

## SECTION 10

**BODY**

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## SECTION 10A1

**DOORS**

**NOTICE:** When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

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## **10A1-2 DOORS**

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## **GENERAL DESCRIPTION**

The doors on C/K model trucks use hinges that are welded to the door and body. No adjustment of this type of hinge is recommended. Replacement hinges bolt on to the door pillar and body side pillar and are adjustable.

### **POWER DOOR LOCK AND POWER WINDOW HARNESS**

The power lock and window harness starts at the fuse block and routes to the left and right sides of the instrument panel. The harness travels to a set of connectors on the inner wheel housing. From the connectors, the harness passes through a flexible conduit tube in the front door trim panel opening. The harness branches off to the control switches, the door lock motors, and the power window motors inside the door (figures 1 and 2).

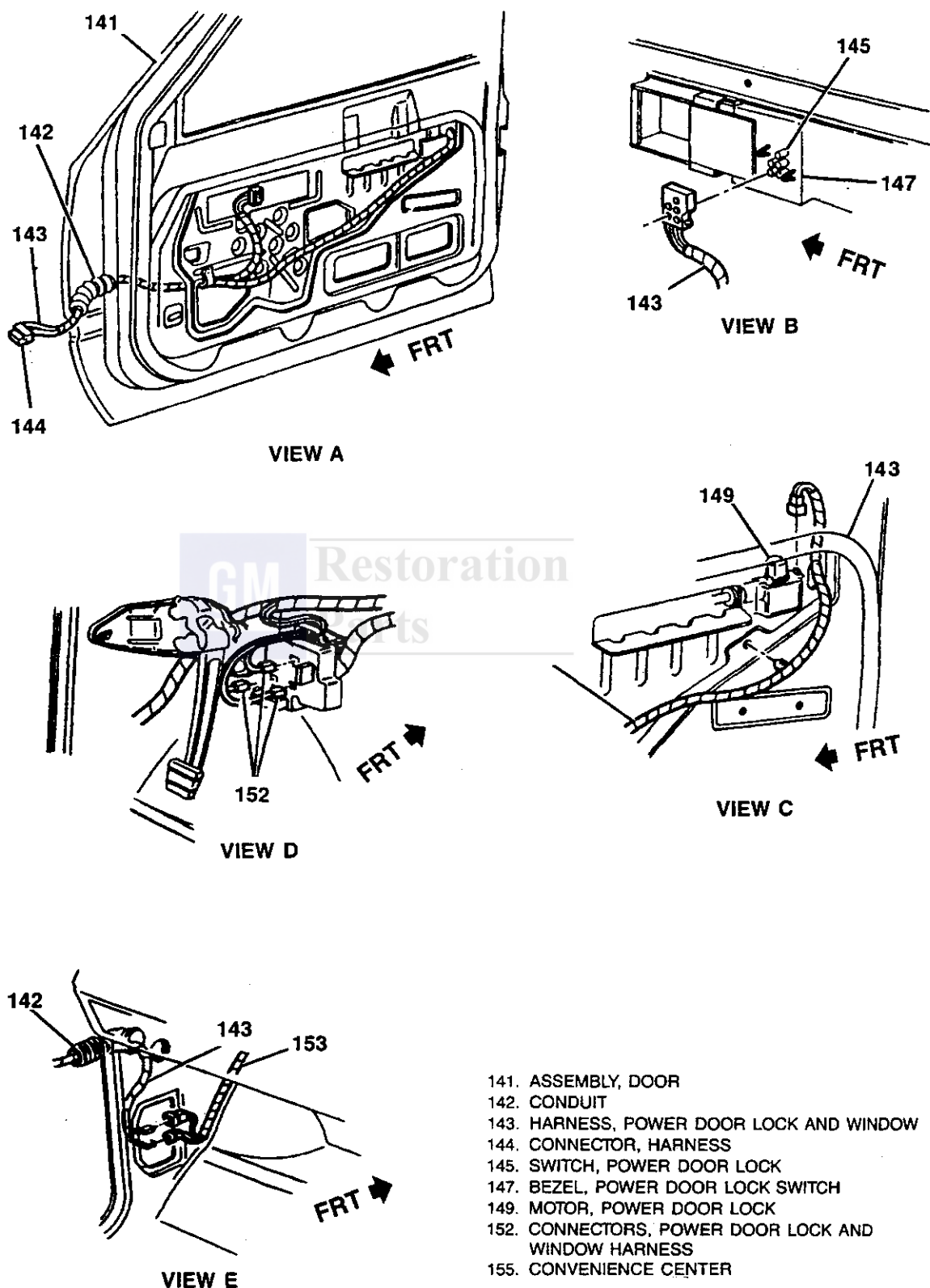


Figure 1—Power Door Lock and Window Harness

## 10A1-4 DOORS

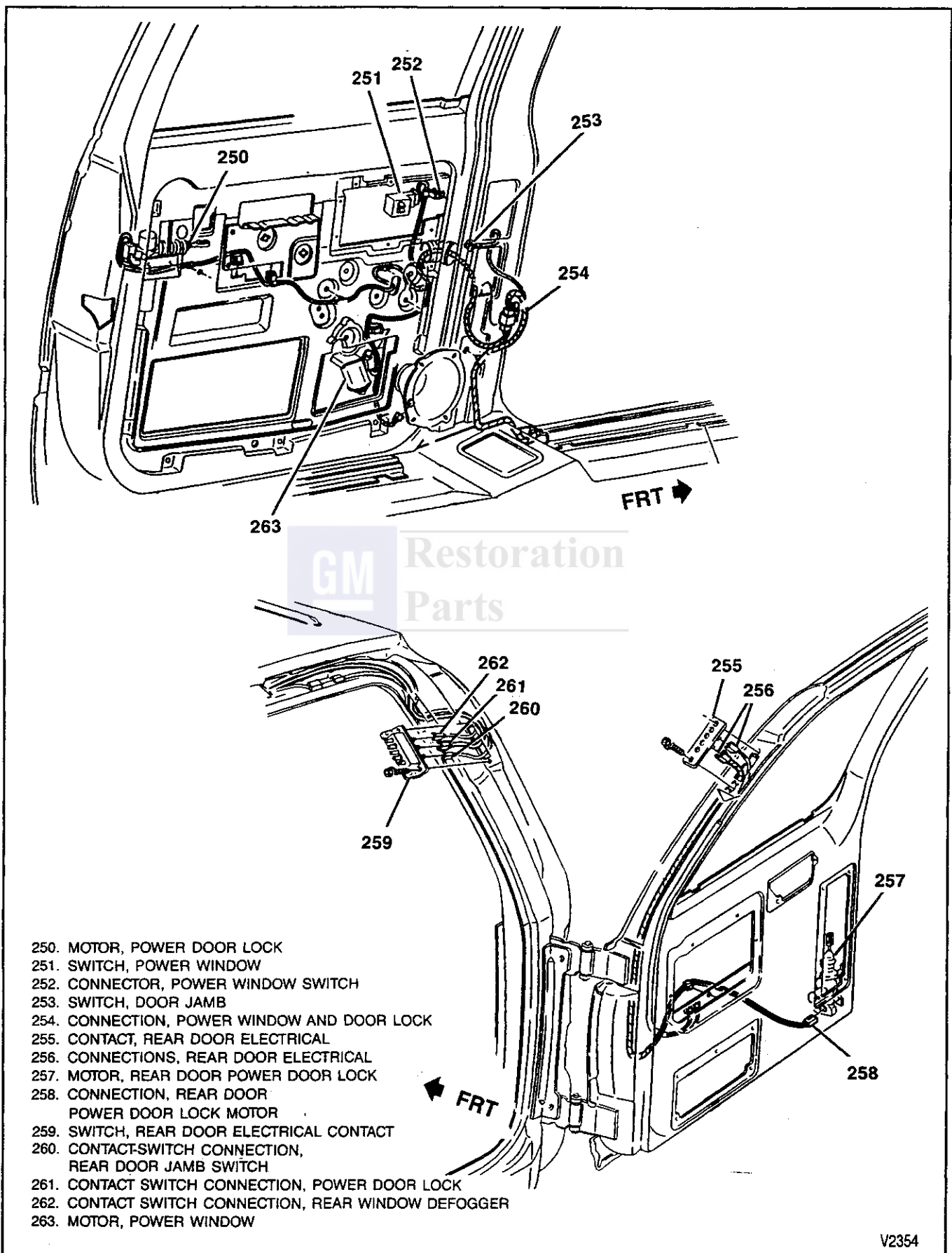


Figure 2—Power Door Lock and Window Harness

## DIAGNOSIS OF POWER WINDOW SYSTEM

PROBLEM	POSSIBLE CAUSE	CORRECTION
<b>Passenger Window Will Not Work, Using Either Passenger Switch or Driver Switch</b>	<ol style="list-style-type: none"> <li>1. No power at the passenger switch.</li> <li>2. Passenger switch is not working.</li> <li>3. Motor has an internal open.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ignition switch at RUN or ACC. Check for voltage at the passenger switch. If there is no voltage, find the open between the switch and the fuse block.</li> <li>2. With the voltage on the PNK wire at the switch, move the switch to "UP." There should be voltage at the switch. If there is no voltage, replace the switch.</li> <li>3. With the window switch moved to the "UP" position, check for voltage on the DK BLU wire at the motor. If there is no voltage, find the open between the switch and the motor. If there is voltage on the DK BLU wire, backprobe a jumper ground at the BRN wire at the motor. If the motor does not run, replace the motor. If the motor does run, find the open in the ground circuit. Note: The ground circuit does run back through the passenger window "DN" contacts and the driver window switch "DN" contacts before reaching ground.</li> </ol>
<b>Passenger Window Will Not Work Using the Passenger Switch. The Window Will Work Using the Driver Switch</b>	<ol style="list-style-type: none"> <li>1. No power at the passenger switch.</li> <li>2. Switch has internal open.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check for voltage on the PNK wire at the passenger switch. If voltage is not present, find the open in the circuit between the switch and the instrument panel harness connector.</li> <li>2. If voltage is present, replace the switch.</li> </ol>
<b>Passenger Window Won't Work Using The Driver Switch</b>	<ol style="list-style-type: none"> <li>1. No power.</li> <li>2. Open in driver switch.</li> <li>3. Open in harness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check driver window action. If the driver window works, power is at the switch.</li> <li>2. With the driver switch moved to "UP," check for voltage on the DK BLU wire at the driver switch. If voltage is not present, replace the switch.</li> <li>3. With voltage present on the DK BLU wire at the driver switch, find the open between the driver switch and the passenger switch.</li> </ol>
<b>Driver Window Won't Work — Passenger Window Works</b>	<ol style="list-style-type: none"> <li>1. Switch won't work.</li> <li>2. Motor has internal open.</li> <li>3. Motor ground circuit is open.</li> </ol>	<ol style="list-style-type: none"> <li>1. Switch moved to "UP." Check for voltage at the DK BLU wire at the switch. If voltage is not present, replace the switch.</li> <li>2. Switch moved to "UP." Check for voltage on the DK BLU wire at the motor. If voltage is present, backprobe a jumper ground at the BRN wire at the motor. If the motor won't run, replace the motor.</li> <li>3. Backprobe a jumper ground at the BRN wire at the motor. Move the driver switch to "UP." If the motor runs, find the open in the ground circuit.</li> </ol>

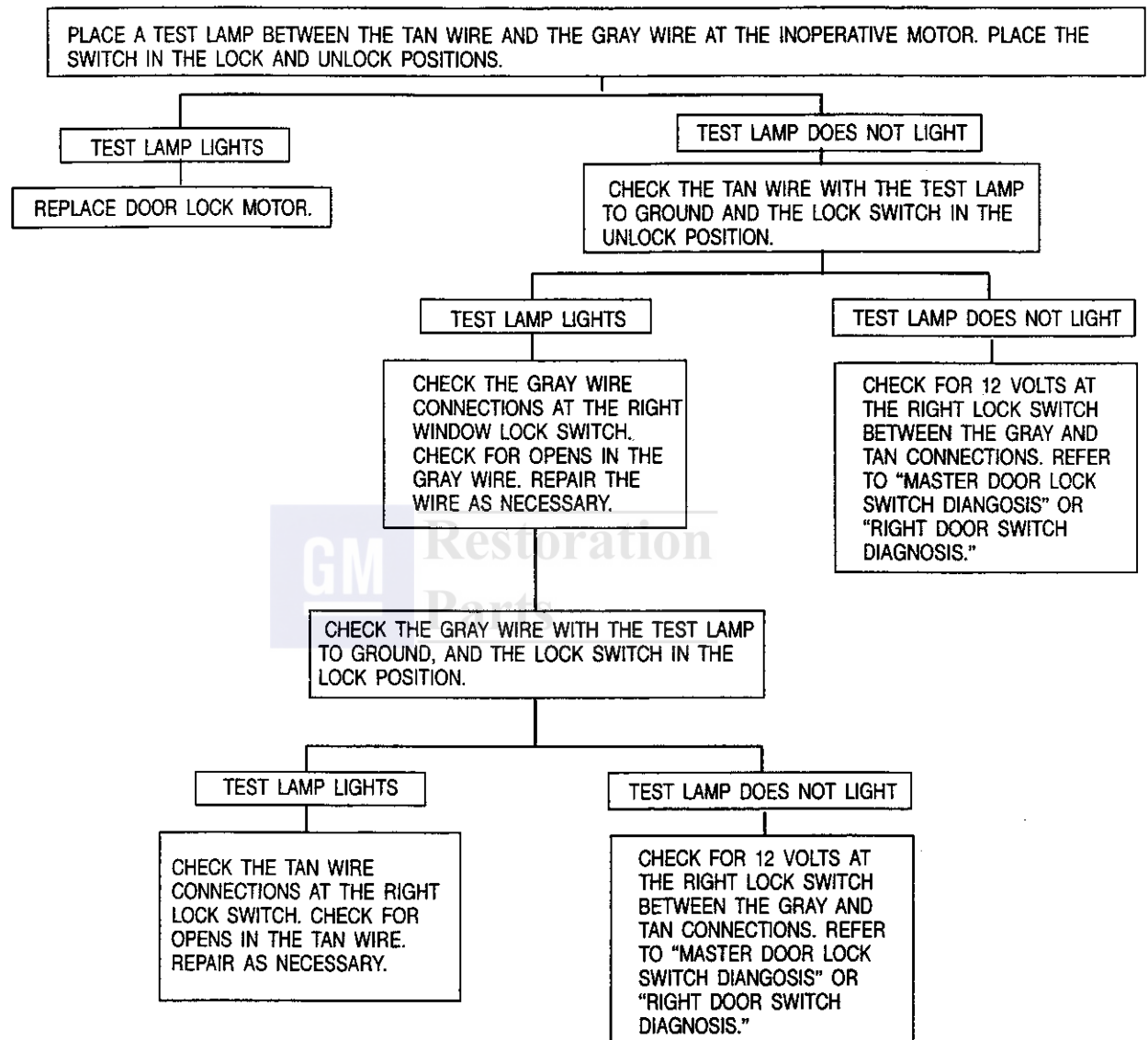
## 10A1-6 DOORS

### DIAGNOSIS OF POWER DOOR LOCK SYSTEM

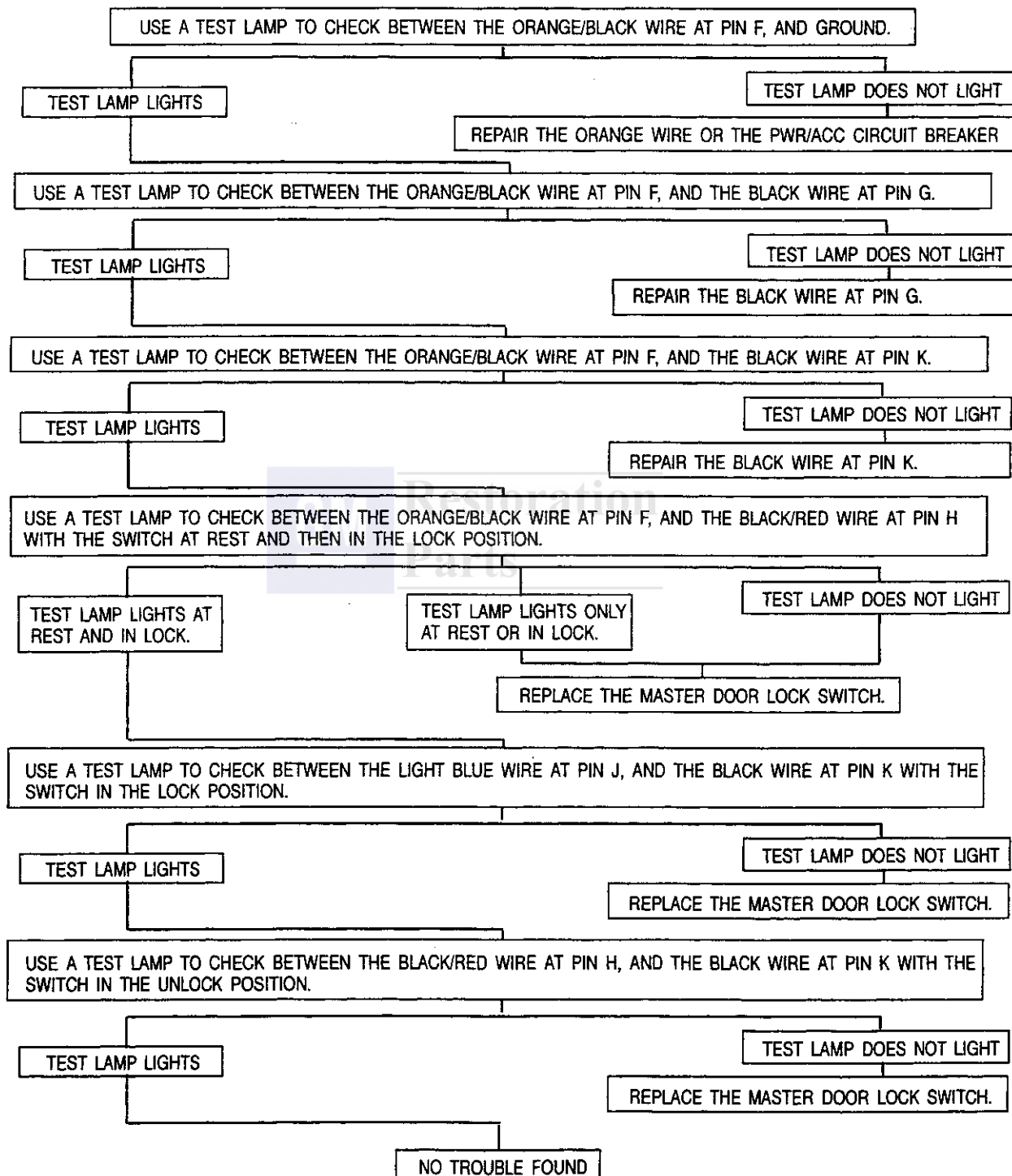
PROBLEM	POSSIBLE CAUSE	CORRECTION
One Door Locks and Unlocks. The Other Door Lock Is Inoperative.	1. Door lock motor.	1. Refer to "Door Lock Motor Diagnosis." Replace motor if necessary.
Neither Door Lock Works.	1. Master door lock switch. 2. Right door lock switch.	1. Refer to "Master Door Lock Switch Diagnosis." Replace switch if necessary. 2. Refer to "Right Door Lock Switch Diagnosis." Replace switch if necessary.
Neither Door Lock Works from the Master Door Lock Switch, and Both Operate From the Right Door Lock Switch.	1. Master door lock switch.	1. Refer to "Master Door Lock Switch Diagnosis." Replace switch if necessary.
Neither Door Lock Works from the Right Door Lock Switch, and Both Operate from the Master Door Lock Switch.	1. Right door lock switch.	1. Refer to "Right Door Lock Switch Diagnosis." Replace switch if necessary.

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## POWER DOOR LOCK MOTOR DIAGNOSIS

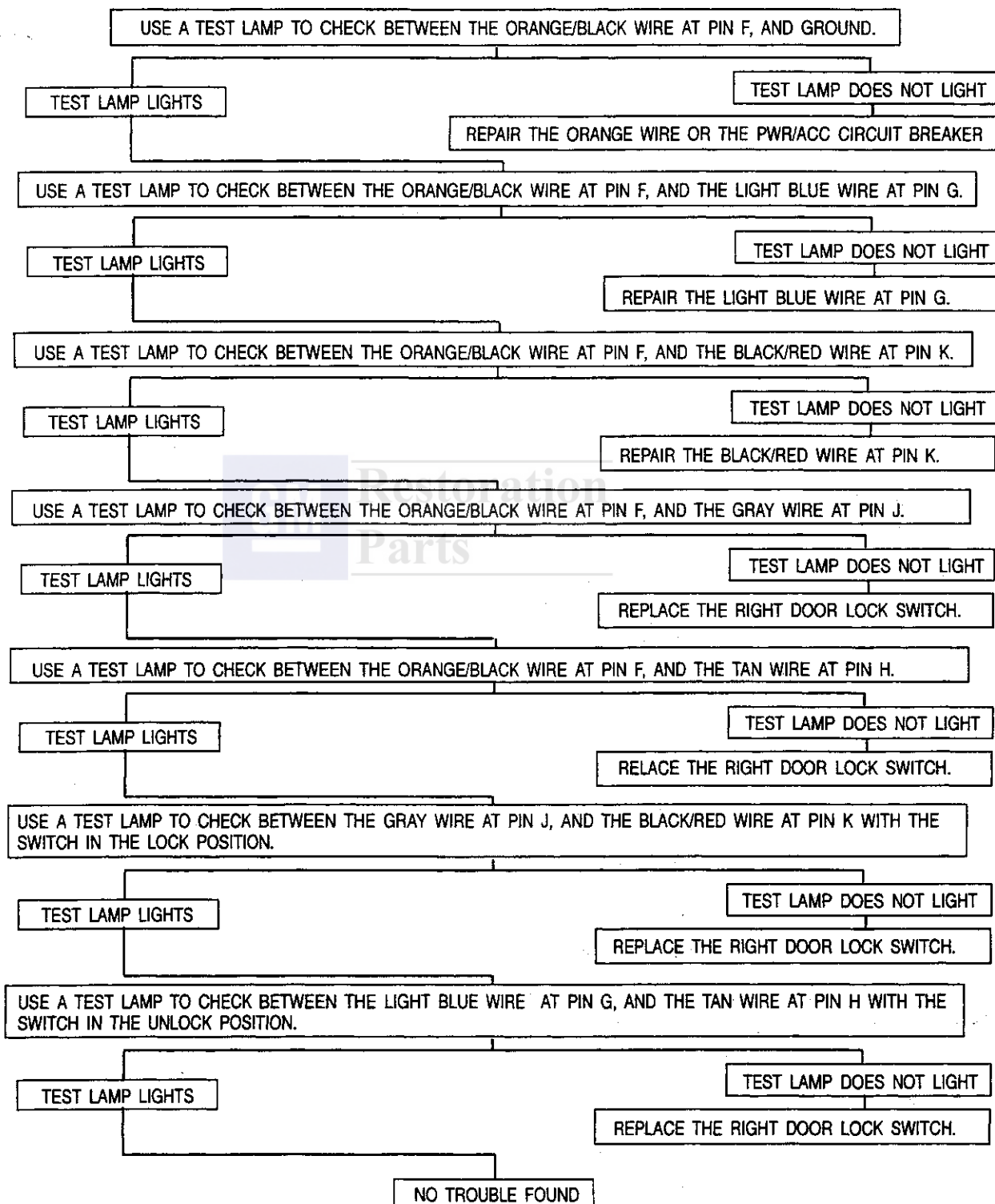


# MASTER DOOR LOCK SWITCH DIAGNOSIS





## PASSENGER DOOR LOCK SWITCH DIAGNOSIS



## ON-VEHICLE SERVICE

### DOOR REPLACEMENT



Remove or Disconnect (Figures 3, 4, and 5)

Tools Required:

J 36604 Door Hinge Spring Compressor

VEHICLES WITH POWER DOOR COMPONENTS ONLY:

1. Negative battery cable. Refer to SECTION 0A.
2. Cowl side vent cover.
3. Wire harness connectors under the instrument panel.
  - A. Receptacles from the wire harness.
  - B. Retainer from the wire harness grommet.
  - C. Rubber conduit from the door pillar by pushing it from the vent cover side.

ALL VEHICLES:

- Apply cloth backed tape to the door and the body pillar.

**CAUTION:** Before removing the door hinge spring, cover the spring with a towel to prevent the spring from "flying" and possibly causing personal injury or damage.

4. Door hinge spring using J 36604 (figure 5).
  - Insert the blades of the tool between the spring coils and turn the barrel nut to compress and hold the spring during removal.
5. Lower hinge pin retainer.
6. Lower hinge pin using a soft-faced hammer and a pair of locking pliers to grasp the pin and drive it out.
  - Install a bolt through the lower hinges temporarily to hold the door in place while removing the upper hinge pin.
7. Upper hinge pin retainer.
8. Upper hinge pin.

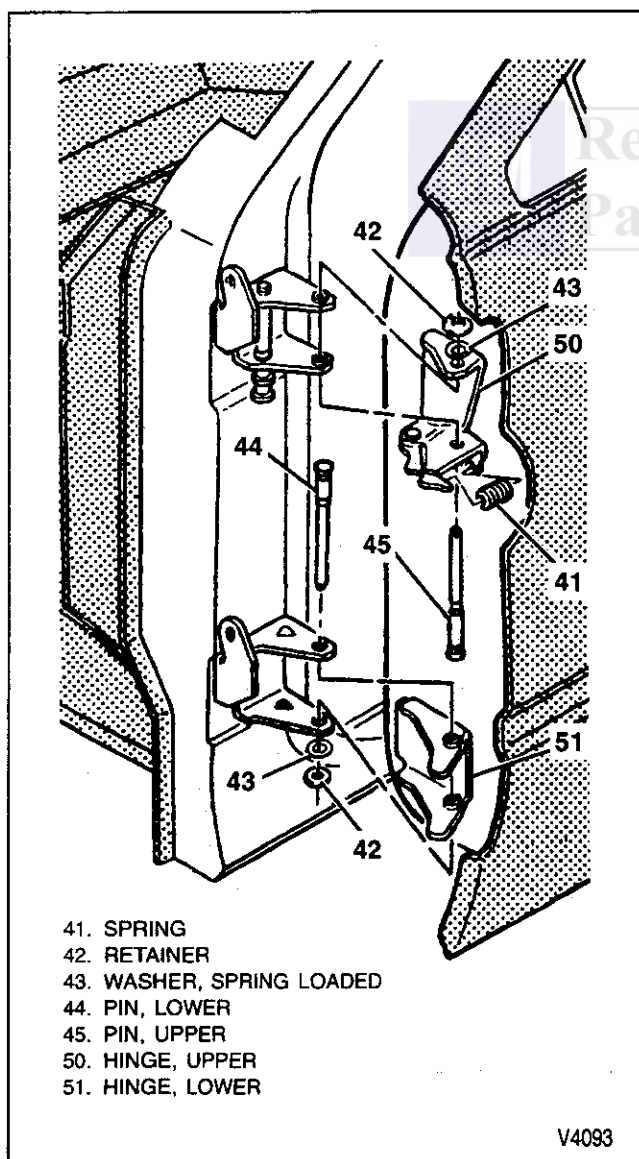


Figure 3—Front Door Hinge Components

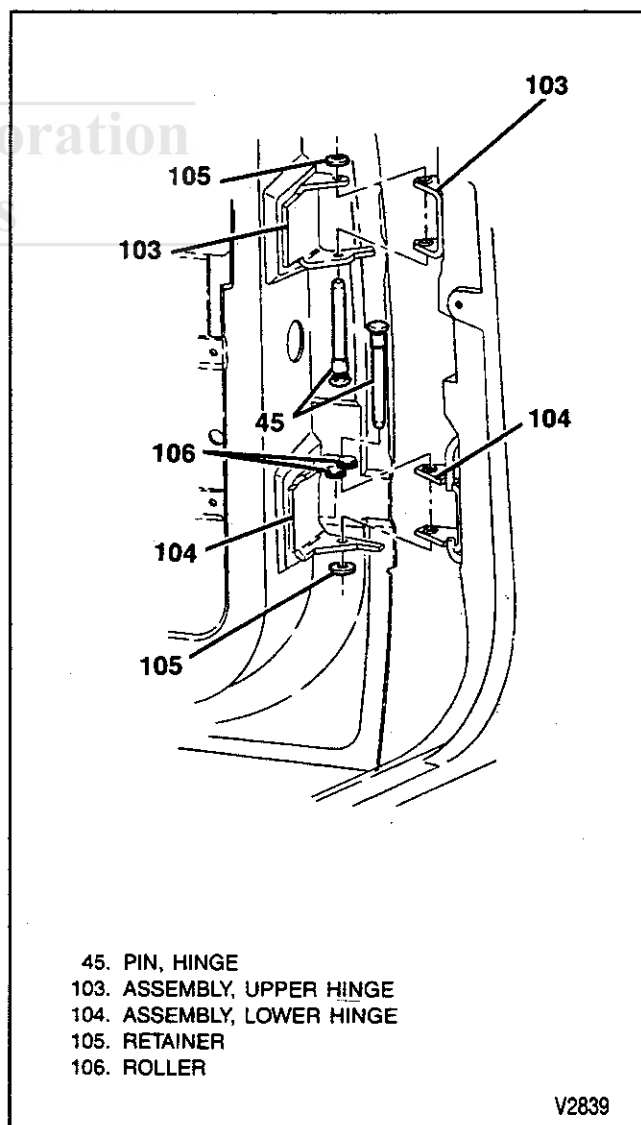


Figure 4—Rear Side Doors and Cargo Door Hinge Components

9. Bolt in lower hinge pin hole.
10. Door from the vehicle.

## Install or Connect (Figures 3, 4, and 5)

Tool Required:  
J 36604 Door Hinge Spring Compressor.  
ALL VEHICLES:

1. Door to the vehicle.
2. Bolt temporarily through the lower hinge pin holes.
3. Upper hinge pin with the pointed end up.

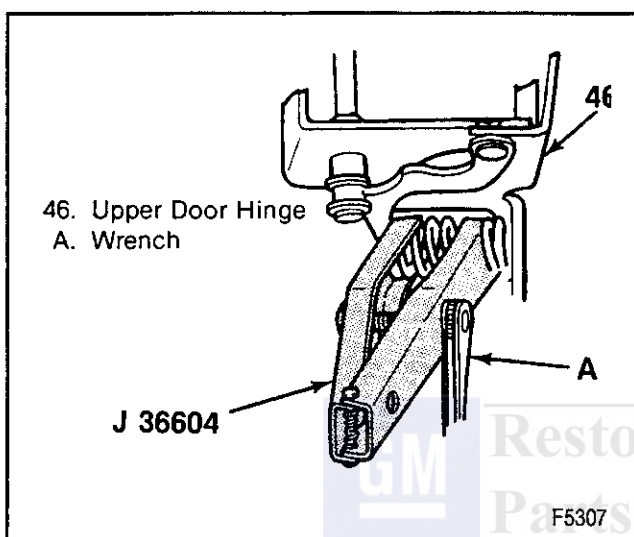


Figure 5—Hinge Spring Removal

4. New hinge pin retainer.

- Remove temporary bolt from the lower hinge.

5. Lower hinge pin with the pointed edge down.
6. New hinge pin retainer.
7. Door hinge spring using J 36604 (figure 5).

VEHICLES WITH POWER DOOR COMPONENTS:

8. Harness connectors.

A. Rubber conduit through the body pillar.  
B. Retainer around the wire harness grommet.  
C. Receptacles to the harness under the instrument panel.

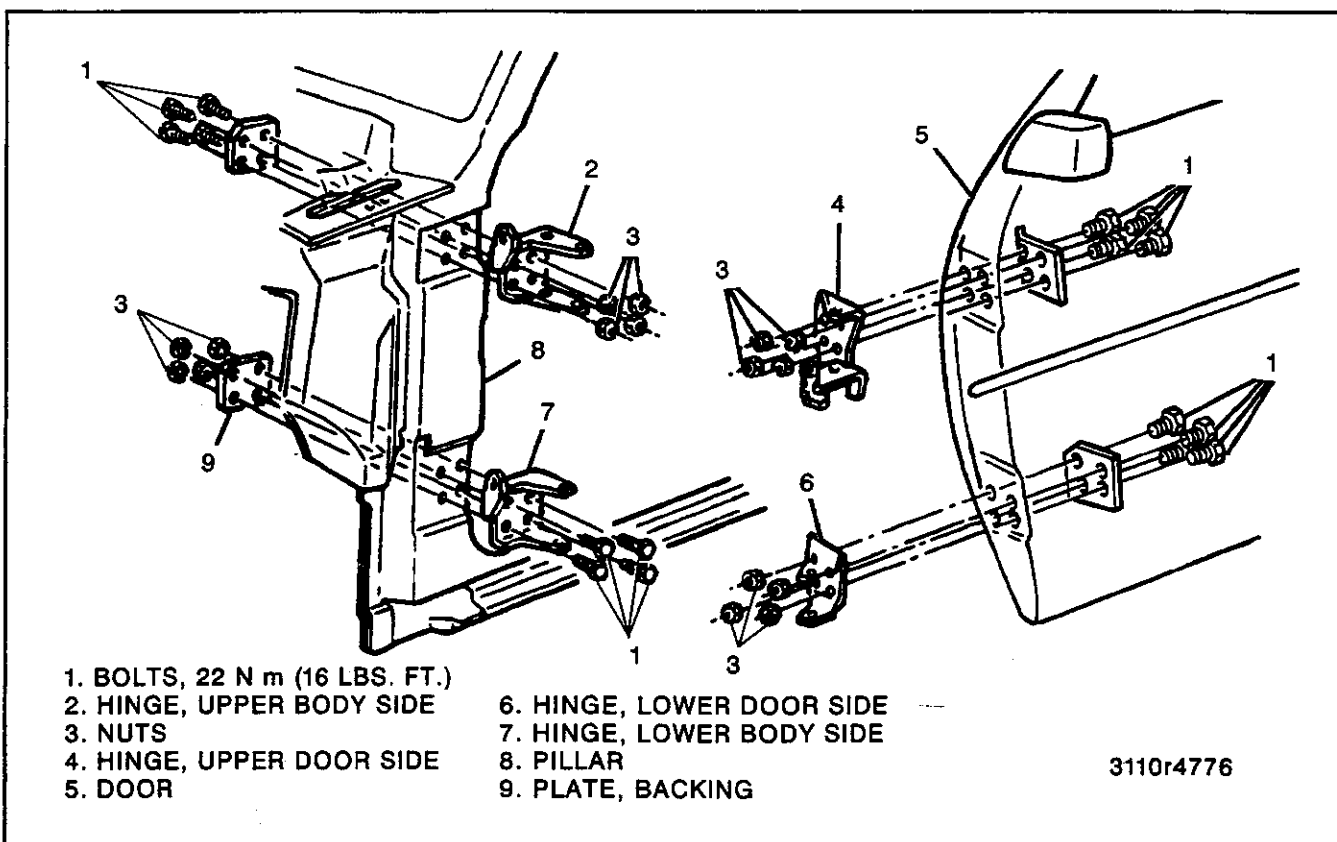
9. Cowl side vent cover.
10. Negative battery cable.
11. Lubricate bushing with engine oil.

## DOOR HINGE REPLACEMENT

### Remove or Disconnect (Figure 6)

1. Door trim panel. Refer to "Door Trim Panel Replacement."
2. Door module panel.
3. Door. Refer to "Door Replacement."
4. Hinges from pillar or door.

A. Scribe the location of the existing hinges on the body pillar, and the door.  
B. Center punch each of the weld marks on the original hinges. It is critical to punch the center of the weld so only the weld is removed.



1. BOLTS, 22 N m (16 LBS. FT.)
2. HINGE, UPPER BODY SIDE
3. NUTS
4. HINGE, UPPER DOOR SIDE
5. DOOR

6. HINGE, LOWER DOOR SIDE
7. HINGE, LOWER BODY SIDE
8. PILLAR
9. PLATE, BACKING

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Figure 6—Replacement Hinges

## 10A1-12 DOORS

- C. Drill a 3-mm (1/8-inch) pilot hole through the hinge base only. Using the 3-mm hole as a pilot, drill a 13-mm hole (1/2-inch) hole through the hinge base only. This will remove the weld, without drilling through the pillar or the door.
- D. Drive a chisel between the hinge and pillar or the door to separate the hinge from the pillar or door.

### Left Hinge Replacement:

1. Sill plate.
2. Kick pad by lifting from the retainers.
3. Parking brake assembly. Refer to SECTION 5F.
  - Carefully pry away the cowl side panel insulator over the lower access hole and set aside to reuse.

### Right Hinge Replacement:

1. Negative battery cable. Refer to SECTION 0A.
2. Sill plate.
3. Kick pad by lifting from the retainers.
4. Glove compartment.
5. Engine control module (ECM) from the mounting bracket by lifting it from the retainers.
6. ECM mounting bracket and screws.
  - Carefully pry the cowl side panel insulator away from the lower access hole and set aside to reuse.



### Install or Connect (Figure 6)

1. Hinges to pillar or door.
  - A. Position the bolt-on service replacement hinges within the scribe marks made on the body hinge pillar and the door at the time of removal.
  - B. Center punch each bolt hole location on the body hinge pillar and/or door.
  - C. Drill a 13-mm (1/2-inch) hinge attaching hole in three steps to ensure placing the hinge in the proper position.
2. Prepare the surface for the replacement hinges using a file or equivalent.
  - Coat the mating surface of the hinges with a medium bodied sealer.

**NOTICE:** Refer to "Notice" on page 10A1-1.

3. Hinges, backing plate, bolts, and nuts.
  - A. Align the hinge and backing plate with the holes in the hinge pillar and door.
  - B. Place the bolts through the hinge, pillar and/or door, and through the backing plate.



### Tighten

- Nuts to 35 N.m (26 lbs. ft.).

### Left Side:

1. Cowl side panel insulator over the lower access hole.
2. Parking brake assembly. Refer to SECTION 5A.
3. Kick pad and sill plate.

### Right Side:

1. Cowl side panel insulator over the lower access hole.
2. Engine control module (ECM) mounting bracket and screws.
3. ECM.
4. Glove compartment.
5. Kick pad and sill plate.
6. Door to the cab. Refer to "Door Replacement."
7. Door module panel. Refer to "Door Module Replacement."
8. Door trim panel. Refer to "Door Trim Panel Replacement."
9. Negative battery cable.



### Adjust

- Refer to "Door Adjustment."

## DOOR ADJUSTMENT

This procedure can only be used when bolt-on service replacement hinges are installed.



### Remove or Disconnect (Figures 7 and 8)

Tool Required:

J 29843-9 Torx Bit (Bit Size T47) or equivalent.

- Door striker bolt using J 29843-9 or equivalent.
- Loosen the door hinge to the body side pillar bolts.



### Adjust (Figure 7)

1. Door up or down, forward or rearward, and in or out at the door hinges.
2. Gap between the rocker panel and the door to the specifications shown in figure 7.
3. Gap between the door and the roof panel.
4. Gap between the rear of the door and the rear pillar.
5. Gap between the door and the fender.
6. Door surfaces flush with other panels within  $\pm 1.0$  mm (0.04-inch).

**NOTICE:** Refer to "Notice" on page 10A1-1.



### Tighten

- Hinge bolts to 35 N.m (26 lbs. ft.).



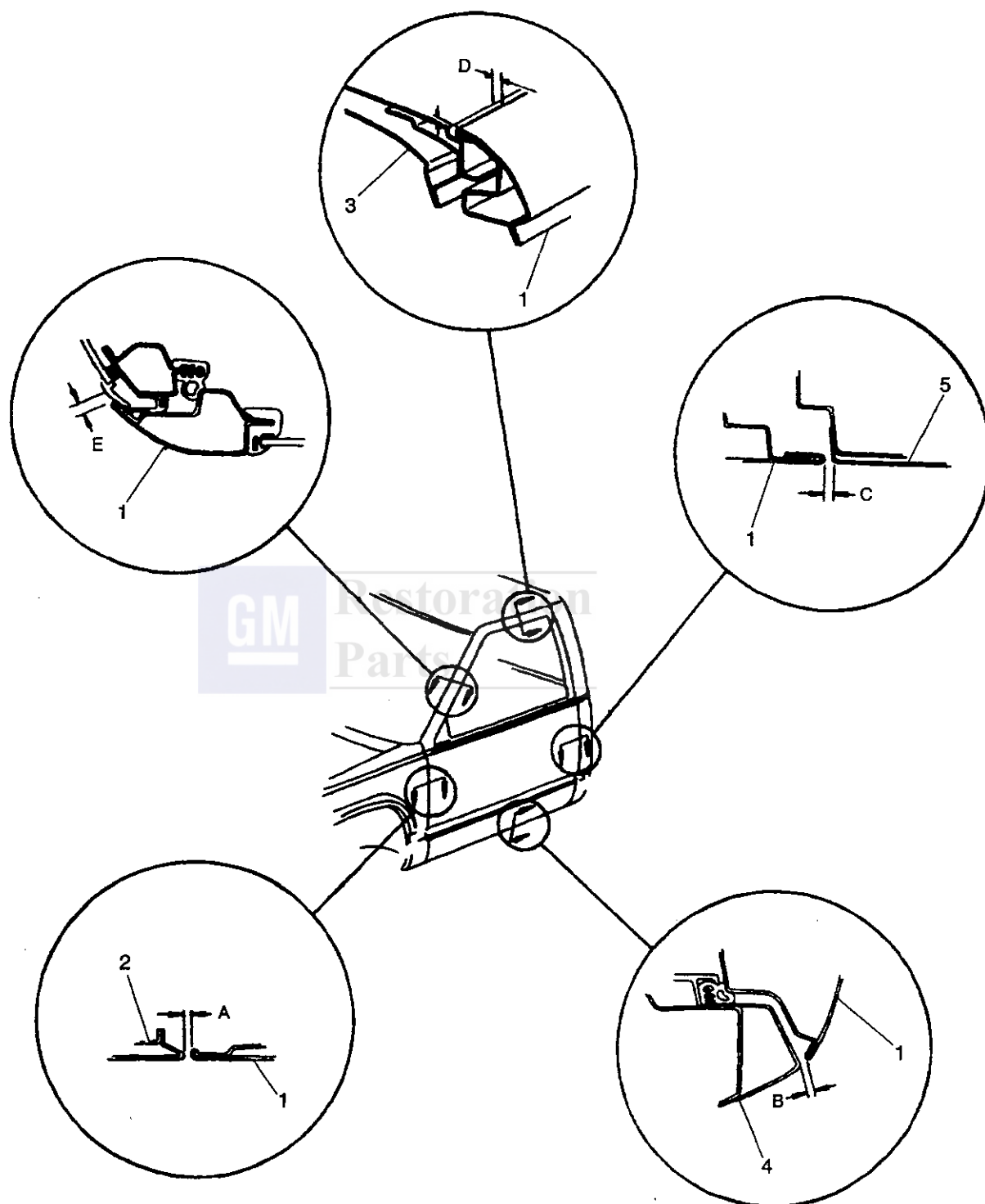
### Install or Connect (Figure 8)

Tool Required:

J 29843-9 Torx Bit (Bit Size T47).

**NOTICE:** Refer to "Notice" on page 10A1-1.

- Door striker bolt.



- A. 5 MM  $\pm$  1 MM (0.19 INCH  $\pm$  0.04 INCH)  
 B. 6 MM  $\pm$  2 OR -1 MM (0.24 INCH + 0.08 OR -0.04 INCH)  
 C. 4 MM  $\pm$  1 MM (0.15 INCH  $\pm$  0.04 INCH)  
 D. 6 MM  $\pm$  2 OR -0 MM (0.24 INCH + 0.08 OR -0 INCH)  
 E. 7 MM  $\pm$  1.0 MM (0.27 INCH  $\pm$  0.04 INCH)

1. DOOR  
 2. FRONT FENDER  
 3. ROOF PANEL  
 4. ROCKER PANEL  
 5. REAR DOOR PILLAR

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Figure 7—Door Adjustment

## 10A1-14 DOORS

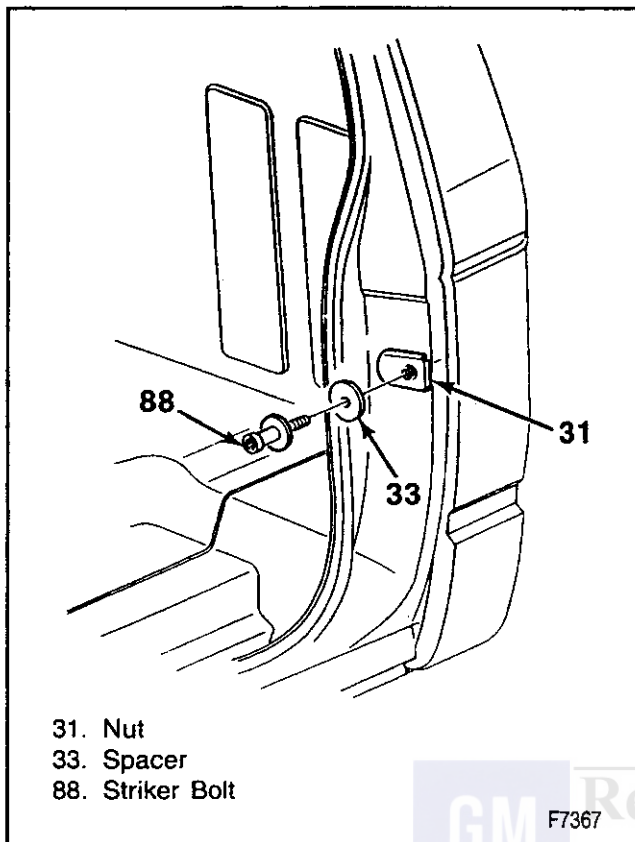


Figure 8—Door Striker Components



### Adjust

- Bolt to properly engage the door lock.



### Tighten

- Bolt to 63 N.m (46 lbs. ft.).

## DOOR STRIKER BOLT REPLACEMENT

The door striker bolt is the special bolt and washer mounted on the door opening's rear pillar. The bolt passes through a hole into a threaded plate behind the pillar. The cab door is secured in position when the lock cam (arm) of the locking mechanism engages and snaps around the striker bolt.

The striker bolt position is not adjustable.



### Remove or Disconnect (Figure 8)

Tool Required:

J 29843-9 Torx Bit (Bit Size T47)

1. Mark the position of the striker bolt spacer on the door pillar.
2. Striker bolt using J 29843-9 or equivalent.



### Install or Connect (Figure 8)

**NOTICE:** Refer to "Notice" on page 10A1-1.

1. Striker bolt into the door pillar retaining plate.
2. Align the striker bolt spacer with the previously made mark.



### Tighten

- Striker bolt while holding spacer in position to 63 N.m (46 lbs. ft.) using J 29843-9 or equivalent.

## DOOR TRIM PANEL REPLACEMENT



### Remove or Disconnect (Figure 9, 10, and 11)

Tool Required:

J 24595-C Trim Pad Retainer Clip Remover

J 9886-01 Door Handle Clip Remover

1. Trim panel pull strap (if used).
  - Remove the plug on each side of the strap and the screws underneath.
2. Door handle bezel.
3. Armrest screws.
4. Armrest pad.
5. Window handle (if used) with J 9886-01. Refer to "Window Regulator Handle Replacement."
6. Use J 24595-C to remove the retainers from the inner door panel.
7. Door trim panel.
8. Bezel with switches fit through cut-out in trim panel.



### Install or Connect (Figures 9, 10, and 11)

1. Retainers to the door trim panel if any remained in the door. Replace any broken retainers.
2. Bezel with switches through cut-out in trim panel.
3. Door trim to the door.
  - Put the trim pad in place on the door and push the retainers into the holes on the door.
4. Window handle (if used). Refer to "Window Handle Regulator Replacement"
5. Armrest pad.
6. Armrest screws.
7. Door handle bezel.
8. Pull strap (if used).

## WINDOW REGULATOR HANDLE REPLACEMENT

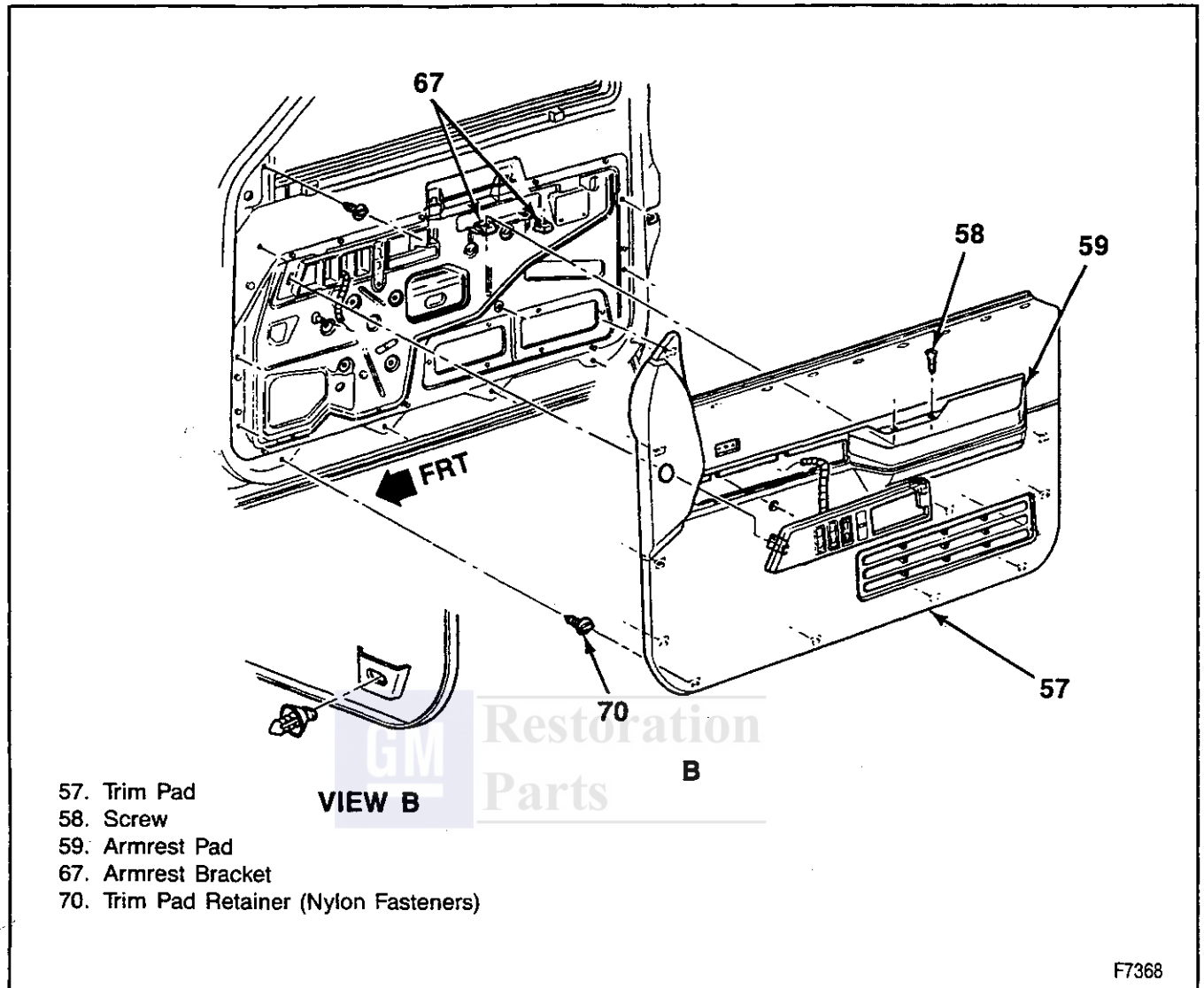
Tool Required:

J 9886-01 Door Handle Clip Remover.



### Remove or Disconnect (Figure 12)

1. Window regulator handle.
  - A. Insert J 9886-01 between the handle and the bearing plate.
  - B. Align the tool J 9886-01 parallel with the door handle and push to disengage the spring clip.
  - C. Pull the handle from the door.
2. Bearing plate.



**Figure 9—Front Door Trim Panel**

**Install or Connect (Figure 12)**

1. Bearing plate.
2. Place the window in the raised position.
3. Put the spring clip onto the handle.
4. Insert the handle onto the door so the handle is pointing towards the front of the door.
  - Push on the handle until the spring clip engages the window regulator shaft.

**INNER DOOR PANEL WATER DEFLECTOR REPLACEMENT**

Water deflectors are used to seal the door inner panel and prevent water from entering into the body. The deflector is secured with a self sealing adhesive.

**Remove or Disconnect (Figure 13)**

1. Door trim panel. Refer to "Door Trim Panel Replacement."
2. Water deflector by pulling it back from the door module.

**Install or Connect (Figure 13)**

1. Water deflector by pressing it against the door module in the area of the adhesive to make a continuous seal.
  - A. Tuck the two lower tabs through slots in the door module.
  - B. Tape over tabs and slots.
2. Door trim panel. Refer to "Door Trim Panel Replacement."

**PRESSURE RELIEF VALVE REPLACEMENT**

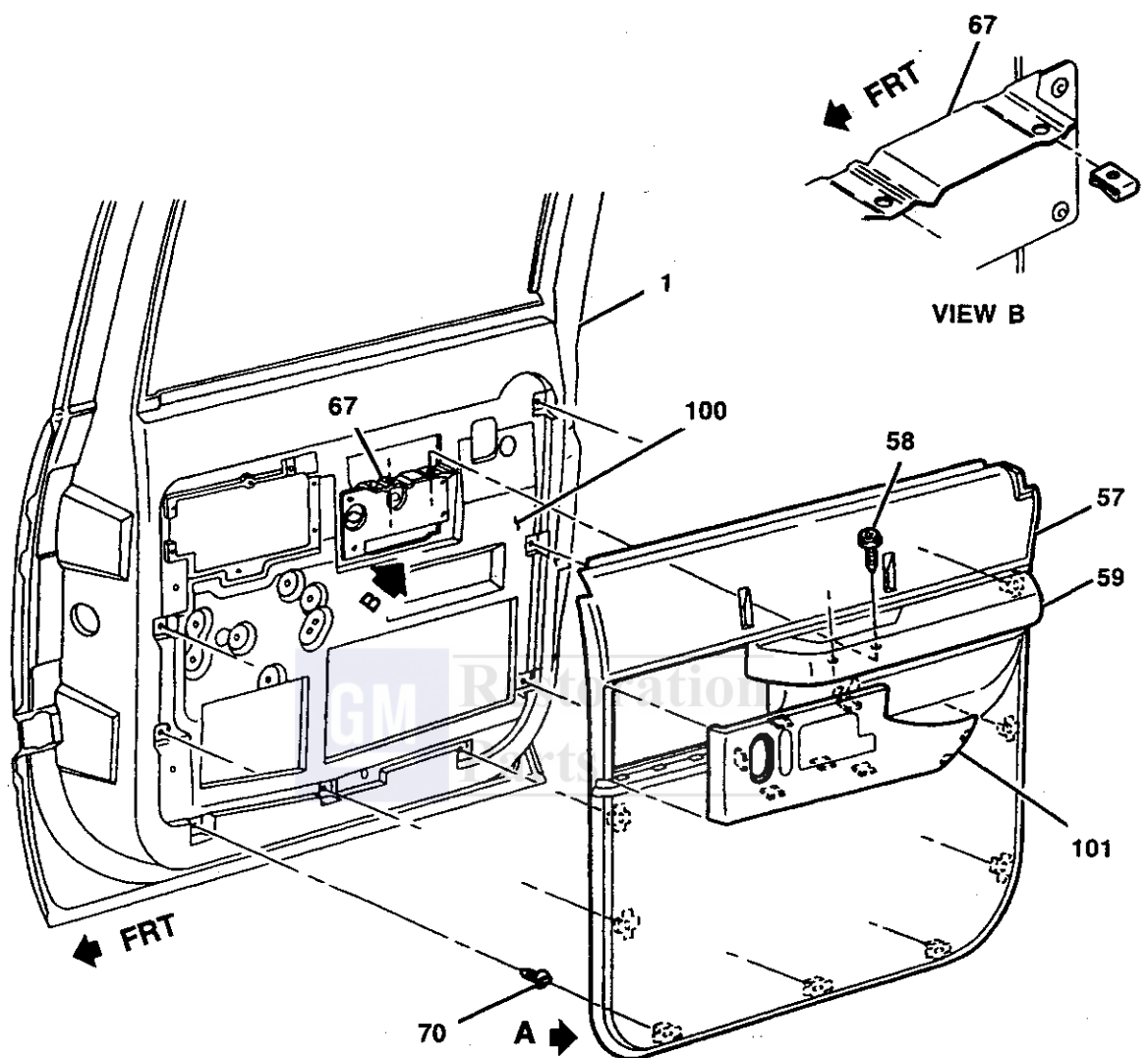
**DOOR MODULE VALVE**

**Remove or Disconnect (Figure 13)**

1. Door trim panel. Refer to "Door Trim Panel Replacement."
2. Valve by drilling out the rivets.



## 10A1-16 DOORS



- 1. DOOR
- 57. PAD, TRIM
- 58. SCREW
- 59. PAD, ARMREST
- 67. BRACKET, ARMREST
- 70. RETAINER, TRIM PAD (NYLON FASTENERS)
- 100. PANEL, REAR SIDE DOOR INNER
- 101. BEZEL

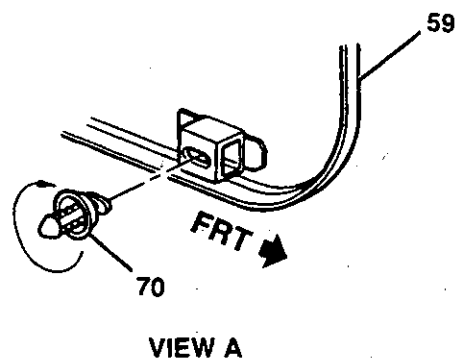


Figure 10—Rear Door Trim Panel



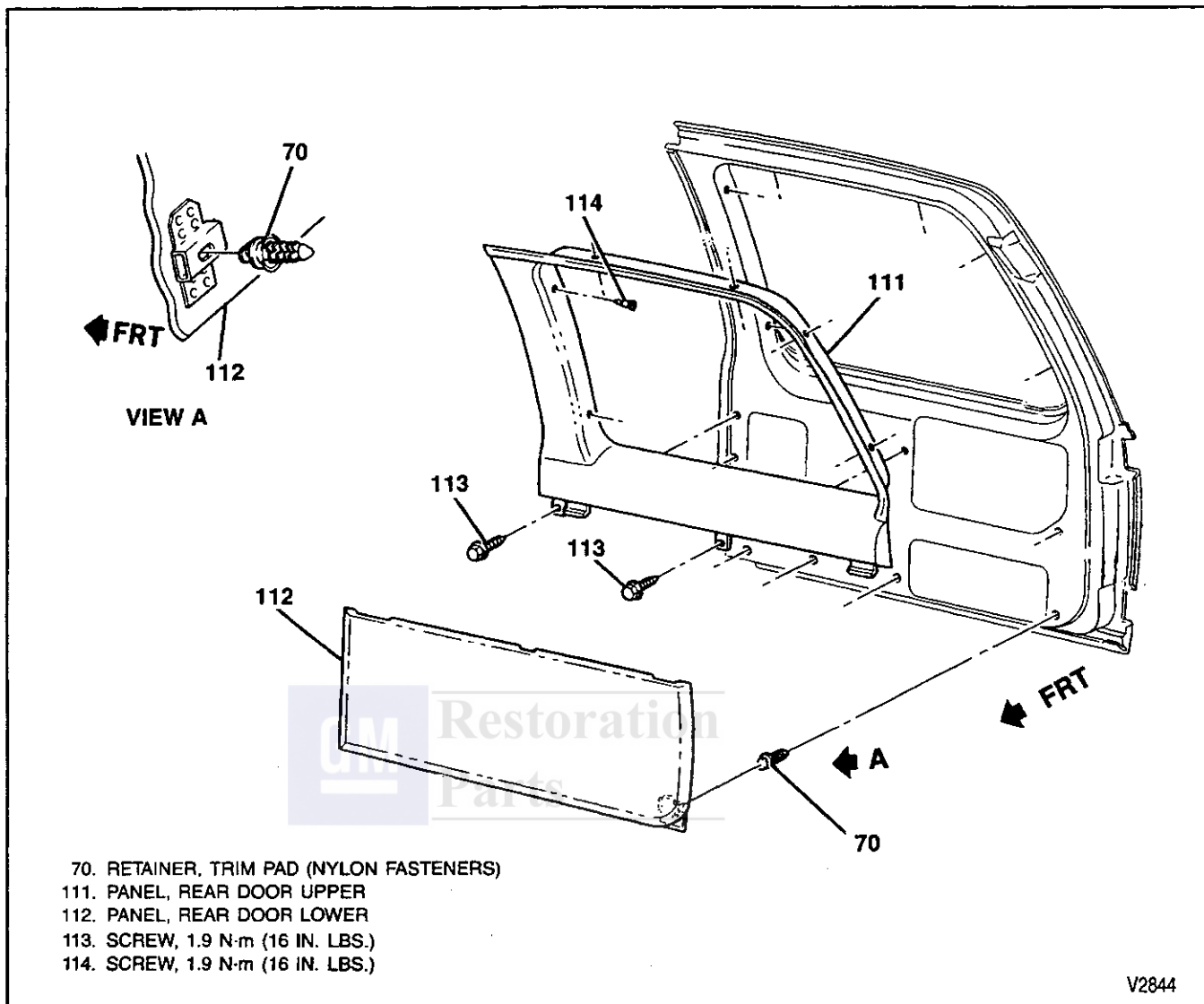


Figure 11—Cargo Door Trim Panel

**Install or Connect (Figure 13)**

1. Valve assembly to the door by riveting.
2. Door trim panel. Refer to "Door Trim Panel Replacement."

**DOOR EDGE VALVE**

**Remove or Disconnect (Figure 14)**

1. Screw retaining the assembly to the door.
2. Valve assembly by lifting it up.

**Install or Connect (Figure 14)**

1. Valve assembly to the door edge.

**NOTICE:** Refer to "Notice" on page 10A1-1.

**Tighten**

- Screw to 1.6 N·m (14 lbs. in.).

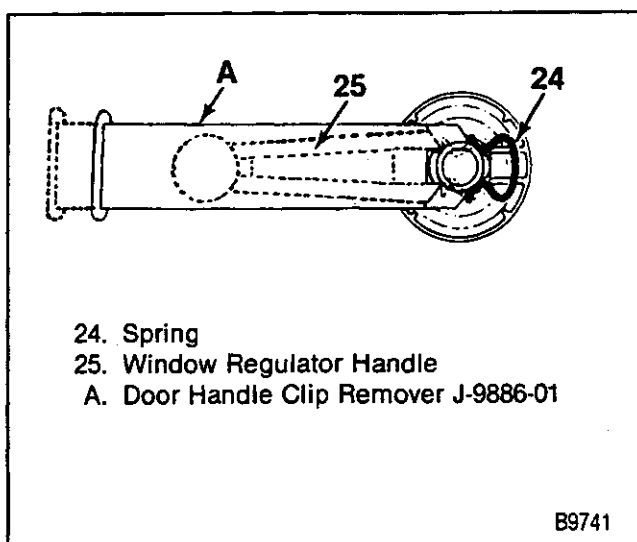


Figure 12—Window Handle Replacement

## 10A1-18 DOORS

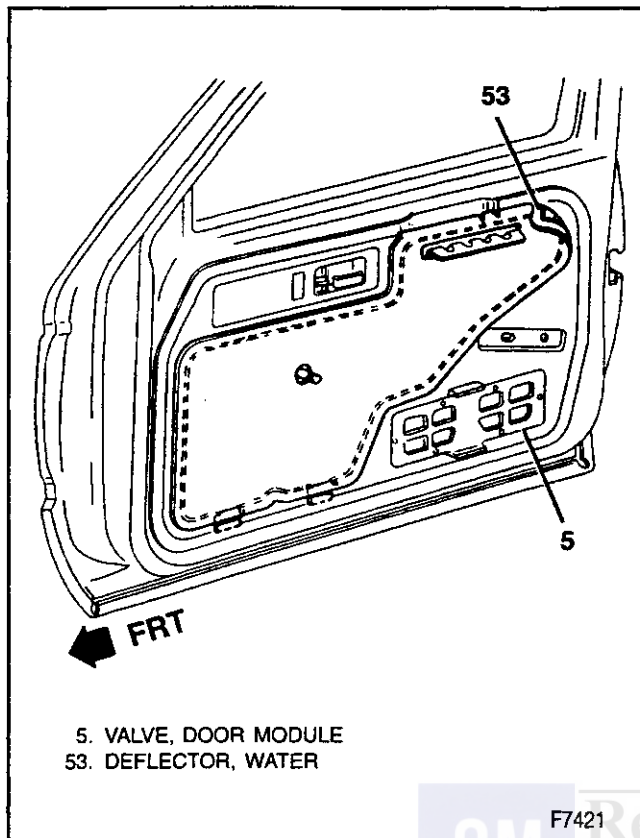


Figure 13—Inner Panel Water Deflector and Pressure Relief Valves

### DOOR HARDWARE LUBRICATION

The mechanical components of the door assembly are lubricated during assembly. If additional lubrication is required to any door hardware mechanism, lubricate with Lubriplate Spray-Lube "A," or Lubriplate Auto-Lube "A", or equivalent. Door hinge pins and bushings should be lubricated at normal service intervals (3 months or 3000 miles) with 30-weight engine oil. Do not lubricate hinge roller to hold-open link contacting surfaces, as this may prevent the roller from rolling properly.

### DOOR LOCK REPLACEMENT

#### Remove or Disconnect (Figures 15 and 16)

1. Door trim panel. Refer to "Door Trim Panel Replacement."
2. Screws from the door module.
  - Tilt the module outward at the top.
3. Lock cylinder rod from the lock cylinder.
4. Inside lock rod.
5. Inside handle rod.
6. Lock screws.
7. Lock mechanism.

#### Install or Connect (Figures 15 and 16)

1. Lock mechanism.
2. Outside door handle rod.

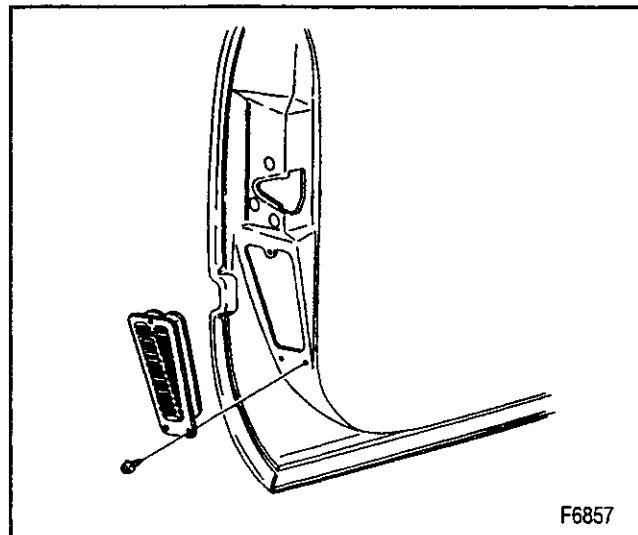


Figure 14—Pressure Relief Valve

**NOTICE:** Refer to "Notice" on page 10A1-1.

3. Lock screws.



#### Tighten

- Screws to 6.7 N.m (60 lbs. in.).
4. Lock cylinder rod to the lock cylinder.
  5. Inside lock rod.
  6. Inside door handle rod.
    - Tilt the door module back in position.
  7. Top front and then top rear module screws.
  8. Rest of the module screws.
  9. Door trim panel. Refer to "Door Trim Panel Replacement."

### DOOR MODULE REPLACEMENT



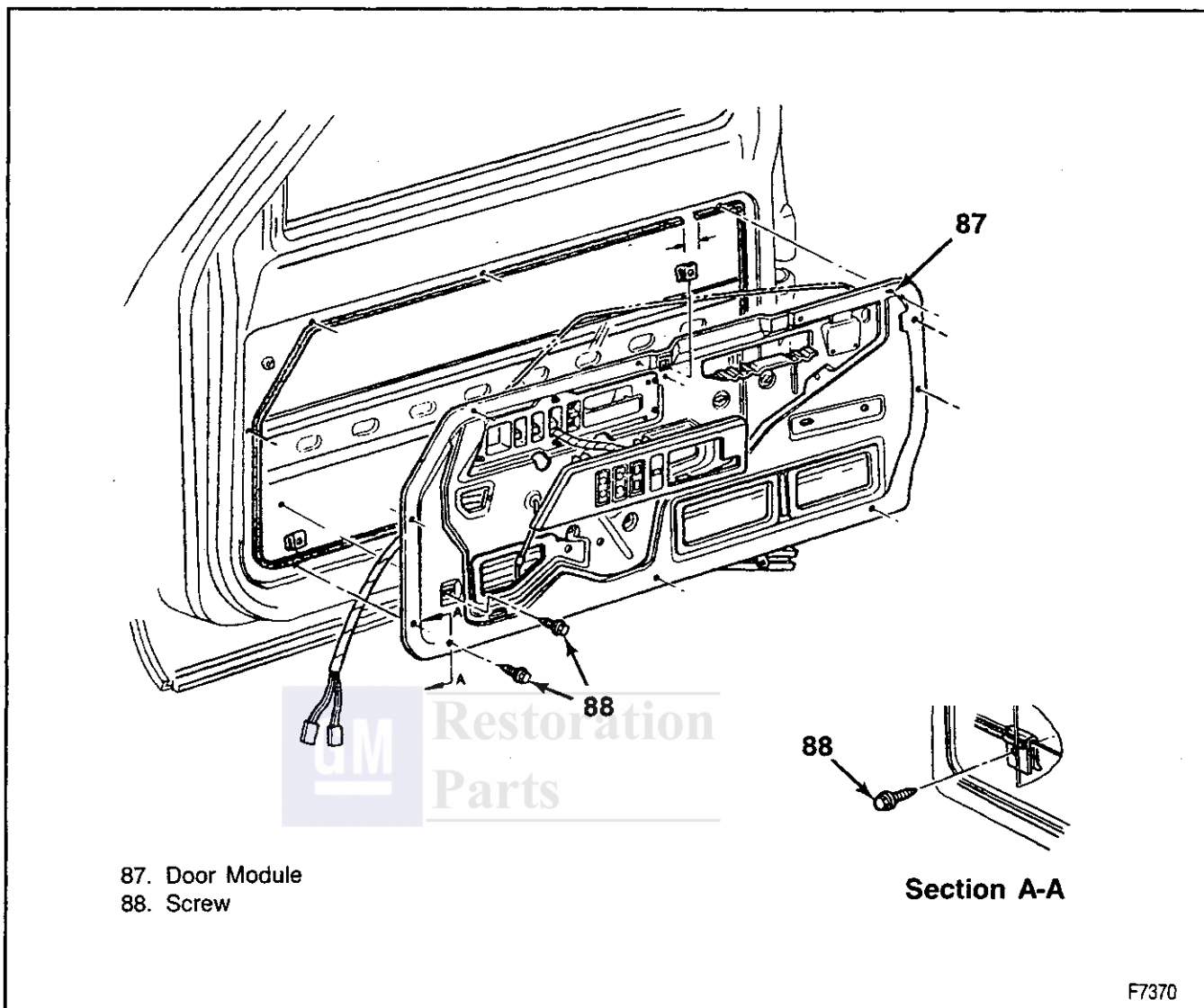
#### Remove or Disconnect (Figure 15)

1. Door trim panel. Refer to "Door Trim Panel Replacement."
  - Lower the window all the way.
2. Screws holding the door module to the door.
  - Pull back the water deflector.
3. Lock and handle rods from the back of the door module.
  - Tape them to the door.
4. Module wiring connector (if present).
  - A. Pull the wiring from the door hinge pillar to reach the connector.
  - B. Remove the boot over the wiring.
  - C. Push the wiring harness into the door.
5. Upper belt through window run channel.
  - A. Move the channel away from the glass.
  - B. Tilt the module and window glass assembly, then lift it out of the bottom of the door.



#### Install or Connect (Figure 15)

**NOTICE:** For steps 2, 6, 7, and 8, refer to "Notice" on page 10A1-1.



87. Door Module  
88. Screw

Section A-A

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Figure 15—Door Module

1. Door module and glass assembly into the door.
  - Fit the glass into the rear channel inside the door.
2. Upper run channel bolt and tighten it.
3. Lock and handle rods to the back of the door module.
4. Wiring connector (if used).
  - Pull the wiring through the boot and connect it inside the door hinge pillar.
5. New water deflector. Refer to "Door Inner Panel Water Deflector Replacement."
6. Top front and the top rear door module screws.
7. Door module to door screws.
8. Lower run channel bolt.
9. Door trim panel. Refer to "Door Trim Panel Replacement."

## POWER DOOR LOCK ACTUATOR REPLACEMENT

### ↔ Remove or Disconnect (Figure 17)

1. Negative battery cable. Refer to SECTION 0A.

2. Door trim panel. Refer to "Door Trim Panel Replacement."
3. Water deflector.
4. Module panel. Refer to "Door Module Replacement."
5. Lock actuator mounting rivets by drilling.
6. Remote lock rod from the actuator arm.
7. Wire harness from the lock actuator.
8. Actuator from the module panel.

### ↔ Install or Connect (Figure 17)

1. Module panel to actuator rivets.
2. Wiring harness to the actuator.
3. Remote lock rod to the actuator arm.
4. Module panel to the door.
5. Water deflector. Refer to "Inner Door Water Deflector Replacement."
6. Door trim panel. Refer to "Door Trim Panel Replacement."
7. Negative battery cable.

10A1-20 DOORS

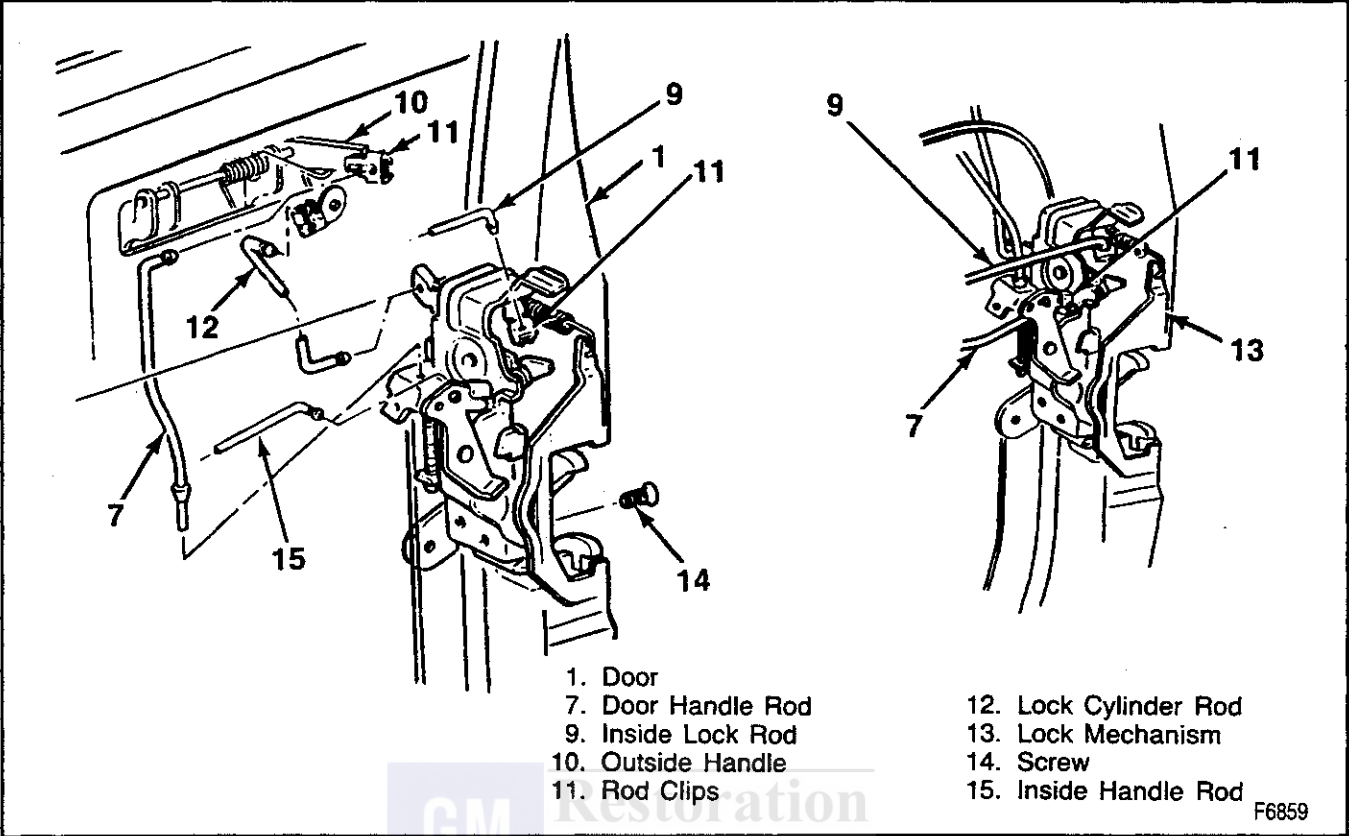


Figure 16—Door Lock Components

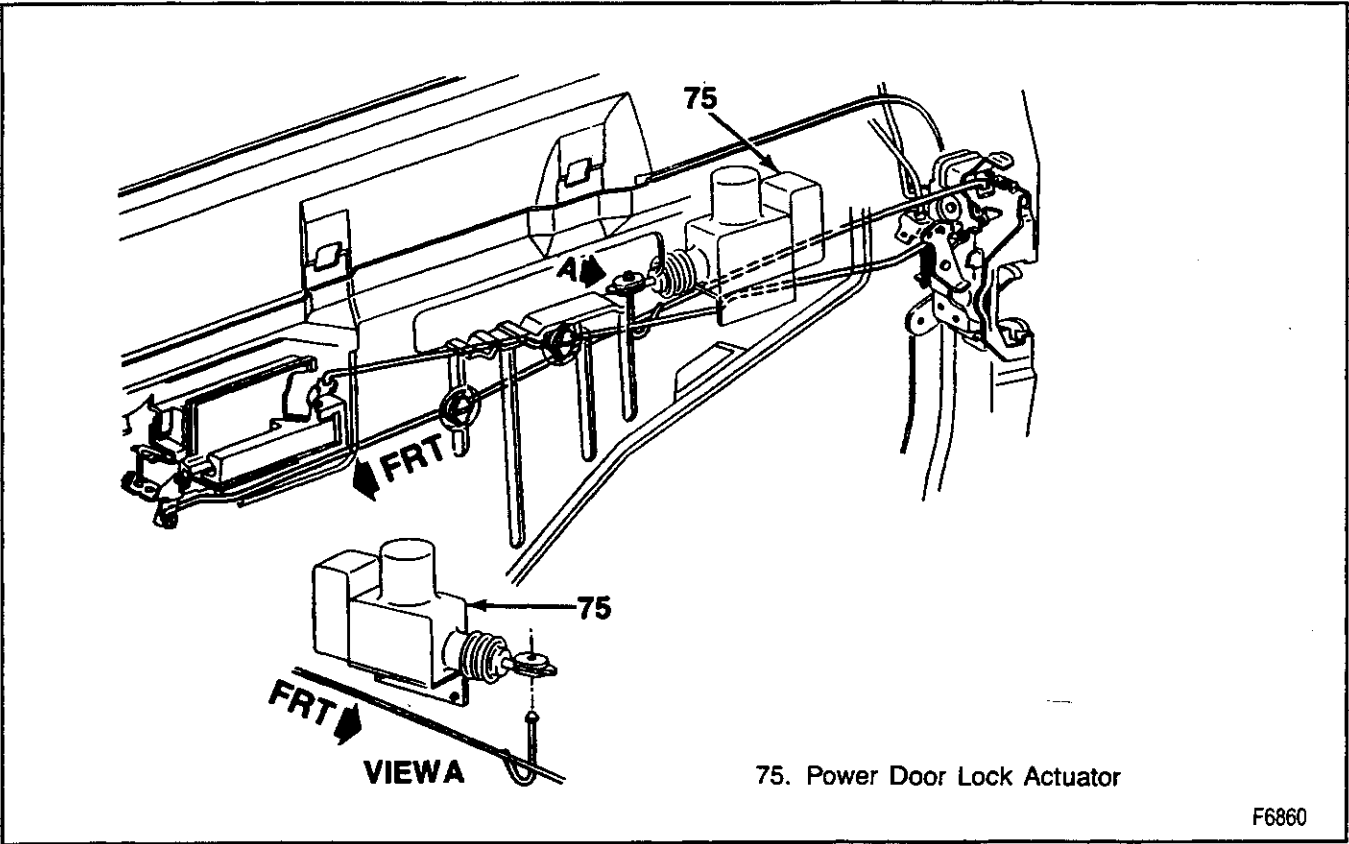


Figure 17—Power Door Lock Actuator

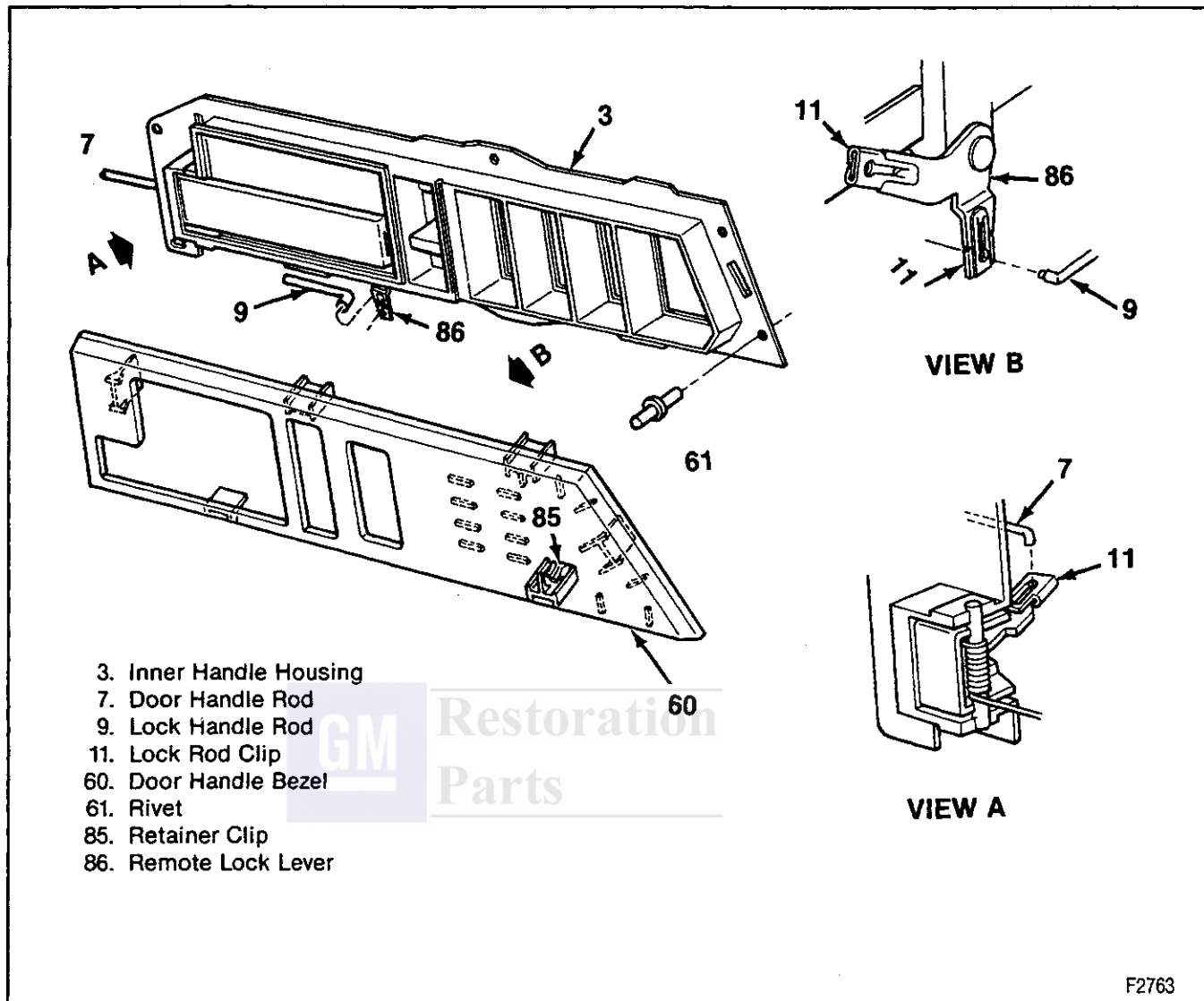


Figure 18—Inner Door Handle Components

## INNER DOOR HANDLE HOUSING REPLACEMENT

### Remove or Disconnect (Figure 18)

1. Door trim panel. Refer to "Door Trim Panel Replacement."
2. Inner handle housing rivets.
3. Inner handle housing.
4. Control rods from the handle and the lock. Refer to "Door Lock Rod Replacement."
5. Switch harness (if used).

### Install or Connect (Figure 18)

1. Switch harness (if used).
2. Control rods to the handle and the lock. Refer to "Door Lock Rod Replacement."
3. Inner handle housing.
4. Inner handle housing rivets.
5. Door trim panel. Refer to "Door Trim Panel Replacement."

## BINDING LOCK CYLINDERS

Binding or sticking door lock cylinders and keys that are hard to insert or remove may be corrected in many cases by applying the proper lubrication.

The recommended materials for lubricating these components are (in order of preference):

- Lubricant GM P/N 12345120 (or equivalent).
- 5 W 30 motor oil.
- Silicone spray GM P/N 1052276 (or equivalent)

Penetrating lubricants (such as GM P/N 1052949 and WD-40®) ARE NOT recommended because they wash out the original lubrication and eventually evaporate, leaving little or no lubricating material. However, if these materials are used to unfreeze or loosen lock cylinder components, refer to steps 2 through 4 below for proper methods of lubrication.

Frozen lock cylinders due to cold weather may be repaired using the following procedure:

1. Apply heat to cylinder with a heat gun while being careful not to damage the painted surfaces.

## 10A1-22 DOORS

2. Hold the door shutter open with a paper clip (or similar item) and force air into cylinders using compressed air and a blow gun attachment.
3. While holding the shutter door open, inject a small amount of lubricant (refer to above recommendations) into cylinder.
4. Work the key into the cylinder several times and wipe any excess lubrication residue from key.

### DOOR LOCK CYLINDER AND OUTSIDE HANDLE REPLACEMENT

New lock cylinders are available as replacement parts. If door lock cylinders require replacement for any reason, apply a coating of GM P/N 12345120 or equivalent lubricant inside of the lock case and cylinder keyway prior to assembling and installing the cylinder.

To repair a binding lock cylinder, refer to "Binding Lock Cylinders." To code a new lock cylinder, refer to "Lock Cylinder Coding" in SECTION 0A.

#### Remove or Disconnect (Figures 19 and 20)

1. Door trim panel. Refer to "Door Trim Panel Replacement."
2. Door module and window. Refer to "Door Module Replacement."
3. Outside handle rod from the rod clip.
4. Lock cylinder rod from the rod clip.
5. Outside handle mounting screws.
6. Door lock cylinder from the outside handle housing.
7. Handle.

#### Install or Connect (Figures 19 and 20)

1. Handle to the vehicle.
2. Door lock cylinder to the outside handle housing.
3. Lock cylinder rod to the lock cylinder clip.
4. Handle rod to the handle assembly clip.

**NOTICE:** Refer to "Notice" on page 10A1-1.

5. Outside handle mounting screws.

#### Tighten

- Screws to 4 N.m (35 lbs. in.).
6. Door module and glass.
  7. Door trim panel. Refer to "Door Trim Panel Replacement."

### DOOR LOCK ROD REPLACEMENT

Rods are used to connect the door actuating levers with the inside and outside handles and the inside lock knob.

#### Remove or Disconnect (Figure 21)

1. Door trim panel. Refer to "Door Trim Panel Replacement."
2. Screws from the door module.

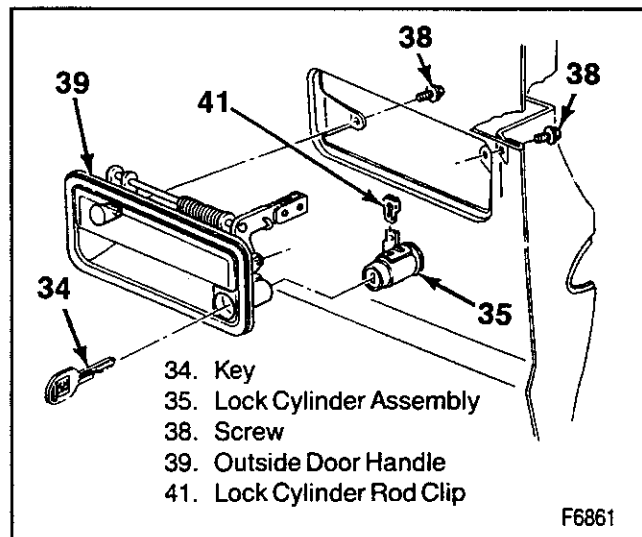


Figure 19—Front Door Lock Cylinder and Outside Handle

- Rotate the door module inboard for access to rods and clips.

3. Spring clip.

- A. Insert an awl into the indentation on the lever.
- B. Slide the clip forward far enough to disengage the rod from the lever.

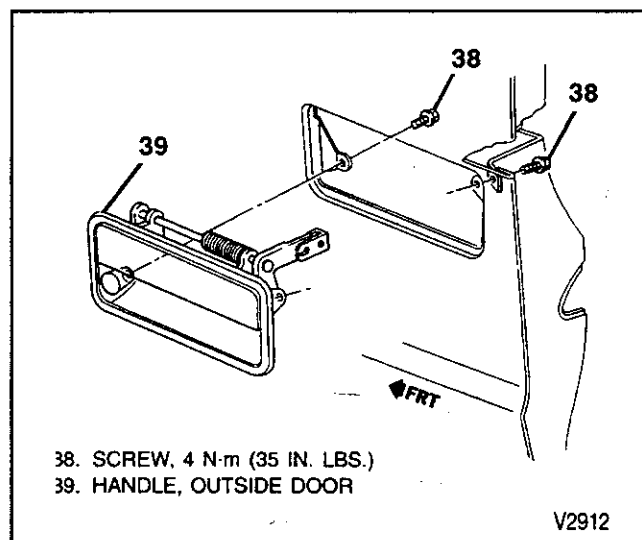
4. Rod from the lever.

#### Install or Connect (Figure 21)

1. Rod through the spring clip.
2. Rod and spring clip to the lever.

- Slide the clip over the rod and engage the tang into the indentation on the lever.

3. Door module to door panel screws.
4. Water deflector. Refer to "Inner Door Water Deflector Replacement."
5. Door trim panel. Refer to "Door Trim Panel Replacement."



38. SCREW, 4 N-m (35 IN. LBS.)  
39. HANDLE, OUTSIDE DOOR

V2912

Figure 20—Side Rear Door Outside Handle



## WINDOW REGULATOR AND MOTOR REPLACEMENT

The power window motor is not serviced. It is replaced as a unit with the regulator.

### Remove or Disconnect (Figures 22 and 23)

1. Negative battery cable (with power door components). Refer to SECTION 0A.
2. Door trim panel. Refer to "Door Trim Panel Replacement."
3. Water deflector. Refer to "Inner Door Water Deflector Replacement."
4. Door lock linkage.
5. Door module and glass. Refer to "Door Module Replacement."
6. Window.
  - Slide window glass channel from the regulator roller assembly.
7. Regulator assembly rivets.
8. Regulator and motor as a unit.

### Install or Connect (Figures 22 and 23)

1. Regulator and motor assembly to the module panel.
2. Window.
  - Slide window glass channel into the regulator roller assembly.
3. Window and module to the door.

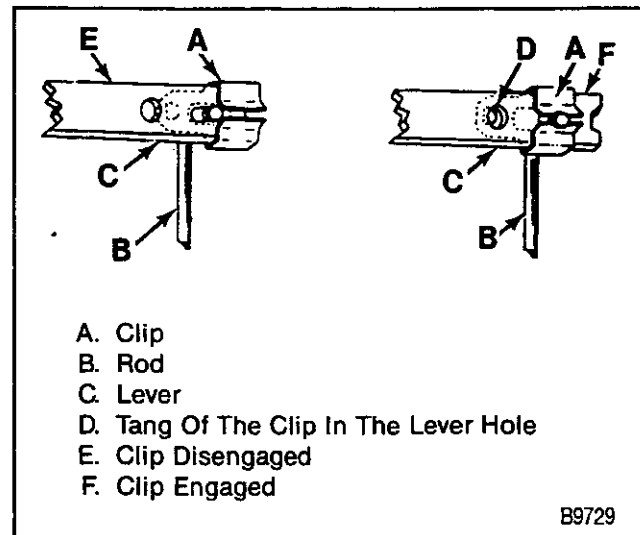


Figure 21—Door Clips

4. Lock rods to the retainer clips.
5. Module panel screws, starting with the top front and top rear screws.
6. Door lock linkage.
7. New water deflectors. Refer to "Door Inner Panel Water Deflector Replacement."
8. Door trim panel. Refer to "Door Trim Panel Replacement."
9. Negative battery cable (power components only).

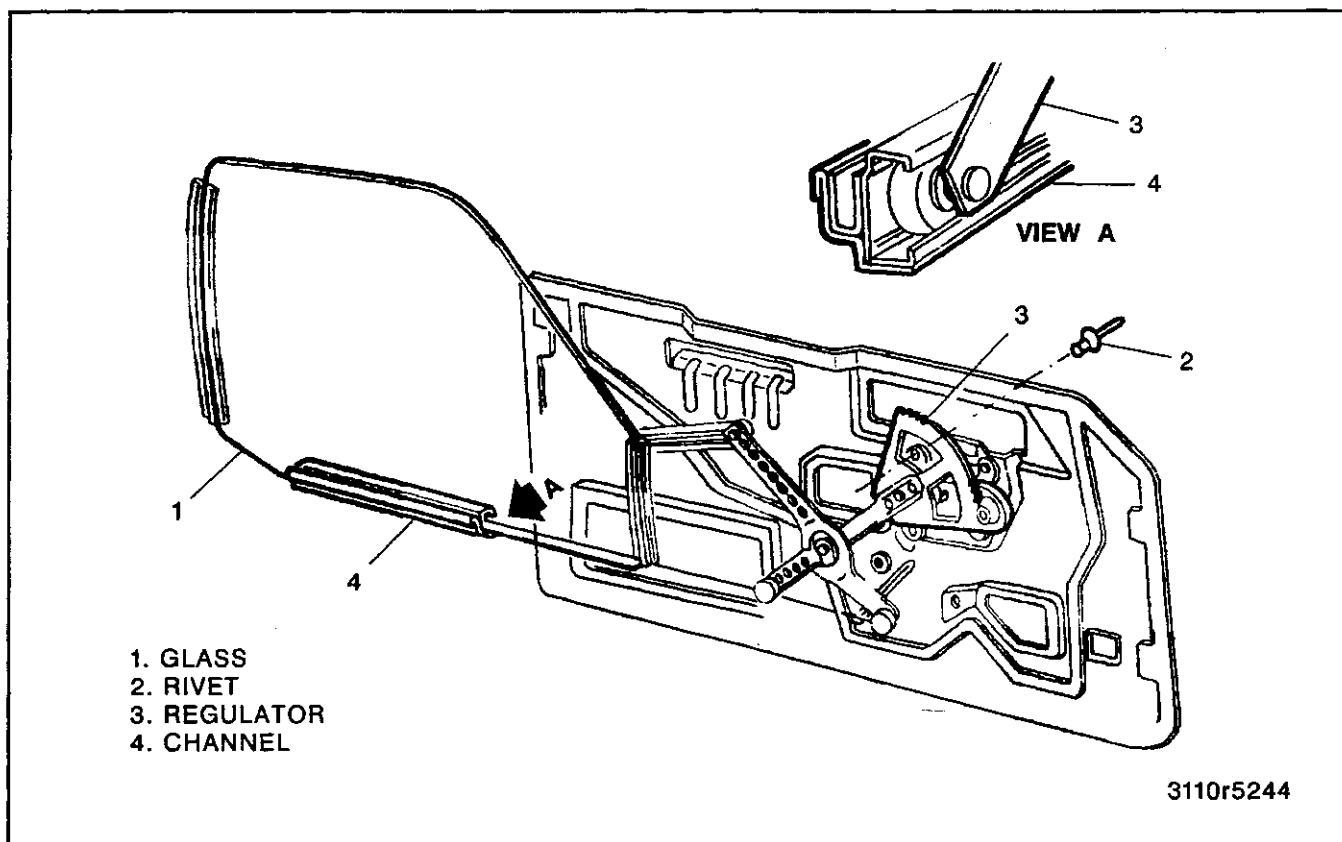


Figure 22—Window Regulator

## 10A1-24 DOORS

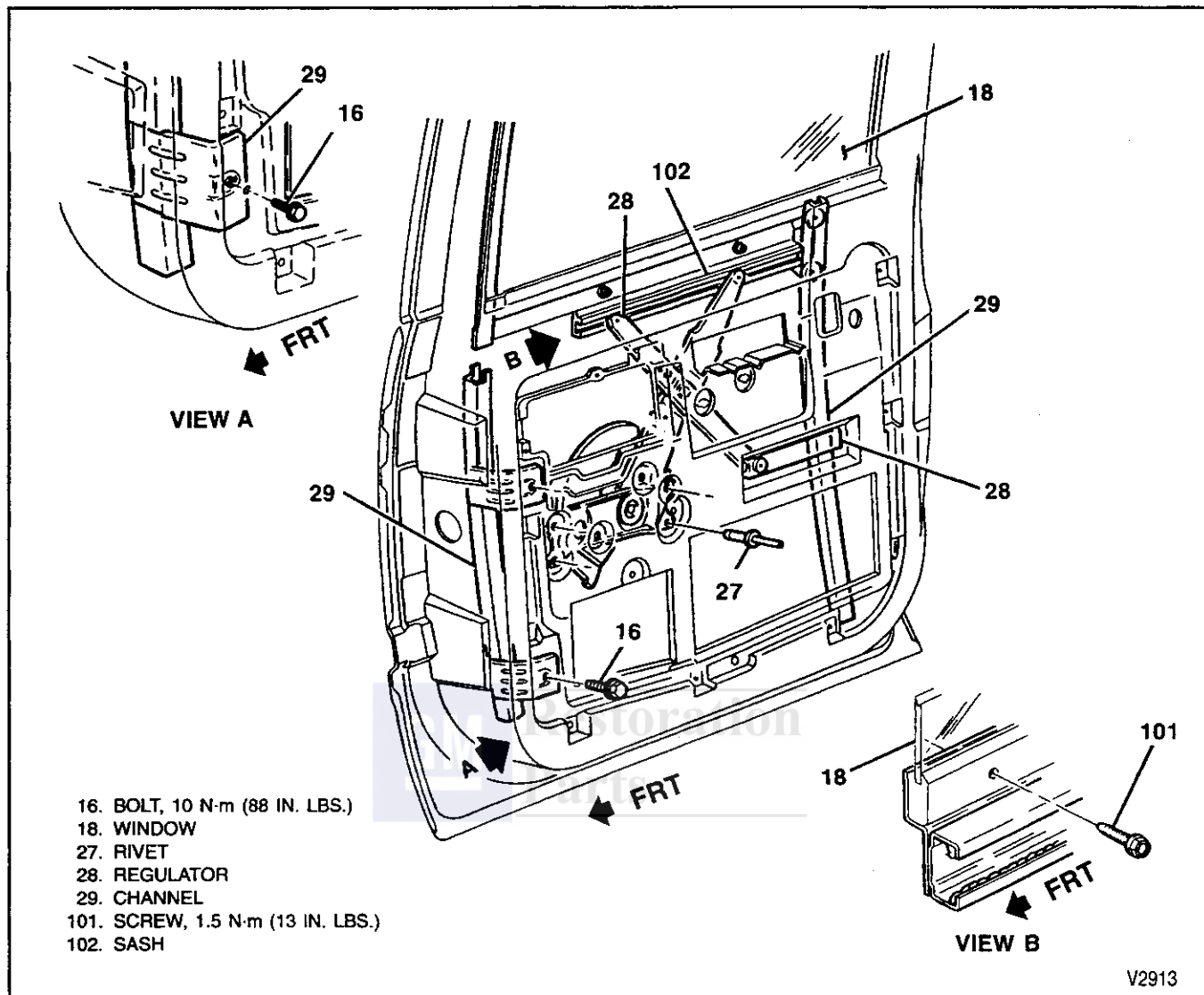


Figure 23—Rear Door Window Regulator

### WINDOW REPLACEMENT

↔ Remove or Disconnect (Figures 22, 23, and 24)

**CAUTION:** Always wear heavy gloves when handling glass to avoid the risk of personal injury.

- Roll the window all the way down.

1. Window regulator handle. Refer to "Window Regulator Handle Replacement."
2. Door trim panel. Refer to "Door Trim Panel Replacement."
3. Door module panel. Refer to "Door Module Replacement."
4. Slide glass from the channel (figures 22 and 23).

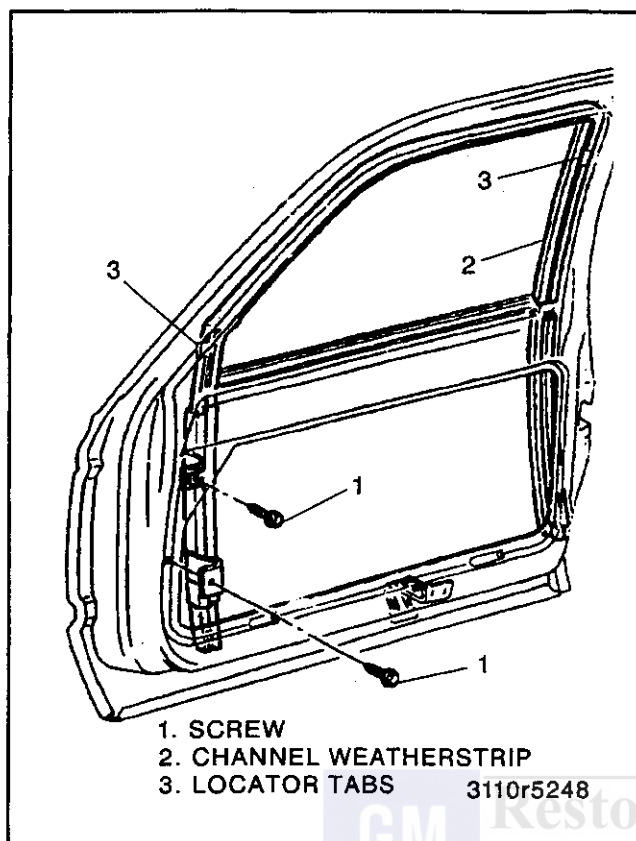
→ Install or Connect (Figures 22, 23, and 24)

**CAUTION:** Always wear heavy gloves when handling glass to avoid the risk of personal injury.

**NOTICE:** For steps 3, and 7, refer to "Notice" on page 10A1-1.

1. Glass into the channel.
2. Door module and glass assembly into the bottom of the door.
  - A. First fit the glass into the rear channel in the door.
  - B. Fit the glass into the front run channel while pulling the channel toward the glass.
3. Upper front run channel bolt.
  - Do not tighten.
4. Lock rods to door module.
5. Boot over the wiring harness from the door to the body.
6. Wiring to the connector inside the door hinge pillar.





**Figure 24—Window Run Channel**

7. Lower front run channel bolt.
  - Do not tighten.
8. Lock rods to the module.
9. New water deflector. Refer to "Door Inner Panel Water Deflector Replacement."

**NOTICE:** Refer to "Notice" on page 10A1-1.

10. Door module to door screws, starting with the top front and top rear screws.



**Tighten**

- Tighten the upper and lower front run channel screws to 10 N.m (88 lbs. in.).
11. Door trim panel. Refer to "Door Trim Panel Replacement."

## **WINDOW RUN CHANNEL WEATHERSTRIP REPLACEMENT**



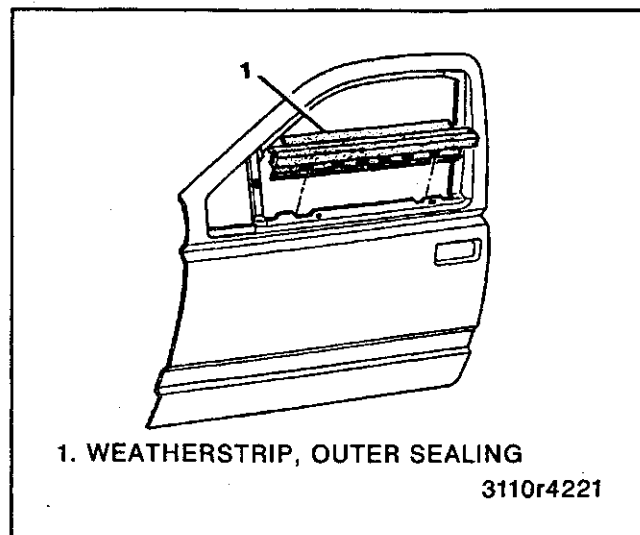
**Remove or Disconnect**

- Roll down the window.
1. Front and rear locator tabs.
  2. Window run channel weatherstrip by pulling weatherstrip from front or rear channel runs.



**Install or Connect**

1. Window run channel weatherstrip by sliding between run channel and glass.



**Figure 25—Outer Belt Seal Weatherstrip**

## **WINDOW RUN CHANNEL REPLACEMENT**



**Remove or Disconnect (Figure 24)**

- Roll up the window.
1. Door trim panel. Refer to "Door Trim Panel Replacement."
  2. Door to window run channel bolts.
    - Pull back water deflector.
  3. Run channel from the door.



**Install or Connect (Figure 24)**

1. Window run channel to the door.

**NOTICE:** Refer to "Notice" on page 10A1-1.

2. Door to window run channel screws.



**Tighten**

- Screws to 10 N.m (88 lbs. in.).
3. Reseal water deflector.
  4. Door trim panel. Refer to "Door Trim Panel Replacement."

## **OUTER BELT SEAL REPLACEMENT**



**Remove or Disconnect (Figure 25 or 26)**

- Outer sealing strip from the door by pulling center of seal from door.



**Install or Connect (Figure 25 of 26)**

- Outer sealing strip to the door by inserting rear slot of seal to door frame. Insert front slot of seal to door. Snap seal down over flange.

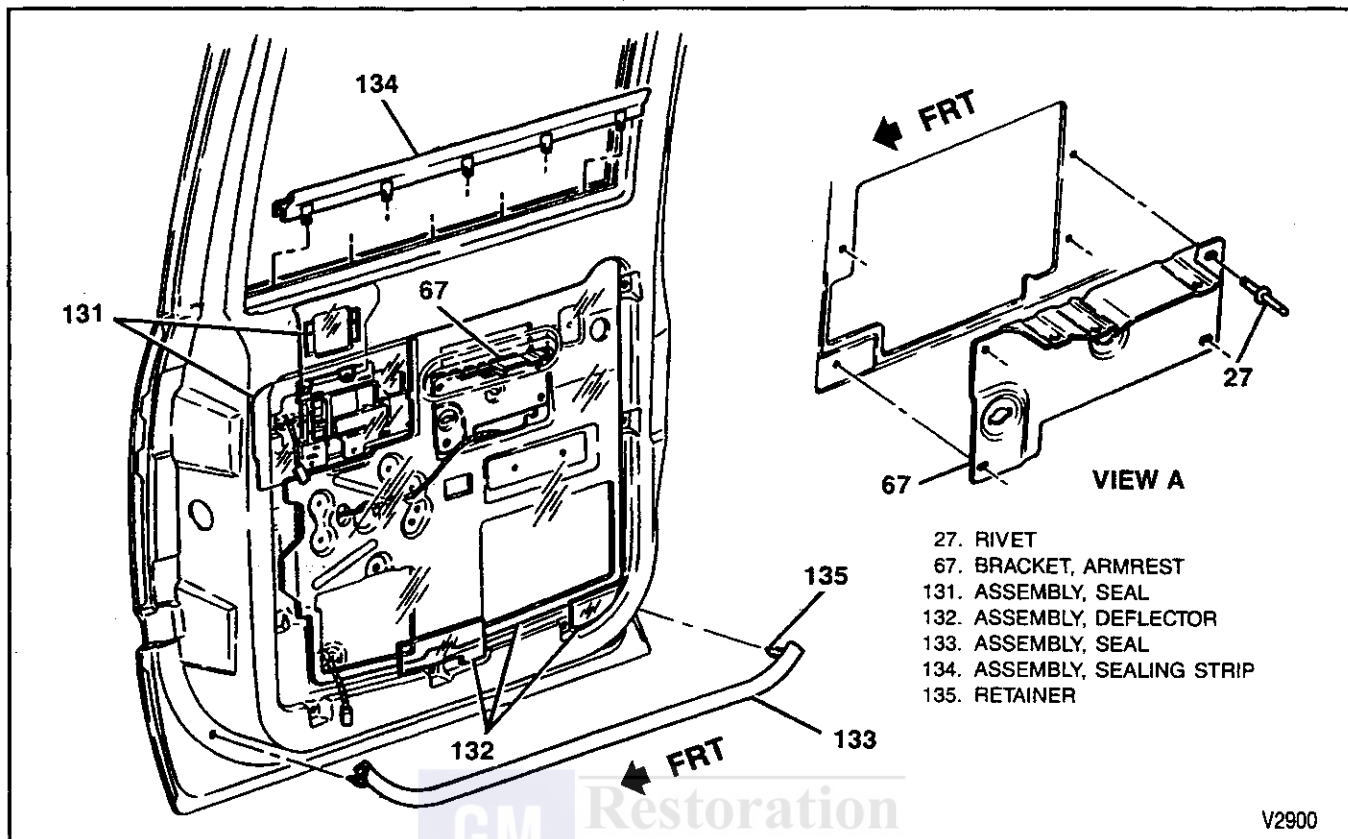


Figure 26—Rear Side Door Outer Belt Window Seal and Lower Door Seal Assembly

## LOWER DOOR SEAL ASSEMBLY REPLACEMENT

### Remove or Disconnect (Figure 26)

1. Remove fasteners.
2. Remove lower door seal.

### Install or Connect (Figure 26)

1. Position lower door seal to door.

**NOTICE:** Refer to "Notice" on page 10A1-1.

2. Snap fasteners in place.

## OUTSIDE MIRROR REPLACEMENT

### Remove or Disconnect (Figure 27)

1. Door trim panel. Refer to "Door Trim Panel Replacement."
2. Nuts holding the mirror to the door.
3. Mirror from the door.

### Install or Connect (Figure 27)

1. Mirror to the door.

**NOTICE:** Refer to "Notice" on page 10A1-1.

2. Nuts holding the mirror to the door.

### Tighten

- Nuts to 10 N.m (88 lbs. in.).

3. Door trim panel. Refer to "Door Trim Panel Replacement."

## PRIMARY WEATHERSTRIP REPLACEMENT

The primary weatherstrip is installed at the pinchweld flanges that form at the door openings. The weatherstrip is attached by friction to the pinchweld.

### Remove or Disconnect (Figures 28 and 29)

- Primary weatherstrip from the door by pulling it from the door pinchweld flange.

### Install or Connect (Figures 28 and 29)

1. Door weatherstrip to the door pinchweld flange.

- A. Position the weatherstrip in the upper rear corner of the door opening so that the part end will be 6 inches below the rocker before installation.
- B. Push the weatherstrip onto the flange, while compressing weatherstrip into each corner, then butt joint of ends of the weatherstrip to approximately 6 inches forward of the lower rear corner of the door opening.

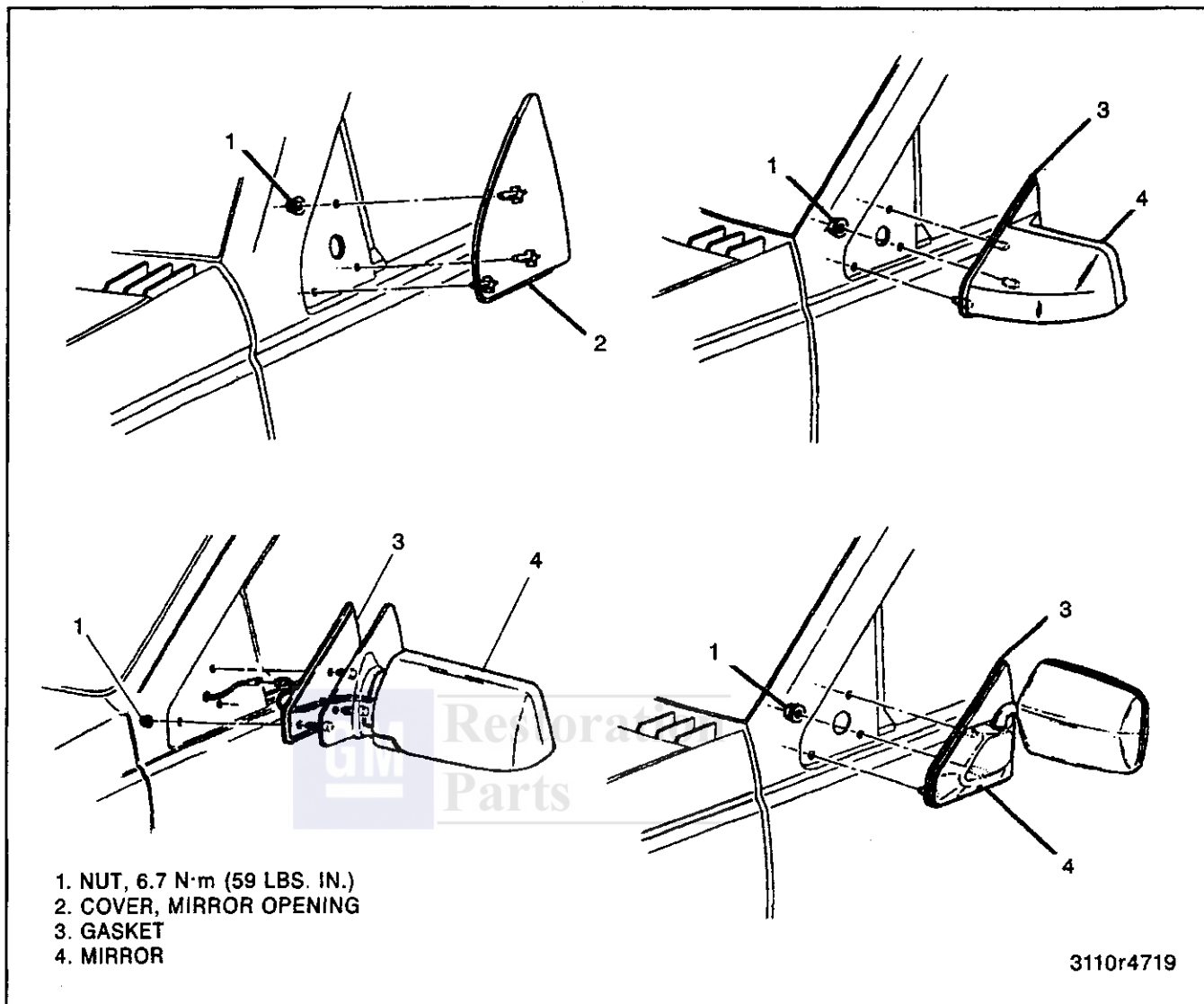


Figure 27—Outside Rear View Mirror

## ON-VEHICLE SERVICE OF CARGO DOORS

### CARGO DOOR REPLACEMENT



#### Remove or Disconnect (Figure 30)

1. Negative battery cable (vehicles with power components only). Refer to SECTION 0A.
2. Harness connectors. (Vehicles with power components only).
  - Apply cloth backed tape to the door, and body pillar.
3. Lower hinge pin using a soft-faced hammer and locking pliers.
  - Temporarily install a bolt through the lower hinges to hold the door in place while removing the upper hinge pin.

4. Upper hinge pin.
5. Bolt in lower hinge pin hole.
6. Door from vehicle.



#### Install or Connect (Figure 30)

1. Door to the vehicle.
2. Bolt through the lower hinge pin holes.
3. Upper hinge pin with the pointed end down using a soft-faced hammer and a pair of locking pliers to grasp the pin.
  - Remove the temporary bolt in the lower hinge.
4. Lower hinge pin with the pointed end down.
5. Wiring harness connectors (if used).
  - Remove cloth backed tape to the door, and the body pillar.
6. Negative battery cable.

## 10A1-28 DOORS

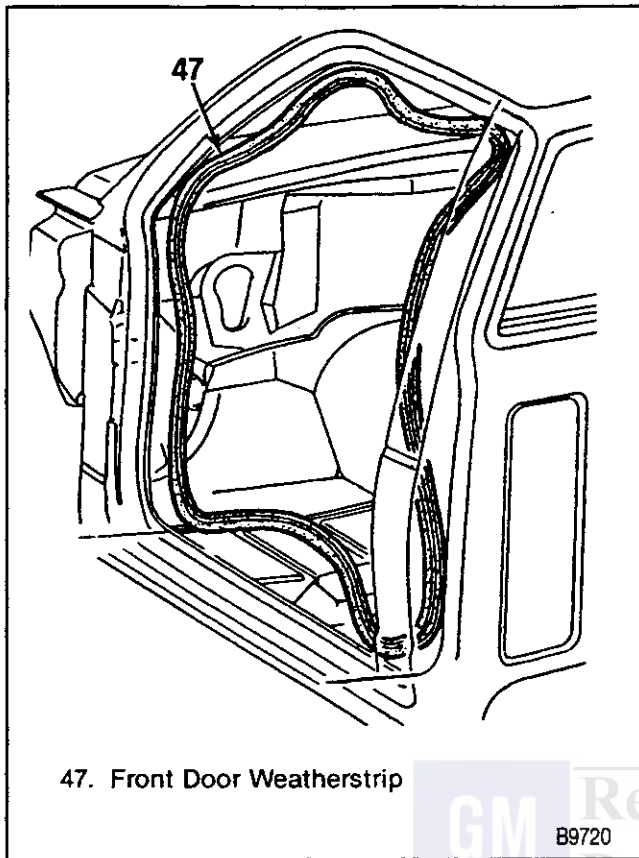


Figure 28—Front Door Opening Weatherstrip

### CARGO DOOR HINGE CHECK ASSEMBLY

#### Remove or Disconnect (Figure 31)

1. Apply cloth backed tape to the door and body pillar.
2. Pin retainer.
3. Hinge pin using a soft-faced hammer and locking pliers.
4. Spring.
5. Check assembly.

#### Install or Connect (Figure 31)

1. Check assembly.
  2. Spring.
  3. Hinge pin using a soft-faced hammer and locking pliers.
  4. New pin retainer.
- Remove cloth backed tape from the door and the body pillar.

### CARGO REAR DOOR STRIKERS

#### Remove or Disconnect (Figure 32)

1. Mark the position of the upper and/or lower striker.
2. Striker screw.
3. Striker.

#### Install or Connect (Figure 32)

1. Striker to the vehicle.

**NOTICE:** Refer to "Notice" on page 10A1-1.

2. Striker screw.
3. Align the striker and screw with the previously made mark.

#### Tighten

- Screw to 7.5 N·m (66 lbs. in.).

### DOOR LOCK CYLINDER, ROD, AND OUTSIDE HANDLE REPLACEMENT

New lock cylinders are available as replacement parts. If door lock cylinders require replacement for any reason, apply a coating of GM P/N 12345120 lubricant or equivalent inside of the lock case and cylinder key-way prior to assembling and installing the cylinder.

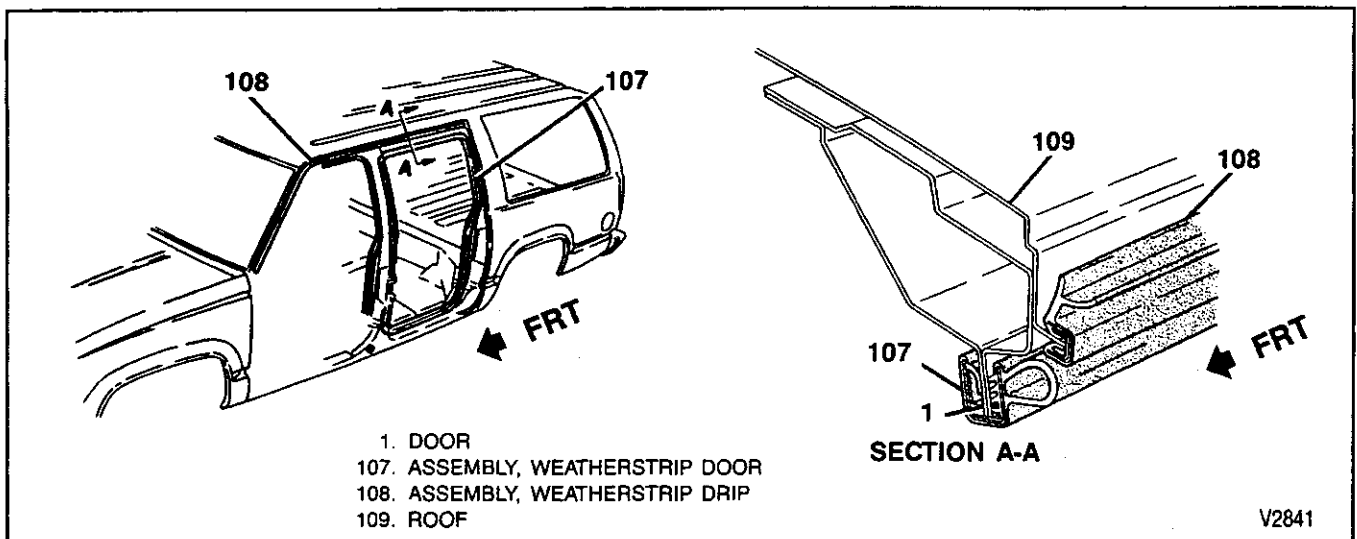
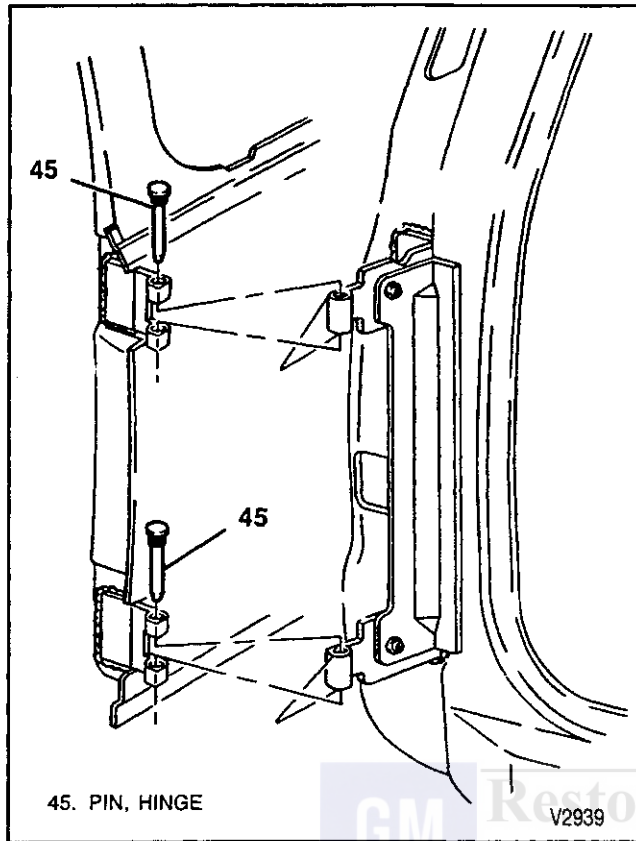


Figure 29—Side Door Opening Weatherstrip

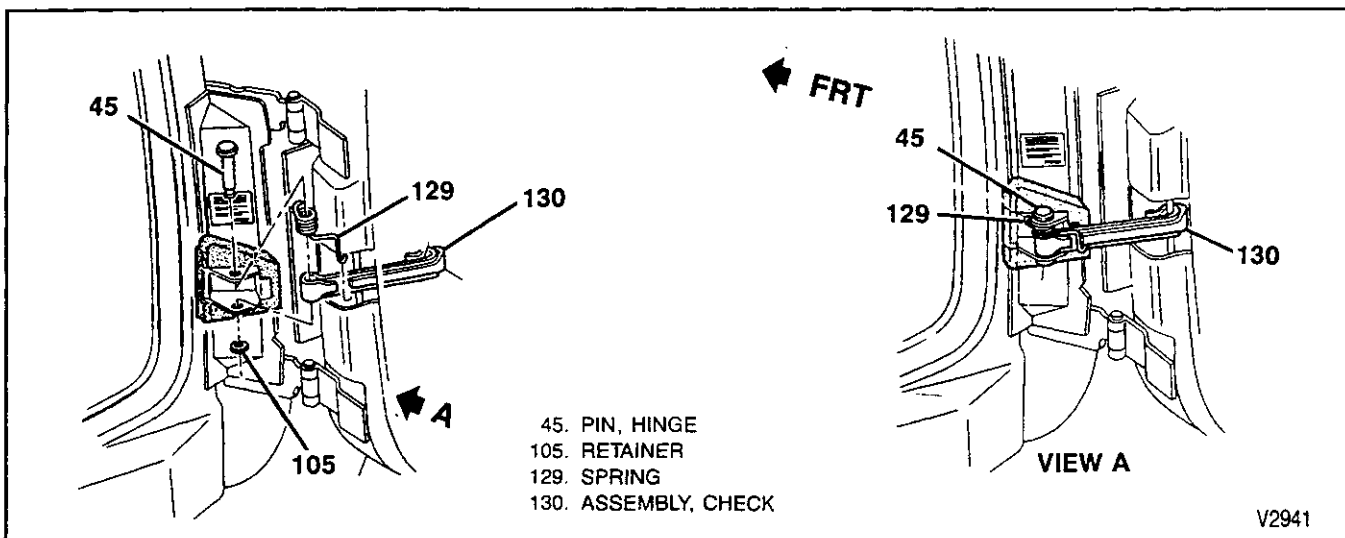


**Figure 30—Rear Door Hinge Pin**

To repair a binding lock cylinder, refer to "Binding lock cylinders." To code a new lock cylinder, refer to "Lock Cylinder coding" in SECTION 0A.

**Remove or Disconnect (Figures 34 through 37)**

1. Door trim panel. Refer to "Door Trim Panel Replacement" in this section.
2. Door module and window. Refer to "Door Module Replacement."



**Figure 31—Hinge Check Assembly**

3. Outside handle rod from the rod clip.
4. Lock cylinder rod from the rod clip.
5. Outside handle mounting screws.
6. Door lock cylinder from the outside handle housing.
7. Handle.

**Install or Connect (Figures 34 through 37)**

1. Handle.
2. Door lock cylinder to the outside handle housing.
3. Lock cylinder rod to the lock cylinder clip.
4. Handle rod to the handle assembly clip.

**NOTICE:** Refer to "Notice" on page 10A1-1.

5. Outside handle mounting screws.

**Tighten**

- Screws to 4 N.m (35 lbs. in.).
- 6. Door module and glass. Refer to "Door Module Replacement"
- 7. Door trim panel. Refer to "Door Trim Panel Replacement."

## 10A1-30 DOORS

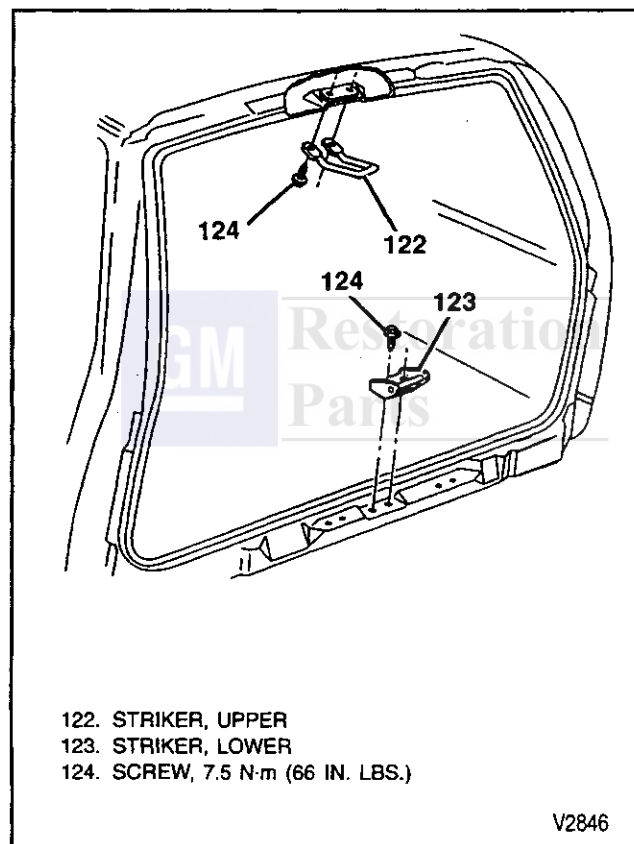
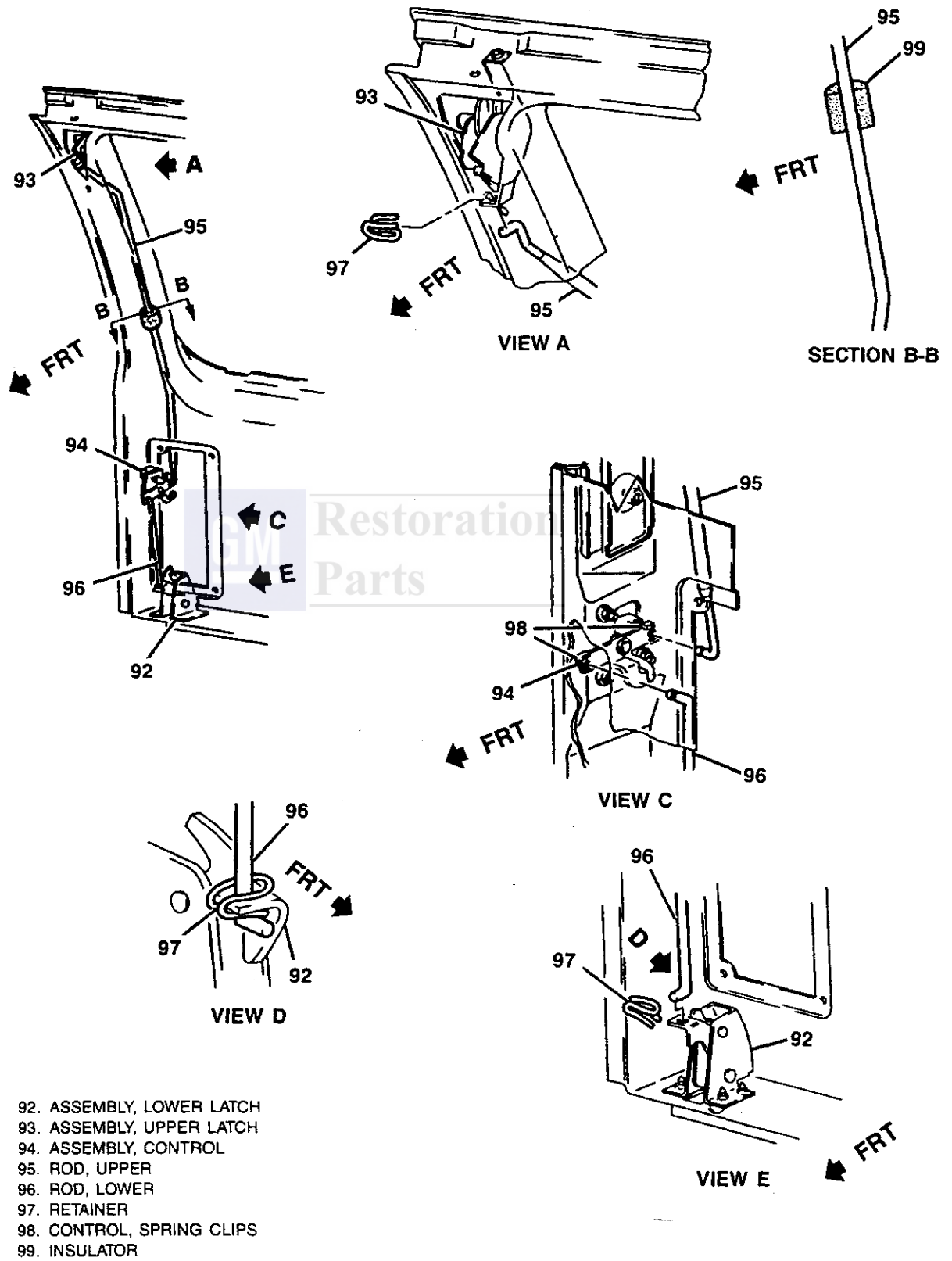


Figure 32—Cargo Upper and Lower Strikers



V2897

Figure 33—Cargo Rear Door Latch

## 10A1-32 DOORS

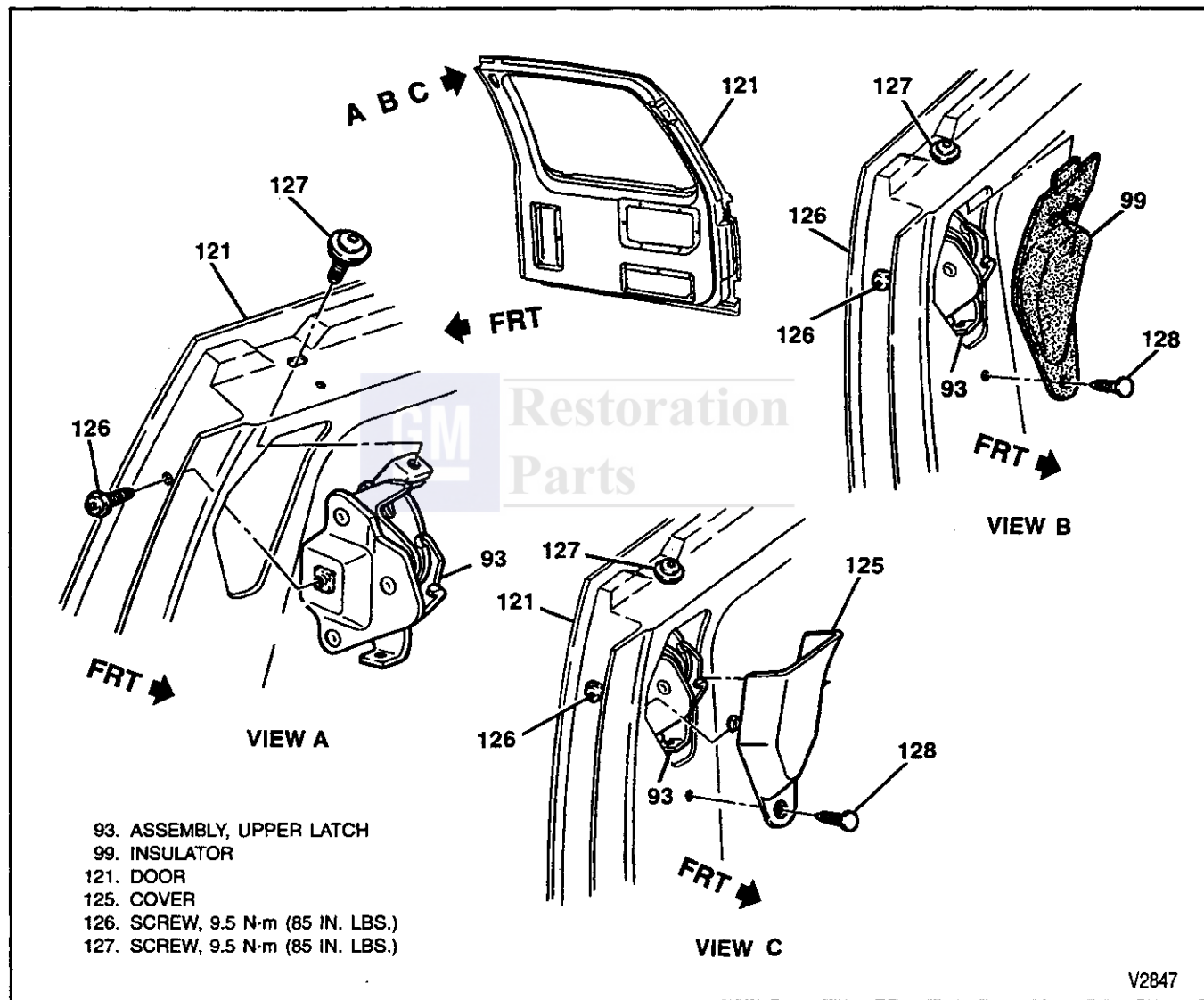


Figure 34—Cargo Upper Latch Assembly

V2847



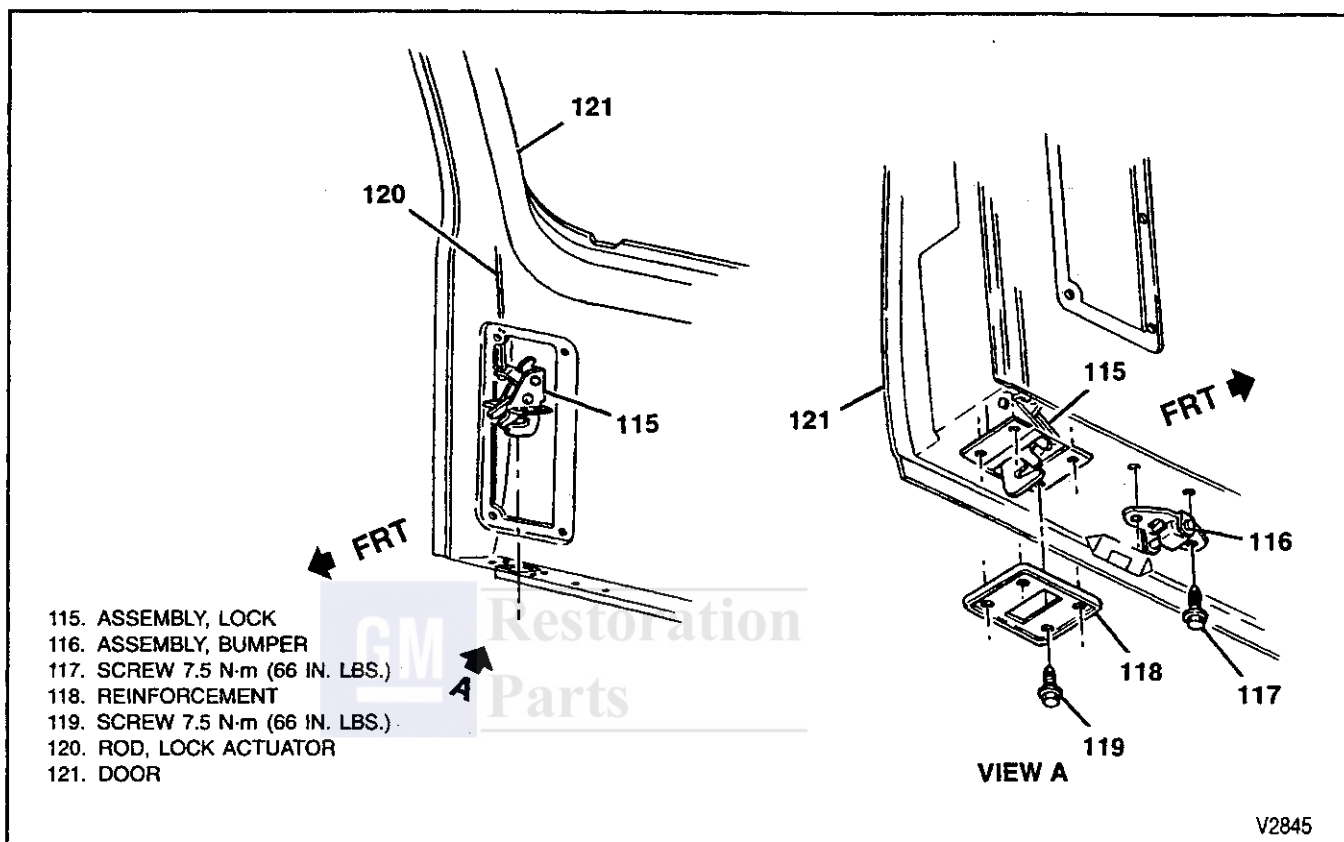


Figure 35—Rear Door Lock

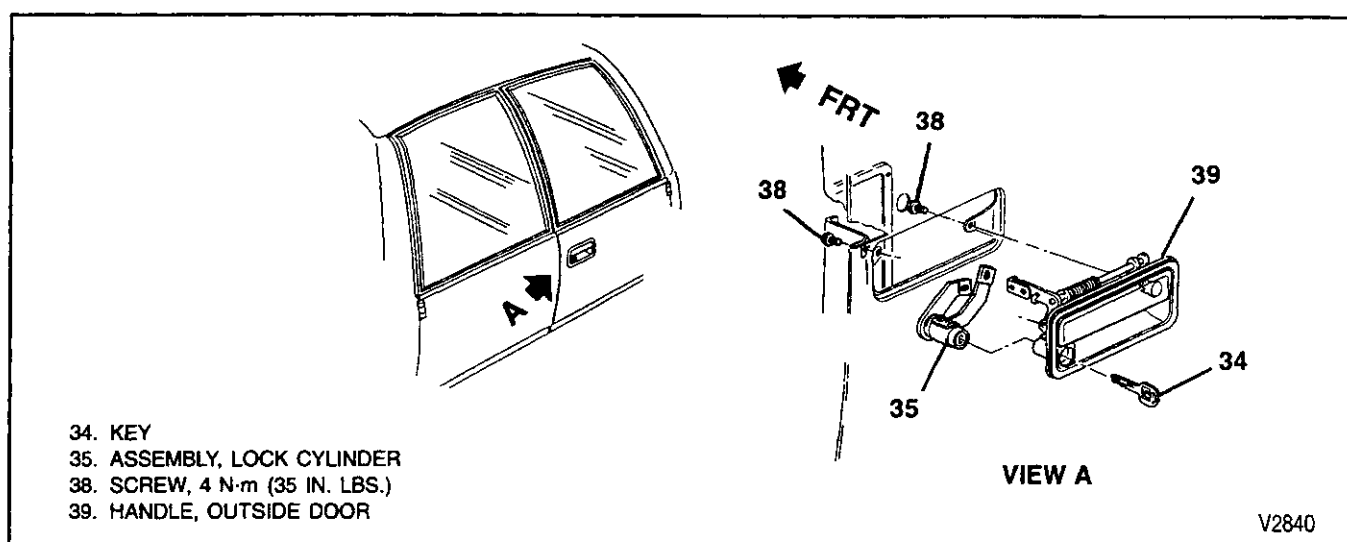


Figure 36—Rear Door Outside Handle and Lock Cylinder

## 10A1-34 DOORS

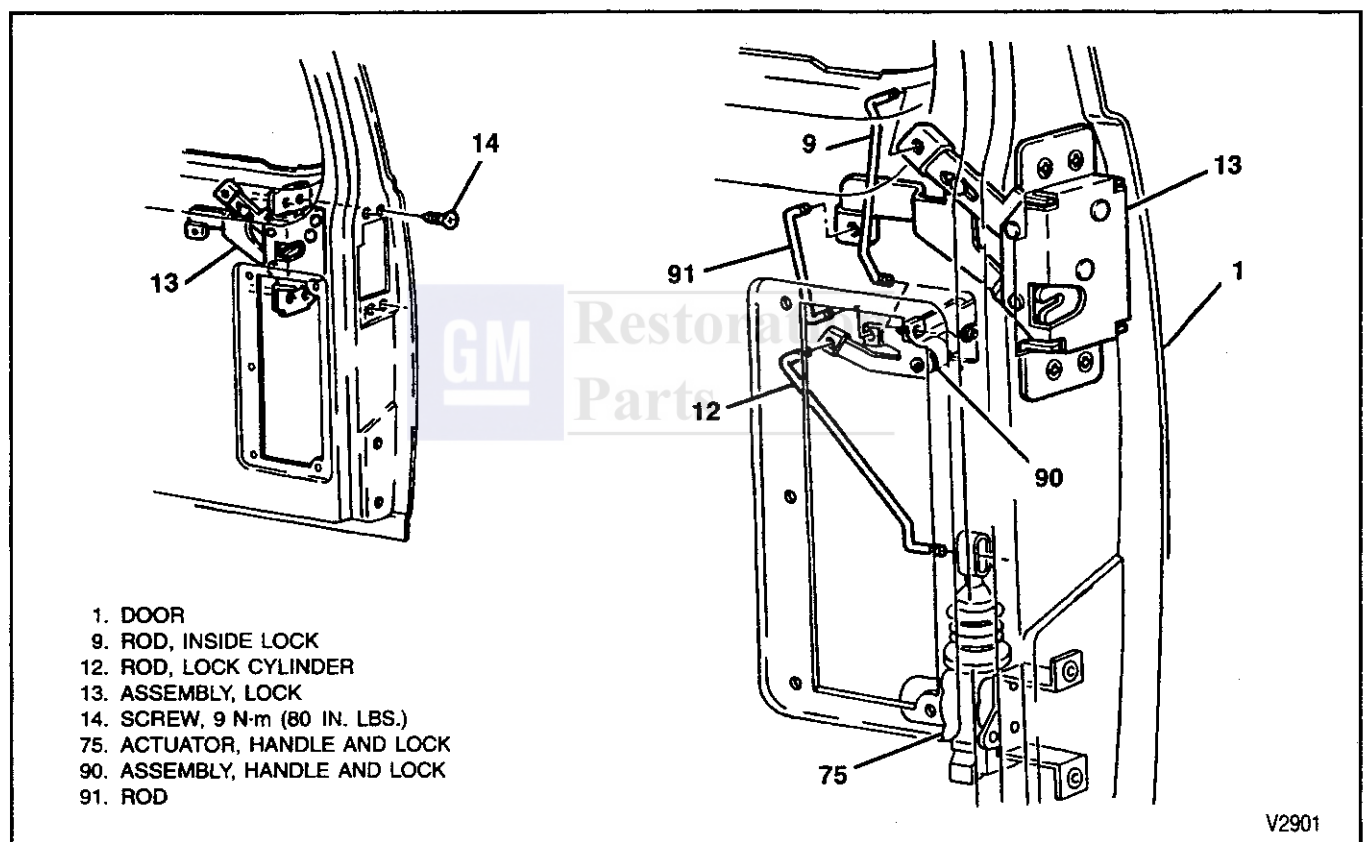


Figure 37—Rear Door Lock

## SPECIFICATIONS

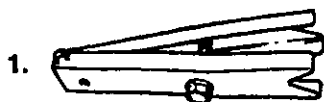
### FASTENER TIGHTENING SPECIFICATIONS

	N-m	Lbs. Ft.	Lbs. In.
Door Lock Screws.....	6.7	—	60
Door Module Mounting Screws .....	4	—	35
Door to Window Run Channel Screws .....	10	—	88
Front Door Striker Bolt.....	63	46	—
Front Run Channel Screws .....	10	—	88
Hinge Nuts (Service Replacement Kit) .....	35	26	—
Outside Door Handle Mounting Screws.....	4	—	35
Outside Rearview Mirror Mounting Nuts.....	10	—	88
Pressure Relief Valve Mounting Screws.....	1.6	—	14
Rear Door Striker Bolt .....	7.5	—	66

T2153



Restoration  
SPECIAL TOOLS  
Parts



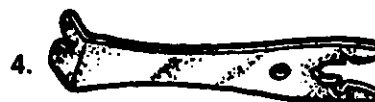
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J 9886-01

1. DOOR HINGE SPRING COMPRESSOR
2. T47 BIT SOCKET
3. TRIM PAD REMOVER
4. DOOR HANDLE CLIP REMOVER

3110r8098

## **10A1-36 DOORS**

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### **NOTES**



## SECTION 10A2

## SEATS

**NOTICE:** When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

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## DIAGNOSIS OF MANUAL SEAT ADJUSTER

PROBLEM	POSSIBLE CAUSE	CORRECTION
Adjuster Will Not Lock	<ol style="list-style-type: none"> <li>1. Wire assembly too tight.</li> <li>2. Lock bar spring disconnected or broken.</li> <li>3. Lock bar sticking or binding.</li> </ol>	<ol style="list-style-type: none"> <li>1. Loosen the wire assembly by moving the hooked end to the forward hole of the lock bar.</li> <li>2. Connect the spring or install a new spring.</li> <li>3. Lubricate the lock bar pivot. If the bar is binding, eliminate the cause of binding or replace the adjuster.</li> </ol>
Adjuster Will Not Unlock	<ol style="list-style-type: none"> <li>1. Wire assembly too loose or disconnected.</li> <li>2. Lock bar sticking or binding.</li> </ol>	<ol style="list-style-type: none"> <li>1. Eliminate the slack in the wire assembly by moving the hooked end to the rearward hole of the lock bar.</li> <li>2. Lubricate the lock bar pivot. If the bar is binding, eliminate the cause of binding or replace the adjuster.</li> </ol>

## 10A2-2 SEATS

### DIAGNOSIS OF MANUAL SEAT ADJUSTER (cont'd)

PROBLEM	POSSIBLE CAUSE	CORRECTION
Seat Hard To Move Forward Or Rearward	1. Adjusters new, not seated.  2. Adjuster(s) improperly lubricated.  3. Adjuster(s) binding due to bent or damaged channels.	1. Operate the seat to the full forward and full rearward positions several times to work the new tightness out of the channels. 2. Lubricate the adjuster channels with Lubriplate Auto-Lube A or equivalent. 3. Replace the adjuster.
Easy Entry Passenger Seat In Extended Cab Does Not Slide Forward When The Seat Is Tilted Forward	Cable from the seat back to the adjuster is disconnected.	Pull back the covering on the seat back and seat. Make sure the cable is still connected and taut from the seat back through the seat to the adjuster.
D0217		

### DIAGNOSIS OF SIX-WAY POWER ADJUSTER

CONDITION	POSSIBLE CAUSE	CORRECTION
Horizontal operation of the seat is not smooth. Apparent hard operation.	1. Improper lubrication of the seat adjuster carriages and seat adjuster slides. 2. Transmission assembly is loose or binding.	1. Lubricate carriages and seat adjuster slides with a lithium base grease. 2. Inspect transmission assembly. Tighten mounting screws or replace assembly if necessary.
Horizontal chuck or looseness.	1. Seat adjuster carriages out of alignment or worn.	1. Inspect transmission assembly and replace if necessary.
Adjuster will not operate horizontally.	1. No power to the adjuster assembly.  2. Seat adjuster drive cable damaged.  3. Seat adjuster motor is not working.	1. Refer to Driveability, Emissions, and Electrical Diagnosis Manual for this vehicle. 2. Inspect drive cable and replace if necessary. 3. Inspect adjuster motor assembly and replace if necessary.
One or both adjusters will not operate vertically.	1. No power to the adjuster assembly.  2. Seat adjuster drive cables damaged.  3. Seat adjuster motor is not working.	1. Refer to Driveability, Emissions, and Electrical Diagnosis Manual for this vehicle. 2. Inspect drive cables and replace if necessary. 3. Inspect adjuster motor assembly and replace if necessary.
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## ON-VEHICLE SERVICE

### FRONT SEAT TRIM COVER REPLACEMENT



Remove or Disconnect (Figure 1)

1. Screws.
2. Seat trim cover from seat.



Install or Connect (Figure 1)

1. Trim cover to seat.
2. Screws.

### FRONT BUCKET SEAT REPLACEMENT



Remove or Disconnect (Figures 2 and 3)

1. Seat trim cover. Refer to "Trim Cover Replacement".
2. Seat retaining bolts.
3. Seat from the vehicle.

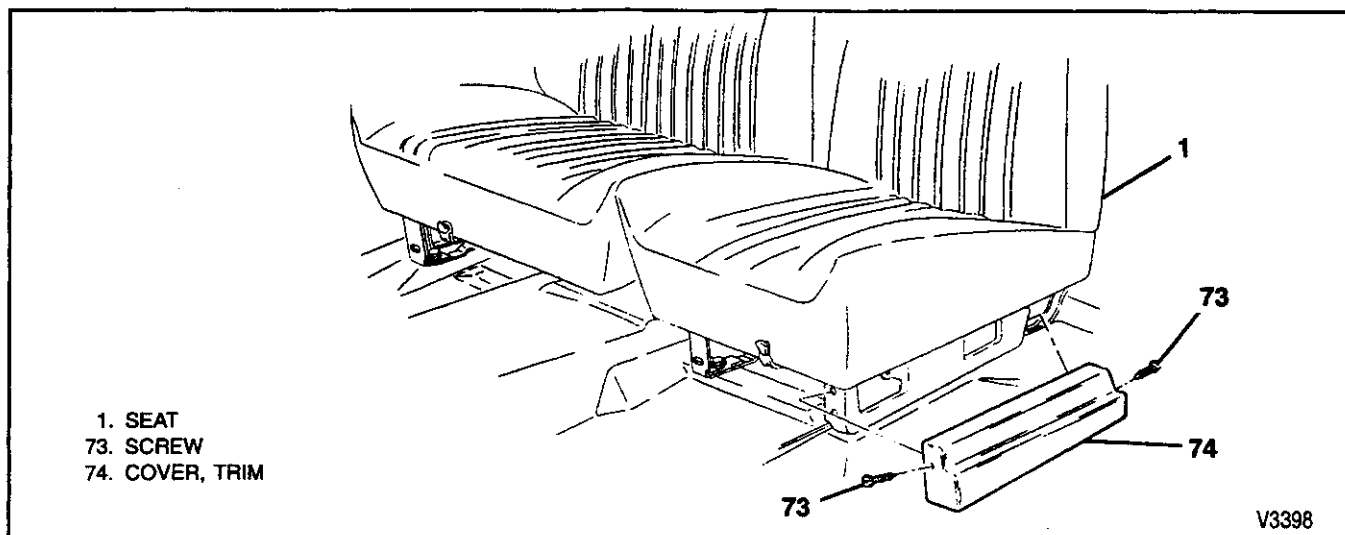


Figure 1—Front Seat Trim Cover

**Install or Connect (Figures 2 and 3)**

1. Seat to the vehicle.

**NOTICE:** Refer to "Notice" on page 10A2-1.

2. Seat retaining bolts.

**Tighten**

- Bolts to 55 N.m (41 lbs. ft.).

3. Seat trim cover. Refer to "Trim Cover Replacement."

## FRONT SPLIT BENCH SEAT REPLACEMENT

**Remove or Disconnect (Figure 4)**

1. Seat trim cover. Refer to "Trim Cover Replacement."  
2. Seat retaining bolts.

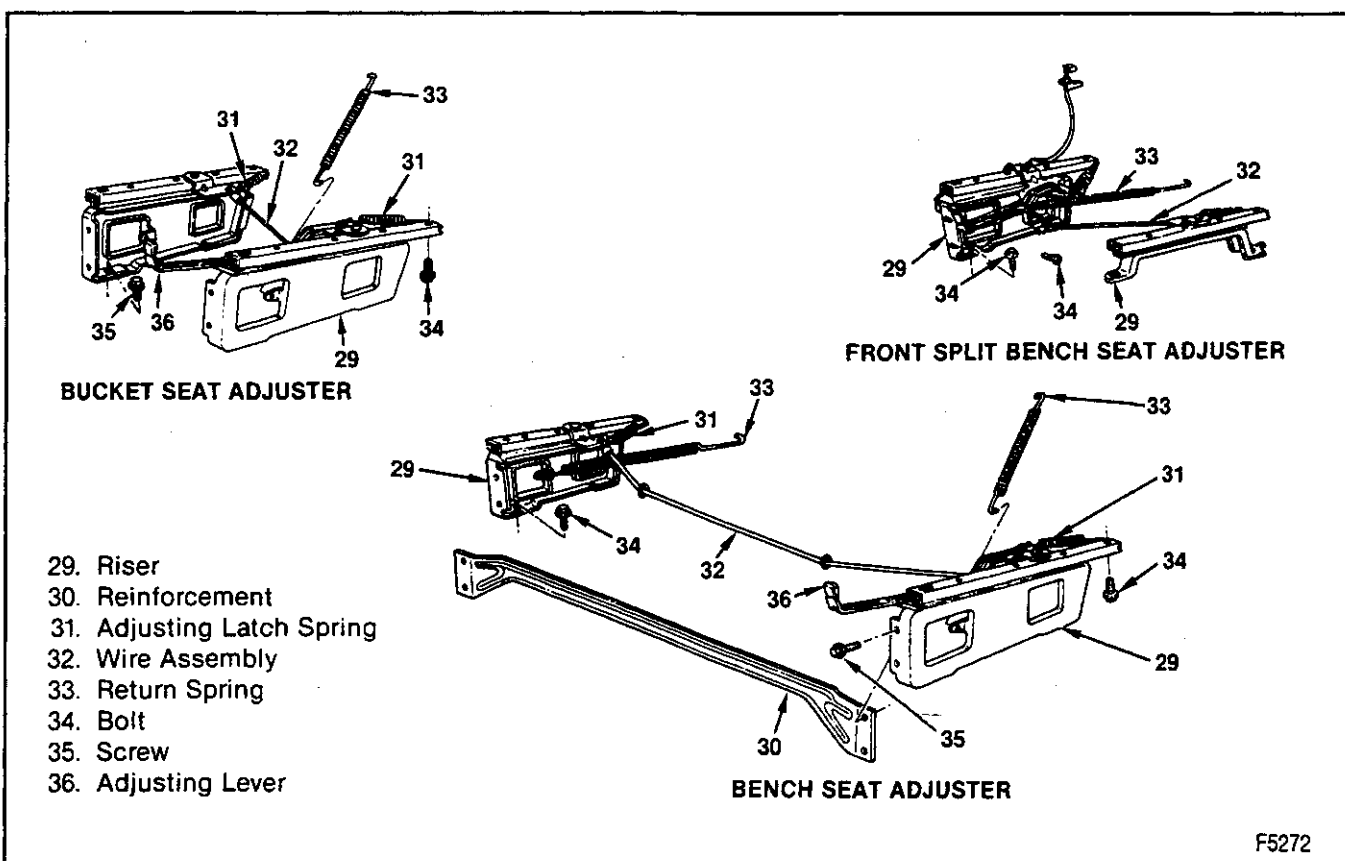


Figure 2—Manual Seat Adjusters

## 10A2-4 SEATS

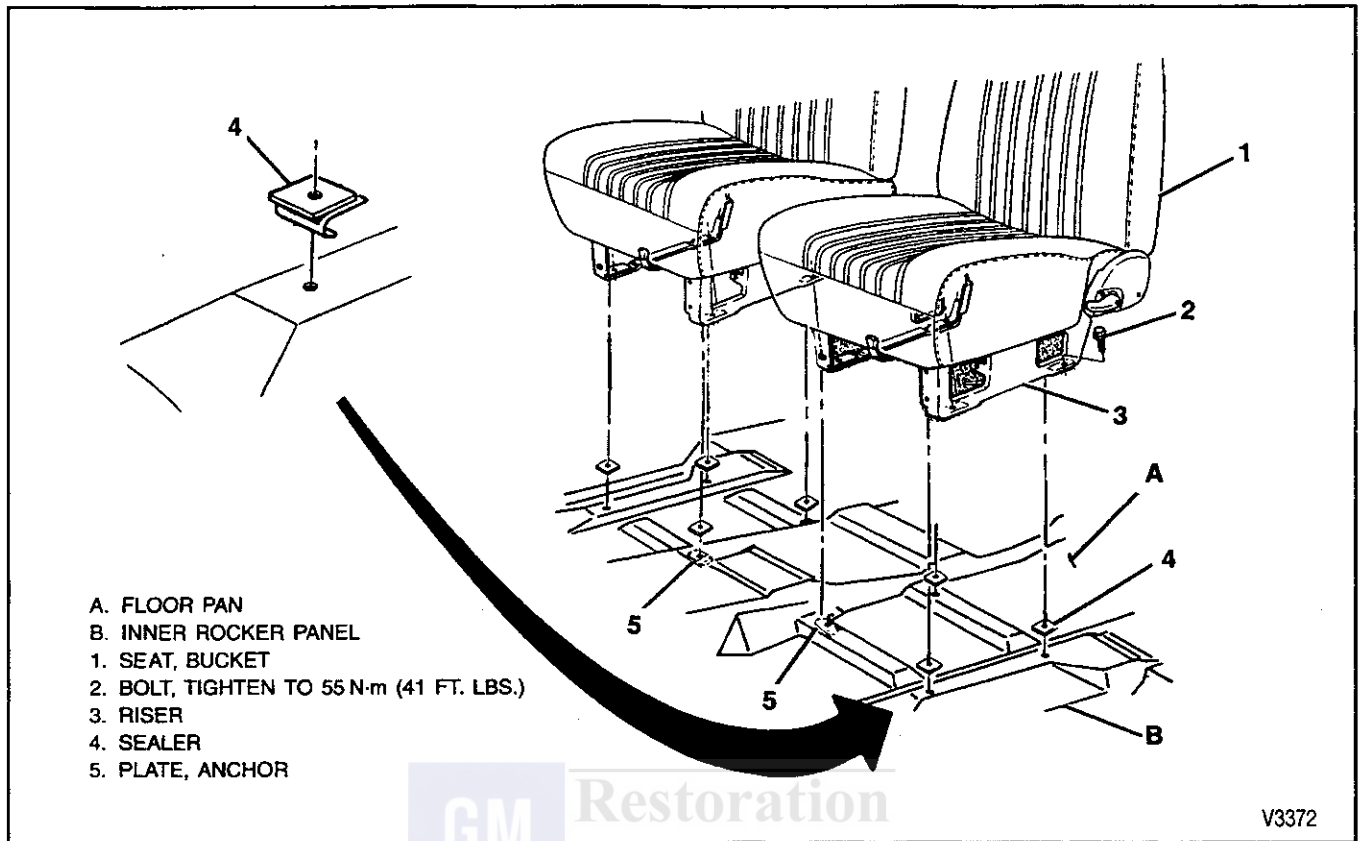


Figure 3—Front Bucket Seat Mounting

3. Seat and seat belt from the vehicle.

↔ Install or Connect (Figure 4)

**NOTICE:** For steps 2 and 3, refer to "Notice" on page 10A2-1.

1. Seat to the vehicle.
2. Seat retaining bolts.

⌚ Tighten

- Bolts to 55 N·m (41 lbs. ft.).

3. Bolt retaining the seat belt to the floor.

⌚ Tighten

- Bolt to 55 N·m (40 lbs. ft.).

4. Seat trim cover to seat. Refer to "Trim Cover Replacement."

### FRONT BENCH SEAT REPLACEMENT

↔ Remove or Disconnect (Figure 5)

1. Seat trim cover. Refer to "Trim Cover Replacement."
2. Seat retaining bolts.
3. Seat from the vehicle.

↔ Install or Connect (Figure 5)

1. Seat to the vehicle.

**NOTICE:** Refer to "Notice" on page 10A2-1.

2. Seat retaining bolts.

⌚ Tighten

- Bolts to 55 N·m (41 lbs. ft.).

3. Seat trim cover to seat. Refer to "Trim cover replacement".

### INTERMEDIATE SEAT REPLACEMENT

↔ Remove or Disconnect (Figures 6 and 7)

1. Front and rear leg trim covers and (figure 8).
2. Seat retaining bolts.
3. Seat from the vehicle.

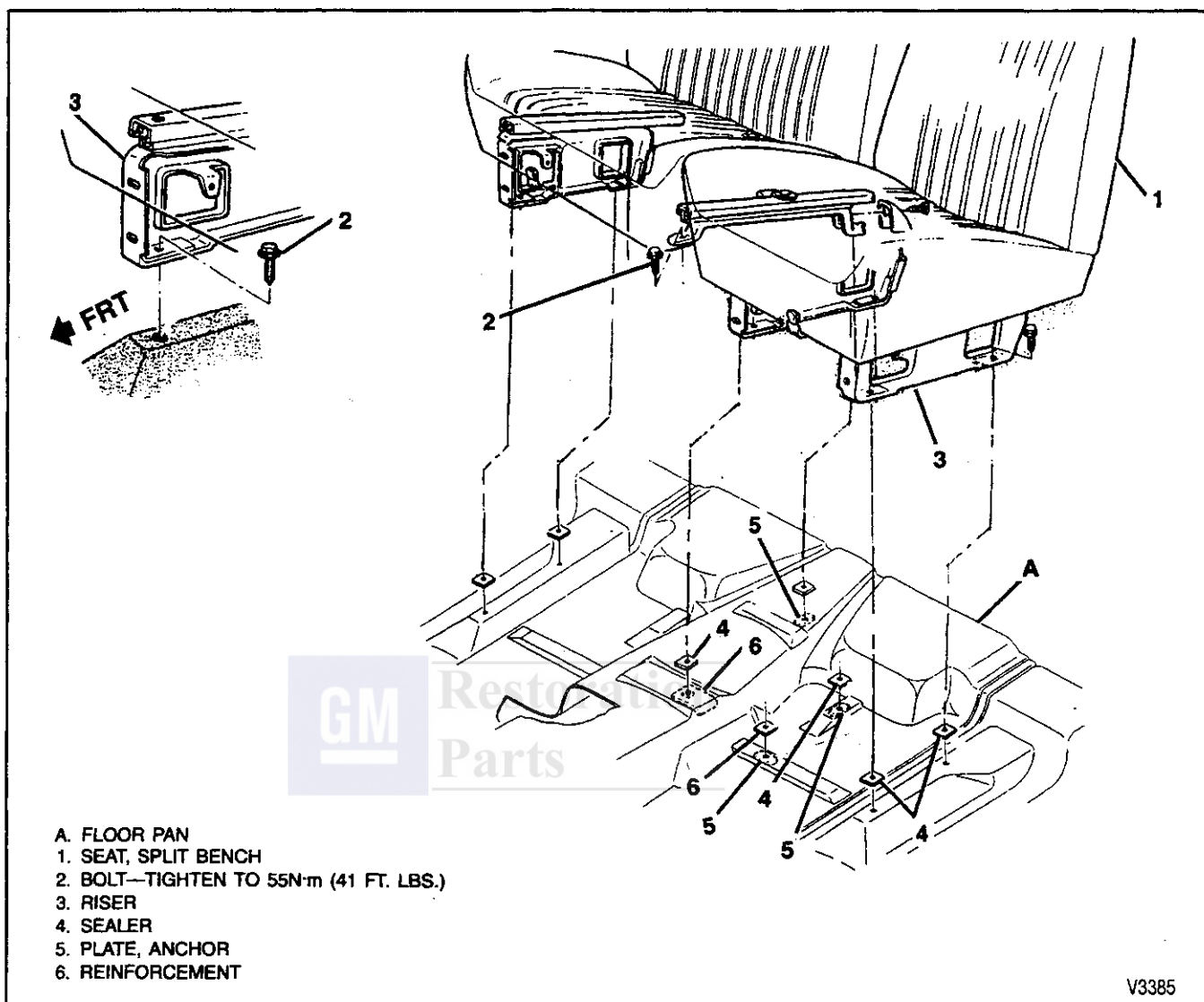
↔ Install or Connect (Figures 6 and 7)

1. Seat into the vehicle.

**NOTICE:** Refer to "Notice" on page 10A2-1.

2. Seat retaining bolts.





V3385

Figure 4—Front Split Bench Seat Mounting

**Tighten**

- Bolts to 55 N·m (41 lbs. ft.).

3. Front and rear leg trim covers (figure 7).

## REAR SEAT REPLACEMENT



Remove or Disconnect (Figures 8 through 12)

1. Seat retaining bolts.
2. Seat from the vehicle.



Install or Connect

1. Seat belts to support assembly, if removed.
2. Seat to the vehicle.

**NOTICE:** Refer to "Notice" on page 10A2-1.

3. Seat retaining bolts.

**Tighten**

- Refer to figures 8 through 12 for specifications.

## REAR SEAT SUPPORT REPLACEMENT (EXTENDED CAB)



Remove or Disconnect (Figure 8)

1. Rear seat.
2. Ashtray and panel pocket.
3. Arm rest.
4. Seat belt anchors.
5. Jack cover, jack, and tray (right side only).
6. Lower trim panel mounting screws.

## 10A2-6 SEATS

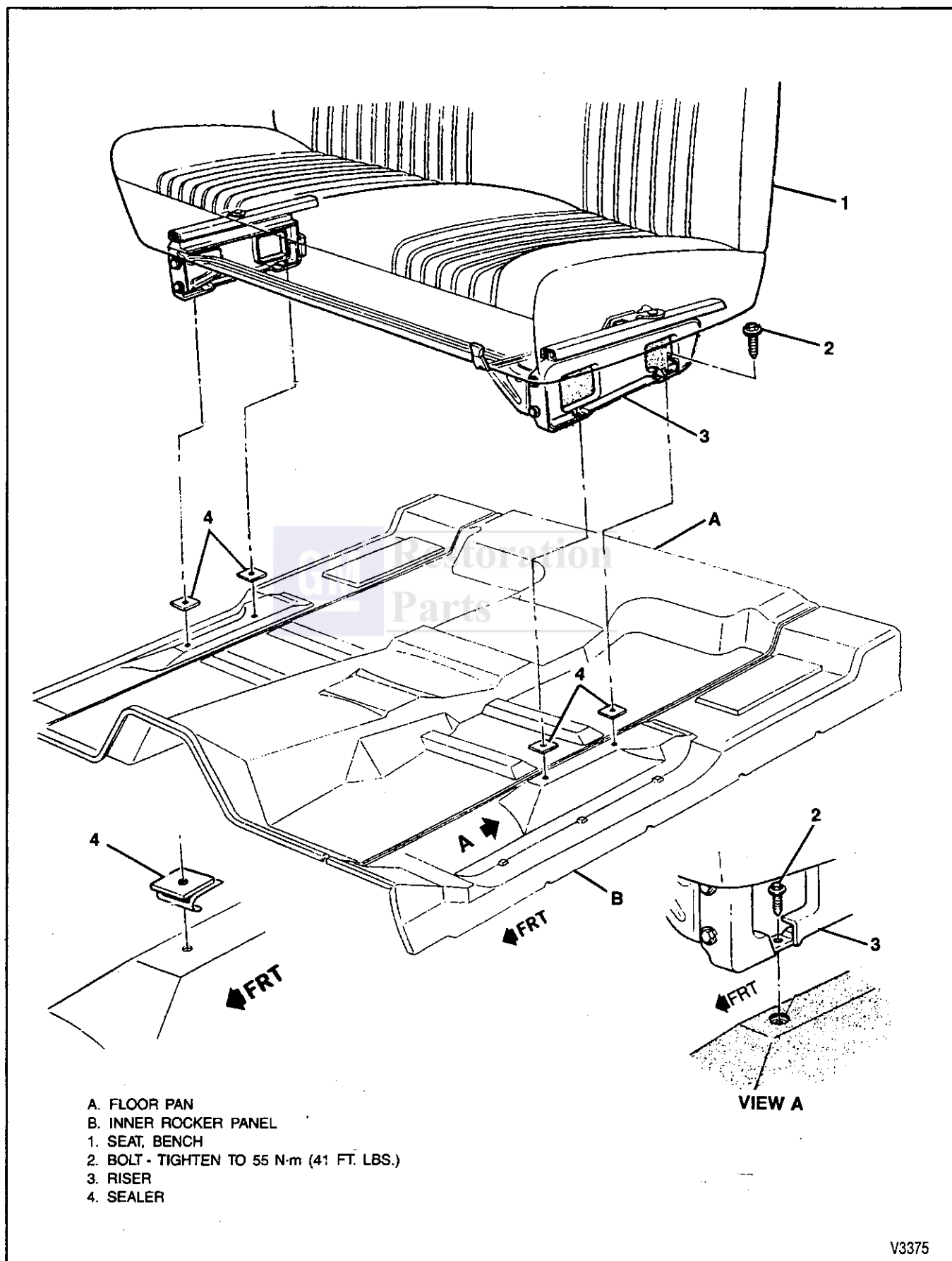
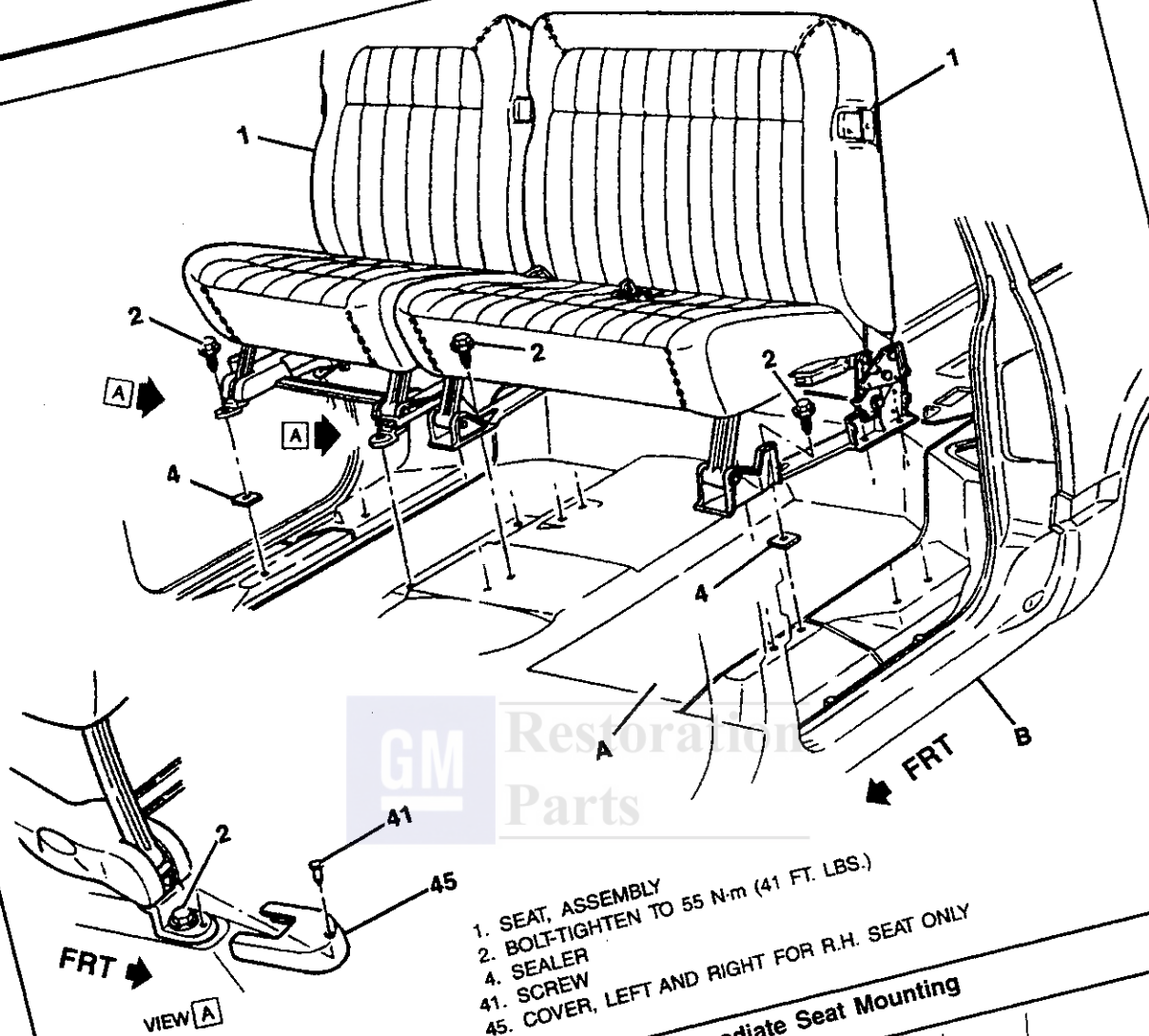


Figure 5—Front Bench Seat Mounting



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Figure 6—Folding Intermediate Seat Mounting

- 1. SEAT
- 41. SCREW
- 45. COVER, FRONT LEG TRIM
- 47. COVER, REAR LEG TRIM
- 48. HANDLE
- 50. SCREW

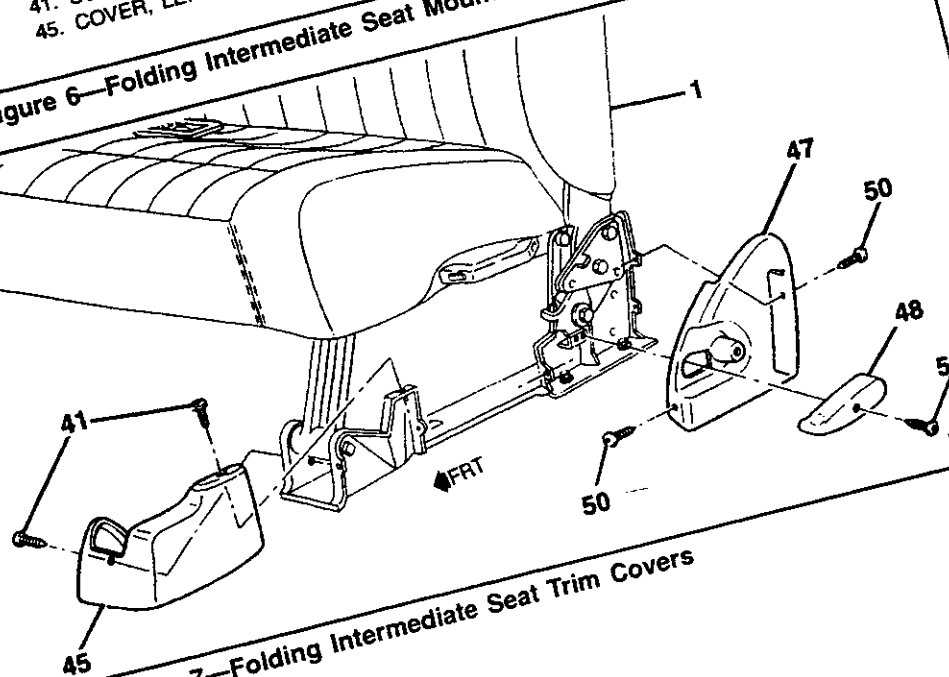


Figure 7—Folding Intermediate Seat Trim Covers

## 10A2-8 SEATS

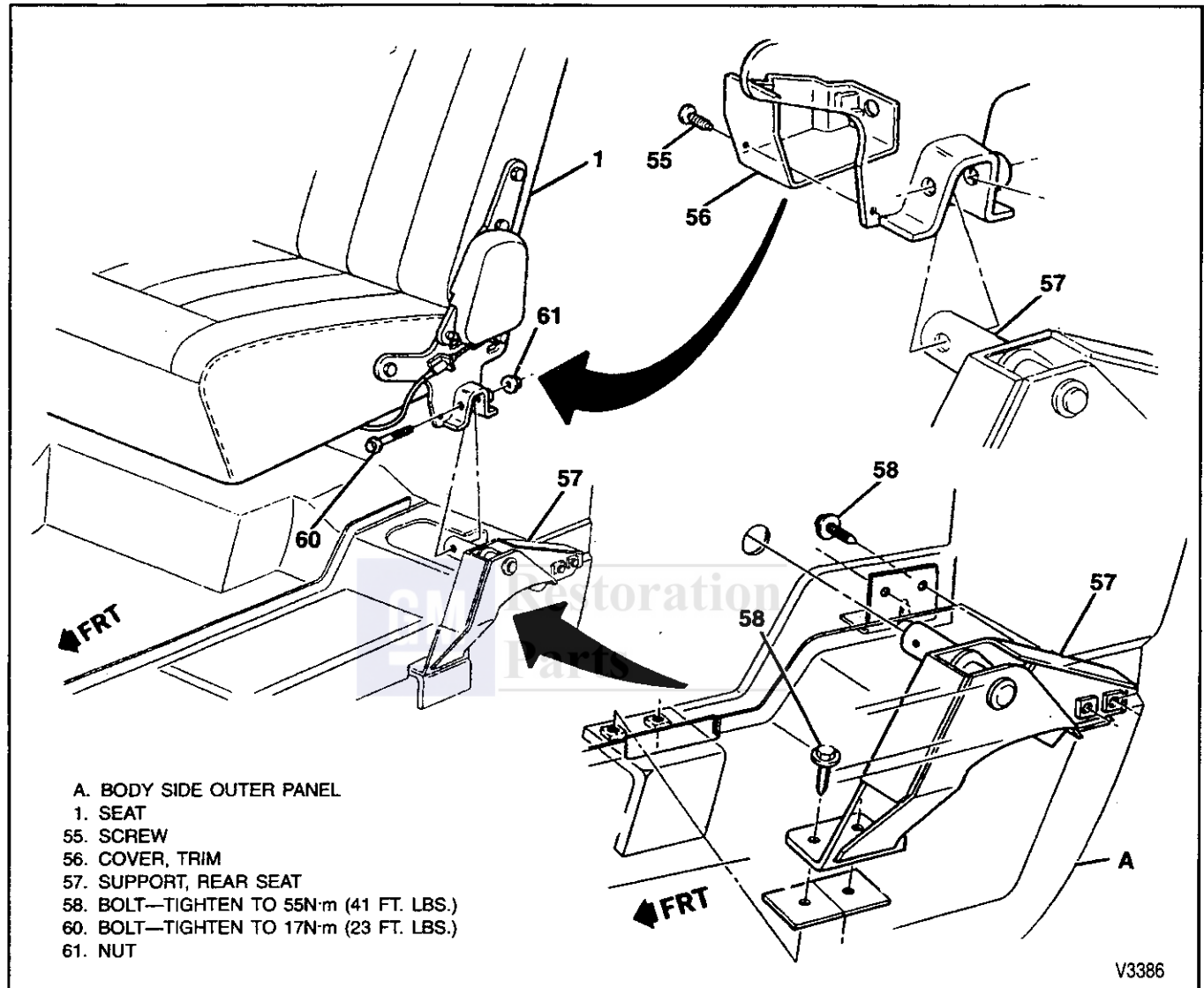


Figure 8—Rear Folding Seat Mounting (Extended Cab)

7. Lower trim panel.
8. Support retaining bolts.
9. Support assembly from the vehicle.



### Install or Connect (Figure 8)

1. Support assembly to the vehicle.

**NOTICE:** For steps 2 and 8, refer to "Notice" on page 10A2-1.

2. Bolts.



### Tighten

- Bolts to 55 N·m (41 lbs. ft.).

3. Lower trim panel and screws.
4. Jack tray, jack, and cover (right side only).
5. Seat belt anchors to the seat assembly.
6. Arm rest.
7. Ash tray and panel pocket.
8. Rear seat and bolts.



### Tighten

- Seat retaining bolts to 17 N·m (12 lbs. ft.).

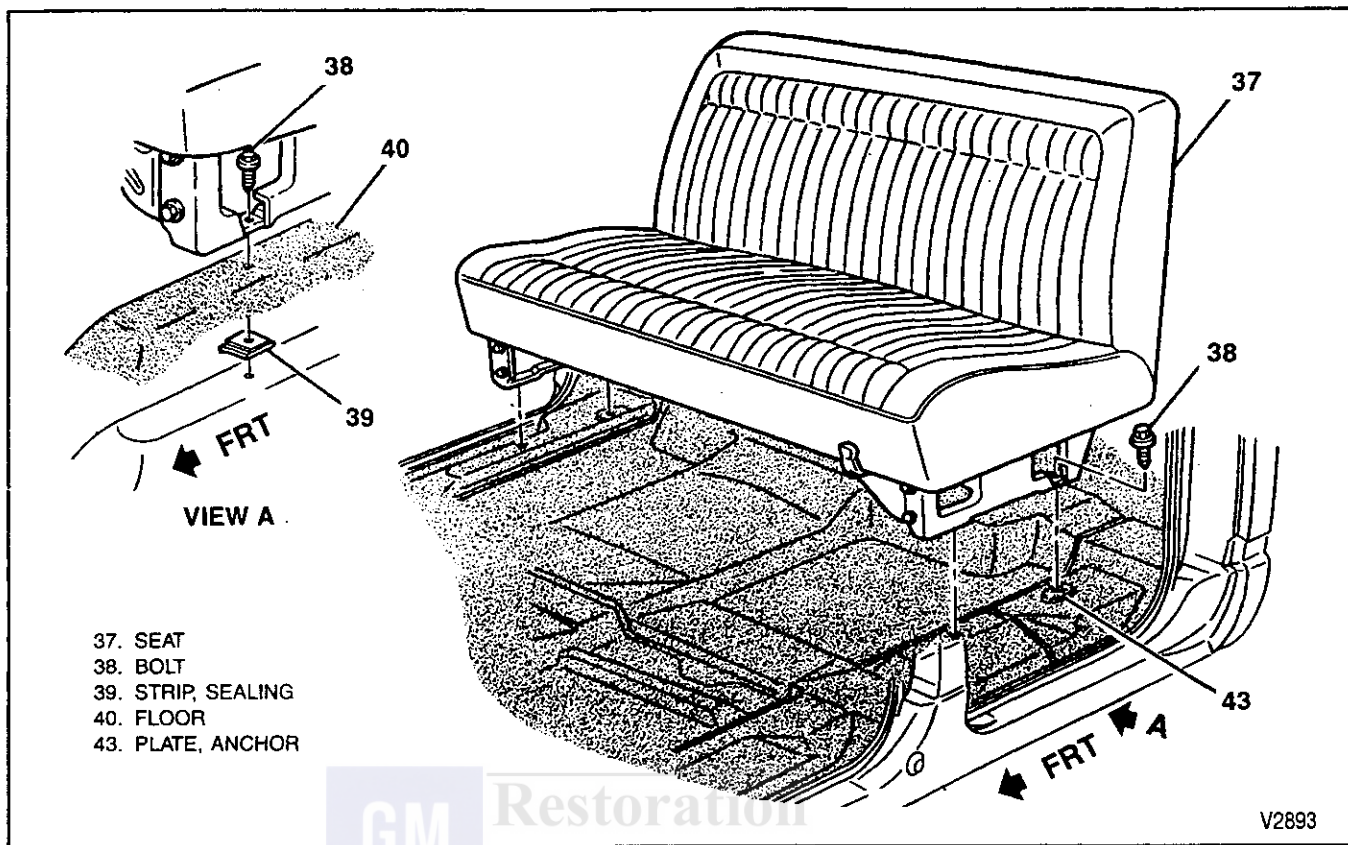


Figure 9—Rear Folding Seat Mounting (Utility)

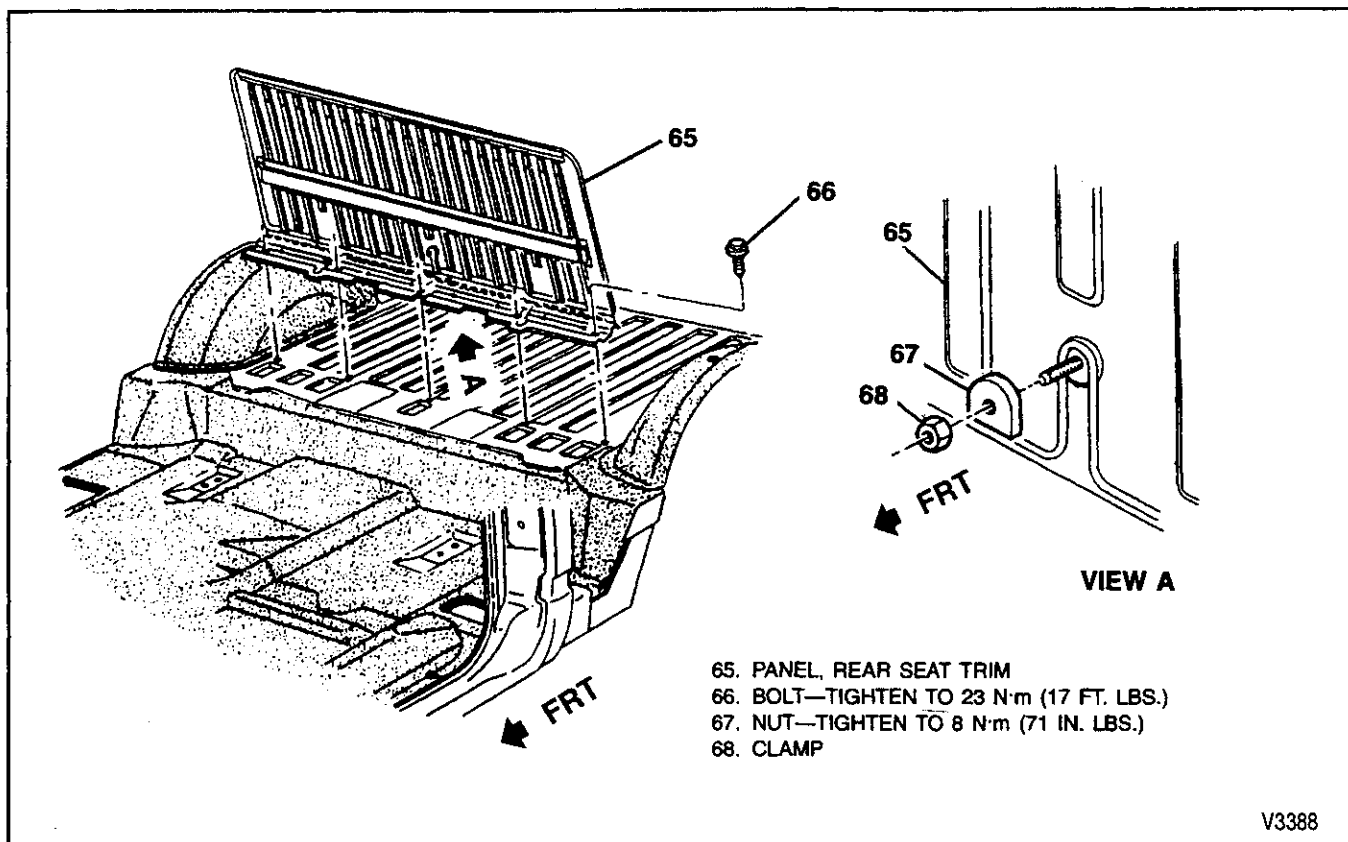


Figure 10—Rear Folding Seat Panel (Utility)

## 10A2-10 SEATS

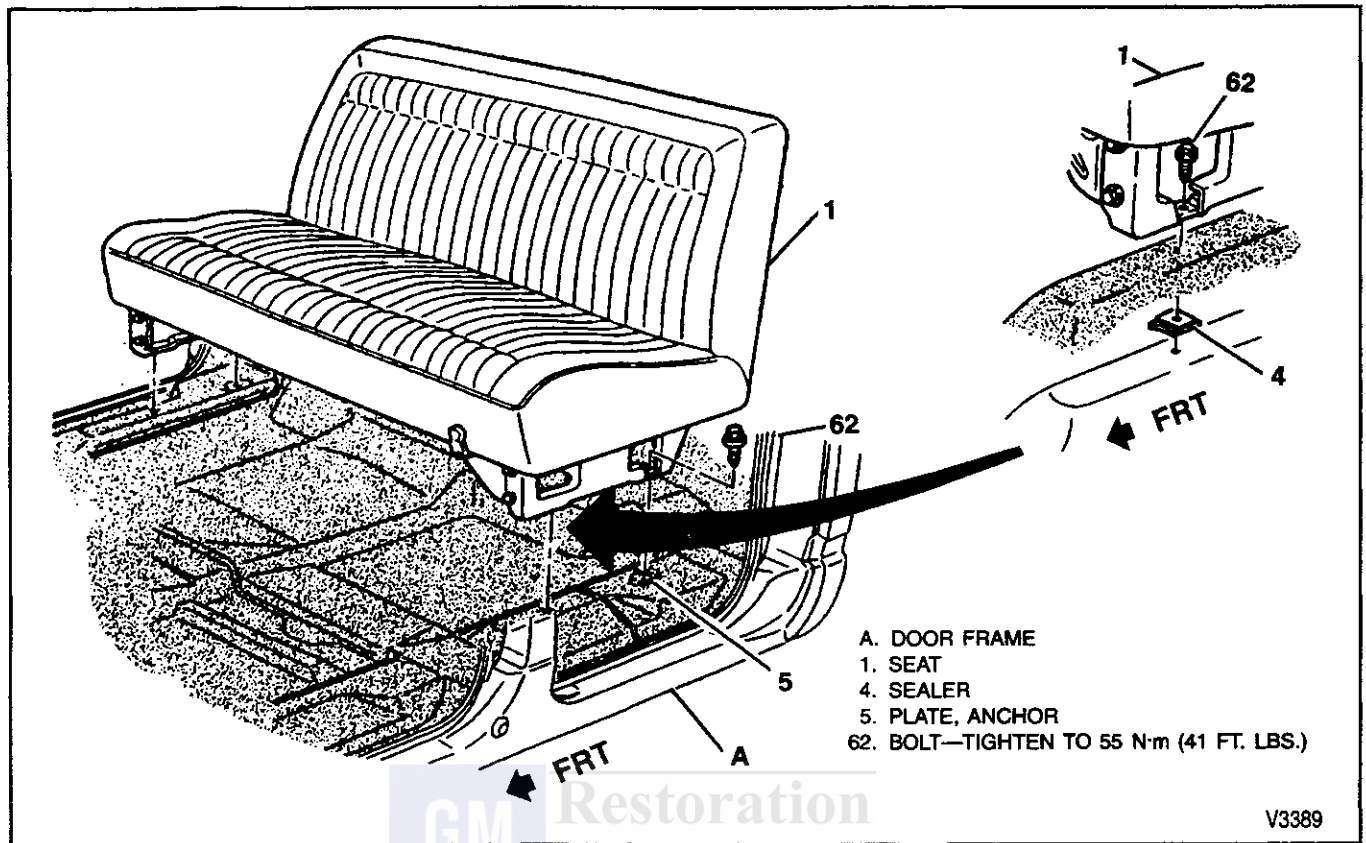


Figure 11—Rear Seat Mounting (Crew Cab)

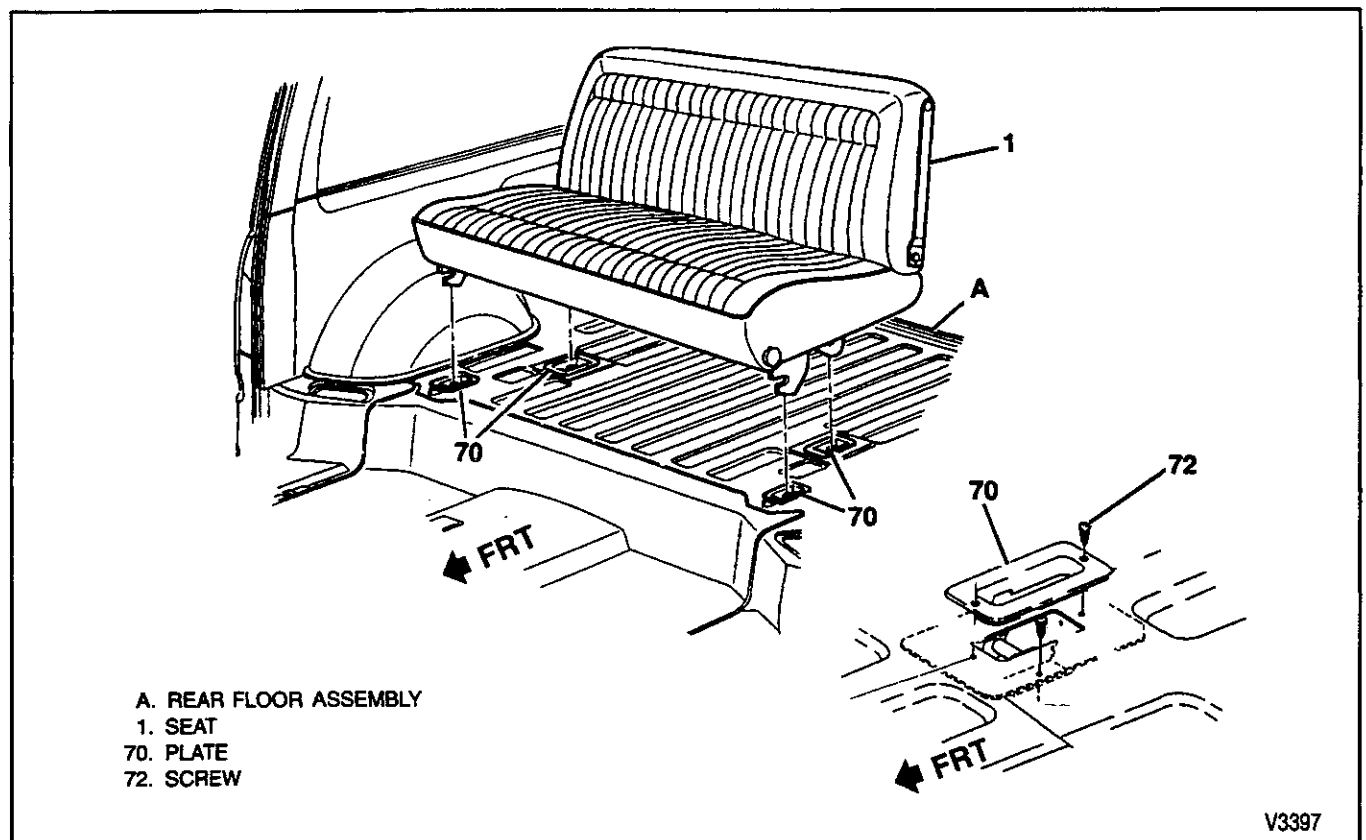


Figure 12—Rear Seat Mounting (Suburban)



## SEAT BELTS

**NOTICE:** Before servicing or replacing lap and shoulder belts, including single loop belt systems, refer to the following precautionary items:

1. Lap and shoulder belts will be serviced as follows:
  - A. All belts will be serviced in complete sets.
  - B. Do not intermix standard and deluxe belts on front or rear seats.
2. Keep sharp edges and damaging objects away from belts.
3. Avoid bending or damaging any portion of the belt buckle or latch plate.
4. Do not bleach or dye belt or strap webbing. Clean with a mild soap solution and water.
5. When installing lap or shoulder belt anchor bolt, start the bolt by hand to ensure that the bolt is threaded straight.
6. Do not attempt repairs on lap or shoulder belt retractor mechanisms to lap belt retractor covers. Replace defective assemblies with new service replacement parts.
7. Do not attempt to remove the seat belt retractor cover. The cover and the long rivet securing the cover to the retractor are not available as service replacement parts.

## FRONT SEAT BELT REPLACEMENT

↔ Remove or Disconnect (Figures 13 through 16)

1. Cover from the door pillar anchor plate.
  - Pry the bottom up.
2. Bolt from the door pillar weld nut.
3. Bolt retaining the retractor to the floor panel.
4. Retractor from the vehicle.
5. Cover from the buckle assembly which conceals the nut.
6. Nut from the buckle assembly to floor weld stud.
7. Seat belt warning wire from the buckle assembly (driver's side only).
8. Buckle assembly from the vehicle.

↔ Install or Connect (Figures 13 through 16)

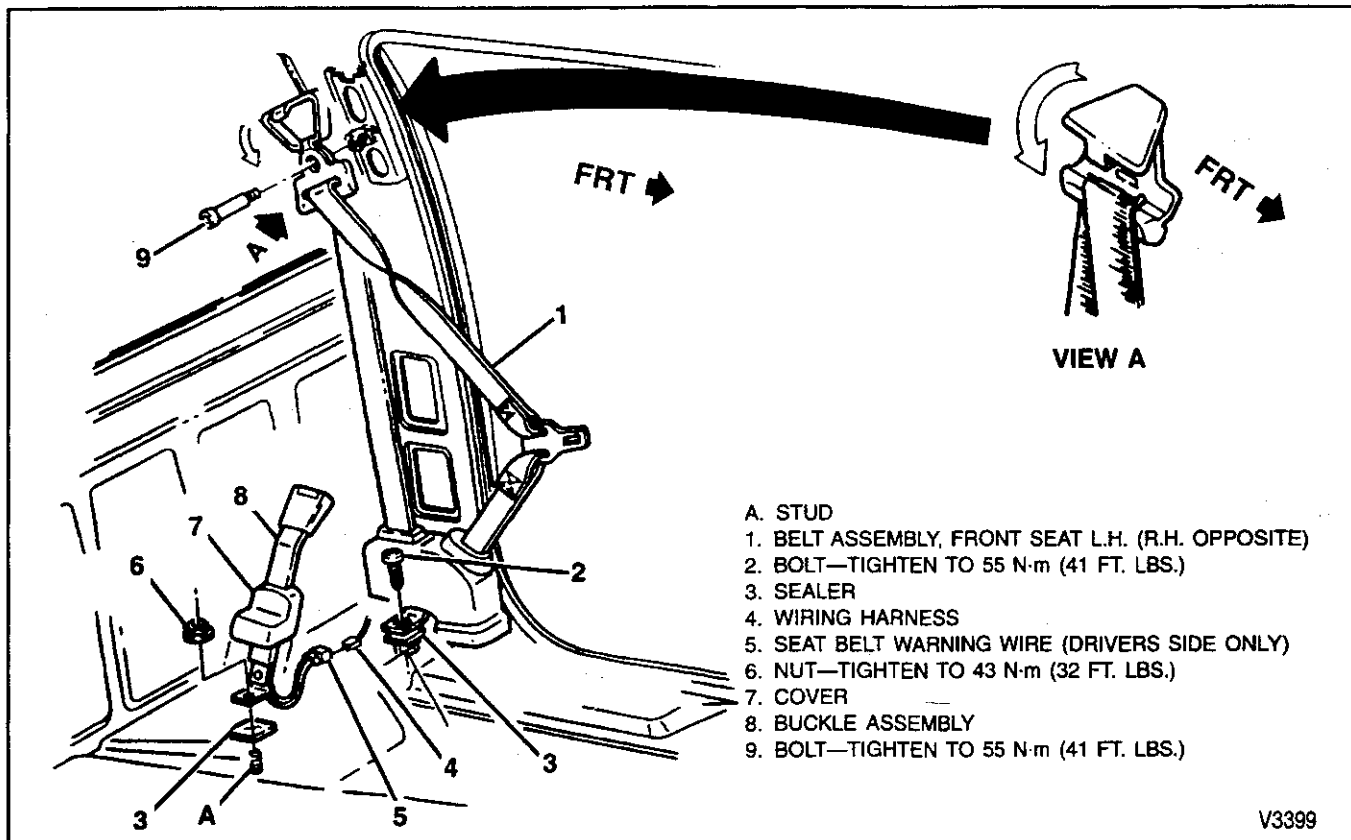
**NOTICE:** For steps 3 and 6 refer to "Notice" on page 10A2-1.

1. Buckle assembly to the floor panel.
2. Seat belt warning wire to the buckle assembly (driver's side only).
3. Nut to the buckle assembly and onto the floor panel weld stud.



## Tighten

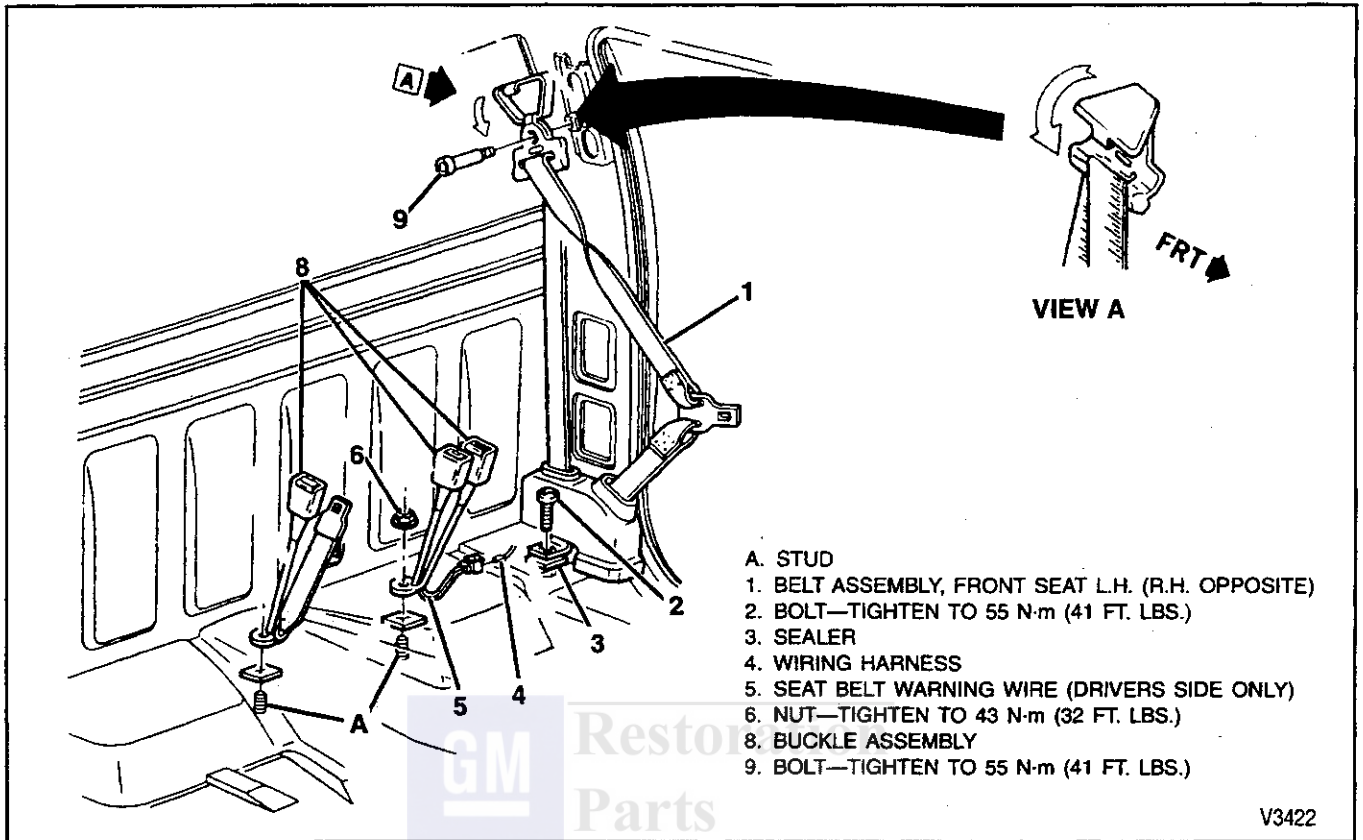
- Nut to 43 N·m (32 lbs. ft.).
4. Cover assembly over nut.



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Figure 13—Front Seat Belts (Regular Cab with Bucket Seats)

## 10A2-12 SEATS



**Figure 14—Front Seat Belts (Regular Cab with Bench Seats)**

5. Retractor and belt to floor.
6. Bolt through the retractor and into the floor panel weld nut.

 **Tighten**

- Bolt to 55 N·m (41 lbs. ft.).

7. Bolt through the anchor plate and washer, and into the door pillar weld nut.

 **Tighten**

- Bolt to 55 N·m (41 lbs. ft.).

8. Cover over the door pillar anchor plate.

### REAR SEAT BELT REPLACEMENT

 **Remove or Disconnect (Figures 17 through 21)**

1. Rear seat. Refer to "Rear Seat Replacement."
2. Buckle from the rear seat support assembly.
3. Quarter trim panel. Refer to SECTION 10A4.
4. Bolt and holding the retractor to the body.

5. Seat belt and retractor.
6. Nuts holding the buckle assembly to the studs.
7. Buckle assembly.

 **Install or Connect (Figures 17 through 21)**

1. Buckle assembly to the floor panel stud.

**NOTICE:** For steps 2, 3, and 5, refer to "Notice" on page 10A2-1.

2. Nuts to the buckle assembly.

 **Tighten**

- Nuts to 43 N·m (32 lbs. ft.).

3. Bolt through the seat belt retractor to the weld nut.

 **Tighten**

- Bolt to 55 N·m (41 lbs. ft.).

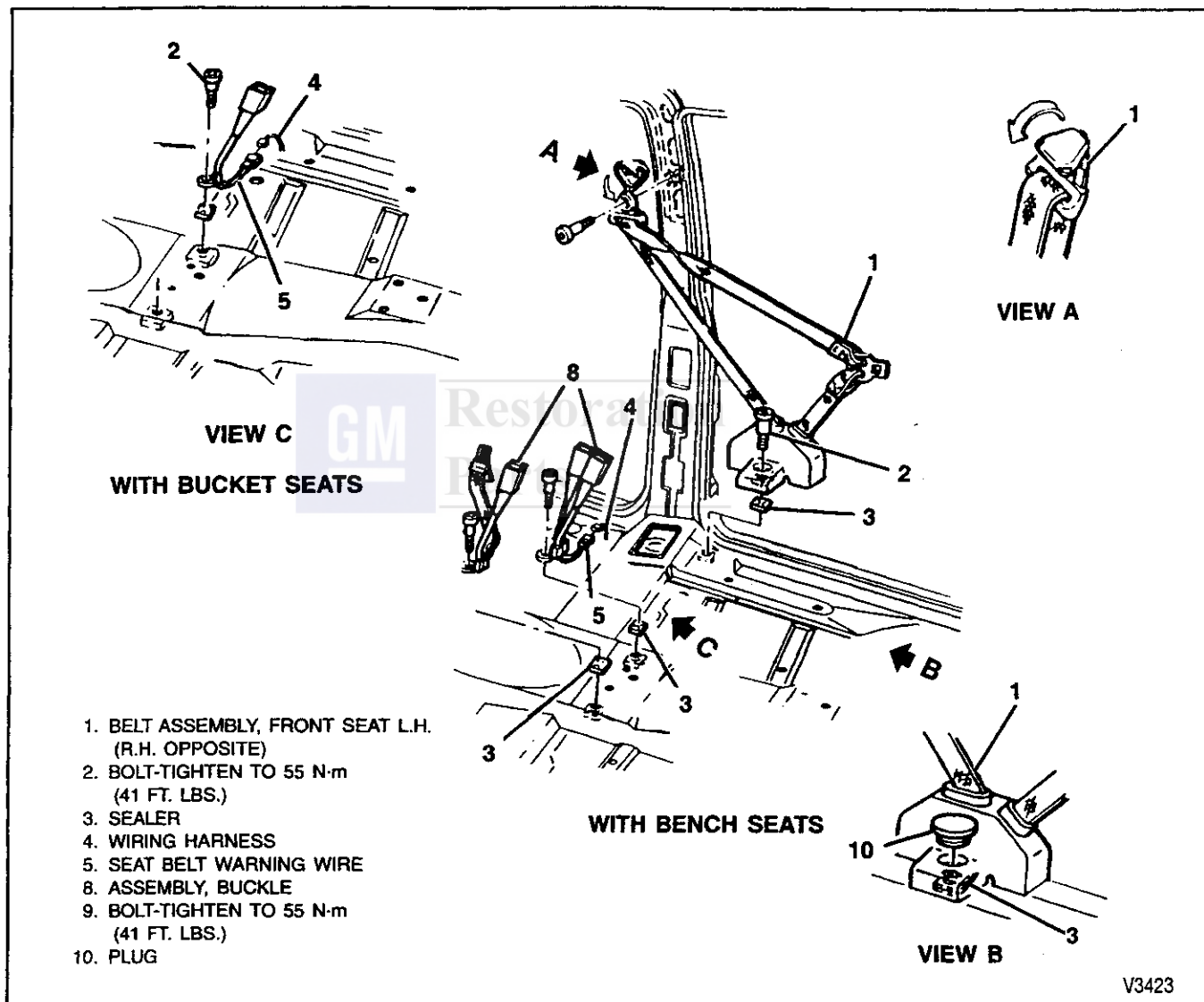
4. Quarter trim panel. Refer to SECTION 10A4.
5. Bolt to the upper anchor plate.

 **Tighten**

- Bolts to 55 N·m (41 lbs. ft.).

6. Rear seat. Refer to "Rear Seat Replacement."





**Figure 15—Front Seat Belts (Suburban and Crew Cab)**

## 10A2-14 SEATS

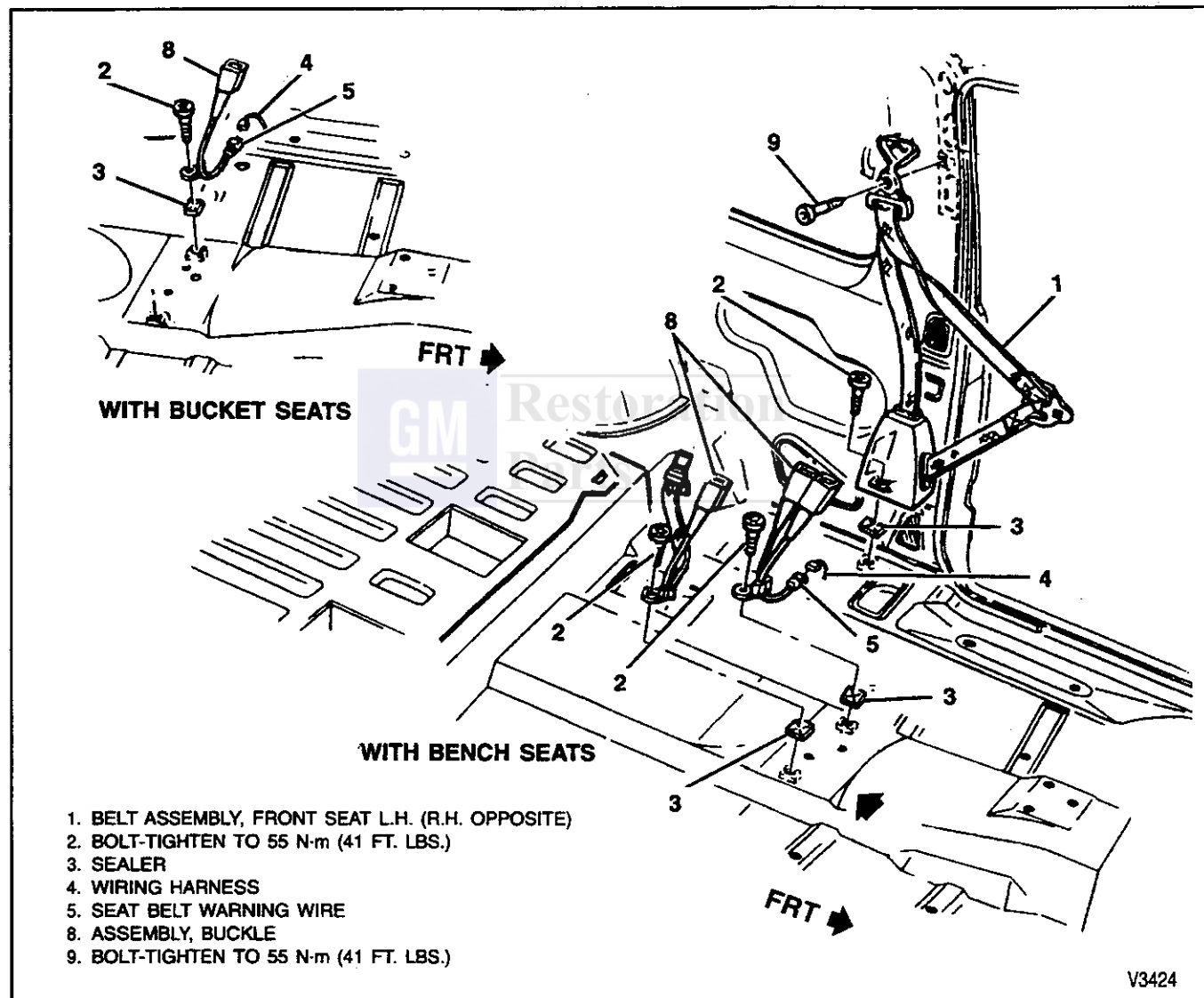


Figure 16—Front Seat Belts (Utility Model)

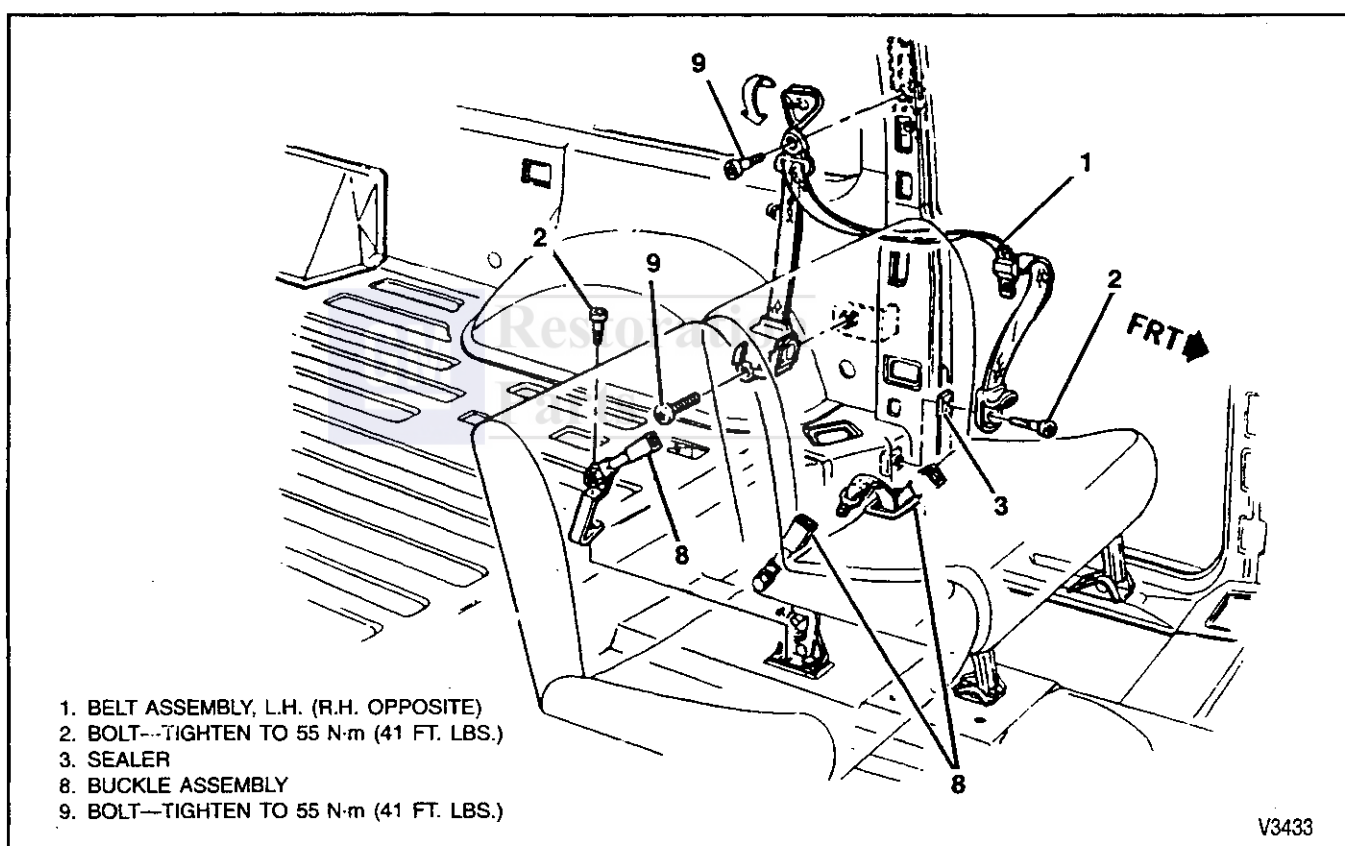


Figure 17—Folding Intermediate Seat Belts (Suburban)

## 10A2-16 SEATS

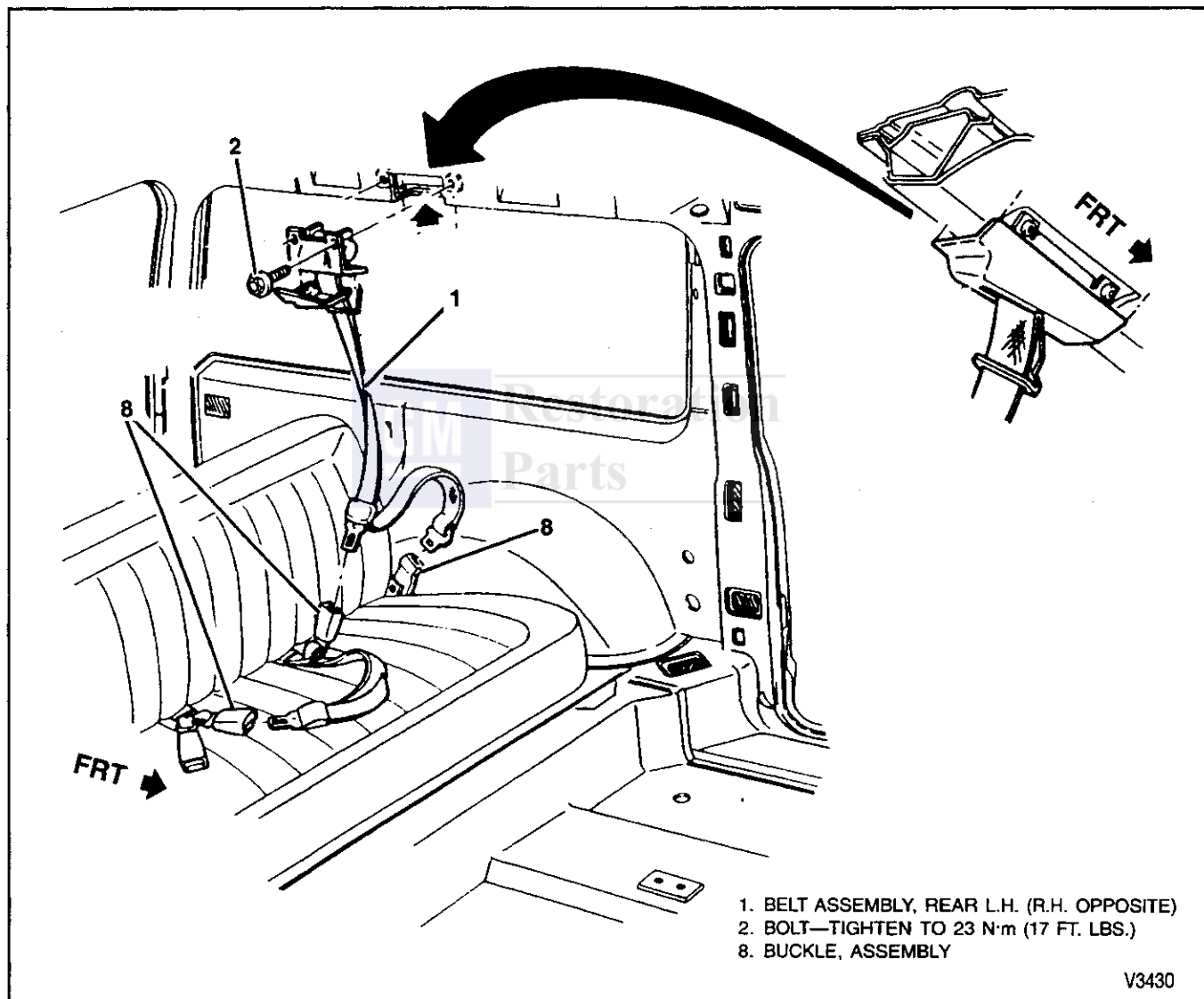
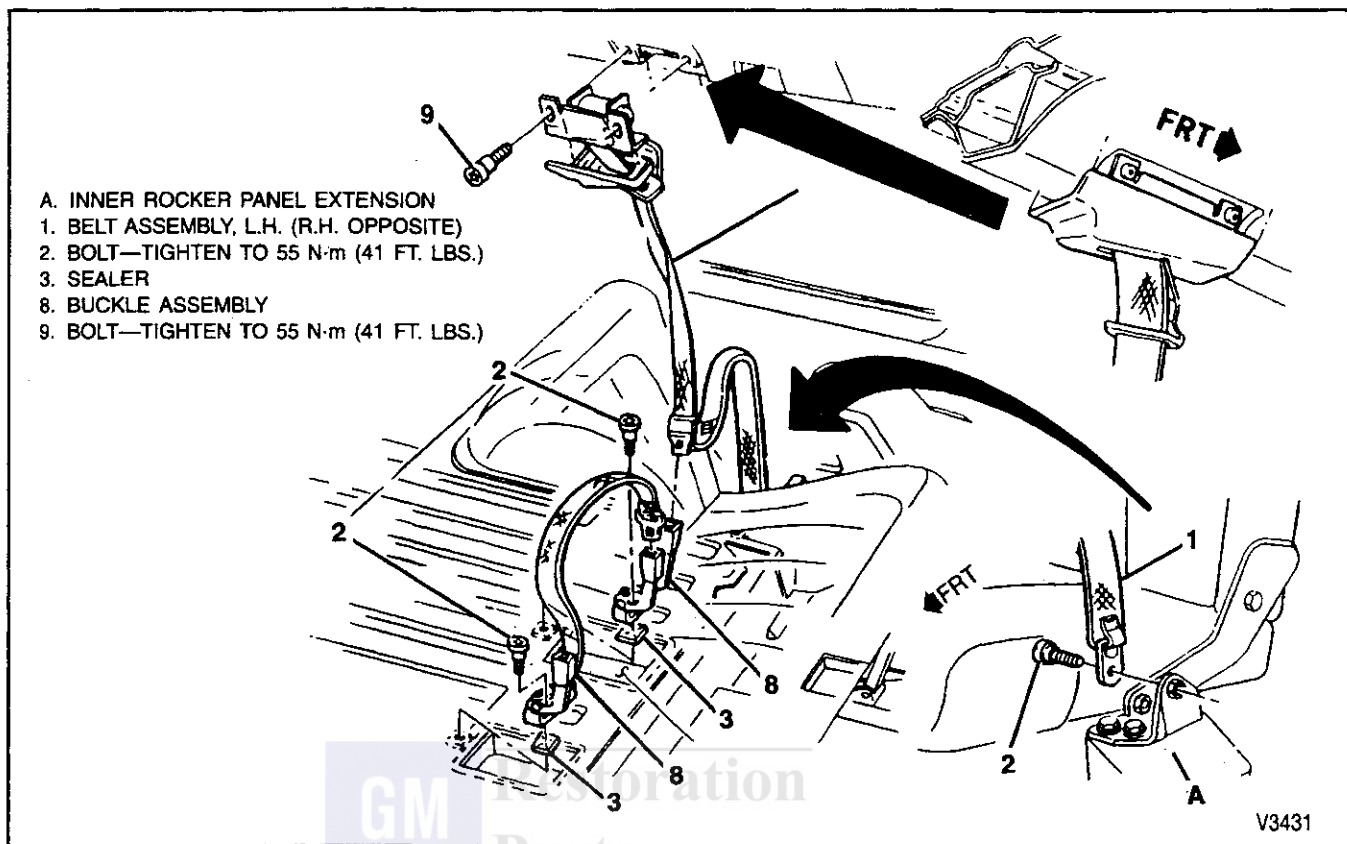
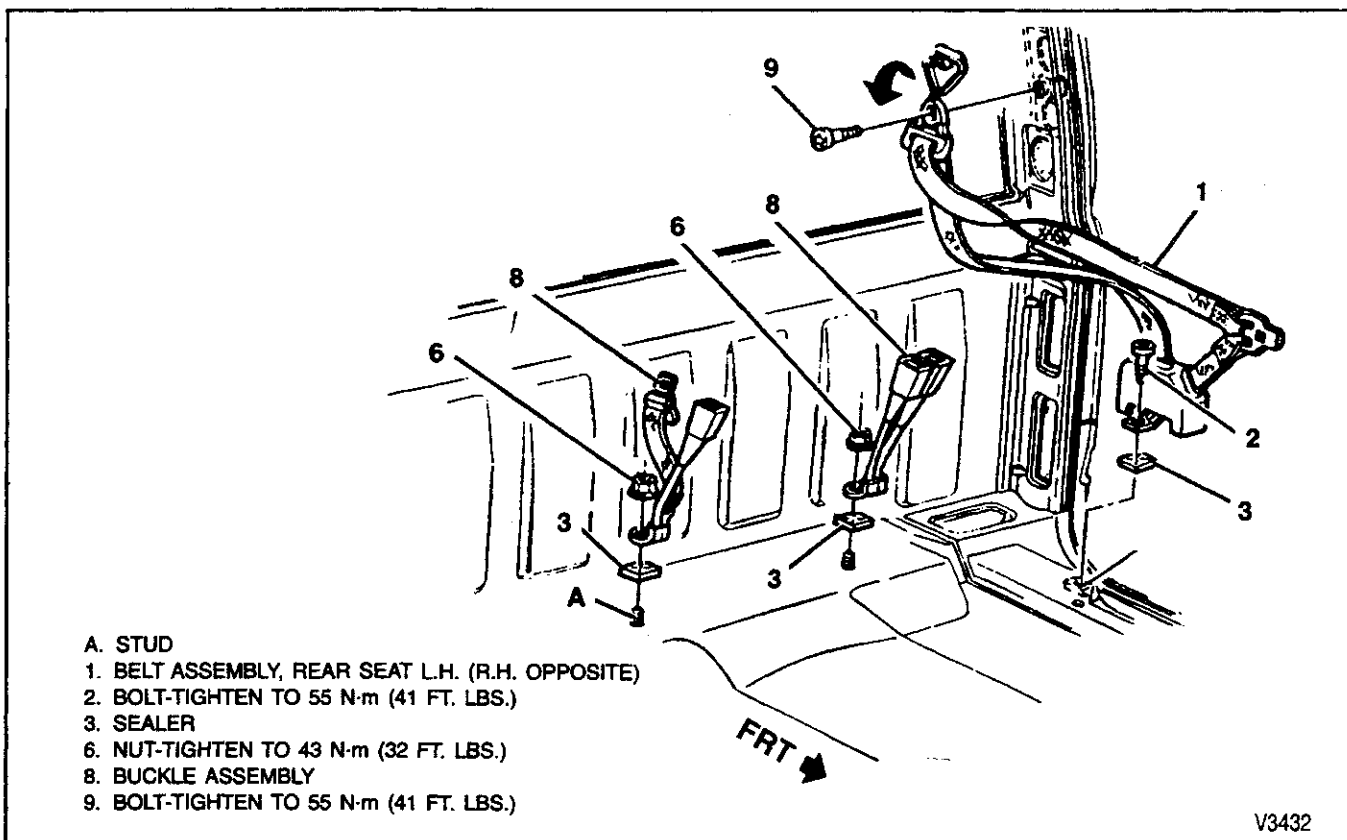


Figure 18—Rear Seat Belts (Suburban with Removable Folding Rear Seat)



**Figure 19—Rear Seat Belts (Utility with Folding Rear Seat)**



**Figure 20—Rear Seat Belts (Crew Cab with Folding Rear Seat)**

## 10A2-18 SEATS

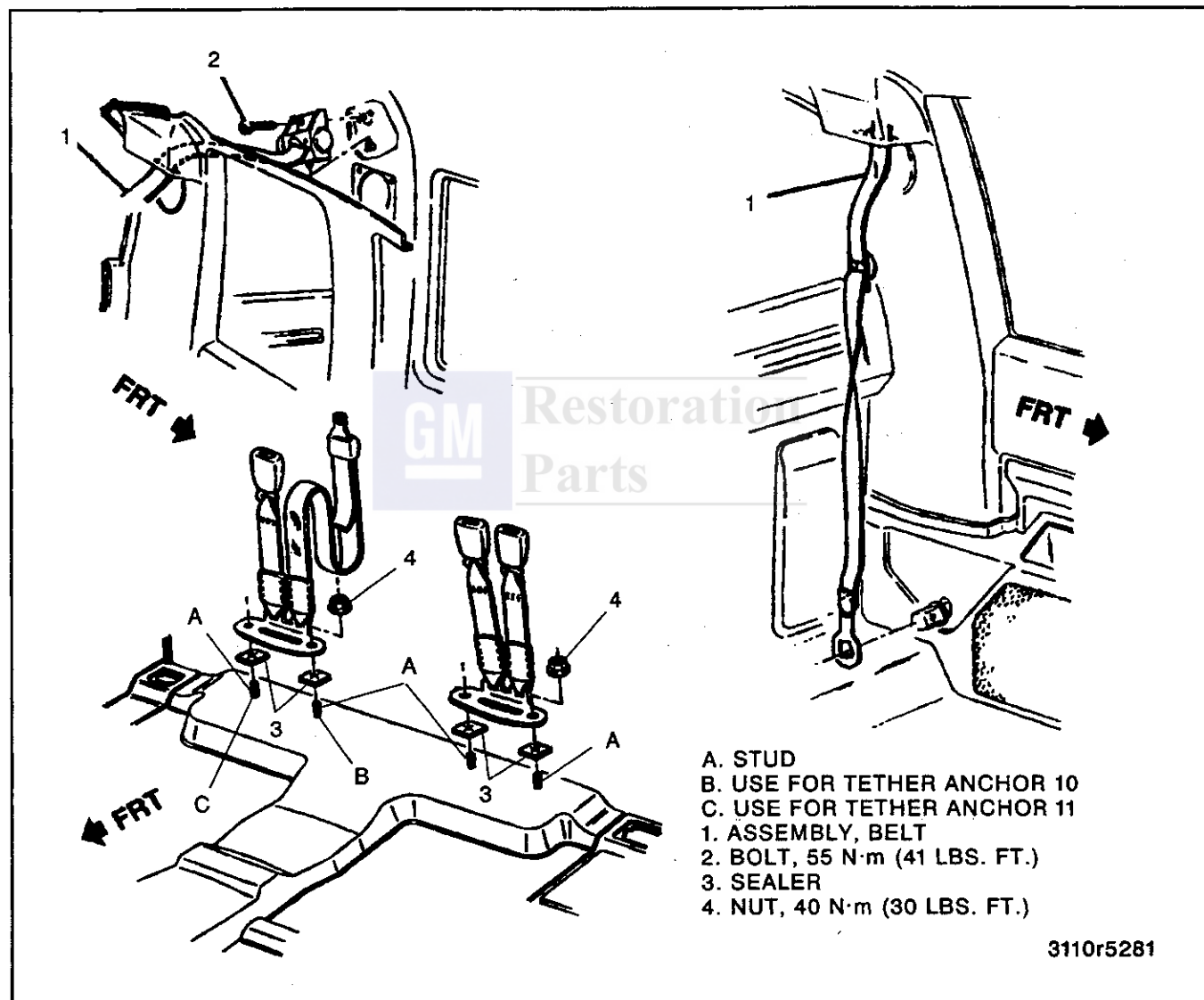
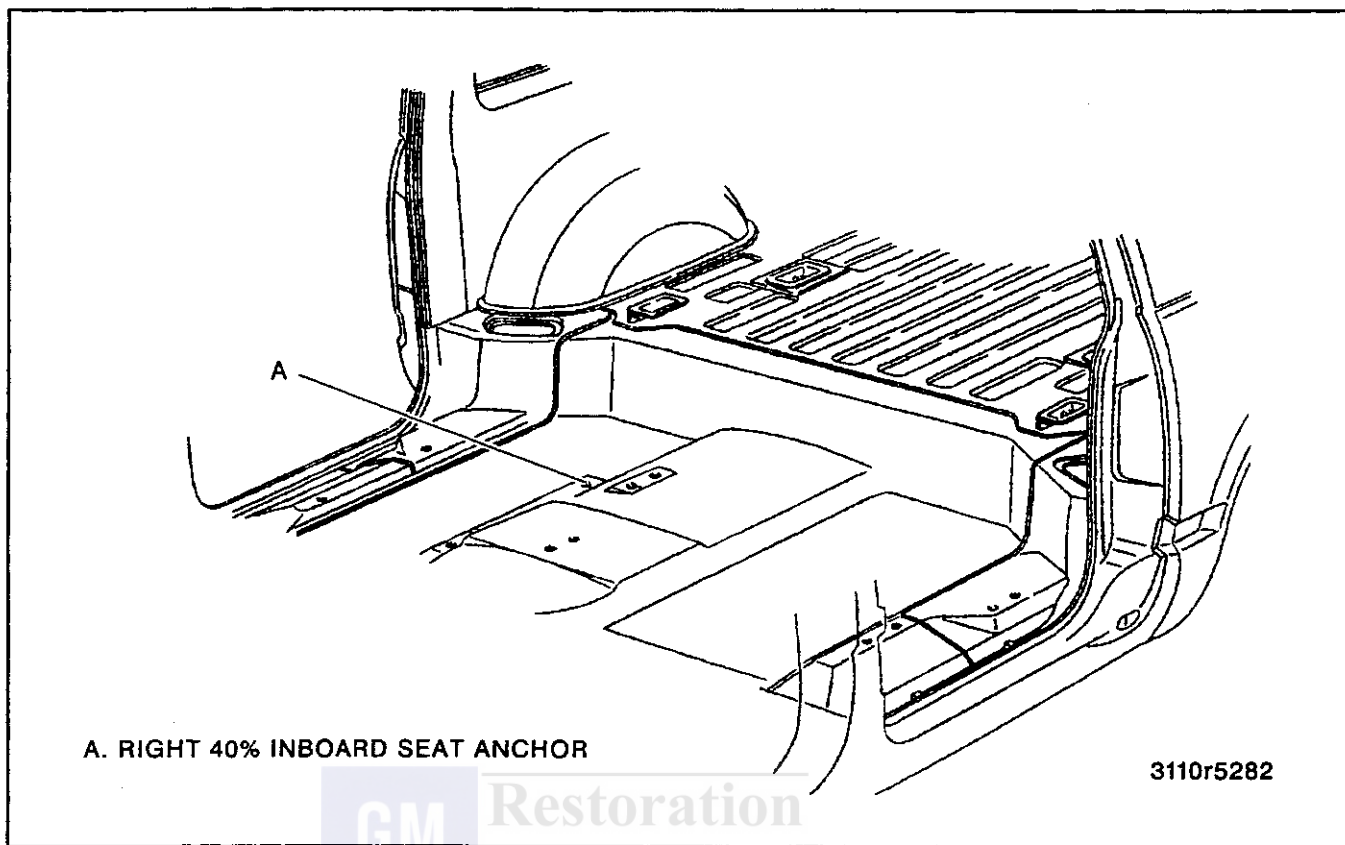
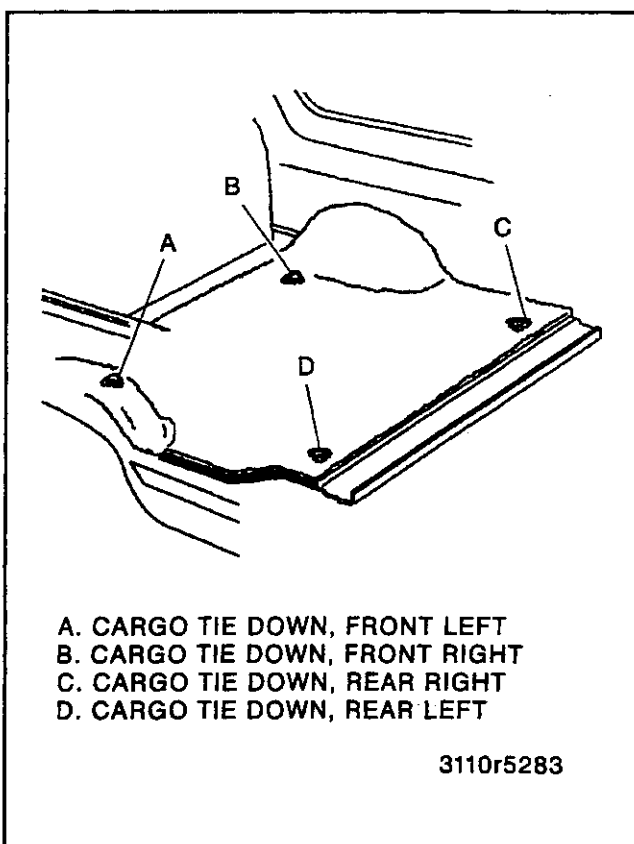


Figure 21—Rear Seat Belts (Extended Cab)



**Figure 22—Child Seat Tether Anchor Point**



**Figure 23—Cargo Tie Downs**

## TOP TETHER CHILD SEAT ANCHOR POINTS

Seat Position	Suburban				Utility	Crew Cab	Extended Cab		Pickup
	With 2nd Folding Seat (AT5)	Without 2nd Folding Seat (AT5)	With 3rd Seat (AS3)	Without 3rd Folding Seat (AS3)			With 2nd Seat (AM7)	Without 2nd Seat (AM7)	
Front Seat Center	1	2	X	X	1	1	1	10	9R
Front Seat Right	3	2	X	X	1	1	1	11	9R
2nd Seat Center Folding	X	X	4	NR	X	X	X	X	X
2nd Seat Left Folding	X	X	4	5	X	X	X	X	X
2nd Seat Right Folding	X	X	12	6	X	X	X	X	X
3rd Seat Center	X	X	NR	X	X	X	X	X	X
3rd Seat Left	X	X	7	X	X	X	X	X	X
3rd Seat Right	X	X	8	X	X	X	X	X	X
2nd Center	X	X	X	X	NR	9C	9C	X	X
2nd Seat Left	X	X	X	X	7	9L	9L	X	X
2nd Seat Right	X	X	X	X	8	9R	9R	X	X
1	Hook tether into 2nd seat center occupant lap belt latch plate if 2nd seat is unoccupied.*								
2	Use anchor hole located in figure 22.								
3	Use GM P/N 15971501 to latch tether to buckle on 2nd 40% seat if seat is unoccupied*.								
4	Hook tether into 3rd seat center occupant lap belt latch plate and pull taught if 3rd seat is unoccupied*.								
5	Use left front cargo tie down located in figure 23.								
6	Use right front cargo tie down located in figure 23.								
7	Use left rear cargo tie down located in figure 23.								
8	Use right rear cargo tie down located in figure 23.								
9L	Refer to "top strap tether back panel installation" below. Drill anchor hole between scallops on the left side of back panel.								
9R	Refer to "top strap tether back panel installation" below. Drill anchor hole between scallops on the right side of back panel.								
9C	Refer to "top strap tether back panel installation" below. Drill anchor hole between scallops centerline back panel.								
10	Use stud in floor located in figure 21.								
11	Use stud in floor located in figure 21.								
12	Use GM P/N 15971501 to latch tether into 3rd seat buckle directly behind child seat location if 3rd seat buckle is unoccupied*.								
X	Not applicable.								
NR	Not recommended for use with child seat that has a top tether.								
*	If seat is occupied the child seat should be placed in a rear seat position that will allow the use of the cargo tie downs on Suburban and Utility models or back panel anchor on pickup, extended cab, and crew cab models. Use chart above for tether locations.								

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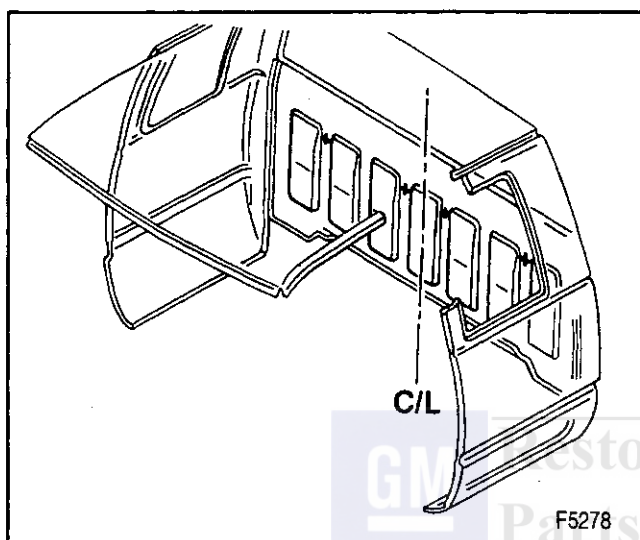
## TOP TETHER BACK PANEL INSTALLATION


**Install or Connect (Figure 25)**
**Tools Required:**

J 24595-C Trim Pad Clip Remover

1. Remove the seat. Refer to "Rear Seat Replacement."
2. Pry the trim panel off the sheet metal below the rear window with J 24595-C.
3. Pry the carpet off the rear panel with J 24595-C.
4. Locate the position where the hole will be drilled from inside the cab. The hole may be located either 109 mm (4.3 inches) or 545 mm (21.4 inches) outboard from the centerline or center line





**Figure 24—Child Restraint Anchor Installation**

of the back panel and 42 mm (1.65 inches) below the horizontal sheet metal panel (figures 24 and 25).

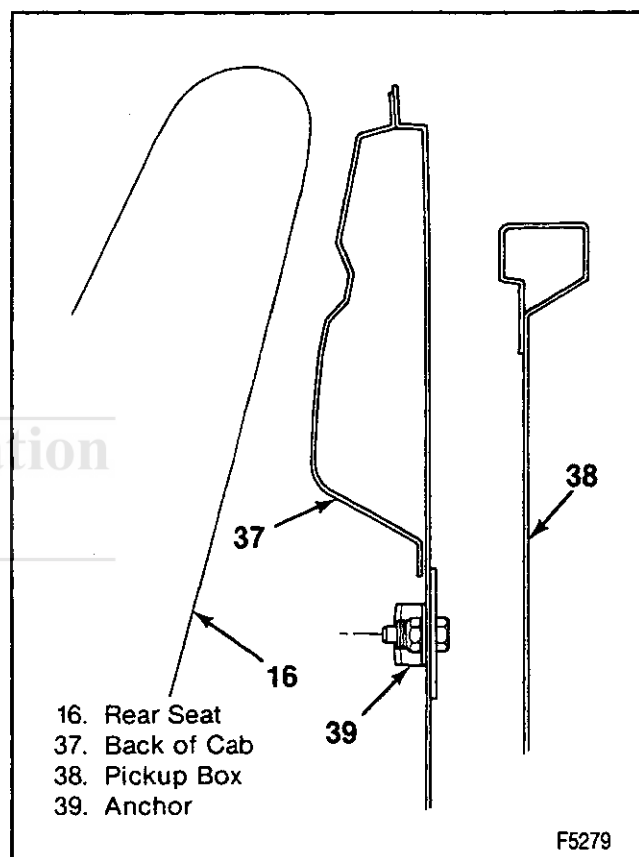
5. Drill a 9-mm (3/8-inch) hole through the sheet metal from inside the cab. Use a drill stop to prevent damage to the pickup box.
6. Place the washer on the bolt and apply a bead of sealer around the hole in the washer.
7. Using a clamping tool, feed the bolt through the hole from the outside of the cab.
8. Thread the nut on the bolt, holding the bolt head with an extended length wrench.

**NOTICE:** Refer to "Notice" on page 10A2-1.



**Tighten**

- Nut to 30 N·m (22 lbs. ft.).



**Figure 25—Anchor Installation (Pickup Models)**

9. In the extended cab, the length of the bolt may interfere with the rear seat when it is in the folded position. If this occurs, saw off the end of the bolt, leaving at least two threads visible from the end of the nut.

Note: In the event the child seat anchorage is removed, the 9-mm (3/8-inch) diameter hole must be properly resealed.

## 10A2-22 SEATS

### SPECIFICATIONS

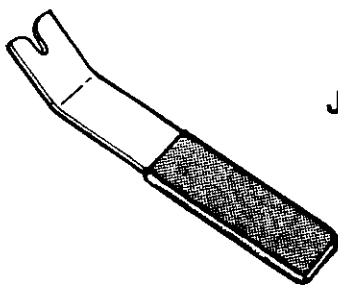
#### FASTENER TIGHTENING SPECIFICATIONS

Fastener	N-m	Ft. Lbs.
Child Restraint Anchor Nut.....	30	22
Front Seat Belt Anchor Plate Bolts.....	55	41
Front Seat Belt Buckle		
Assembly Bolts (Extended Cab).....	55	41
Assembly Nuts (Regular Cab).....	42	32
Front Seat Belt Retractor Bolts.....	55	41
Front Seat Retaining Bolts.....	55	41
Rear Seat Belt Buckle Assembly Nuts.....	42	32
Rear Seat Belt Retractor Bolts.....	55	41
Rear Seat Retaining Bolts.....	17	12
Rear Seat Support Bolts.....	40	30

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### SPECIAL TOOLS

1.



J 24595-C

1. Trim Pad Clip Remover

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## SECTION 10A3

# WINDOWS

**CAUTION:** When replacing stationary glass; such as a windshield, back window, or hatch roof window, urethane adhesive (P/N 12345633 or equivalent) must be used to maintain original installation integrity. Failure to use urethane adhesive will result in poor retention of the windshield which may allow unrestrained occupants to be ejected from the vehicle with resulting personal injury.

**NOTICE:** When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

**NOTICE:** If a window is cracked but still intact, it should be crisscrossed with masking tape to reduce the risk of damage to the vehicle.

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## ON-VEHICLE SERVICE

### WINDSHIELD SERVICE

**CAUTION:** Always wear heavy gloves and safety glasses when handling glass to minimize the risk of injury.

When replacing a cracked windshield, it is important that the cause of the crack be determined and the condition corrected before a new window is installed. The cause of the crack may be an obstruction or high spot

somewhere around the flange of the opening. Cracking may not occur until pressure from the high spot or obstruction becomes particularly high due to winds, extremes of temperature, or rough terrain. Suggestions of what to look for are described later in this section under "Inspection."

If a windshield is broken, the glass may already have fallen or been removed from the adhesive. Often, however, it is necessary to remove a cracked or otherwise imperfect windshield that is still intact.

## 10A3-2 WINDOWS

If a crack extends to the edge of the window, mark the point where the crack meets the reveal molding. (Use a piece of chalk and mark the point on the cab, next to the reveal molding). Later, when examining the flange of the opening for a cause of the crack start at the point marked.

Before removing the window cover the instrument panel and the surrounding sheet metal with protective covering.

### WINDSHIELD REMOVAL (BROKEN WINDSHIELD)

**CAUTION:** Always wear heavy gloves and safety glasses when handling glass to avoid the risk of injury.



#### Remove or Disconnect (Figure 1)

Tools Required:

- J-24709-01, Urethane Glass Sealant Remover (Hot Knife—115 Volt)
- J-24402-A, Glass Sealant Removal Knife

- Place protective coverings around the window removal area.

1. Windshield wiper arms.
2. Radio antenna mast.
3. Cowl vent grille.
4. Windshield stop screws.
5. Rear view mirror.

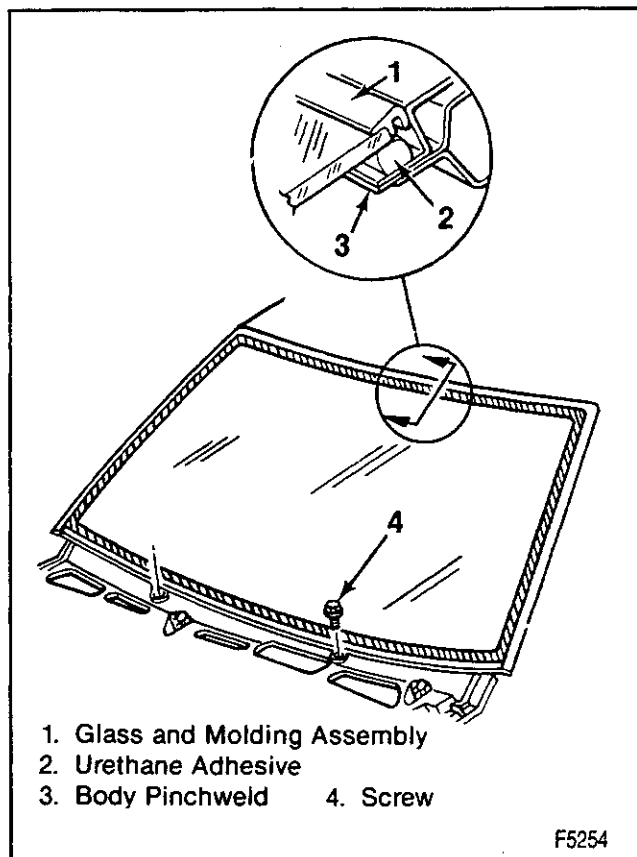


Figure 1—Windshield Assembly

6. Door opening seals, windshield garnish moldings, and speaker covers.

- Cut the molding from the window with a razor-type knife taking care not to damage the paint.
- Work from the outside.

**NOTICE:** If a window is cracked but still intact, it should be crisscrossed with masking tape to reduce the risk of damage to the vehicle.

7. Windshield glass using J-24709-01 or J-24402-A.

- A. Insert the blade between the glass and urethane.
- B. Keep the blade against the window edge, and cut the adhesive from the windshield.
- C. Use help to remove the windshield.



#### Clean

- Loosened adhesive from the pinchweld flange by wiping with a dry cloth.
- Do not attempt to scrape away old adhesive still attached. The paint could be damaged.

### WINDSHIELD REMOVAL (UNDAMAGED WINDSHIELD)

**CAUTION:** Always wear safety glasses and heavy gloves when working with glass to avoid the risk of injury.



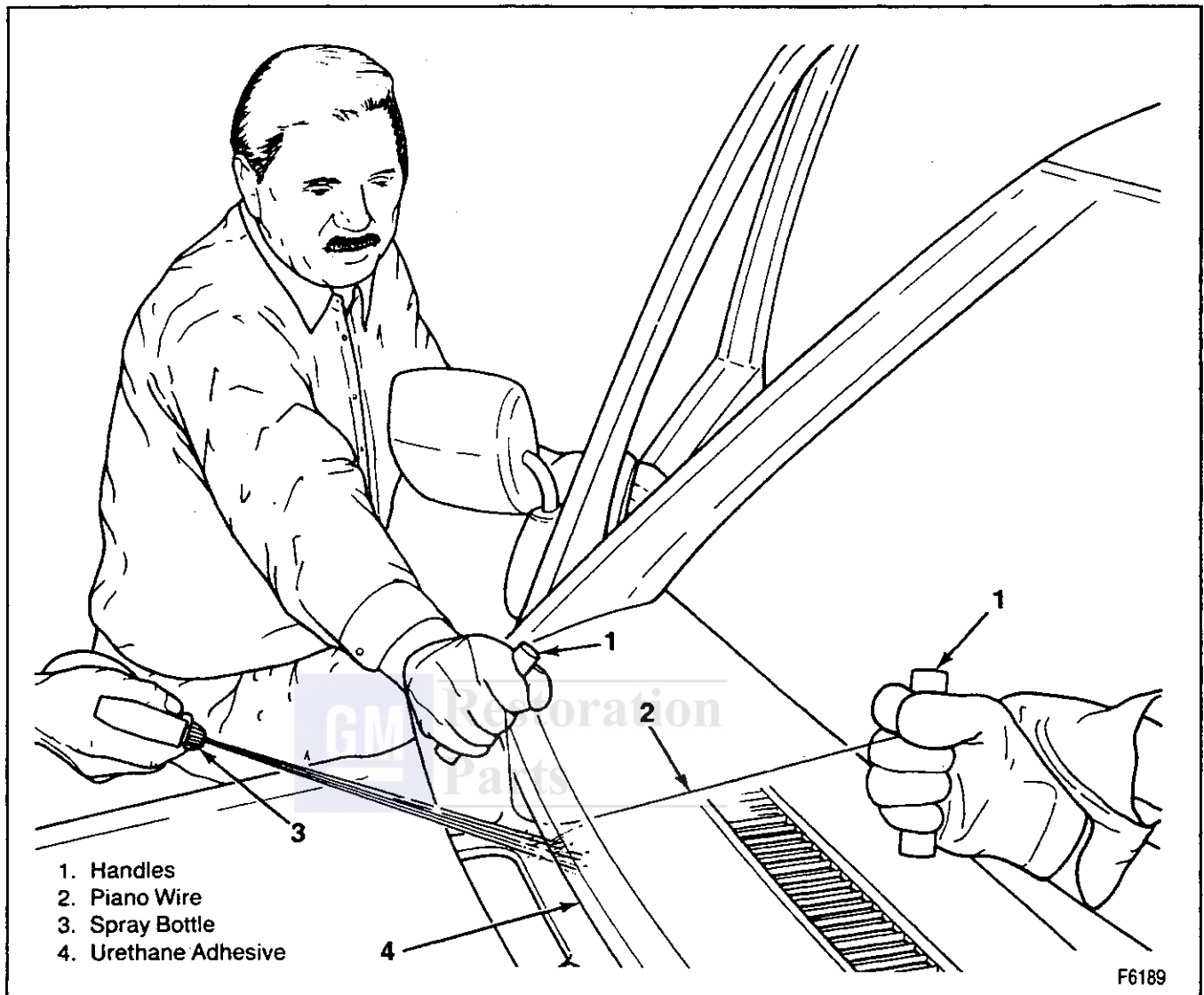
#### Remove or Disconnect (figure 1 and 2)

Tools Required:

- J-36020 Windshield Remover

1. Windshield wiper arms.
2. Radio antenna mast.
3. Cowl vent grille.
4. Windshield stop screws.
5. Rear view mirror
6. Radio speaker grilles.
7. Windshield pillar trim from both sides of the vehicle and pull the door seal back from the windshield area.

- A. Using J 36020, insert one end of the wire through the urethane adhesive to the interior of the vehicle and wrap each end of the wire around each handle. Or cut a 6-foot length of 0.020-inch piano wire. Insert one end of the wire through the adhesive around the windshield and wrap each end of the wire around a suitable handle.
- B. Spray a liquid soap solution around the entire perimeter of the windshield so the urethane is wet.
- C. With one person at each end of the wire, work the wire back and forth exerting pressure against the urethane. Continue this action until all of the urethane has been cut and the windshield is loose.



**Figure 2—Cutting the Window from the Frame**

**! Important**

\* When working the wire back and forth, follow these precautions:

1. To protect the instrument panel from being damaged during the cutting action of the wire, place a cloth or piece of cardboard between the wire and instrument panel pad.
2. When working the wire back and forth do not allow the wire to make contact with the glass.
3. Periodically spray soap solution ahead of the wire until the urethane has been completely cut.
1. Glass from the vehicle with the aid of a helper.

**INSPECTION**

An inspection of the flange of the windshield opening, reveal molding, and glass may reveal the cause of a broken windshield. This can help prevent future breakage.

Look for high weld or solder spots, hardened spot weld sealer, or any other obstruction or irregularity in the flange. Also, check the cowl vent grille for contact with the windshield.

**SERVICE KITS**

To replace a urethane adhered windshield, use GM windshield sealer preparation kit P/N 1052420 and GM adhesive caulking kit P/N 12345633 or equivalent. Materials in the GM windshield sealer preparation kit P/N 1052420 kit include:

1. Rubber cleaner.
2. Rubber primer.
3. Pinch weld flange primer.
4. Applicators.
5. Desiccant.
6. Instruction sheet.

Materials in the GM adhesive caulking kit P/N 12345633 kit include:

1. One tube of adhesive material.
2. Clear glass primer.
3. Blackout primer.
4. Application dauber
5. Polyethylene applicator nozzle.
6. Instruction sheet.

## 10A3-4 WINDOWS

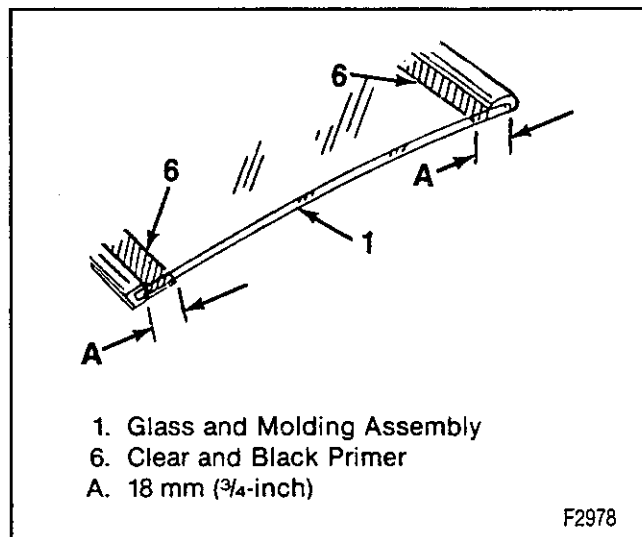


Figure 3—Windshield Primer Locations

Other materials required for windshield installation which are not included in the service kit include:

1. Alcohol for cleaning the edge of the glass.
2. Adhesive dispensing gun J 24811.
3. A standard household cartridge type gun reworked as follows:
  - A. Widen the end slot to fit the diameter of the dispensing nozzle of the adhesive tube.
  - B. Reduce the diameter of the plunger disc so that the disc will enter the large end of the adhesive tube.
4. Commercial type razor knife (for cutting along the edge of the glass).

**NOTICE:** Do not use a petroleum-based solvent such as kerosene or gasoline. The presence of oil will prevent adhesion of new material.

### WINDSHIELD INSTALLATION

**CAUTION:** Always wear heavy gloves and safety glasses when handling glass to minimize the risk of injury.

#### Install or Connect (Figures 1, 3 and 4)

- If the original windshield is being reinstalled, clean all old urethane off the windshield using a razor knife.
  - Use GM repair kit P/N (12345633) or equivalent which contains the necessary primers and adhesives.
1. Clear primer to the windshield covering an area 18 mm (3/4 inch) from the glass edge. Wipe the primer dry immediately.
  2. Black primer to the same area as the clear primer and allow it to dry.

**CAUTION:** Refer to "Caution" on page 10A3-1.

3. Bead of urethane 10.0 mm (0.40 inches) high over the primer.

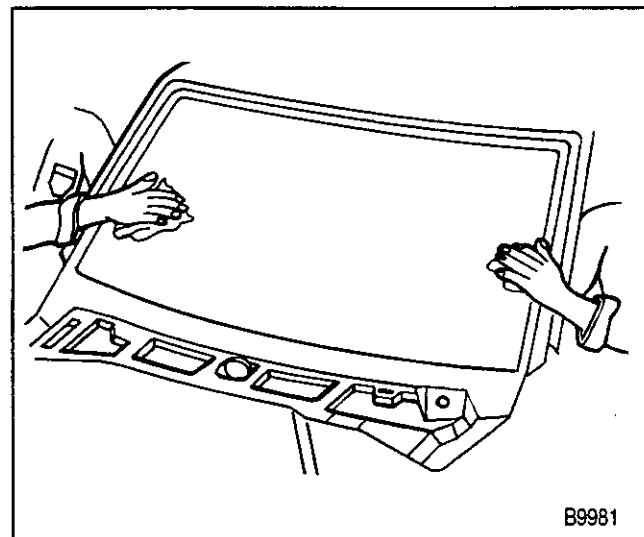


Figure 4—Glass Installation

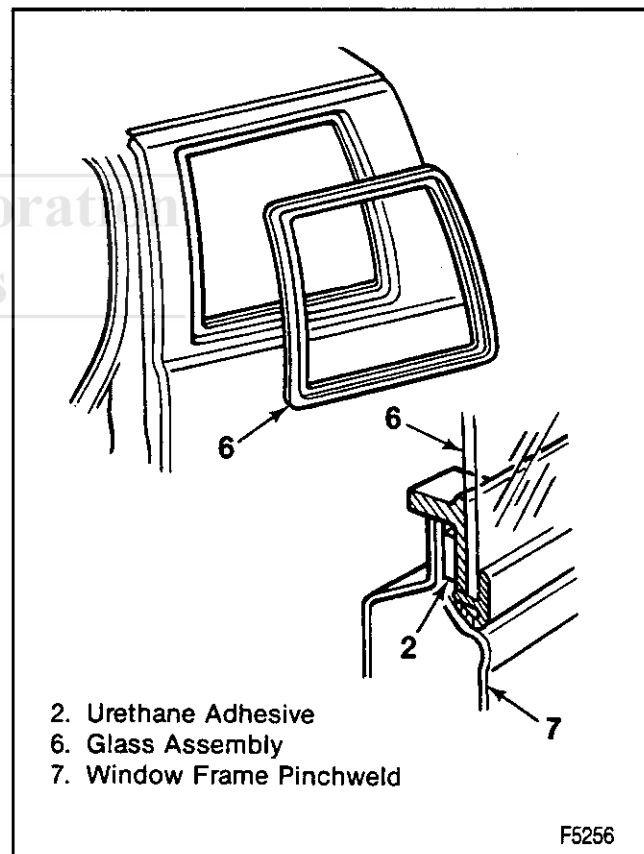


Figure 5—Extended Cab Stationary Body Side Glass

4. Windshield.
  - Drill or punch a hole in the center of each tab at the bottom of the windshield.
  - With the aid of a helper, lift the windshield into place.
  - Align the groove in each upper outer edge of the windshield molding with the door edge.
5. Windshield stop screws.
6. Rear view mirror.
7. Windshield pillar trim and door weatherstrip.
8. Speaker grilles.



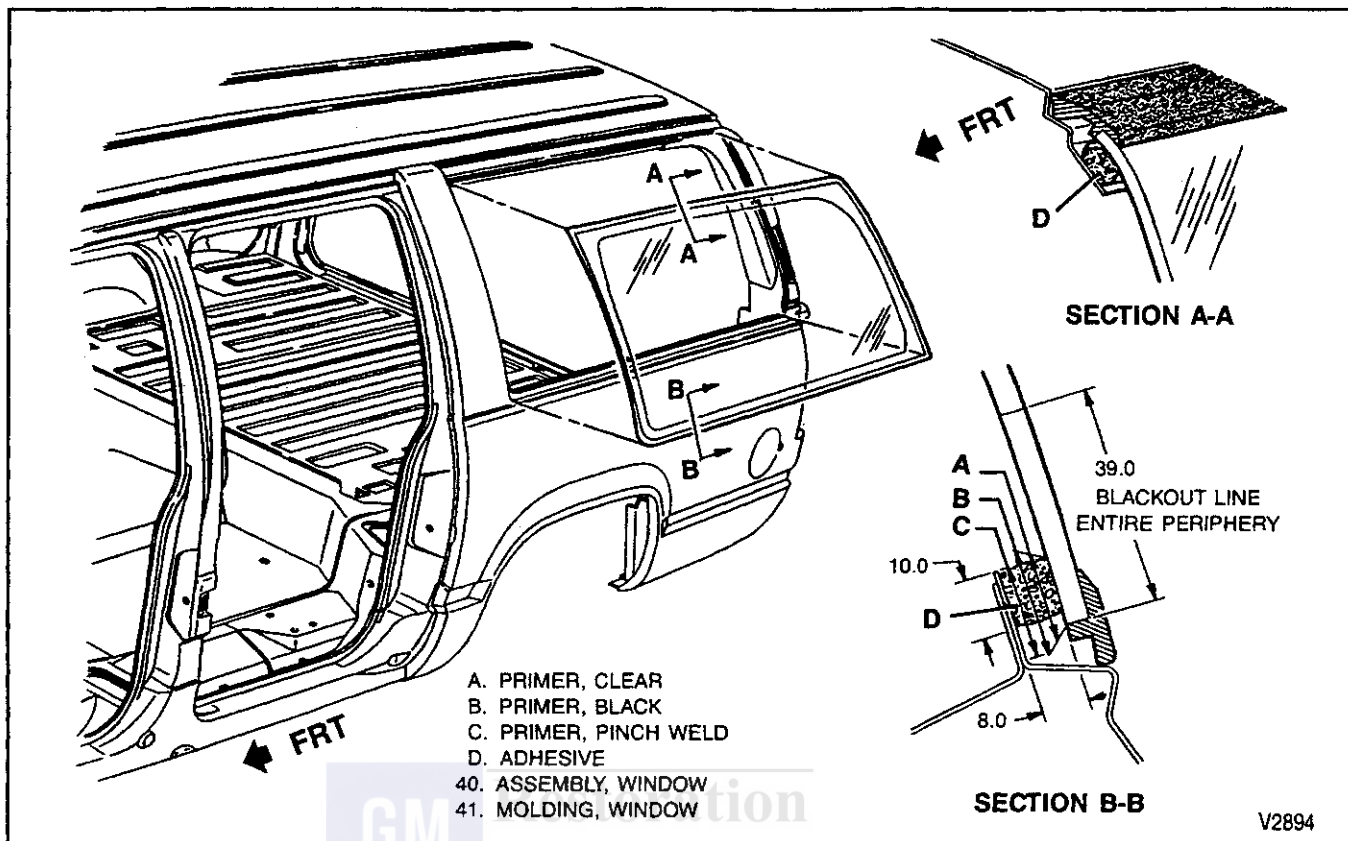


Figure 6—Stationary Body Side Glass

9. Cowl vent grille.
10. Windshield wiper arms.
11. Radio antenna mast.
12. Windshield garnish moldings.

**NOTICE:** Until the new urethane has cured, air pressure from a closing door may cause the windshield to move. To prevent this, lower one window several inches before closing the door.

- Allow the vehicle to stand for several hours for the adhesive to dry.
- Test the windshield for water leaks. Refer to "Water Leak Tests."

## STATIONARY BODY SIDE WINDOW REPLACEMENT

**CAUTION:** Always wear heavy gloves and safety glasses when handling glass to minimize the risk of injury.

### Remove or Disconnect (Figures 5 and 6)

Tools Required:  
J-24709-01, Urethane Glass Sealant Remover—Hot Knife.  
J-24402-A, Glass Sealant Remover Knife.

1. Quarter trim panel from around the window frame. Refer to SECTION 10A4.
2. Molding from the glass with a razor knife.

3. Window glass assembly using J-24709-01 or J-24402-A.

- Wipe away loose adhesive from the frame with a dry cloth.

### Install or Connect (Figures 5, 6, and 7)

1. Body primer on the pinchweld flange in areas where the paint has come off.
  - Use the GM repair kit, P/N (12345633), or equivalent, which contains the proper primers and adhesive.
  - Allow the primer to dry.
2. Clear primer to the window covering an area of 18 mm (3/4 inch) from the edge of the glass (figure 6 and 7).
  - Wipe primer dry immediately.
3. Black primer to the same area as the clear primer.
  - Allow the primer to dry.

**CAUTION:** Refer to "Caution" on page 10A3-1.

4. Urethane adhesive bead to the body to fill in any gaps in the old adhesive.
  - Apply a light hand pressure to the glass to wet-out the adhesive and to bond the glass to the pinchweld.
5. Quarter trim panel. Refer to SECTION 10A4.
  - Allow the adhesive to dry for several hours and then test the window for water leaks. Refer to "Water Leak Test."

## 10A3-6 WINDOWS

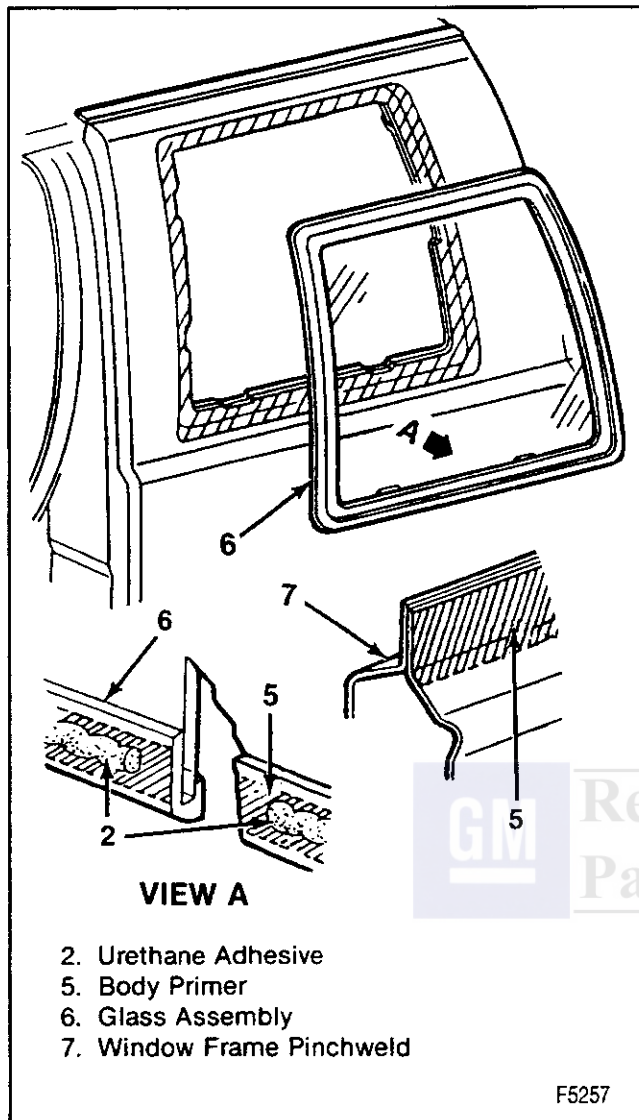


Figure 7—Primer and Adhesive Application Points

### BODY SIDE LATCHED WINDOW REPLACEMENT

The latched side window is a one-piece assembly that includes the window, molding, hinges, and latch assembly.

#### ↔ Remove or Disconnect (Figures 8 and 9)

1. Latch rivets.
2. Hinge rivets.
3. Window assembly.

- Do not replace the weatherstrip unless it is damaged.

#### ↔ Install or Connect (Figures 8 and 9)

1. Window assembly.
2. Hinge rivets.
3. Latch rivets.

### REAR WINDOW REPLACEMENT

#### ↔ Remove or Disconnect (Figure 10, 11 and 12)

**CAUTION:** Always wear heavy gloves and safety glasses when handling glass to minimize the risk of injury.

**NOTICE:** If a glass is cracked but still intact, it should be crisscrossed with masking tape to reduce the risk of damage to the vehicle.

- On a window with a defogger, unclip the connector at the left and right side of the window from the inside of the cab.
  - Remove all trim panels necessary to gain access for rear window removal. Refer to SECTION 10A4 for the trim panel removal procedures.
1. Molding from the glass with a razor knife.
  2. Glass assembly from the window frame using J-24709-01 or J-24402-A.
    - With a helper standing outside the cab, push the window out from the inside.
    - Wipe away the loose adhesive from the frame with a dry cloth.

#### ↔ Install or Connect (Figure 10, 11, and 12)

1. Body primer to the pinchweld flange in areas where the paint has come off.
  - Use the GM repair kit P/N (12345633) or equivalent that contains the proper primers and adhesive.
  - Allow the primer to dry.
2. Clear primer to the window covering an area of 18 mm (3/4 inch) from the edge of the glass.
  - Wipe off immediately.
3. Black primer to the same area as the clear primer.
  - Allow the primer to dry.

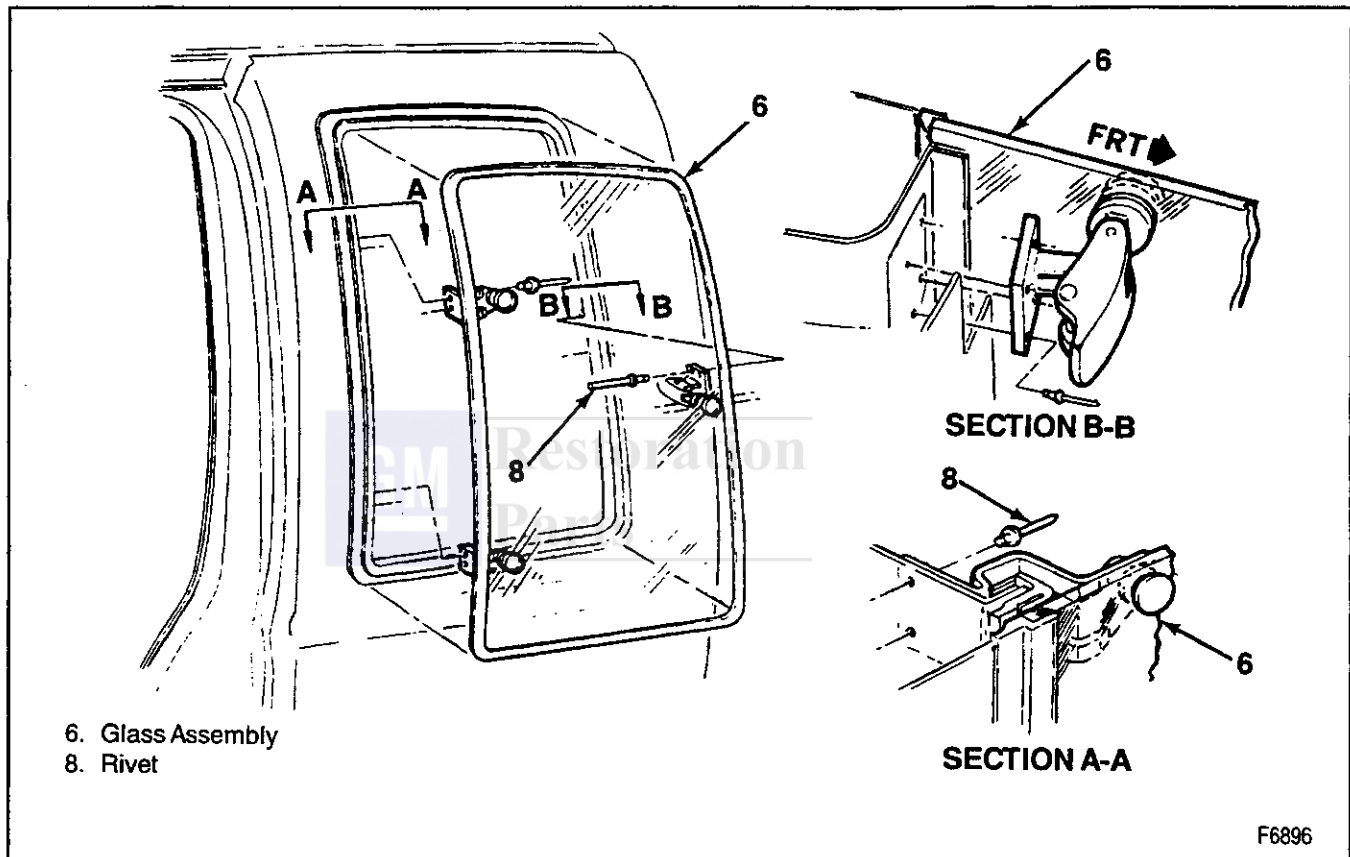
**CAUTION:** Refer to "Caution" on page 10A3-1.

4. Urethane adhesive bead to the body to fill in any gaps in the old adhesive.
5. Window.
  - On windows with defoggers, connect the clips on each side of the window on the inside to the body connectors.
  - Install all trim panels that were removed to gain access for rear window removal.
  - On sliding windows, be sure the two tabs on the bottom of the window are positioned in the slots on the body before installing the window.

### REAR WINDOW DEFOGGER SYSTEM

The optional defogger consists of a heating element bonded to the inside surface of the rear glass. This unit uses an instrument panel mounted switch with an integral indicator lamp and will operate for 5 to 10 minutes and will then turn off by automatic timer. The system can be turned off during this operating period by manually shutting off the defogger switch or turning off the ignition switch. When activated, an indicator light is illuminated. A 12-volt current flows through the relay and





**Figure 8—Body Side Latched Window Components**

out to the resistive heating elements on the rear window. The current enters the grid from the left side of the window and leaves the grid heater from the right side of the window. The ground circuit is on the right side of the cab.

The length of time required to remove interior fog varies under such conditions as vehicle speed, outside

glass temperature, atmospheric pressure, and number of passengers.

The rear window harness plugs into connector at the fuse panel and leads to the instrument panel mounted switch. The harness then continues from the switch routed along the left rocker panel area to the rear of the cab. At this point it is routed up to where it meets the grid connector at the back glass.

## 10A3-8 WINDOWS

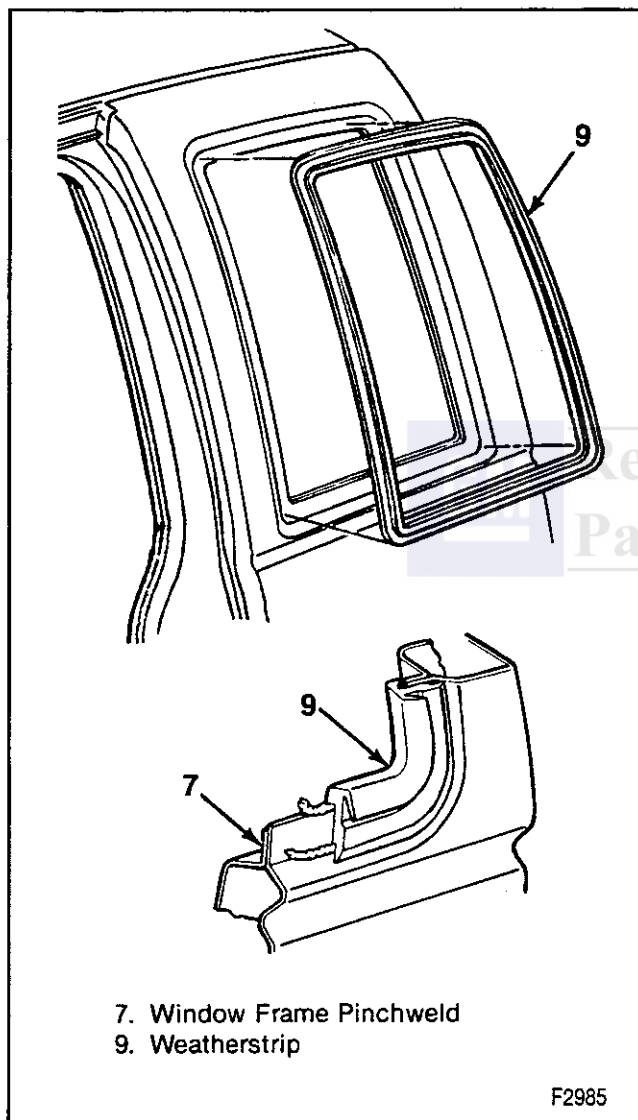


Figure 9—Side Latched Window Weatherstrip

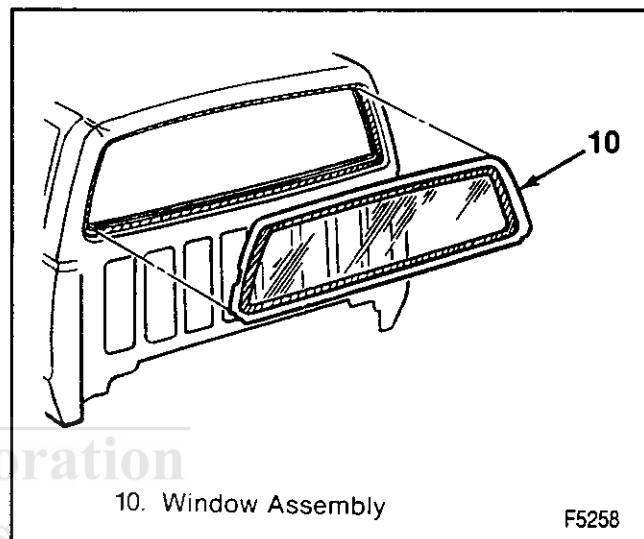


Figure 10—Rear Window Assembly Pickup

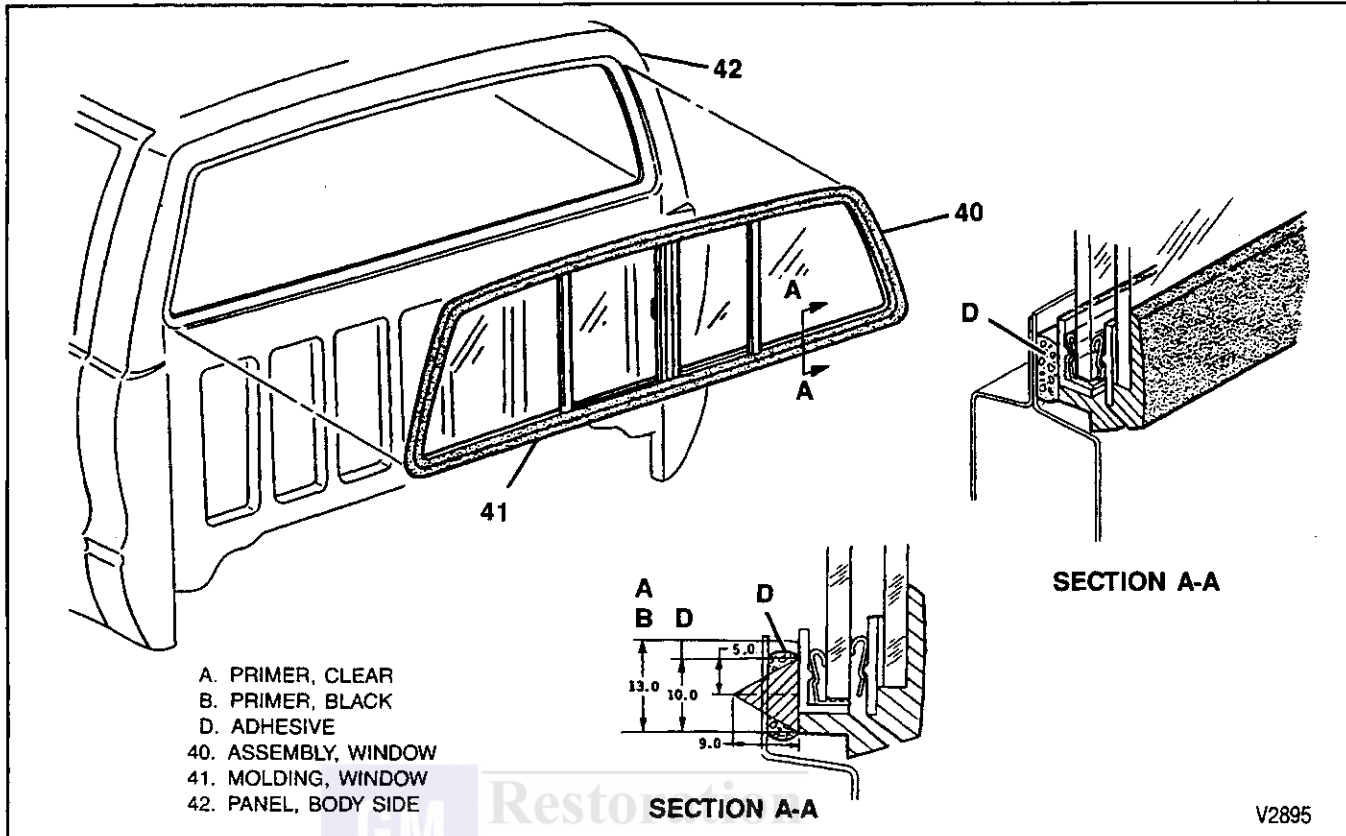


Figure 11—Rear Sliding Glass Window Assembly-Pickup

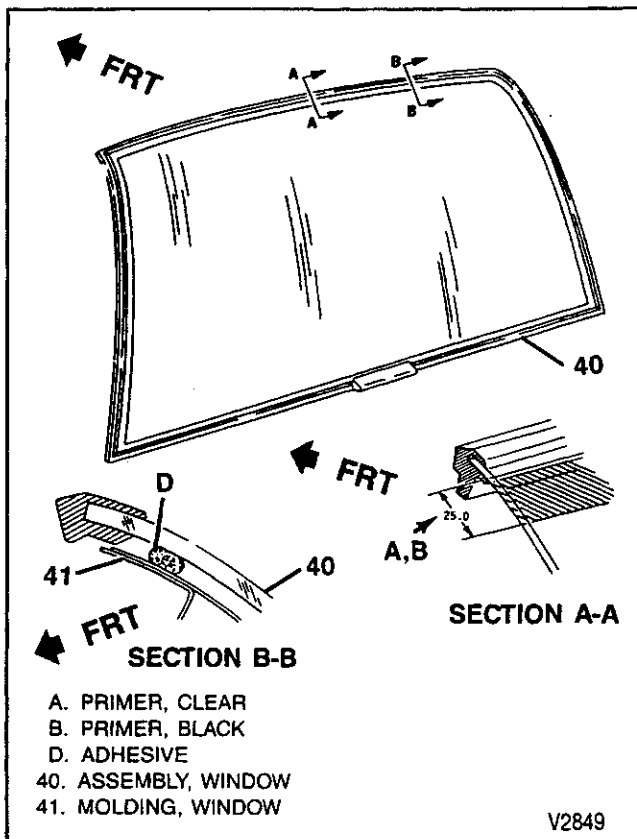


Figure 12—Rear Window Assembly Surburban and Utility

## DIAGNOSIS OF THE REAR WINDOW DEFOGGER SYSTEM

PROBLEM	POSSIBLE CAUSE	CORRECTION
<b>System Won't Heat The Window</b>	<ol style="list-style-type: none"> <li>1. Blown fuse.</li> <li>2. Broken switch.</li> <li>3. Circuit is open.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the fuse with a fuse of the correct rating.</li> <li>2. Test the switch for conduction. Replace the switch if necessary.</li> <li>3. Test for voltage at the left connection of the window. If voltage is present, check the ground circuit. If voltage is not present, test the relay for operation and voltage. If the relay voltage is present, find the open in the harness between the relay and the heater.</li> </ol>
<b>System Won't Turn On. The Indicator Lamp Is Off.</b>	<ol style="list-style-type: none"> <li>1. Blown rear window defogger fuse.</li> <li>2. Relay is faulty.</li> <li>3. Switch is faulty.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the fuse with a fuse of the correct rating.</li> <li>2. Make sure the relay is firmly seated in its socket. Jump the ORN/BLK wire to the LT BLU wire. The relay should click. If the relay clicks, find the open between the switch and the relay if the relay doesn't click, replace the relay.</li> <li>3. Test the switch with a test lamp. Replace the switch with a test lamp. Replace the switch if it's proven faulty.</li> </ol>
		D0102

### TESTING REAR WINDOW DEFOGGER GRID LINES

1. Start the engine and turn on the defogger system.
2. Ground an unpowered test lamp and lightly touch the prod tip to each grid line.
  - Move the lamp from the feed wire side to the grounded side of each grid. The lamp should be fully bright then gradually dim as it is moved across the grid. Be sure to check each grid line in at least two places to avoid the possibility of bridging a gap (figure 13).
3. If the test lamp shows full brilliance at both ends of the grid line, check for a loose ground wire connection to the sheet metal.
4. If the lamp suddenly goes out as it is moved across the grid, a break has been located.

### GRID LINE REPAIR

Tools Required:  
 Rear Window Defogger Repair Kit (P/N 12345345)  
 Heat Gun - capable of reaching 260° C (500° F)

#### Remove or Disconnect

Negative battery cable(s). Refer to SECTION 0A.

#### Inspect

Rear window defog lines. (Mark the grid line breaks on the outside of the window with a grease pencil).

#### Clean

The grid line area to be repaired. Buff with steel wool and wipe clean using a cloth dampened with alcohol. Buff and clean about 6 mm (0.25 in.) beyond each side of the break in the grid line. Be sure the glass is at room temperature.

#### Install or Connect

1. Grid line repair template or two strips of tape positioned above and below the repair area. Repair template or tape **MUST** be used to control the width of the repair area. If the template is used, be sure the die cut metering slot is the same width as the grid line.

**CAUTION:** Keep the repair material away from heat, sparks or open flame, since the material is flammable. Avoid breathing the vapor, or allowing it to contact skin or eyes, since it can cause irritation.

2. The grid repair material at room temperature to the repair area using a small brush (figure 14).

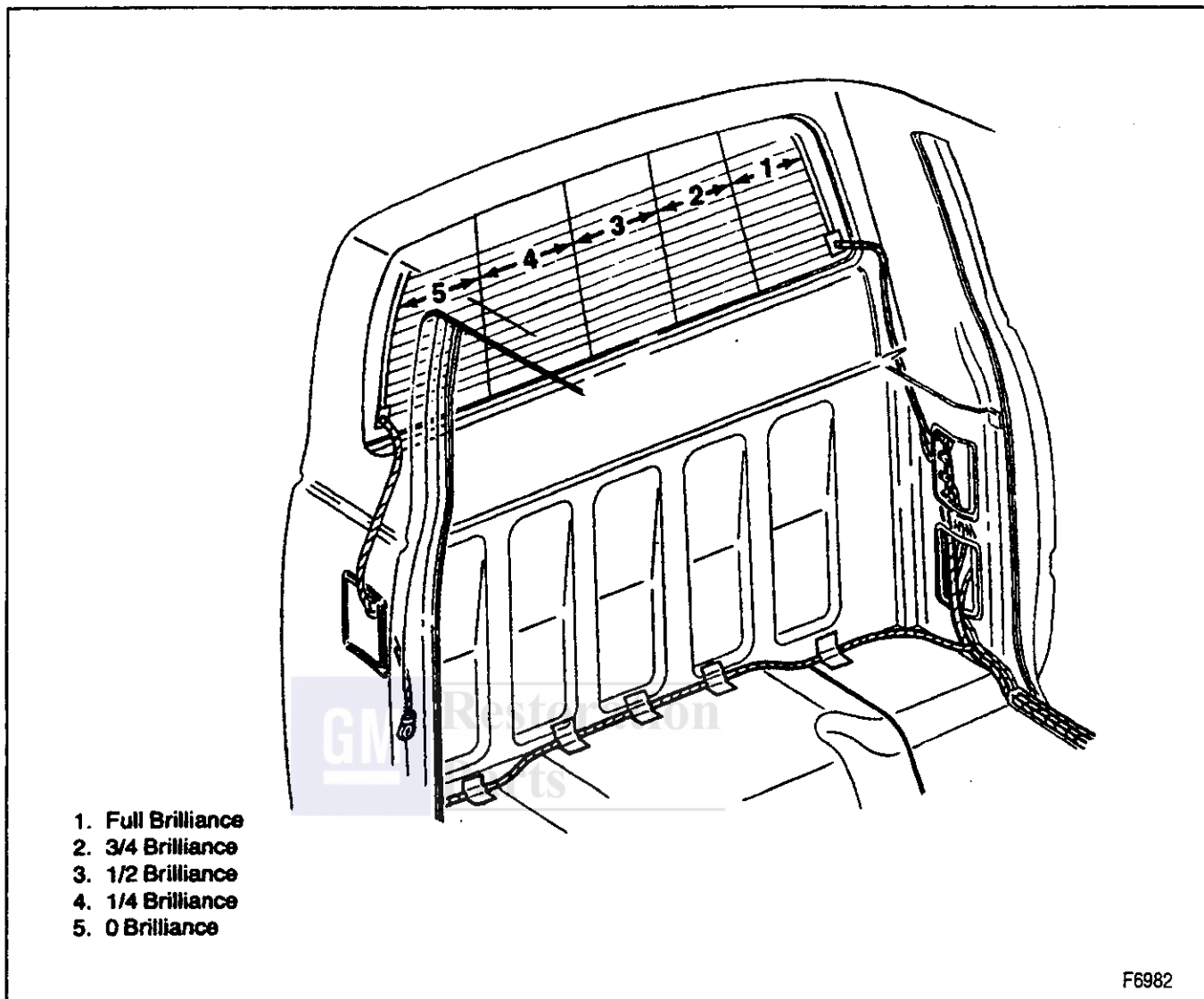


Figure 13—Test Lamp Brilliance Zones - Normal Operating Rear Window

3. Remove the template or tape carefully.

**NOTICE:** The grid line repair material must be cured with heat. To avoid heat damage to the interior trim, protect the trim near the repair where heat is applied.

4. Holding the heat gun 25 to 50 mm (1 to 2 inches) from the repair area, apply heat at 260° - 370° C (500° to 700° F) for 2 to 3 minutes (figure 15). If a heat gun is not available, allow the repair to air dry at an ambient temperature of 20° to 39° C (70° to 90° F) for 24 hours.

5. Negative battery cable(s).



**Inspect**

1. Grid line repair area. If the repair appears discolored, apply a coat of tincture of iodine to the repair area using a pipe cleaner or a fine brush. Allow iodine to dry for about 30 seconds and carefully wipe off the excess with a lint-free cloth.

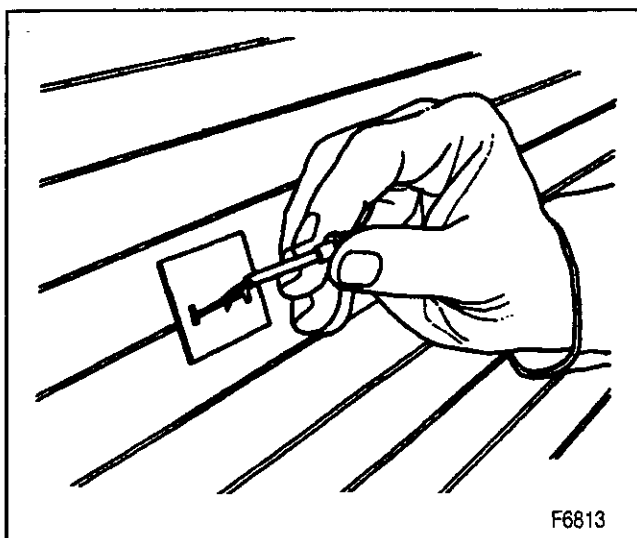


Figure 14—Apply Grid Material to a Broken Grid Line

## 10A3-12 WINDOWS

2. Test the defogger operation to verify grid line repair.
3. Leave the grid area untouched for 24 hours.

### BRAIDED LEAD WIRE REPAIR

1. The rear defogger bus bar lead wire or terminal can be reattached by soldering using a solder containing 3 percent silver and a rosin flux paste.
2. Before soldering the bus bar, the repair area should be buffed with fine steel wool. This removes the oxide coating formed during the glass manufacture.
3. Apply the paste-type rosin flux in small quantities to the wire lead and bus bar repair area using a brush.
4. The soldering iron tip should be coated with solder beforehand. Use only enough heat to melt the solder and only enough solder to ensure a complete repair.
5. Do not overheat the wire when resoldering it to the bus bar.

### WINDOW POLISHING

#### MINOR SCRATCH AND ABRASION REMOVAL

Minor scratches and abrasions can be removed or reduced by following the procedure outlined below. Precautions must be taken to prevent distortions of vision. Double vision may result if an attempt is made to remove deep scratches. Deep scratches should not be removed from an area in the driver's line of vision; in such cases, the glass should be replaced.

The procedure that follows was developed using a cerium oxide compound. Follow manufacturer's directions if other materials are used.

#### Recommended Equipment

1. A low speed (600-1300 rpm) rotary polisher.
2. A wool felt, rotary polishing pad 7 mm (three inches) in diameter and 51-mm (2 inches) thick.

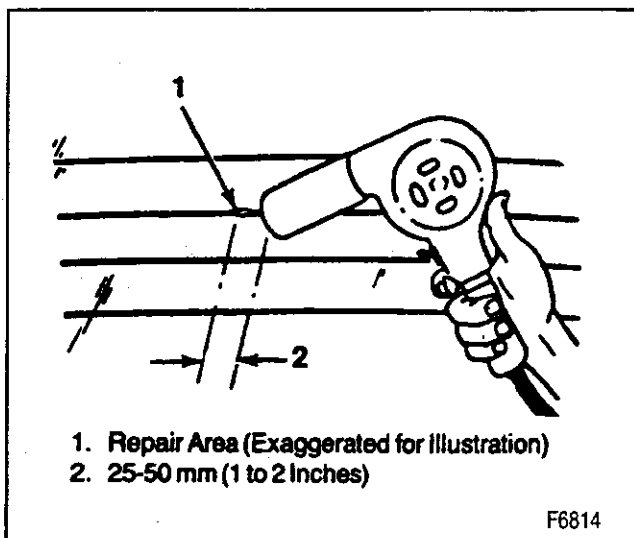


Figure 15—Applying Heat to the Grid Line Repair

3. Powdered cerium oxide mixed with water. This is the abrasive compound.
4. A wide mouth container to hold the abrasive compound.

#### Polishing Procedure (Figure 16)

1. Mix at least 44 ml (1.5 oz.) of cerium oxide with enough water to obtain a creamy consistency. (If the mixture is too thick it will cake on the felt pad more quickly. If it is too runny, more polishing time will be needed.)
2. Draw a circle around the scratches on the opposite side of the glass with a marking crayon or equivalent.
3. Draw a line directly behind the scratch(es) to serve as a guide for locating the scratch while polishing.
4. Cover the surrounding area with masking paper to catch the drippings or spattered polish.
5. Dip the felt pad attached to the polisher into the mixture. Do not submerge the pad or 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 glass any longer than 30 to 45 seconds. If the glass becomes hot to touch, let it air cool before proceeding further. Cooling with cold water may crack heated glass. Avoid excessive pressure. It may cause overheating of the glass.

6. Polish the scratched area, but note the following:
  - Agitate the mixture as often as needed to maintain the creamy consistency of the compound.
  - Use moderate but steady pressure.
  - Hold the pad flat against the glass.
  - Use a feathering-out motion.
  - Dip the pad into the mixture every 15 seconds 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.

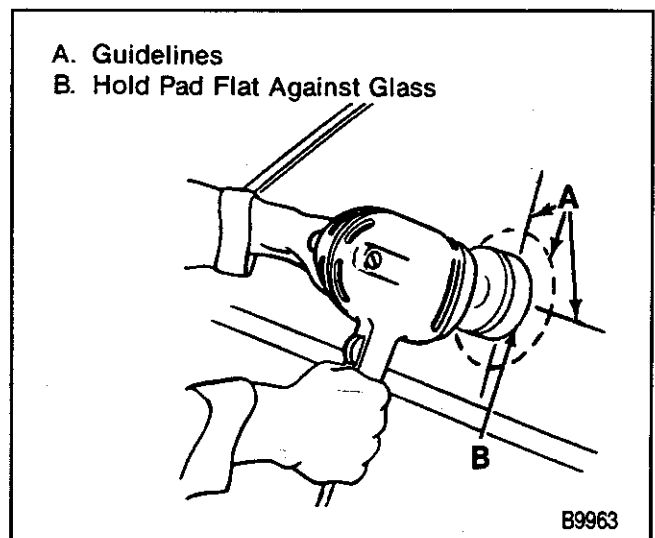


Figure 16—Window Polishing

## WATER LEAK TESTS

Various methods can be used to check for water leaks after the window adhesive has been allowed to dry. Use the first test method whenever possible for generalized testing since it provides a large volume of water to a general area without exceeding the sealing limitations of the glass. Once the leak area has been found, locate the exact entry point by using the water hose or air hose test.

### CHECKING WITH WATERTEST STANDS

To assemble watertest stands, refer to figure 17. Use them as follows.

1. Position the stands as shown in figures 18 and 19. Water spray from the stands should overlap on the vehicle.
2. Run the water at a volume of 14 liters (3.7 gallons) per minute and at a pressure of 155 kPa (22 psi) (measured at the nozzle) for at least 4 minutes.
3. Have someone inside the cab during the test to check for the location of any leaks.
4. To check the windshield, the water spray should be aimed 30 degrees down and 45 degrees toward the rear. Aim at the corner of the windshield (figure 19).
5. To check the side windows, the water spray should be aimed 30 degrees down and 45 degrees toward the rear. Aim at the center of the rear quarter.
6. To check the back window, aim the water spray 30 degrees down and 30 degrees toward the front.

### WATER HOSE TEST

Run water through a hose without the nozzle attached. Begin testing at the base of the window or windshield and slowly move the hose upward and across the top. Have someone in the vehicle watch for leaks.

### AIR HOSE/BUBBLE SOLUTION TEST

Put liquid detergent diluted with water in a squirt bottle. Have a helper inside the cab with an air hose. Beginning at the bottom of the window and gradually moving up the window edges and across the top, squirt soap solution on the window moldings and glass on the outside of the vehicle. Have a helper aim the compressed air at the same locations from the inside of the vehicle. Air pressure from the hose should not exceed 205 kPa (30 psi). Bubbles will form in the soap solution at the location of the leak.

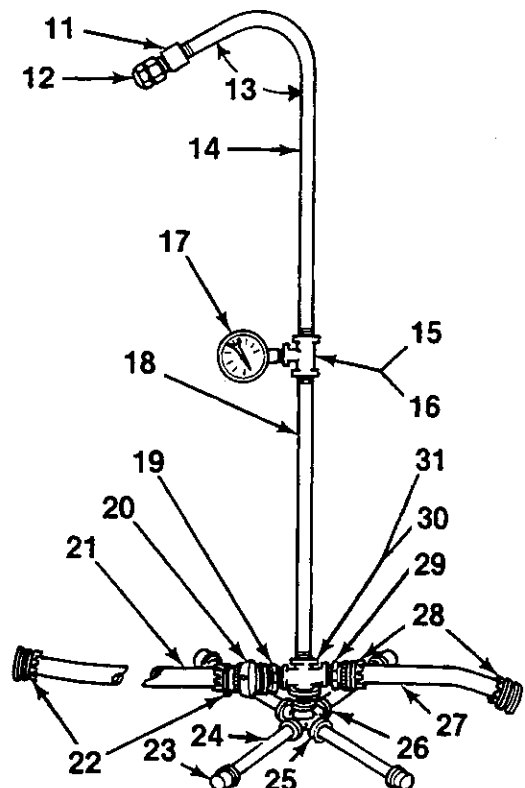
## WINDSHIELD WATER LEAK REPAIR

Depending on where the leak is located, it may be necessary to remove trim molding or the headliner to repair the leak. Refer to SECTION 10A4 for removal procedures.

1. Determine the source of water entry.

**CAUTION:** Refer to "Caution" on page 10A3-1.

11. 0.5 inch Coupling
12. "Full Jet" Spray Nozzle No. 1/2GG-25 or Equivalent.
13. 60 degrees
14. 0.5 inch x 36 inch Pipe
15. 0.5 inch by 0.5 inch by 0.25 inch Reducing Tee (Right Stand Only)
16. 0.5 inch Coupling (Left Stand Only)
17. Water Pressure Gage (Right Stand Only)
18. 0.5 inch x 60 inch Pipe
19. 0.5 inch Pipe to Hose Nipple
20. Hose Quick Connect
21. 12 foot Cross Hose (5/8 inch Diameter)
22. 5/8 inch Female Hose Coupling
23. 0.5 inch Cap
24. 0.5 inch by 12 inch Nipple
25. 0.5 inch Cross with Weld-On 0.5 inch Cap
26. 0.5 inch Close Nipple
27. 2.0 foot Input Hose (5/8 inch Diameter) (Right Stand Only)
28. 5/8 inch Female Hose Coupling
29. 0.5 inch Pipe to Hose Nipple (Right Stand Only)
30. 0.5 inch Tee (Left Stand Only)
31. 0.5 inch Cross (Right Stand Only)



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**Figure 17—Watertest Stand Assembly**



## 10A3-14 WINDOWS

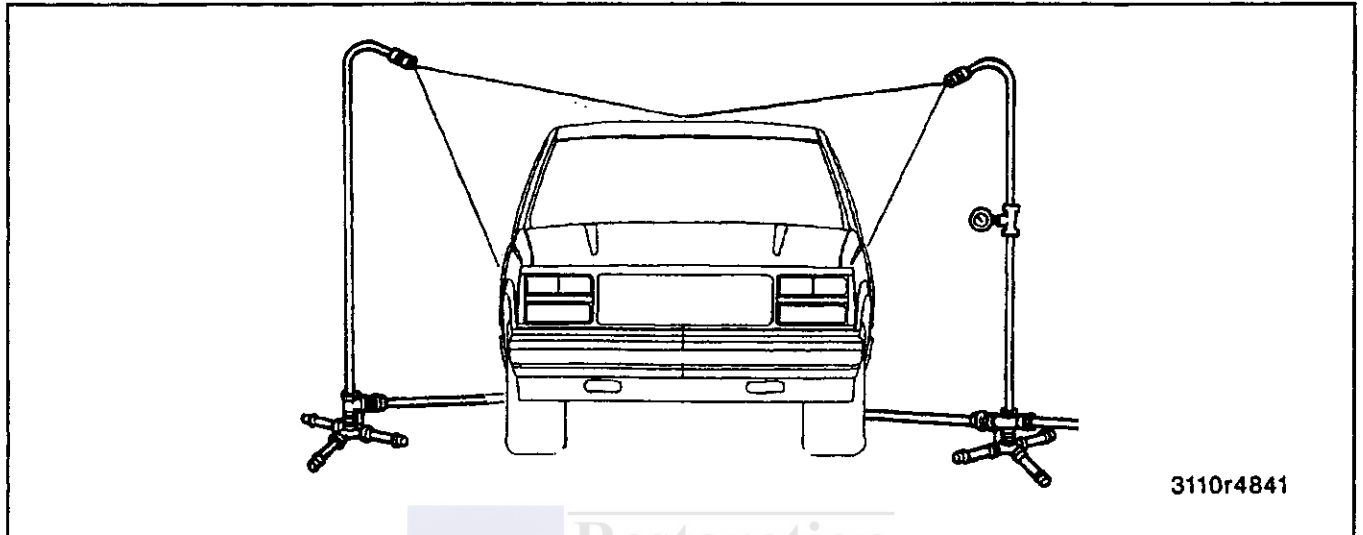


Figure 18—Water Leak Test Stands

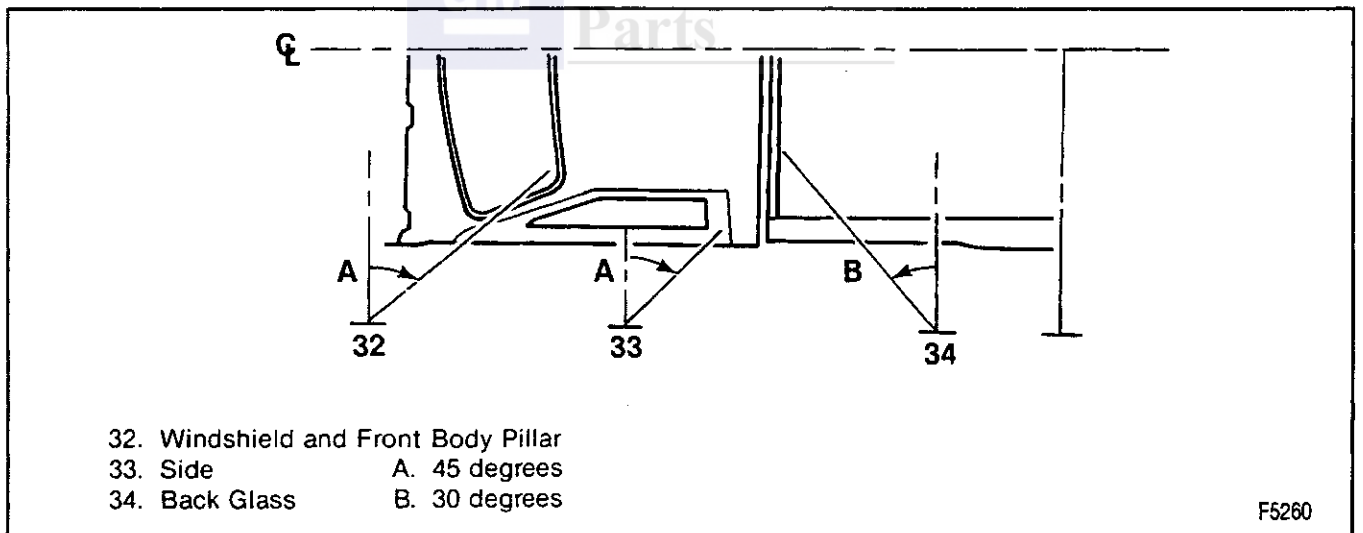


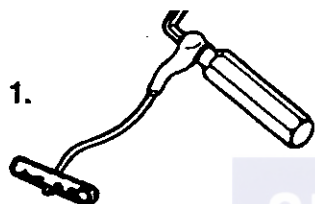
Figure 19—Water Leak Test with Test Stands

2. If water is leaking at the edge of the windshield, reseal it using "Windo-Weld Resealant" P/N 08633 and applicator gun 3M 08992 or equivalent. Use a "duck bill" applicator tip to inject the sealant under the molded glass seal.

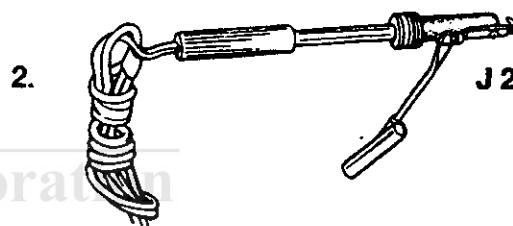
3. If water is leaking into the vehicle at the sides of the glass use 3M "Super Fast" urethane auto glass sealant P/N 08609 or equivalent.



## **SPECIAL TOOLS**



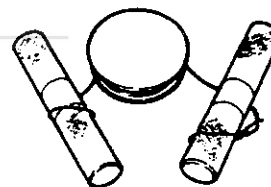
**J 24402-A**



**J 24709-01**

- 1. Glass Sealant Removal Knife
- 2. Urethane Glass Sealant Remover
- 3. Allante Windshield Remover

3.



**J 36020**

## **10A3-16 WINDOWS**

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### **NOTES**



## SECTION 10A4

# INTERIOR TRIM

**NOTICE:** When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

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## ON-VEHICLE SERVICE

### HANDLING ELECTROSTATIC DISCHARGE (ESD) SENSITIVE PARTS

Many solid state electrical components, such as those found in the instrument panel and the radio, can be damaged by electrostatic discharge (ESD). Some will display a label, but many will not (figure 1).

**NOTICE:** In order to avoid possibly damaging any components, observe the following:

1. Body movement produces an electrostatic charge. To discharge personal static electricity, touch a ground point (metal) on the vehicle. This should be done any time you:
  - Slide across the car seat.
  - Sit down or get up.
  - Do any walking.
2. Do not touch exposed electric terminals on components with your finger or any tools. Remember, the connector that you are checking might be tied into a circuit that could be damaged by electrostatic

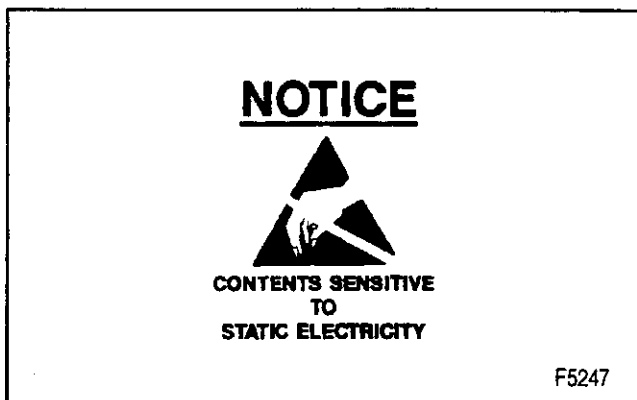


Figure 1—Electrostatic Discharge Parts Symbol

discharge.

3. When using a screwdriver or similar tool to disconnect a connector, never let the tool come in contact with or come between the exposed terminals.
4. Never jump, ground, or use test equipment probes on any components or connectors unless specified in diagnosis. When using test equipment, always connect the ground lead first.
5. Do not remove the solid state component from its protective packaging until you are ready to install the part.
6. Always touch the solid state component's package to a ground before opening. Solid state components can also be damaged if:
  - They are bumped or dropped.
  - They are laid on any metal work benches or components that operate electrically, such as a TV, radio, or oscilloscope.

### INSTRUMENT PANEL AND CARRIER ASSEMBLY REPLACEMENT

The instrument panel carrier is designed not only to access parts through removal of carrier components, but the carrier will also tilt down as a complete assembly to allow access from the top. Remove the retainer screws along the dash pad by the windshield. They are found under the speaker covers and along the defroster duct. The instrument panel will then tilt as an assembly into the cab. It is necessary to lower the steering column from the carrier to allow maximum movement of the instrument panel.



#### Remove or Disconnect (Figures 2 through 6)

1. Negative battery cable(s). Refer to SECTION 0A.
  - Pry out the stop cable retainer for the compartment door (figure 3).
2. Center accessory plate next to the compartment door, by lifting from the bottom.
3. Bolt attaching the lower left compartment door to the carrier.
4. Compartment door.
5. Four bolts holding the compartment to the carrier.
6. Compartment.
  - Open the ash tray assembly (figure 4).
7. Screws holding the tray to the carrier.
8. Tray assembly from the vehicle.

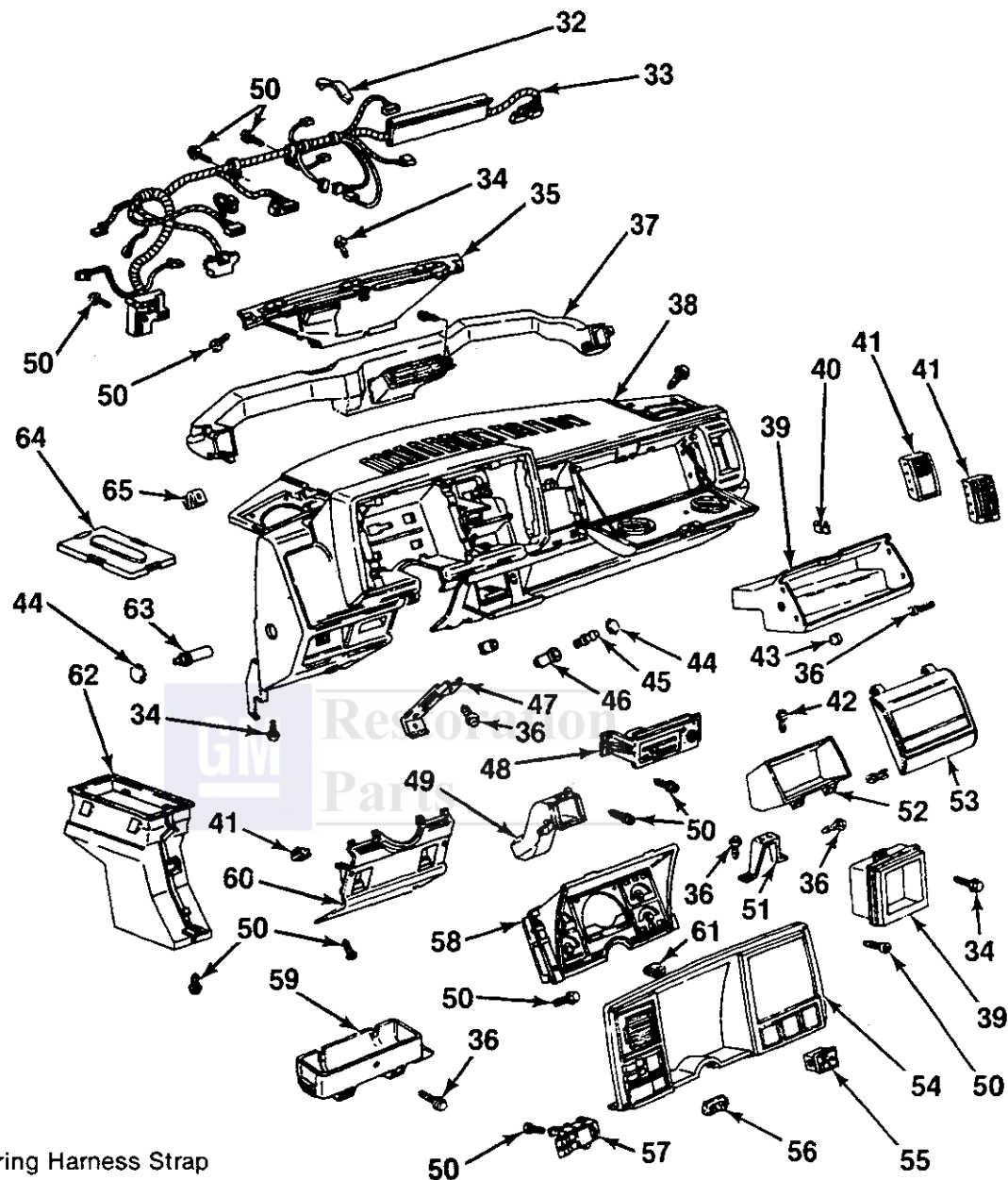
9. Wiring connector from the back of the assembly.
10. Four screws holding the bezel to the instrument panel carrier (figure 4).
11. Bezel from the instrument panel.
12. Headlamp switch connector.
13. Cargo lamp connector (if present).
14. Radio control.
15. Four screws retaining the heater control.
16. Wiring connector behind the heater control.
17. Heater control (figure 2).
18. Two screws retaining the steering column filler panel (figure 2).
19. Filler panel.
20. Shift indicator cable from behind the instrument cluster.
21. Instrument cluster. Refer to SECTION 8C.
22. Air duct and two bolts (figure 2).
23. Bolts retaining the instrument panel pod and trim.
24. Pod and trim (figure 3).
25. Lower trim panels (figure 3).
26. Speaker covers by prying up.
27. Five upper carrier screws.
  - One from under each speaker cover.
  - Three in the defroster vent grille.
28. Parking brake handle and cable from the ratchet assembly.
29. Two bolts retaining the hood release handle.
30. Hood release handle.
31. Two screws retaining the data link connector under the left side of carrier.
32. Data link connector.
33. Door jamb switch.
34. Fuse box cover.
35. Screw holding the carrier to the instrument panel support.
36. Nut from each side of the steering column.
  - Lift the steering column from the support studs and lower it.
37. Left and right kick pads by prying them off.
38. Snap clips and bolts from the left and right bracket mounted studs, supporting the carrier (figure 5).
39. Lift off the carrier.
40. Wiring harnesses from the loom at the back of the carrier.
41. Connector to the instrument panel compartment lamp at the back of the carrier.
42. Five bolts holding the A/C duct to the carrier.
43. A/C duct (if present).
44. All wiring harnesses from behind the left side of the carrier.
45. Ground wire at the back of the carrier.
46. Carrier from the vehicle.



#### Install or Connect (Figures 2 through 6)

**NOTICE:** For steps 10, 12, 32, and 37, refer to "Notice" on page 10A4-1.

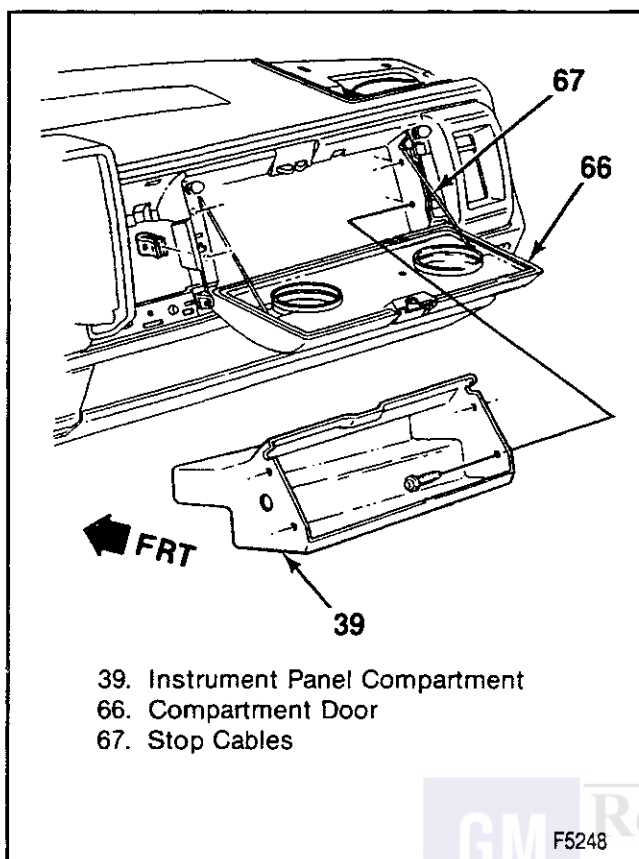
1. Carrier to the cab.
2. Wiring harness connectors to the back of the carrier.
3. Ground wire.
4. Two bolts retaining the wiring harnesses.



- |                                  |                                 |                                     |
|----------------------------------|---------------------------------|-------------------------------------|
| 32. Wiring Harness Strap         | 46. Lighter Housing             | 57. Headlamp Switch                 |
| 33. Wiring Harness               | 47. Instrument Panel Support    | 58. Instrument Cluster              |
| 34. Bolt                         | 48. Heater Control              | 59. Duct                            |
| 35. Defroster Nozzle             | 49. Outer Air Duct              | 60. Steering Column Filler Panel    |
| 36. Hex Head Screw               | 50. Screw                       | 61. Retainer                        |
| 37. Air Duct                     | 51. Bracket                     | 62. Outside Air Valve (without A/C) |
| 38. Instrument Panel and Carrier | 52. I/P Center Compartment      | 63. Door Jamb Switch                |
| 39. Panel Compartment            | 53. Accessory Plate             | 64. Vent Cover                      |
| 40. Push-On Nut                  | 54. Bezel                       | 65. Nut                             |
| 41. Deflector                    | 55. Rear Window Defogger Switch |                                     |
| 42. Hex Head Bolt                | 56. Cargo Lamp Switch           |                                     |
| 43. Lamp Lens                    |                                 |                                     |
| 44. Plug                         |                                 |                                     |
| 45. Lighter                      |                                 |                                     |

Figure 2—Instrument Panel and Carrier Assembly

## 10A4-4 INTERIOR TRIM



**Figure 3—Instrument Panel Compartment**

5. Door jamb switches to the right and left sides of the carrier.
6. A/C duct to the carrier with five bolts.
7. Connector to the instrument panel compartment lamp.
8. Wiring harness to loom.
9. Carrier brackets to body studs.
10. Bolts through body and carrier brackets.



### Tighten

- Bolts to 20 N.m (15 lbs. ft.).

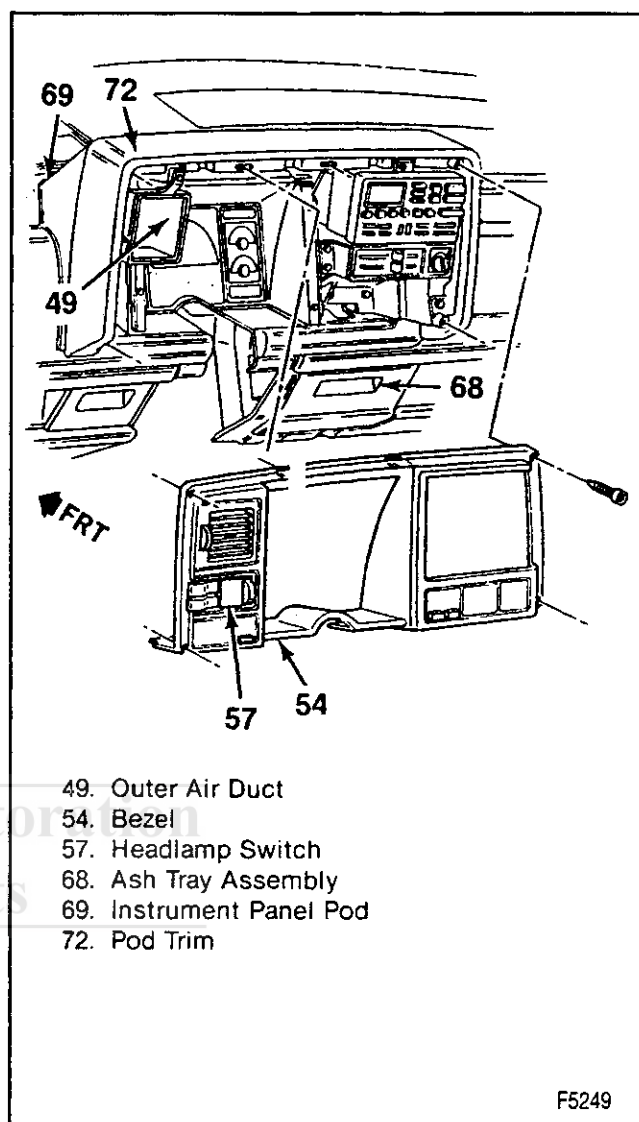
11. Clips over the body bracket studs.
12. Five upper carrier retaining screws.



### Tighten

- Upper carrier screws to 1.9 N.m (17 lbs. in.).

13. Cover over the fuse box.
14. Hood release cable.
15. Data link connector.
16. Parking brake cable.
17. Carrier to instrument panel support.
18. Instrument panel pod and trim.
19. Retaining bolts.
20. Trim panels to the lower left and lower right of the pod.
21. Instrument cluster. Refer to SECTION 8C.
  - Lift the steering column onto the mounting studs.
22. Two nuts holding the column in place.



**Figure 4—Instrument Panel Bezel**

23. Shift indicator connector onto the steering column collar.



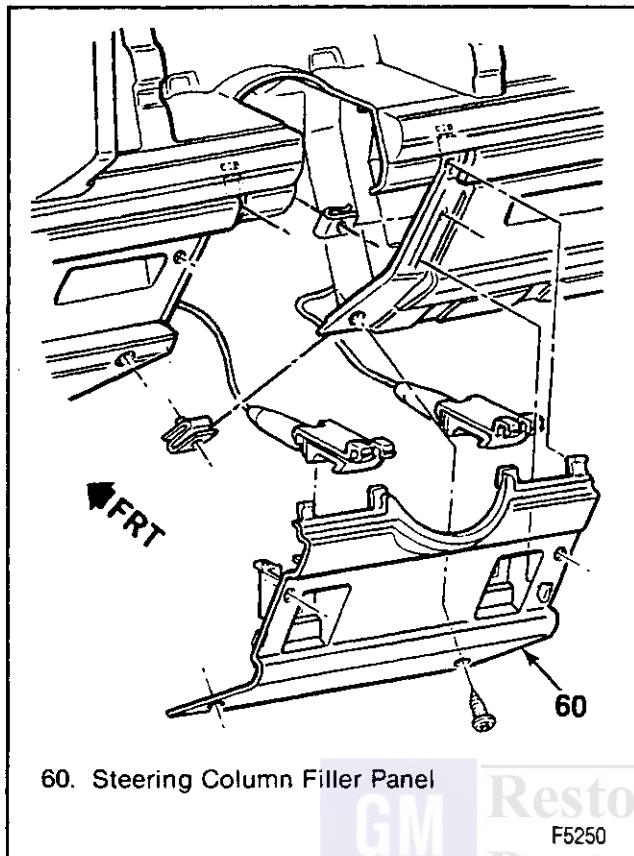
### Adjust

- Cable indicator needle to correct gear.
24. Heater wiring harness to the heater control.
  25. Heater control to the carrier with four screws.
  26. A/C duct to the pad with screws.
  27. Speaker cover to the top of the carrier.
  28. Kick trim panels to the left and right sides of the cab.
  29. Radio controls.
  30. Cargo lamp connector to the switch (if present).
  31. Headlamp connector to the switch.
  32. Instrument cluster bezel on the carrier with four screws.



### Tighten

- Bezel to carrier screws to 1.9 N.m (17 lbs. in.).
33. Steering column filler panel to the carrier.
  34. Ash tray assembly wiring connectors to the cigarette lighter and lamp (if present).



**Figure 5—Steering Column Filler Panel**

35. Strap around the wiring harness to the ash tray assembly.
36. Ashtray assembly to the carrier with four screws.
37. Instrument panel compartment to the right side of the carrier with four bolts.



**Tighten**

- Compartment to carrier bolts to 1.9 N·m (17 lbs. in.).

38. Compartment door to the carrier with one bolt.

39. Compartment door stop cables to the inside of the compartment.
40. Center accessory cover trim plate.
41. Negative battery cable(s).

## CUP HOLDER REPLACEMENT



**Remove or Disconnect (Figure 7)**

1. Bolts from cup holder.
2. Cup holder from instrument panel.



**Install or Connect (Figure 7)**

1. Cup holder to instrument panel.
2. Bolts.



**Tighten**

- Bolts to 1.9 N·m (17 lbs. in.).

## SUNSHADE REPLACEMENT



**Remove or Disconnect (Figure 8)**

1. Retaining screws.
2. Electrical connector if present.
3. Sunshade from roof panel.



**Install or Connect (Figure 8)**

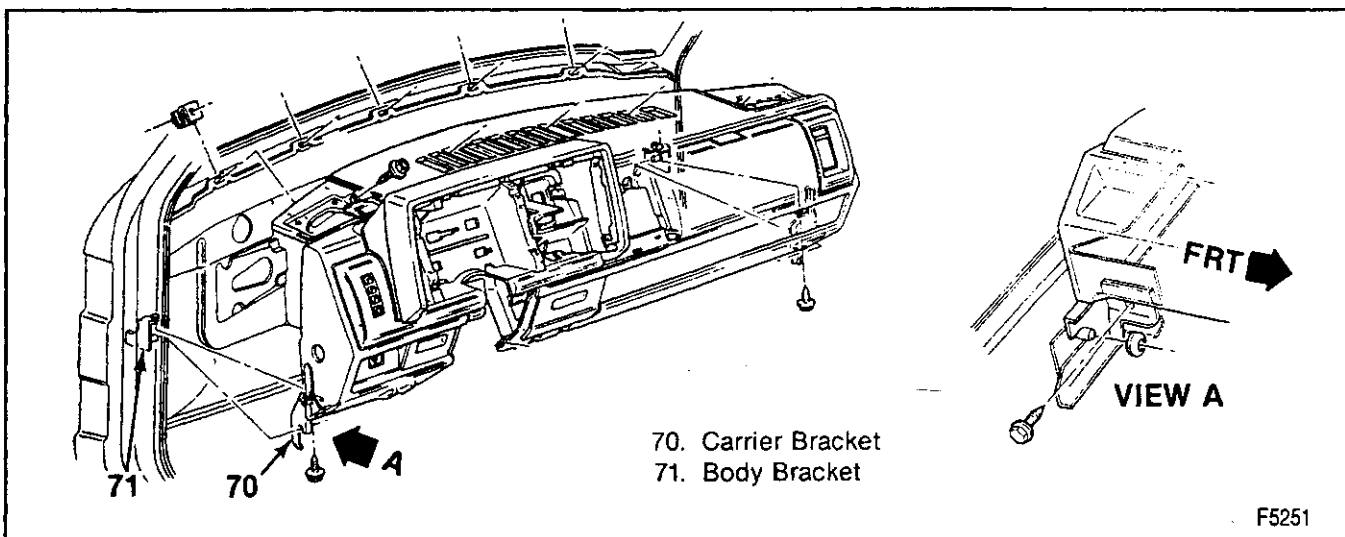
1. Electrical connector if present.
2. Sunshade to roof panel.
3. Retaining screws.

## ASSIST HANDLE REPLACEMENT



**Remove or Disconnect (Figure 9)**

1. Handle screw covers (9).
2. Screws.
3. Handle.



**Figure 6—Carrier Bracket**



## 10A4-6 INTERIOR TRIM

4. Spacers.

### ↔ Install or Connect (Figure 9)

1. Spacers.
2. Handle.
3. Screws.
4. Handle screw covers.

## COAT HOOK REPLACEMENT

### ↔ Remove or Disconnect (Figure 10)

1. Screw from side rear panel.
2. Coat hook.

### ↔ Install or Connect (Figure 10)

1. Coat hook to side rear panel.
2. Screw.

## FRONT FLOOR COMPARTMENT REPLACEMENT

### ↔ Remove or Disconnect (Figure 11)

1. Front tray from the compartment.
2. Storage bin.
3. Two plugs covering the screws.
4. Four screws.

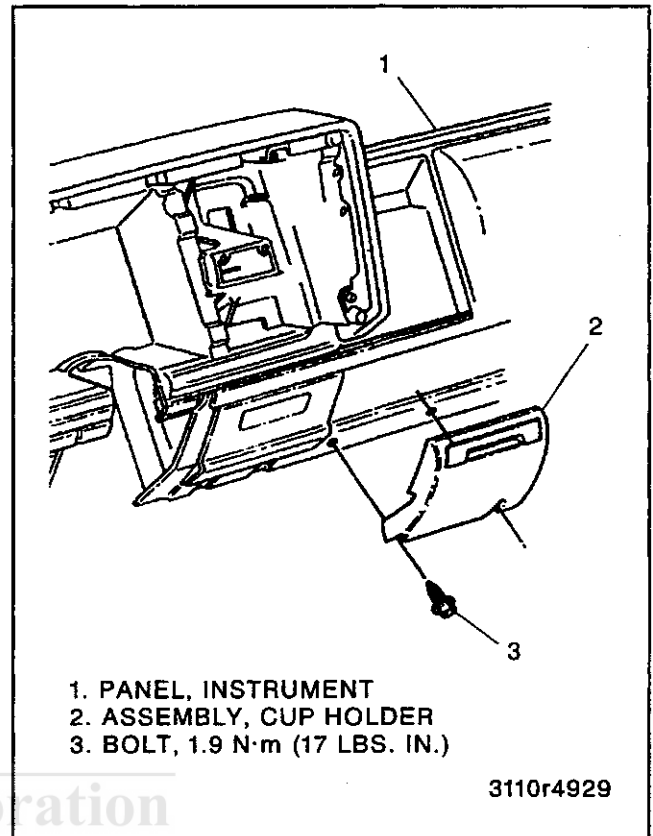


Figure 7—Cup Holder

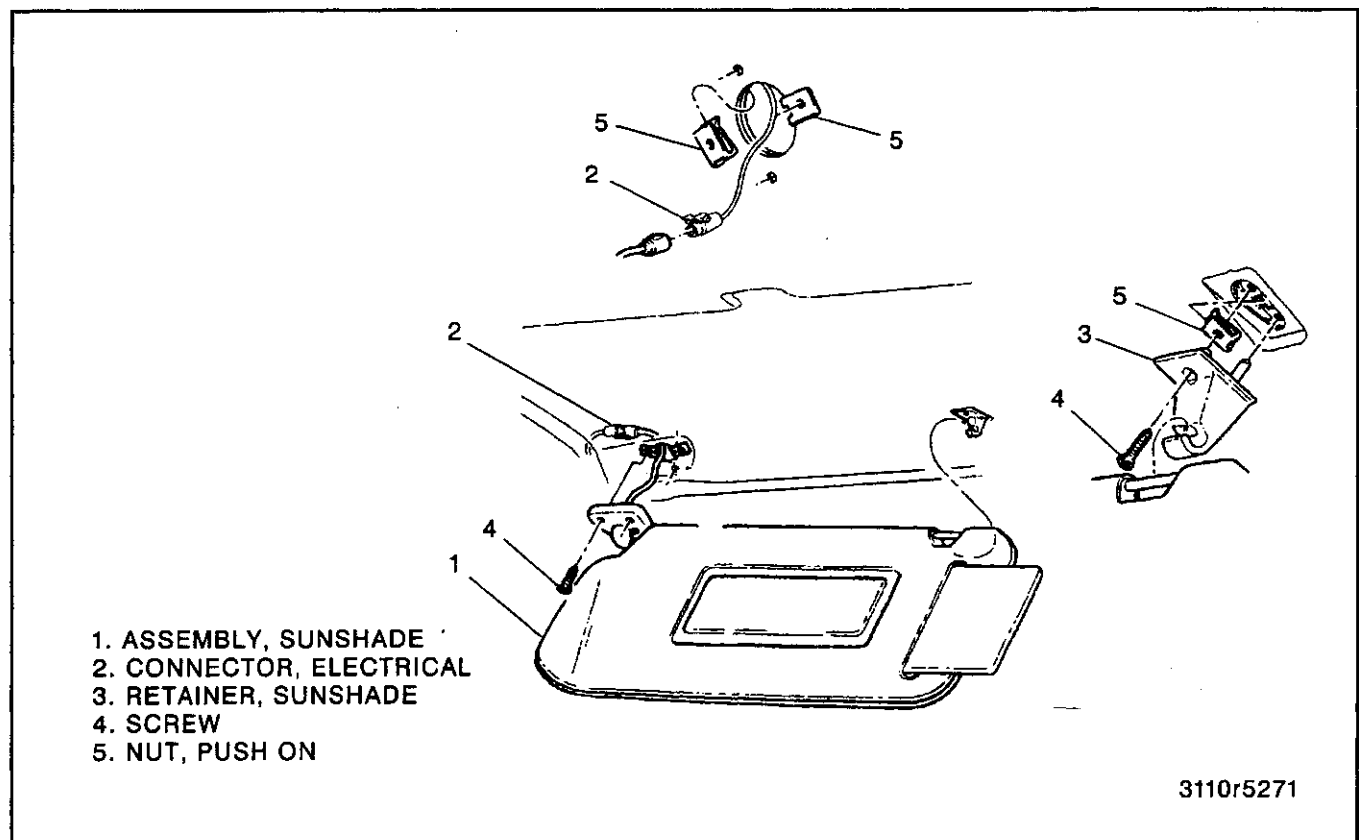


Figure 8—Sunshade Replacement

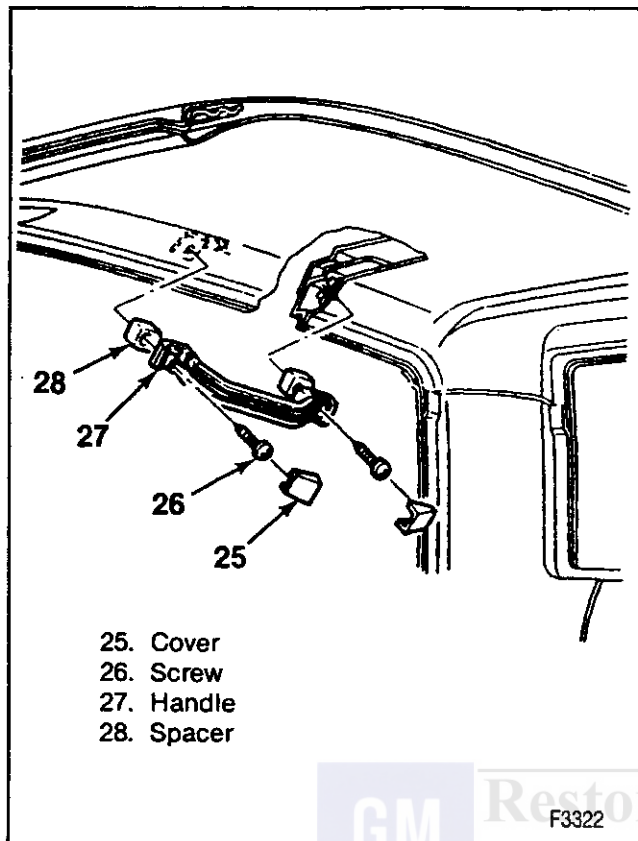


Figure 9—Assist Handle Replacement

5. Floor compartment.

Install or Connect (Figure 11)

1. Floor compartment.
2. Four screws.
3. Screw plugs.
4. Storage bin.
5. Front tray.

## ROOF GARNISH MOLDING REPLACEMENT

Remove or Disconnect (Figure 12)

1. Upper windshield trim.
2. Roof side door trim.
3. Windshield pillar trim.

Install or Connect (Figure 12)

1. Windshield pillar trim.
2. Roof side door trim.
3. Upper windshield trim.

## ROOF TRIM PANEL REPLACEMENT

PICKUP

Remove or Disconnect (Figure 13)

1. Sunshades.
2. Assist handle (if equipped).

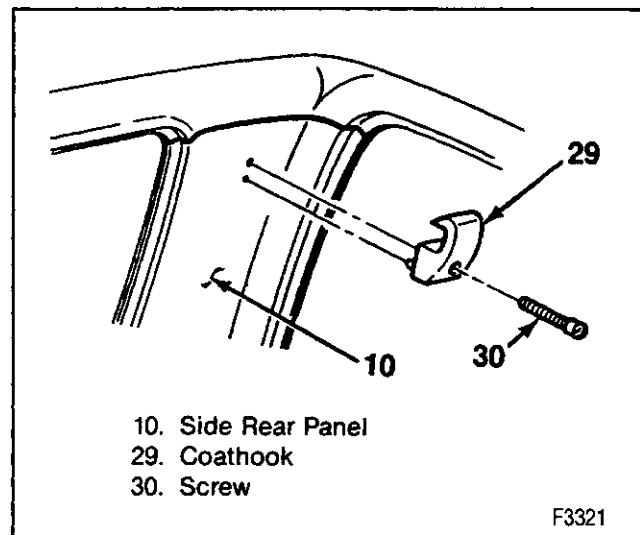


Figure 10—Coat Hook Replacement

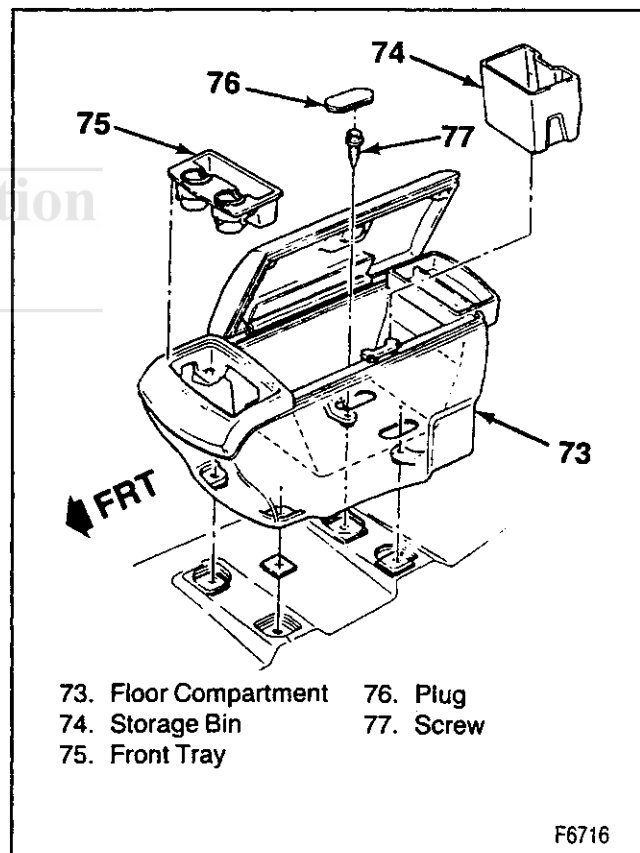


Figure 11—Front Floor Compartment

3. Rear window lower molding. Refer to "Rear Window Lower Garnish Molding Replacement."
4. Body side trim panels. Refer to "Body Side Trim Panel Replacement."
5. Rear window upper molding. Refer to "Rear Window Upper Garnish Molding Replacement."
6. Roof garnish molding. Refer to "Roof Garnish Molding Replacement."

## 10A4-8 INTERIOR TRIM

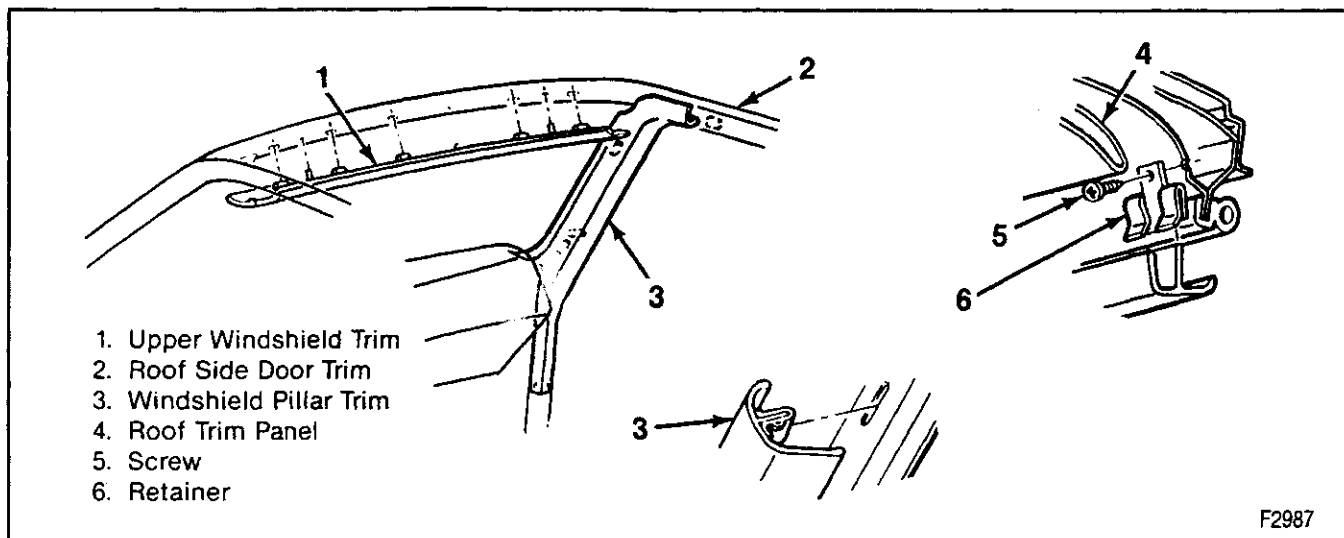


Figure 12—Roof Garnish Molding

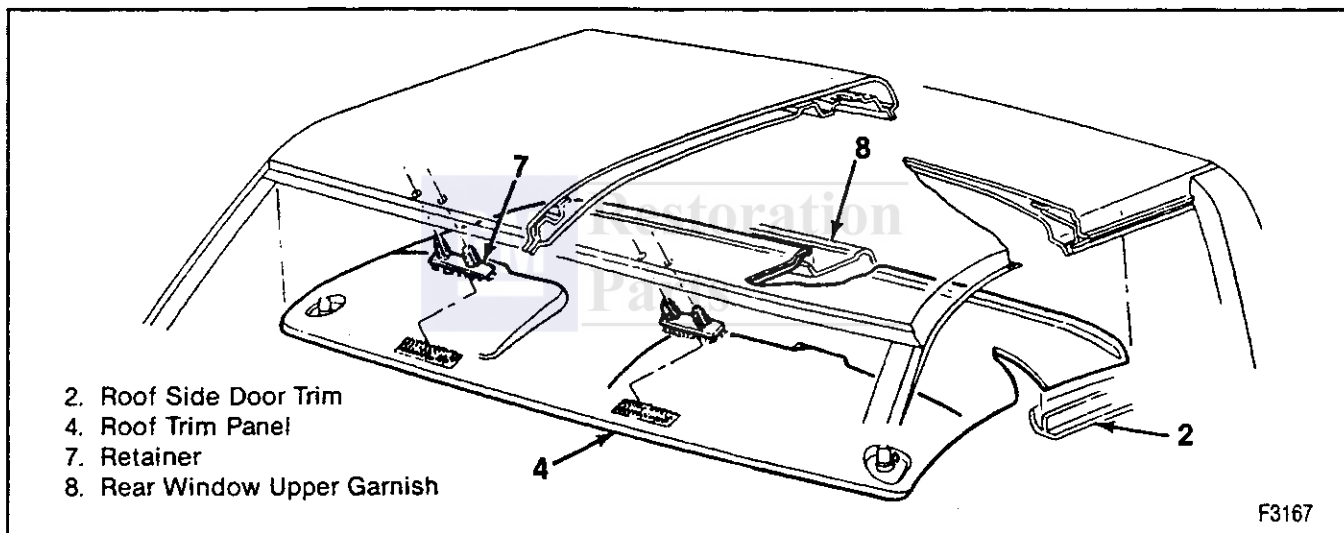


Figure 13—Roof Trim Panel (Pickup)

### 7. Roof trim panel.

- Grasp the panel on the left and right sides near the front of the cab.
- Disengage the front of the panel from the roof.

### 8. Retainers from trim panel.

### →→ Install or Connect (Figure 13)

1. Retainers to the trim panel.
2. Roof trim panel to the vehicle.
  - Insert the retainers into the windshield frame.
3. Roof garnish molding. Refer to "Roof Garnish Molding Replacement."
4. Rear window upper molding. Refer to "Rear Window Upper Garnish Molding Replacement."
5. Body side trim panels. Refer to "Body Side Trim Panel Replacement."
6. Rear window lower garnish molding. Refer to "Rear Window Lower Garnish Molding Replacement."
7. Assist handle (if equipped).
8. Sunshades.

## SURBURBAN AND UTILITY

### ↔ Remove or Disconnect (Figure 14)

1. Assist handles (if equipped).
2. Sunshades.
3. Windshield pillar moldings.
4. Assist handles.
5. Coat hooks.
6. Dome lights.
7. Roof garnish moldings. Refer to "Roof Garnish Molding Replacement."
8. Rear seat belt upper trim covers.
9. Side door lock pillar molding. Refer to "Pillar Molding Replacement."
10. Upper center trim panel.
11. Cargo door lock pillar molding panel. Refer to "Pillar Molding Replacement."
12. Roof console. Refer to "Roof Console Replacement."

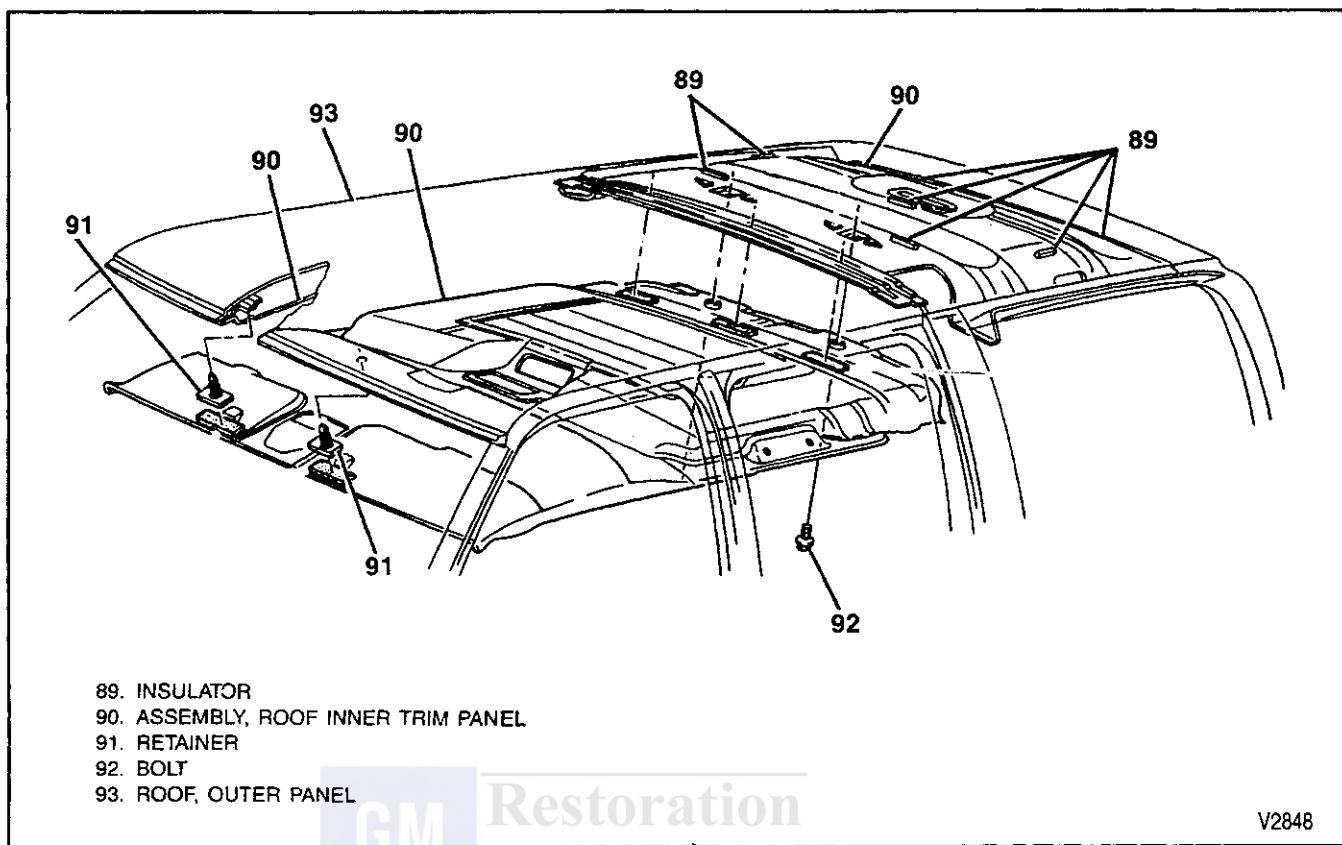


Figure 14—Roof Trim Panel (Surburban and Utility)



## Install or Connect (Figure 14)

1. Roof console. Refer to "Roof Console Replacement."
2. Windshield pillar moldings.
3. Assist handles.
4. Coat hooks.
5. Dome lights.
6. Roof garnish moldings. Refer to "Roof Garnish Molding Replacement."
7. Rear seat belt upper trim covers.
8. Side door lock pillar molding. Refer to "Pillar Molding Replacement."
9. Upper center trim panel.
10. Cargo door lock pillar molding panel. Refer to "Pillar Molding Replacement."
11. Sunshades.
12. Assist handles (if equipped).

## ROOF CONSOLE REPLACEMENT



## Remove or Disconnect (Figure 15)

1. Console to the roof screw.
2. Electrical connectors.
3. Console from the roof.



## Install or Connect (Figure 15)

1. Console to the roof.

2. Electrical connectors.
3. Console to the roof screw.



## Tighten

- Console to the roof screw to 1.9 N.m (17 lbs. in.).

## REAR WINDOW UPPER GARNISH MOLDING REPLACEMENT



## Remove or Disconnect (Figures 16 and 17)

1. Retainer screws.
2. Molding from rear body panel.



## Install or Connect (Figure 16 and 17)

1. Molding to the rear body panel.

**NOTICE:** Refer to "Notice" on page 10A4-1.

2. Retainer screws.



## Tighten

- Upper garnish molding retainer screws to 1.9 N.m (17 lbs. in.).

## 10A4-10 INTERIOR TRIM

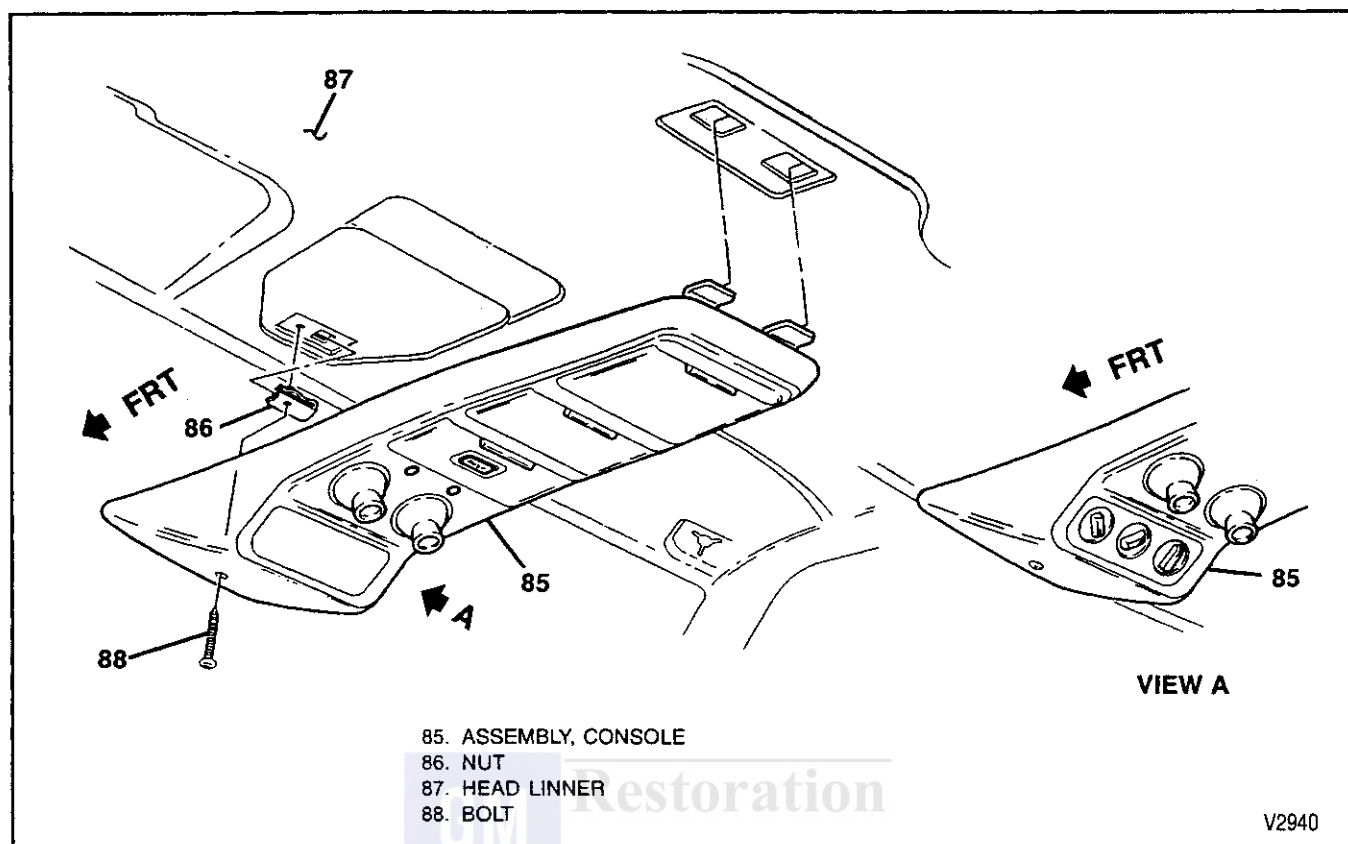


Figure 15—Roof Console

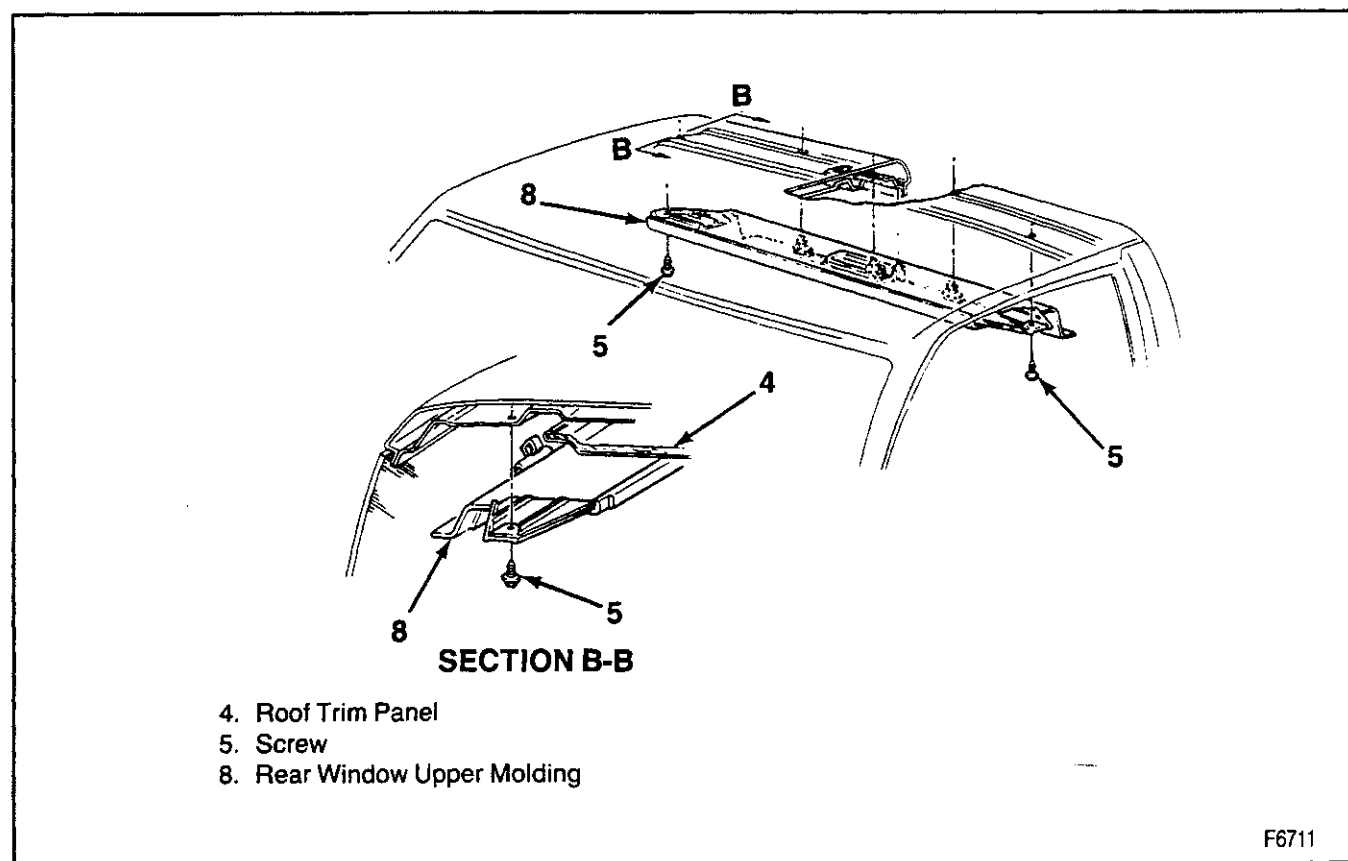


Figure 16—Rear Window Upper Garnish Molding (Regular Cab)

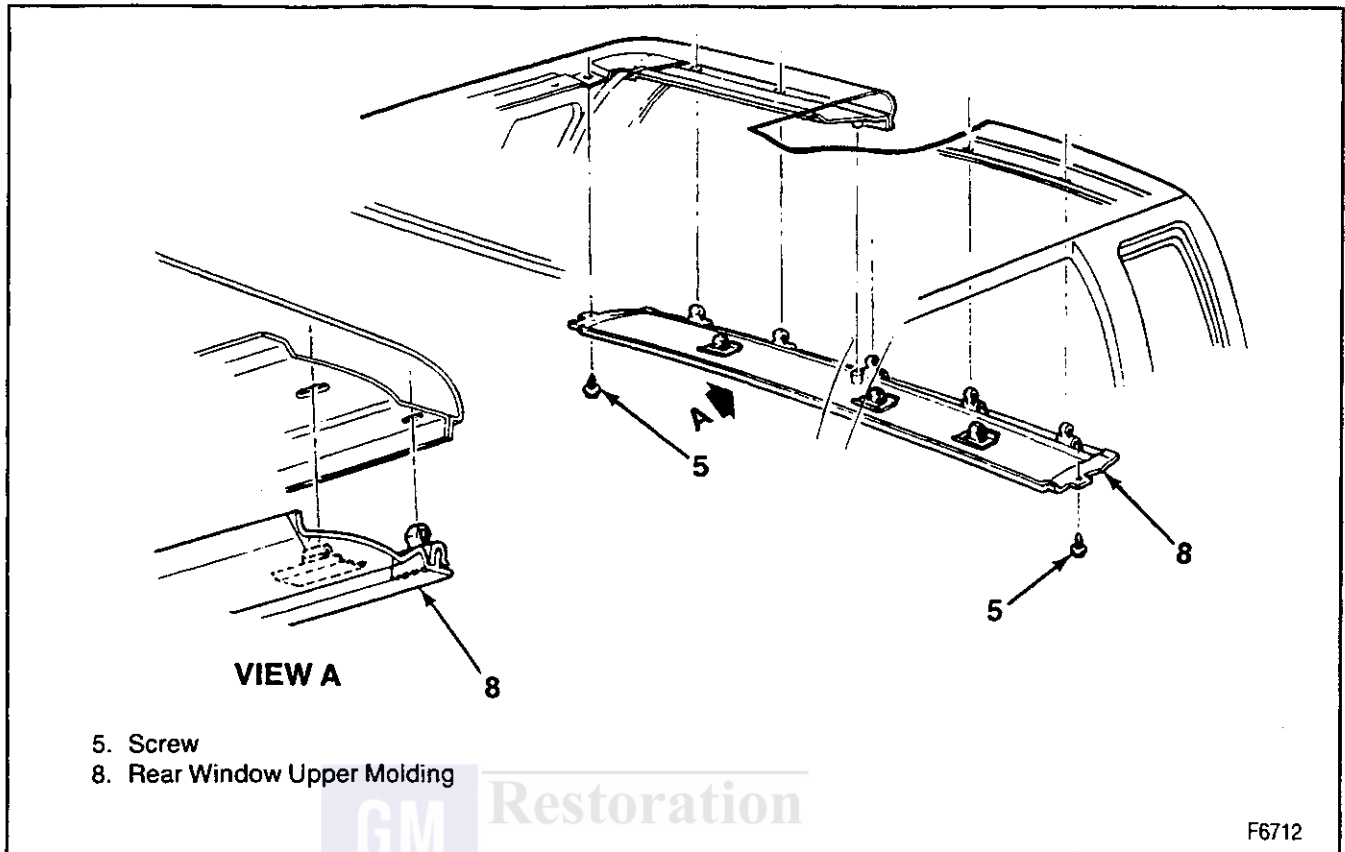


Figure 17—Rear Window Upper Garnish Molding (Extended Cab)

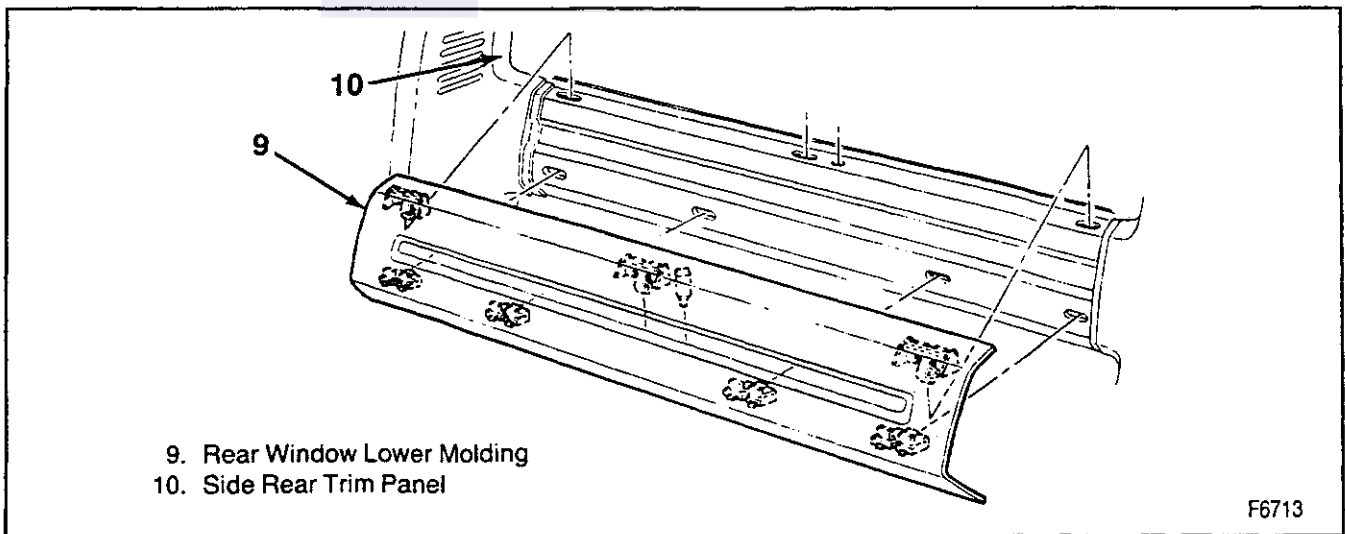


Figure 18—Rear Window Lower Garnish Molding

## REAR WINDOW LOWER GARNISH MOLDING REPLACEMENT

### ↔ Remove or Disconnect (Figure 18)

1. Lightly pull lower edge of molding to release the four clips.

### ↔ Install or Connect (Figure 18)

1. Align molding clips with holes in body panel along back glass.
2. Snap molding into place applying light pressure along top of molding at glass.
3. Align lower row of molding clips and snap lower portion of molding into place.

## 10A4-12 INTERIOR TRIM

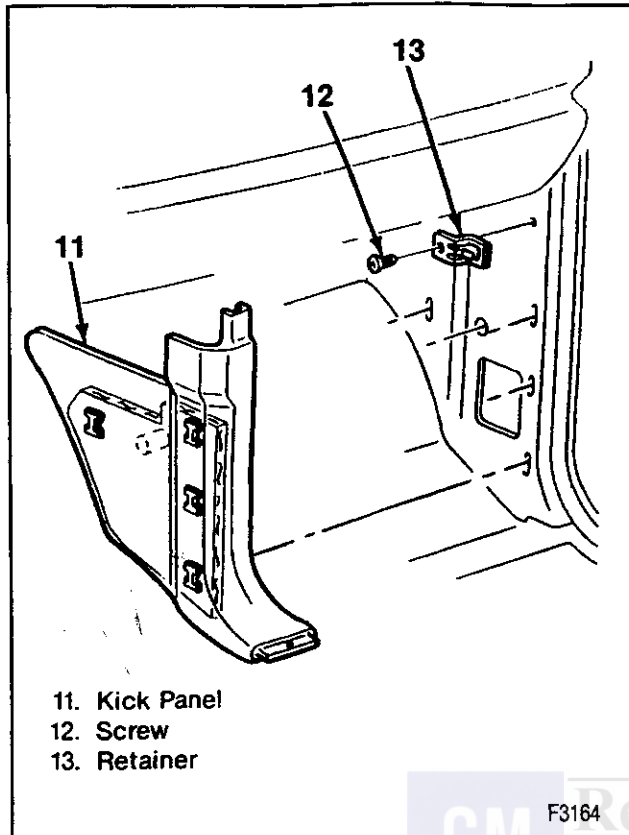


Figure 19—Cowl Side Kick Panel

### COWL SIDE KICK PANEL

#### ↔ Remove or Disconnect (Figure 19)

1. Retainer screw.
2. Kick panel from the retainers.

#### →← Install or Connect (Figure 19)

1. Kick panel to the retainers.
2. Retainer screw.

### BODY SIDE TRIM PANEL (REGULAR CAB, EXTENDED CAB, AND CREW CAB)

#### ↔ Remove or Disconnect (Figures 20 and 21)

1. Coat hook.
2. Seat belt guide.
3. Seat belt retractor. Refer to SECTION 10A2.
4. Jack cover, jack, and jack tray (right side).
5. Rear window lower garnish molding. Refer to "Rear Window Lower Garnish Molding Replacement."
6. Body side trim panel screws (regular and crew cab only).
7. Rear screw from the sill plate (regular and crew cab only).
8. Body side trim panel.

#### →← Install or Connect (Figures 20 and 21)

1. Body side trim panel.

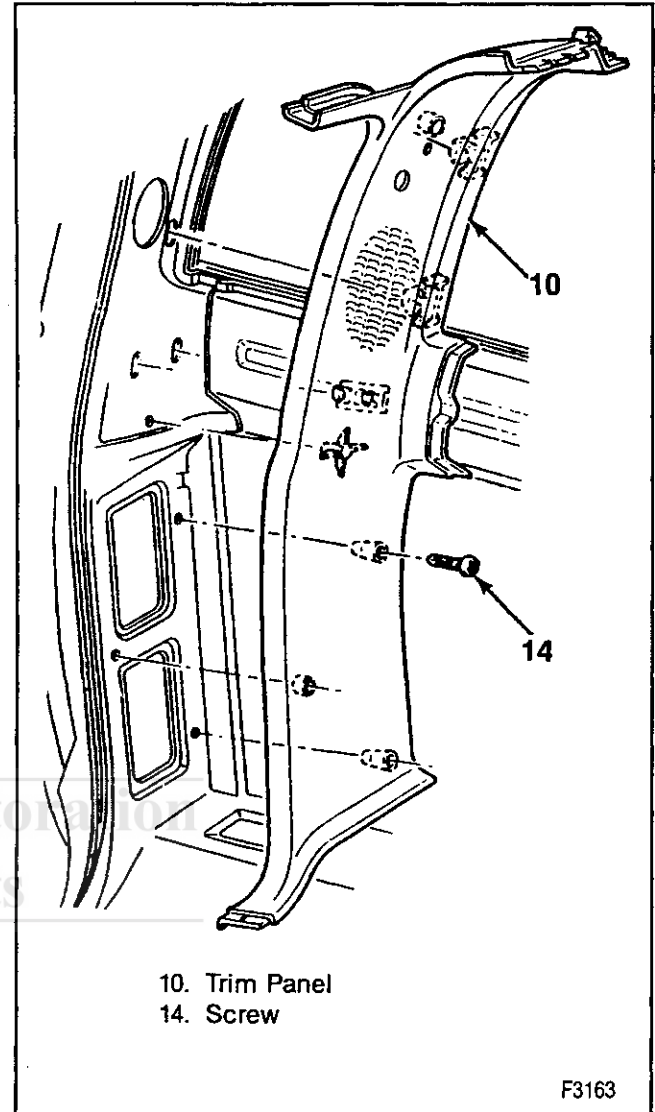


Figure 20—Body Side Trim Panel (Regular and Crew Cab)

**NOTICE:** Refer to "Notice" on page 10A4-1.

2. Panel screws (regular and crew cab only).

#### Tighten

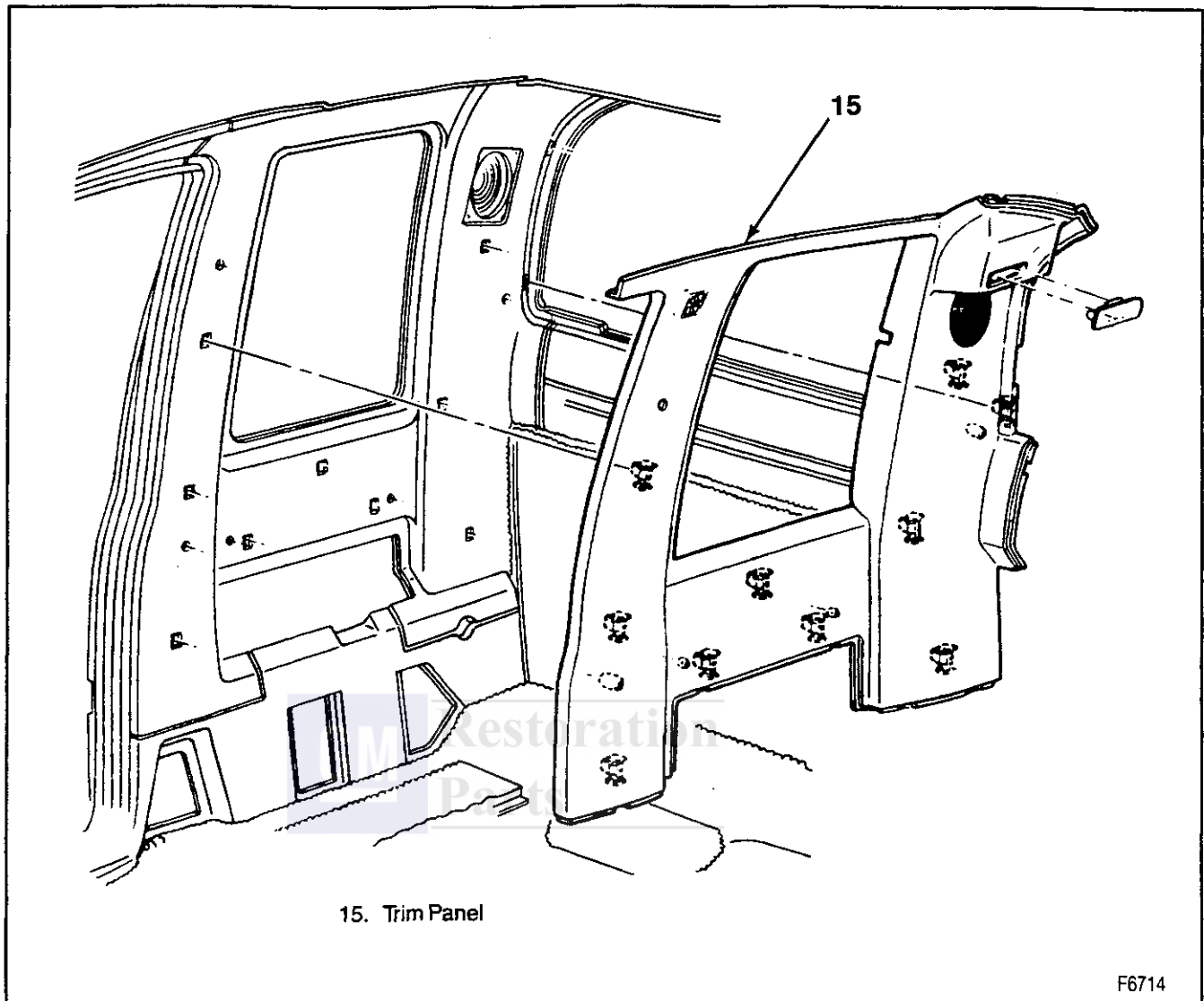
- Trim panel screws to 1.9 N.m (17 lbs. in.).
- 3. Rear screw into the sill plate.
- 4. Rear window lower garnish molding.
- 5. Jack tray, jack, and cover (right side)
- 6. Seat belt retractor.
- 7. Seat belt guide.
- 8. Coat hook.

### BODY SIDE REAR LOWER TRIM PANEL (REGULAR AND EXTENDED CAB)

#### ↔ Remove or Disconnect (Figures 22 and 23)

1. Armrest (if present).
2. Pocket from the lower panel (if present).
3. Lower panel screws.





15. Trim Panel

F6714

**Figure 21—Body Side Trim Panel (Extended Cab)**

4. Panel from the body frame.

**Install or Connect (Figures 22, 23 and 24)**

1. Panel to the body frame.
2. Lower panel screws.
3. Pocket to the lower panel (if present).
4. Armrest (if present).

**PILLAR MOLDINGS (SUBURBAN, UTILITY AND CREW CAB)**

**Remove or Disconnect (figure 25, 26 and 28)**

1. Door sill plate screws.
2. Door sill plates.
3. Seat belt to pillar anchors (side door lock pillars only). Refer to SECTION 10A2.
4. Pillar molding screws
5. Pillar moldings.

**Install or Connect (Figure 25, 26 and 28)**

1. Pillar moldings.

**NOTICE:** Refer to "Notice" on page 10A4-1.

2. Pillar moldings screws to pillar.

**Tighten**

- Body side pillar molding screws to 1.9 N.m (17 lbs. in.).
3. Seat belt anchors to pillars. Refer to SECTION 10A2.
  4. Door sill plates.
  5. Door sill plate screws.

**BODY SIDE TRIM PANELS (SUBURBAN AND UTILITY)**

**RIGHT SIDE**

**Remove or Disconnect (Figures 27 and 28)**

1. Rear seat. Refer to SECTION 10A2.
2. Arm rest to side panel screws. (Suburban only)
3. Arm rest from the body side panel.
4. Rear blower motor trim cover.

## 10A4-14 INTERIOR TRIM

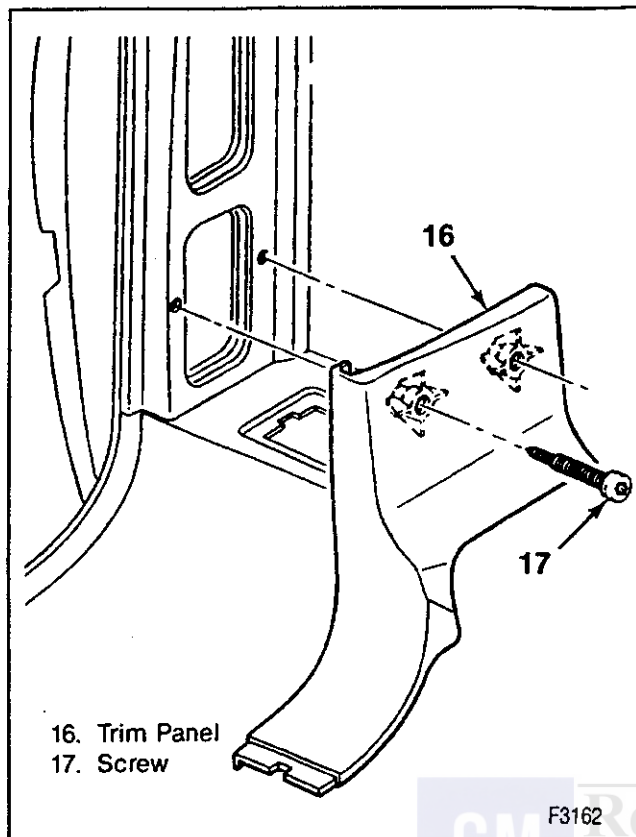


Figure 22—Side Rear Lower (Regular Cab)

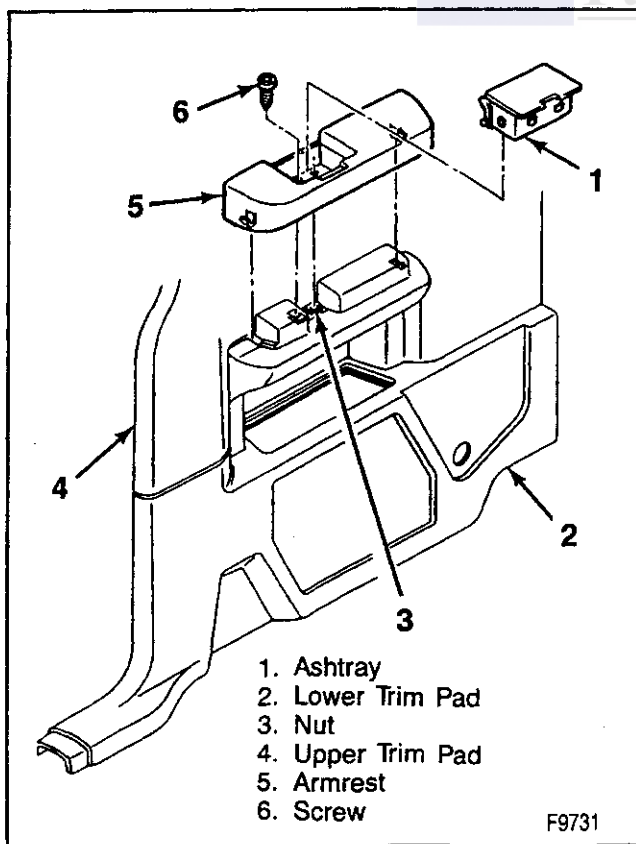


Figure 23—Side Rear Lower Panel (Extended Cab with Armrest)

5. Cargo door pillar molding. Refer to "Pillar Molding Replacement."
6. Rear door lock pillar molding (Surburban only). Front door lock pillar molding (Utility). Refer to "Pillar Molding Replacement."
7. Body side trim panel screws.
8. Body side trim panel from the vehicle.
  - Lift panel to release from body side.



Install or Connect (Figure 27 and 28)

**NOTICE:** For steps 2 and 8, refer to "Notice" on page 10A4-1.

1. Body side trim panel to the vehicle.
2. Body side trim panel screws.



Tighten

- Body side trim panel screws to 1.9 N.m (17 lbs. in.).
3. Rear door lock pillar molding to pillar (Surburban only).
  4. Front door lock pillar molding to pillar (Utility only).
    - Refer to "Pillar molding Replacement."
  5. Cargo door pillar molding to pillar.
    - Refer to "Pillar Trim Panel Replacement."
  6. Rear blower motor trim cover.
  7. Arm rest to body side trim panel.
  8. Arm rest to the body side trim panel screws.



Tighten

- Arm rest to the body side trim panel screws to 1.9 N.m (17 lbs. in.).

9. Rear seat. Refer to SECTION 10A2.

### LEFT SIDE



Remove or Disconnect (Figure 28 and 29)

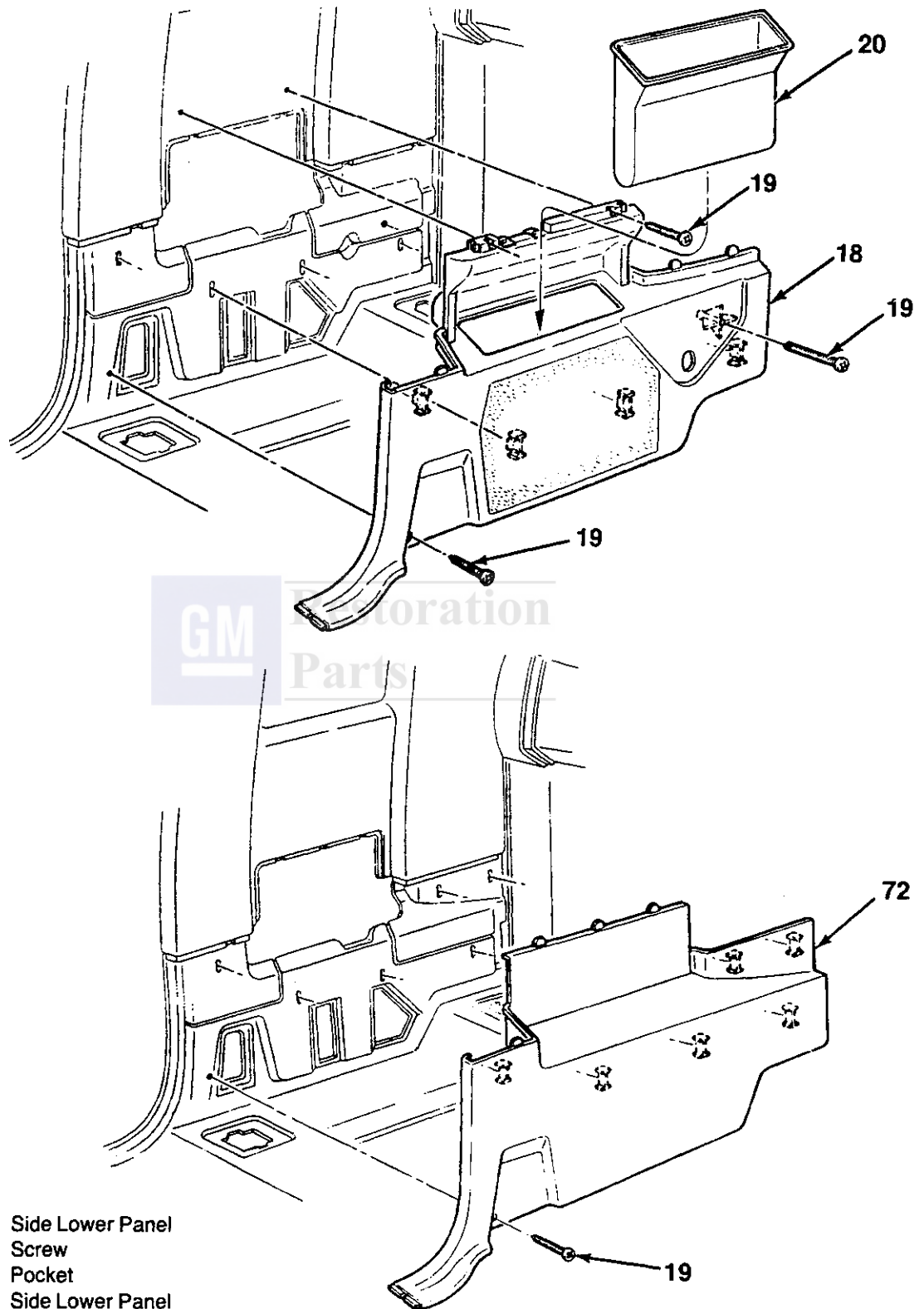
1. Rear seat. Refer to SECTION 10A2.
2. Spare tire cover.
3. Spare tire. Jack (utility).
4. Spare tire rest trim covers.
5. Spare tire rest bolts.
6. Spare tire rest from the vehicle.
7. Spare tire holder from the floor.
8. Spare tire I-bolt from the body side.
9. Arm rest.
10. Cargo door pillar moldings. Refer to "Pillar Trim Panel Replacement".
11. Intermediate seat belt to rear door pillar bolt. Refer to SECTION 10A2.
12. Intermediate seat belt anchor to the floor bolt. Refer to SECTION 10A2.
13. Rear door lock pillar molding. Refer to "Pillar trim Panel replacement."
14. Body side trim panel screws.
15. Body side trim panel from the vehicle.



Install or Connect (Figure 28)

1. Body side trim panel to vehicle.

**NOTICE:** Refer to "Notice" on page 10A4-1.



- 18. Side Lower Panel
- 19. Screw
- 20. Pocket
- 72. Side Lower Panel  
(No Rear Seat)

Figure 24—Side Rear Lower Panel (Extended Cab With And Without Pocket)

## 10A4-16 INTERIOR TRIM

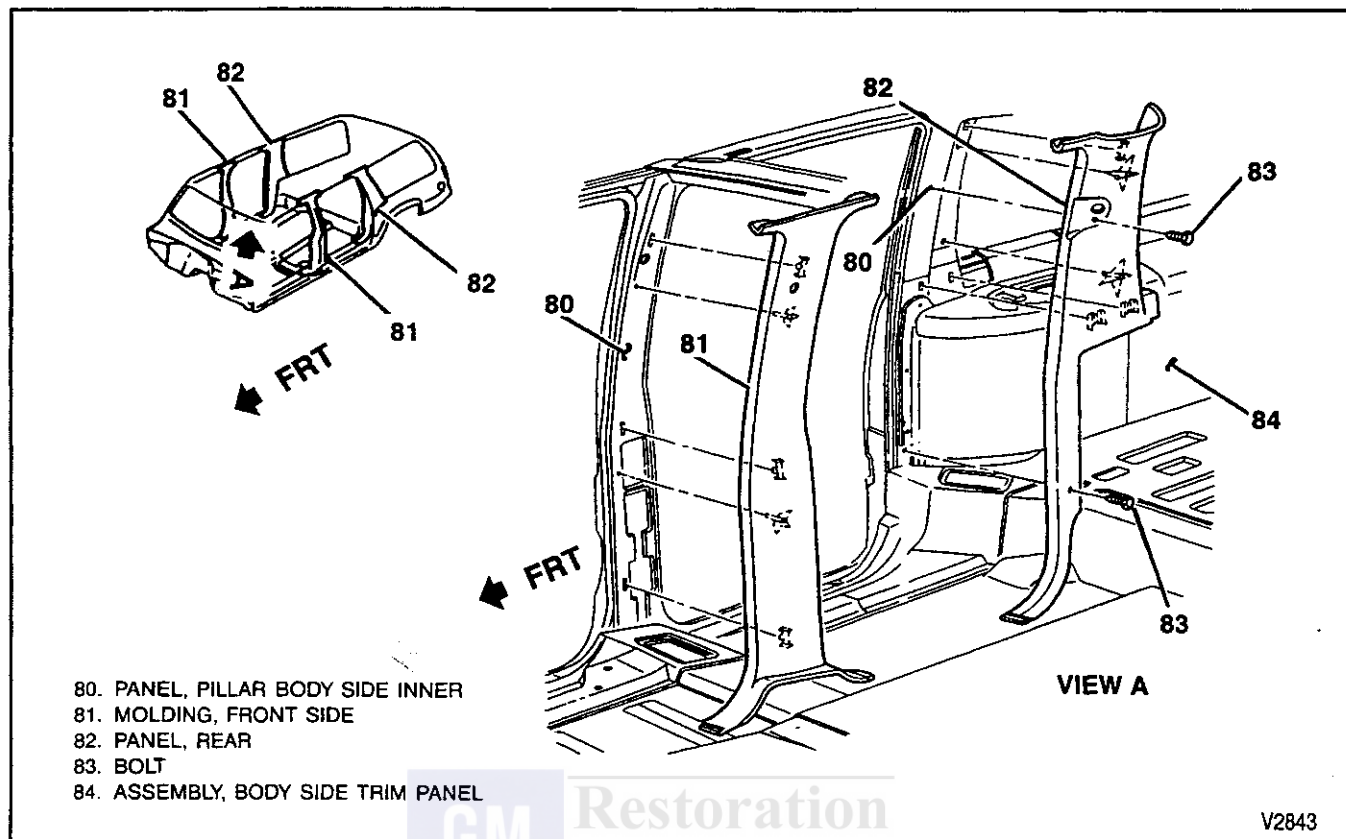


Figure 25—Pillar Moldings

2. Body side trim panel screws.



**Tighten**

- Tighten trim panel to vehicle screws to 1.9 N-m (17 lbs. inch.).

3. Rear door lock pillar trim panel (Suburban only). Front door lock pillar (Utility only). Refer to "Pillar trim panel replacement".
4. Intermediate seat belt anchor to floor bolt.
5. Intermediate seat belt to rear door pillar bolt.
6. Cargo door pillar trim panels to pillar. Refer to "Pillar Trim Panel Replacement".
7. Arm rest.
8. Spare tire i-bolt to body side.
9. Spare tire holder to floor.
10. Spare tire rest to vehicle.
11. Spare tire rest bolts.
12. Spare tire rest covers. Jack (utility).
13. Spare tire.
14. Spare tire cover.

### REAR PANEL CARPET REPLACEMENT



**Remove or Disconnect (Figure 30)**

1. Rear window lower garnish molding.
2. Side rear trim panel.
3. Side rear lower panel.
4. Carpet retainers.

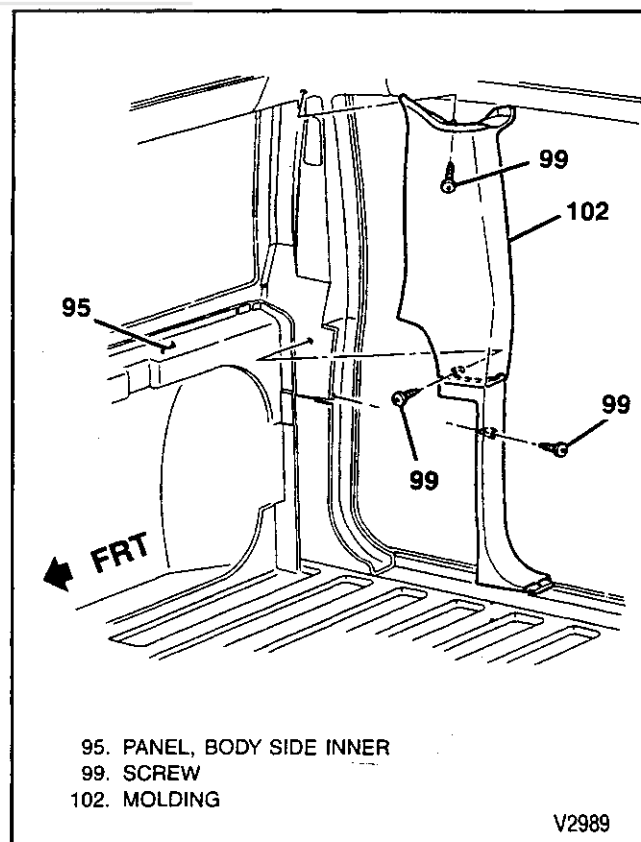
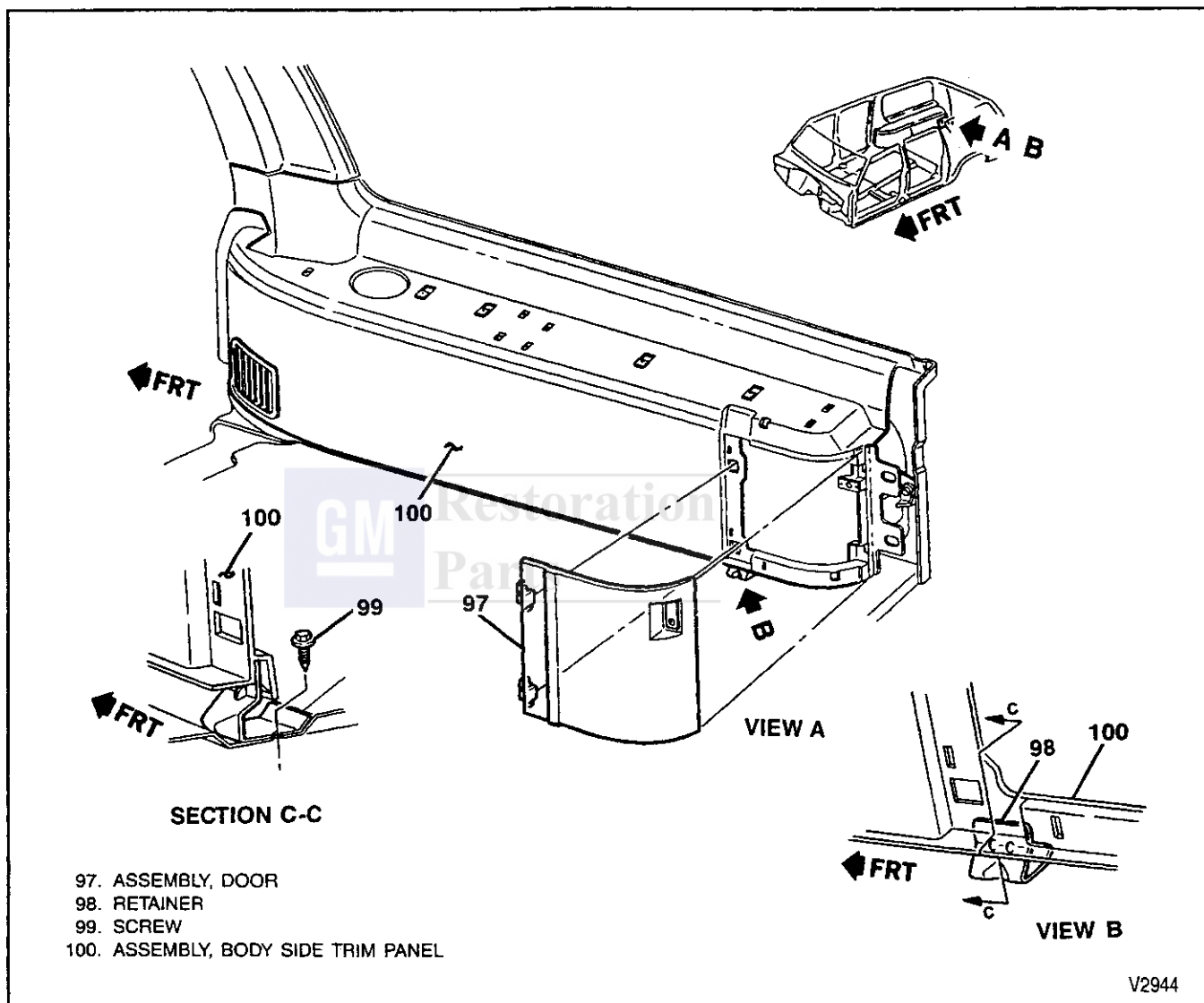


Figure 26—Cargo Door Pillar Molding



**Figure 27—Right Body Side Trim Panel (Surburban)**

- 5. Carpet panel (Extended, Regular and Crew cab)
- 6. Carpet.

**Install or Connect (Figure 30)**

- 1. Carpet.
- 2. Carpet panel.

- 3. Carpet retainers.
- 4. Side rear lower panel.
- 5. Side rear lower panel.
- 6. Rear window lower garnish molding.

## 10A4-18 INTERIOR TRIM

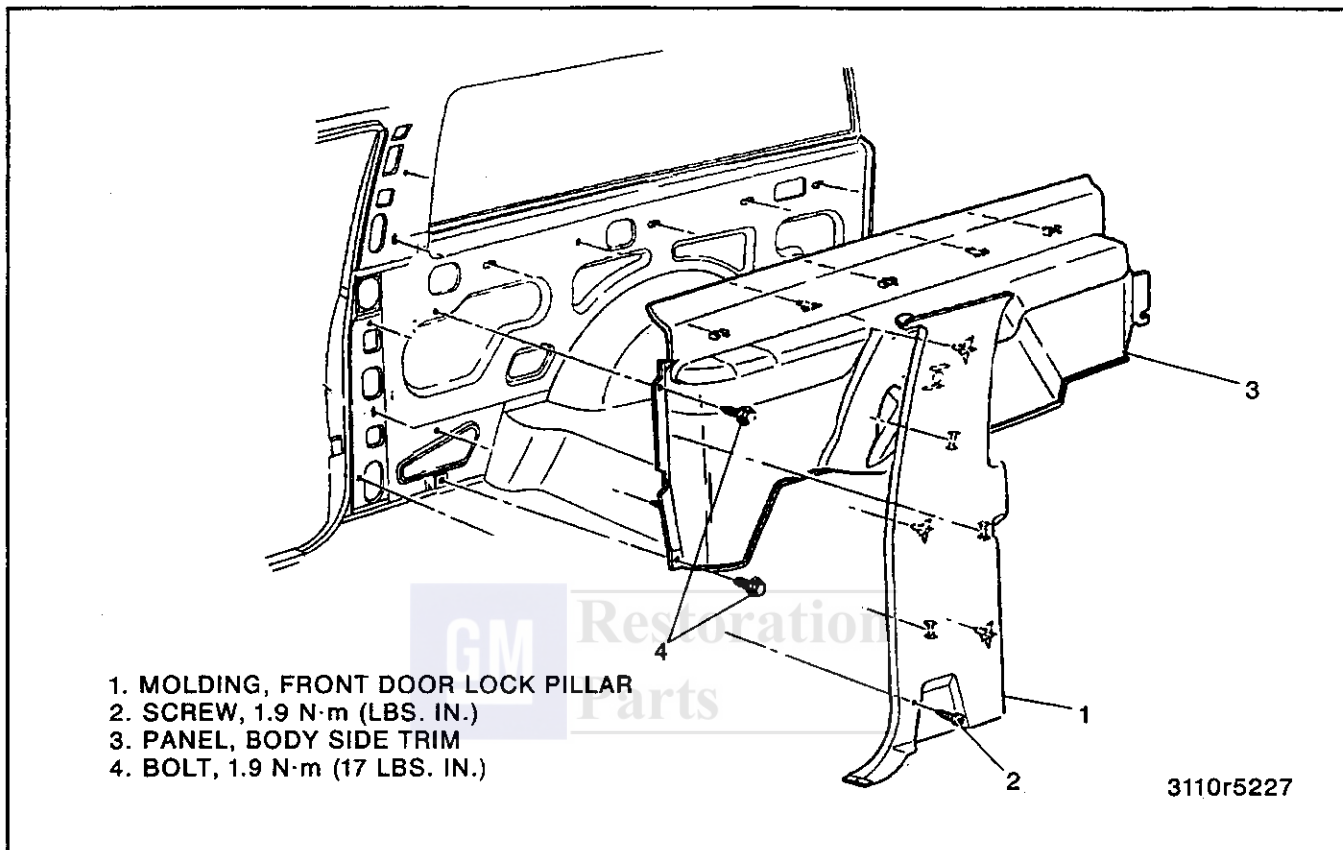


Figure 28—Body Side Trim Panel (Utility)

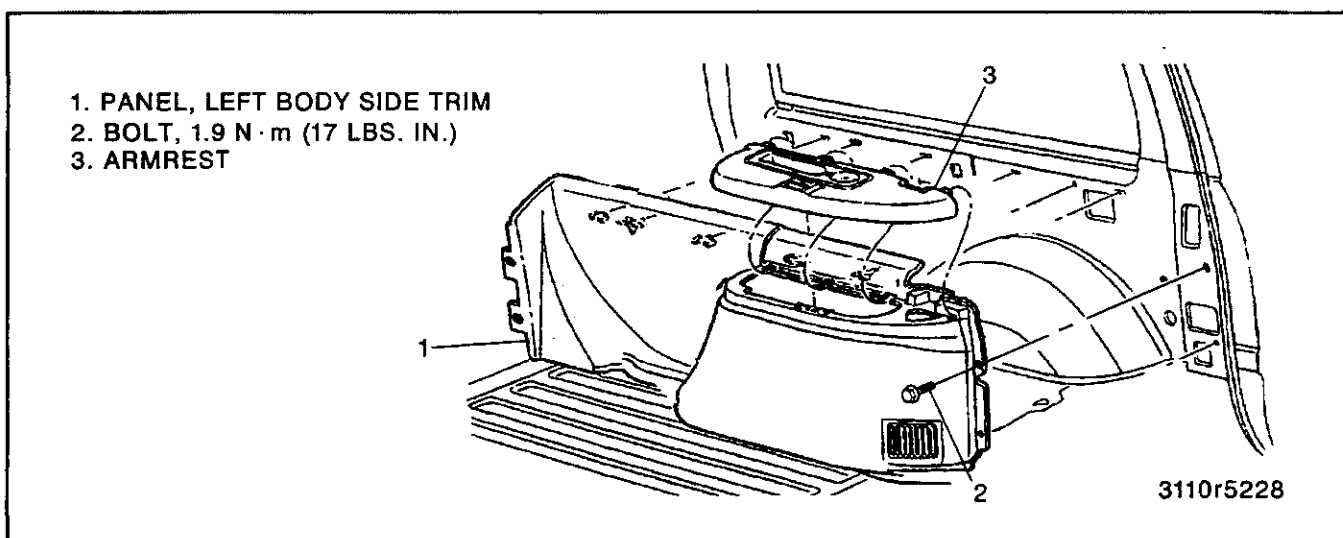
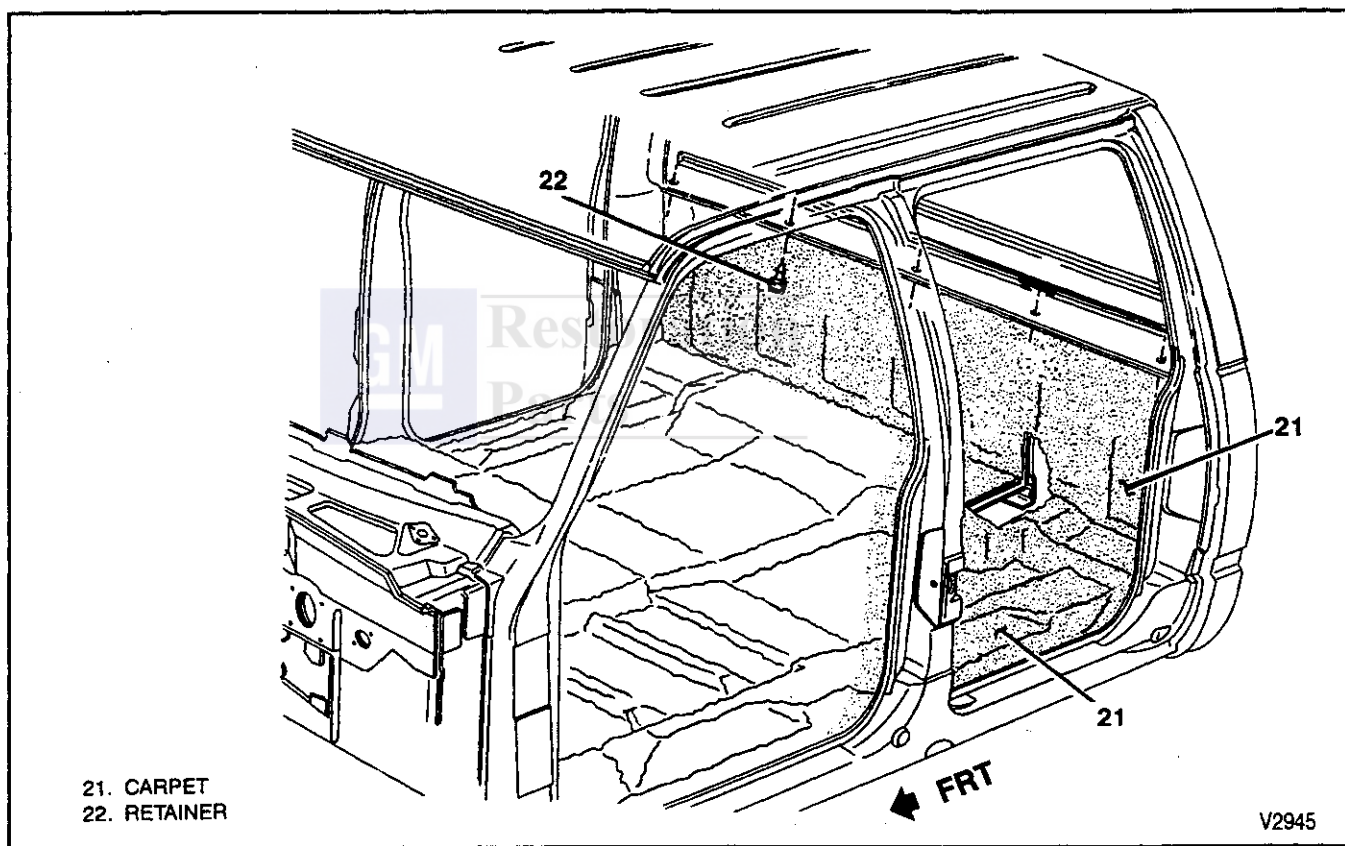


Figure 29—Left Body Side Panel (Suburban)



**Figure 30—Rear Carpet**



## 10A4-20 INTERIOR TRIM

### INTERIOR COLORS

NOTE: GM code numbers \* indicates 12% gloss and 5% gloss available. DuPont paints must have a vinyl resin added to obtain the required gloss. All other companies use a two number system. The top number indicates a 12% gloss and the bottom number indicates a 5% gloss which is used only on the instrument panel.

GM Code	Fisher Code	Color	DuPont No.	PPG Ditzler No.	Martin Senour	Sherwin Williams	BASF
						Acme/Rogers	
13AN*	9653	Light Gray	C9109	**	44438	44438	21029
				**	44437	44437	21026
13BN*	9654	Medium Gray	C9110	**	44439	44439	21027
				**	45940	45940	22281
13CN*	9655	Dark Gray	C9111	**	45941	45941	22282
				**	44440	44440	21028
19DN	848	Black	C8535	**	16915	92387	12812
				**	16918	33024	4401
24CN*	9059	Dark Blue	C8792	**	36478	36478	17124
				**	39838	39838	19021
24DN*	8576	Very Dark Blue	C8539	**	17075	34606	16045
				**	17067	34598	15080
26I	152A	Dark Navy Blue	C9403	**	48704	48704	24132
				**	48703	48703	24133
47CN*	9104	Dark Red	C9007	**	42602	42602	20061
				**	42601	42601	20062
47DN*	9253	Very Dark Red	C9008	**	42604	42604	20063
				**	42603	42603	20064
64AN*	9776	Light Beige	C9202	**	45942	45942	22275
				**	45943	45943	22276
64BN*	9777	Medium Beige	C9203	**	45944	45944	22277
				**	45945	45945	22278
64DN*	9778	Dark Beige	C9204	**	45946	45946	22279
				**	45947	45947	22280

\*\*Not available at time of printing.

T2777

## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

Fastener	N-m	Ft. Lbs.
Carrier Bracket Bolts.....	20	15
Seat Mounting Bolt.....	17	12
		T2155

## SECTION 10A5

# END GATE

**NOTICE:** When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

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## ON VEHICLE SERVICE FOR PICKUP MODELS

### END GATE REPLACEMENT



**Remove or Disconnect (Figures 1 and 2)**

- Lower the end gate to a horizontal position.
  - Pull up on the middle of the cable assembly.
  - With the aid of a helper, raise the end gate 45-degrees.
1. Cable on each side from the side panel striker bolts (figure 2).
  2. End gate from the right side hinge assembly and then the left hinge assembly with the aid of a helper.



**Install or Connect (Figures 1 and 2)**

- Use a helper to lift the end gate.

1. End gate to side panel hinge assemblies holding the gate at a 45-degree angle (figure 2).
2. Cable on each side onto the side panel striker bolts (figure 2).

### END GATE LATCH OPERATING HANDLE REPLACEMENT



**Remove or Disconnect (Figure 3)**

- Lower the end gate.
1. Three bolts and washers from the back of the end gate behind the handle.
  - Raise the end gate.

## 10A5-2 END GATE

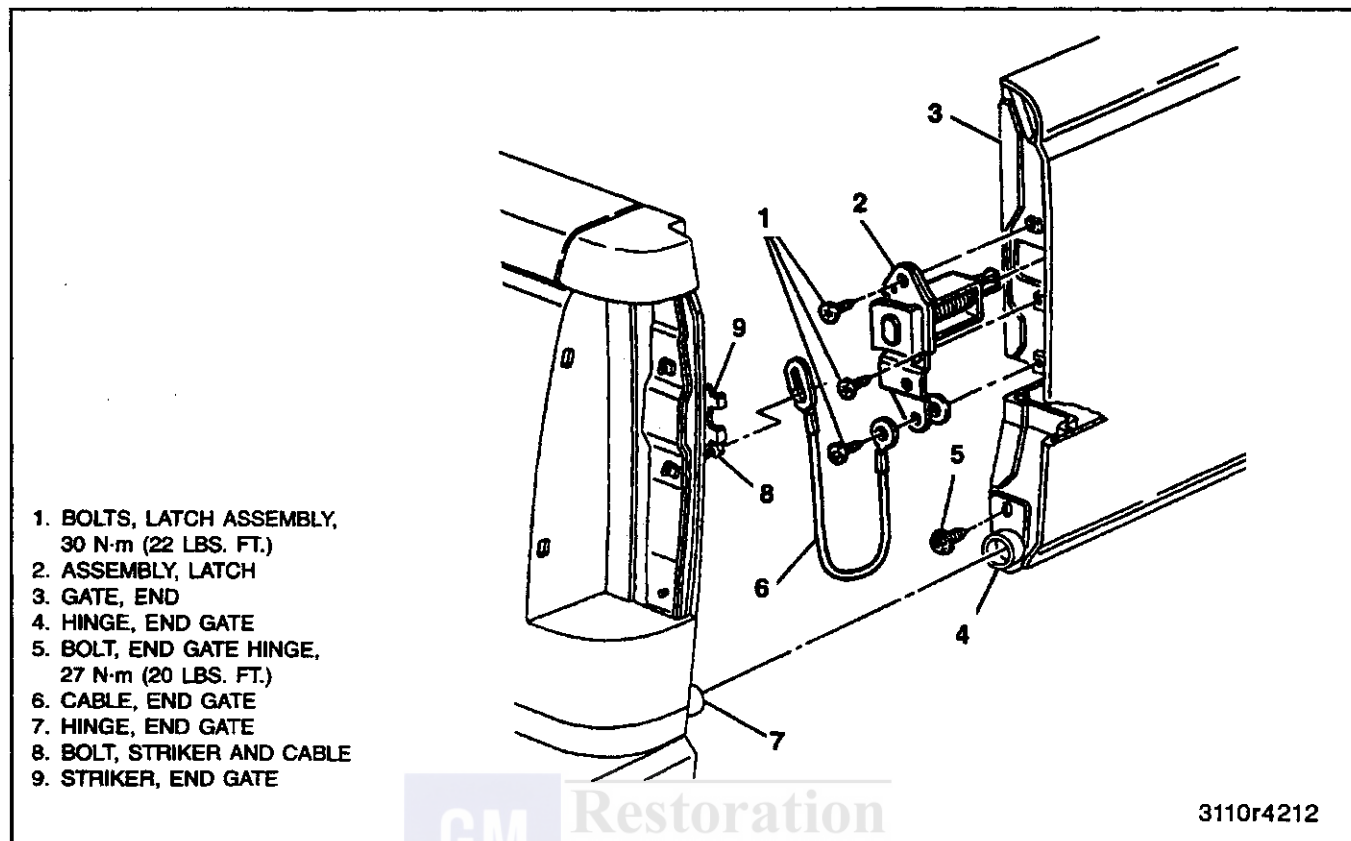


Figure 1—End Cable and Latch Components

2. Bezel from around the handle by prying gently.



### Inspect

- Bezel for damage to the retention prongs. If any of them are broken or bent, replace the bezel.
3. Latch operating rods from the retainers on the handle by pushing the rods back.
  4. Handle assembly from the end gate.



### Install or Connect (Figure 3)

1. Handle assembly into the end gate.
2. Latch operating rods into the retainers on the handle.
3. Bezel to the handle and end gate.
  - Lower the end gate.

**NOTICE:** Refer to "Notice" on page 10A5-1.

4. Three bolts and washers into the handle from the back of the end gate.



### Tighten

- End gate to handle bolts to 25 N·m (18 lbs. ft.).

## END GATE LATCH AND ROD REPLACEMENT



### Remove or Disconnect (Figure 1 and 3)

1. Operating handle. Refer to "End Gate Latch Operating Handle Replacement."

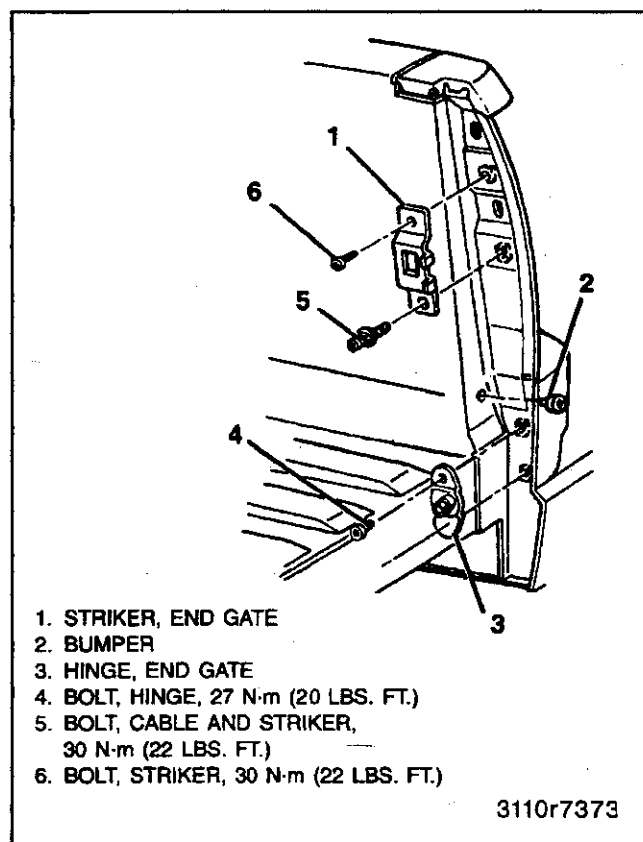


Figure 2—Side Panel Striker and Hinge Components

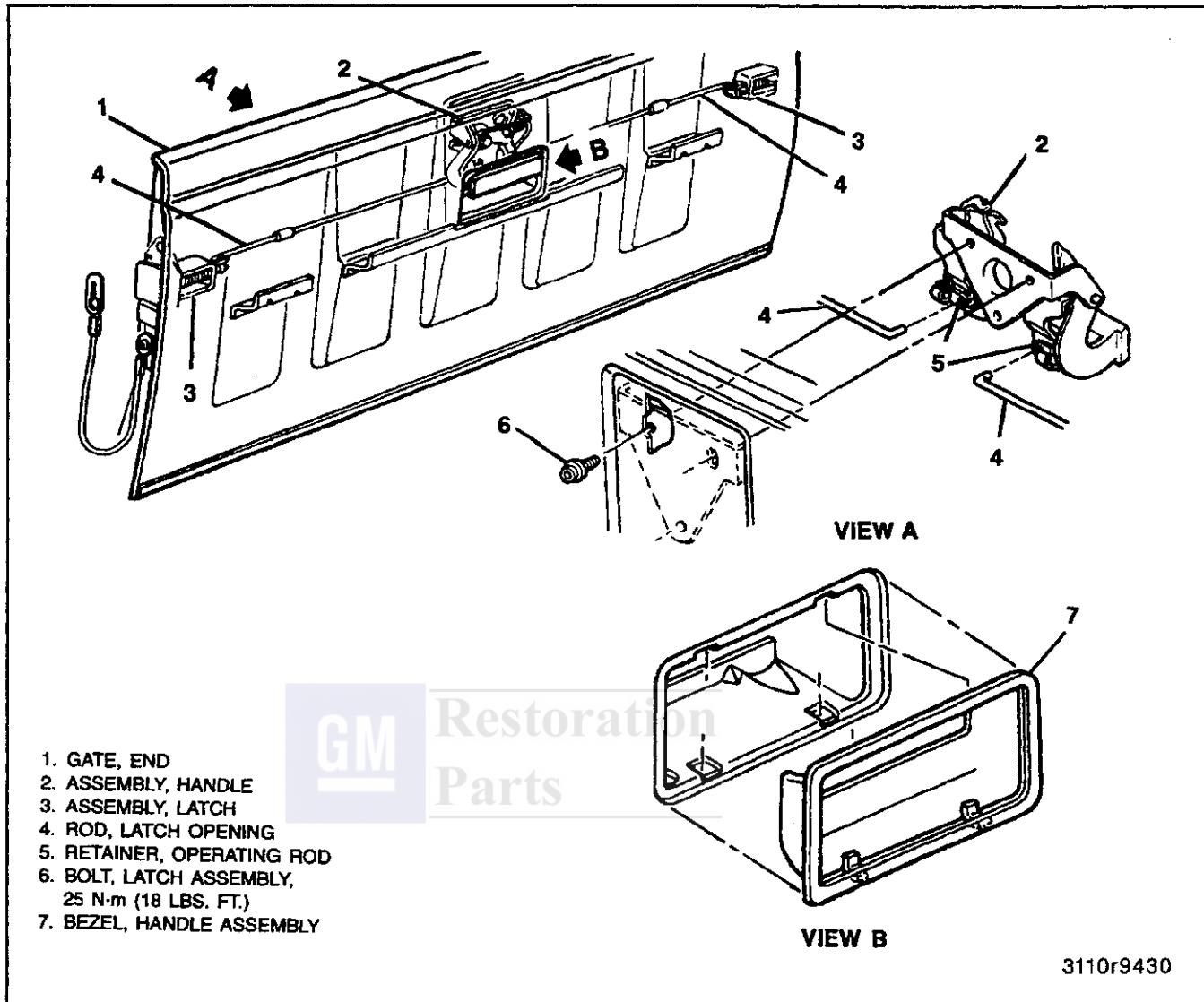


Figure 3—Latch Operating Handle

- Lower and support the end gate and lift the cables off the striker bolts.
- 2. Three bolts holding the latch assembly to the end gate.
- 3. Latch assembly and rod.

**Install or Connect (Figures 1 and 3)**

1. Latch assembly and rod to the end gate.

**NOTICE:** Refer to "Notice" on page 10A5-1.

2. Three bolts holding the latch assembly to the end gate (figure 1).

**Tighten**

- Latch to end gate bolts to 30 N·m (22 lbs. ft.).
- Raise the end gate and attach the cables to the striker bolts.
- 3. Operating handle. Refer to "End Gate Latch Operating Handle Replacement."

## STRIKER AND STRIKER BOLT REPLACEMENT

**Remove or Disconnect (Figure 2)**

- Lower the end gate to a support and lift the cables off the striker bolts.
- 1. Striker and cable bolt.
- 2. Striker bolt.
- 3. Striker.

**Install or Connect (Figure 2)**

**NOTICE:** For steps 2 and 3, refer to "Notice" on page 10A5-1.

1. Striker to the side panel.
2. Striker bolt.

**Tighten**

- Striker bolt to 30 N·m (22 lbs. ft.).
- 3. Striker and cable bolt.

## 10A5-4 END GATE



### Tighten

- Striker and cable bolt to 30 N.m (22 lbs. ft.).
- Raise the end gate and attach the cables to the striker bolts.

## SIDE PANEL LOWER HINGE REPLACEMENT



### Remove or Disconnect (Figure 2)

1. End gate. Refer to "End Gate Replacement."
2. Bolts from the panel hinge.
3. Hinge from the side panel.



### Install or Connect (Figure 2)

1. Hinge to the side panel.

**NOTICE:** Refer to "Notice" on page 10A5-1.

2. Lower panel hinge bolts.



### Tighten

- Bolts to 27 N.m (20 lbs. ft.).
3. End gate to the side panels.

## END GATE HINGE REPLACEMENT



### Remove or Disconnect (Figure 1)

1. End gate. Refer to "End Gate Replacement."
  - Mark the position of the hinge on the end gate.
2. Hinge bolt.
3. Hinge from the end gate.
  - Drill a pilot hole in the weld plug.
  - Drill out the weld plug from the end gate side of the hinge with a 3/8-inch drill bit.



### Install or Connect (Figure 1)

1. Hinge to the end gate. Use the marks made previously to position it.

**NOTICE:** Refer to "Notice" on page 10A5-1.

2. Hinge bolt.



### Tighten

- Hinge to end gate bolt to 27 N.m (20 lbs. ft.).
  - Plug weld the hole that was drilled in the end gate.
  - MIG weld the hinge to the end gate around the edge of the hinge.
  - Paint and lubricate the hinge.
3. End gate to the pickup box.

## ON-VEHICLE SERVICE FOR UTILITY VEHICLES

## END GATE REPLACEMENT



### Remove or Disconnect (Figures 4 and 5)

- Open the end gate to a horizontal position.
1. Torque rod. Refer to "Torque Rod Replacement."
  2. Electrical connector for rear window release.
    - Support the end gate in a horizontal position with a suitable support.
  3. Support cable bolts and washers.
  4. Hinge pin clips.
    - Spread the clip enough to move the clip above the recess in the pin.
    - As the pin is removed, the clip will ride on the pin, and fall free of the pin.
  5. Hinge pins from the right and left hinges.
  6. End gate from the vehicle.



### Install or Connect (Figures 4 and 5)

1. End gate to the vehicle.
  - Support the end gate in a horizontal position with a suitable support.
2. Hinge pins into the left and right hinges.
3. Hinge pin clips to the hinge pins.

**NOTICE:** Refer to "Notice" on page 10A5-1.

4. Support cable bolts and washers.



### Tighten

- Support cable to body bolts to 29 N.m (21 lbs. ft.).
5. Electrical connector for rear window release.
  6. Torque rod. Refer to "Torque Rod Replacement."

## TORQUE ROD REPLACEMENT



### Remove or Disconnect (Figure 5)

1. Bolt at left end with end gate open.
2. Rear bumper. Refer to SECTION 2A.
3. Rear bumper filler panel. Refer to SECTION 2A.
4. Bolts retaining the torque rod to the end gate.
  - With the gate in the closed position, the bolts are accessible from under the vehicle.
5. Torque rod and retainers.



### Install or Connect (Figure 5)

**NOTICE:** For steps 2 and 3, refer to "Notice" on page 10A5-1.

1. Torque rod and retainers to vehicle.
  - With the gate in the closed position, place the torque rod and retainers onto the vehicle.

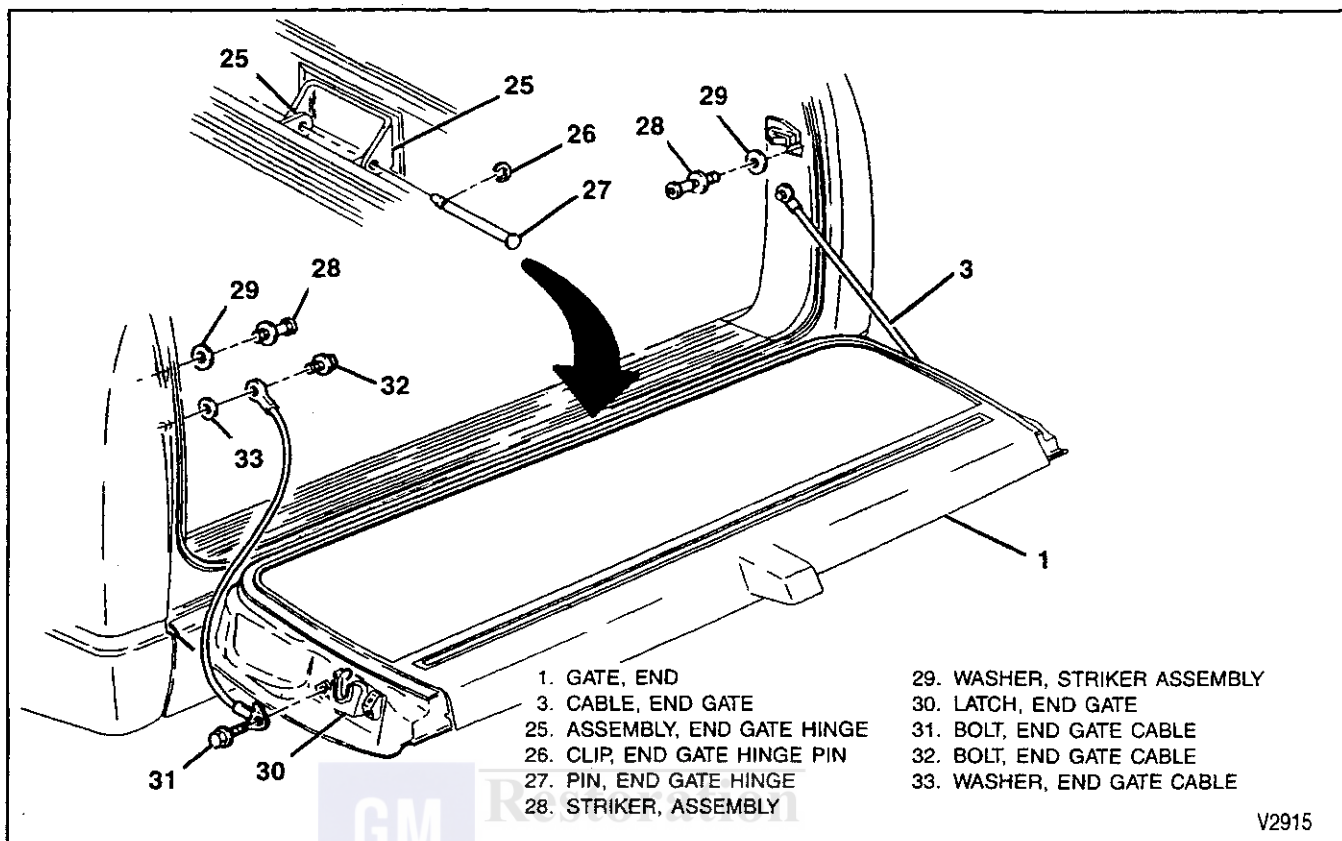


Figure 4—End Gate Replacement

2. Bolts to the torque rod retainers.



**Tighten**

- Torque rod retainer bolts to 15 N.m (11 lbs. ft.).

3. Bolt at left end with end gate open.



**Tighten**

- Torque rod retainer bolt to 15 N.m (11 lbs. ft.).

4. Rear bumper filler panel. Refer to SECTION 2A.

5. Rear bumper. Refer to SECTION 2A.

## TRIM PANEL REPLACEMENT



**Remove or Disconnect (Figure 6)**

- Lower the end gate.
- 1. Trim panel to end gate screws.
- 2. Trim panel from the end gate.



**Install or Connect (Figure 6)**

- 1. Trim panel to the end gate.

**NOTICE:** Refer to "Notice" on page 10A5-1.

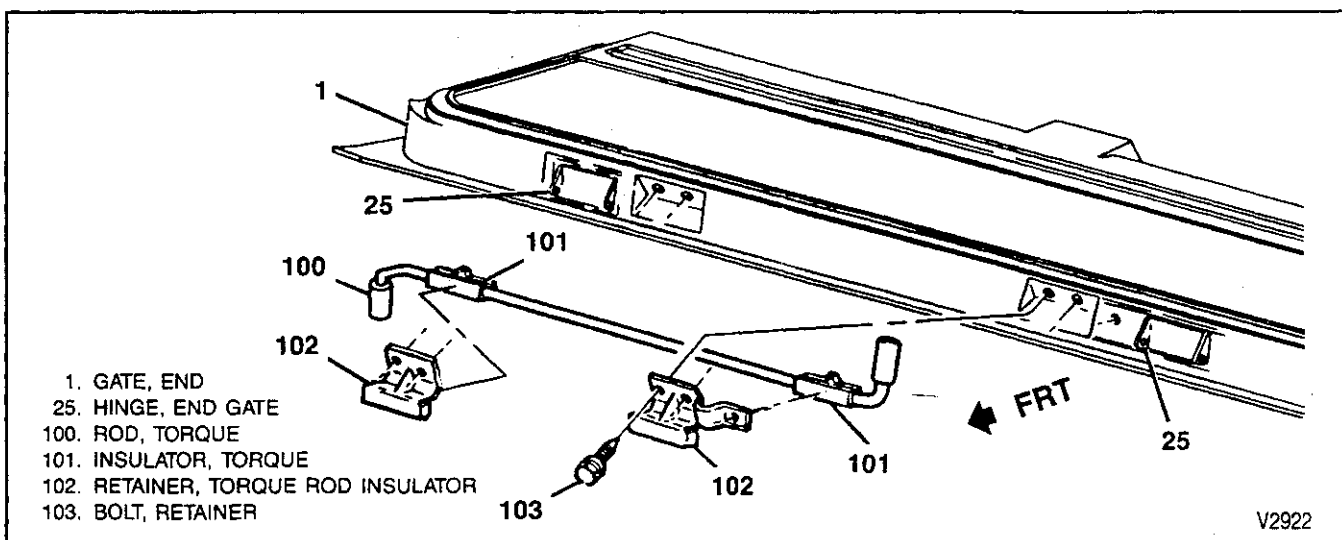


Figure 5—Torque Rod Replacement



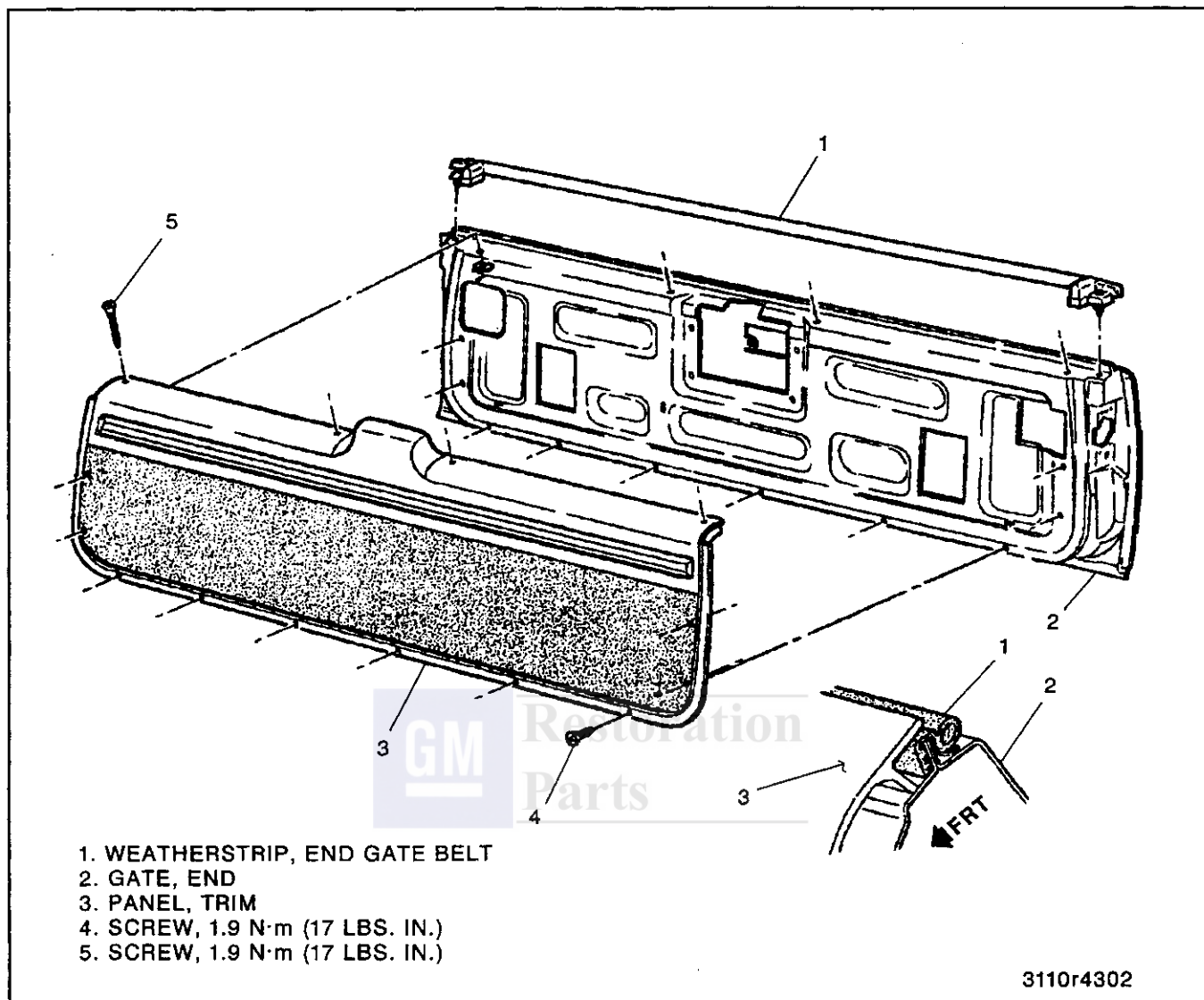


Figure 6—Trim Panel and Belt Weatherstrip

2. Trim panel to end gate screws.



**Tighten**

- Trim panel to end gate screws to 1.9 N·m (17 lbs. in.).

## END GATE LATCH OPERATING HANDLE REPLACEMENT



**Remove or Disconnect (Figure 7)**

- Lower the end gate.
1. Trim panel. Refer to "Trim Panel Replacement."
  2. Lock assembly cover from the end gate.
  3. Two bolts and washers from the back of the end gate behind the handle assembly.
- Raise the end gate.
4. Handle assembly by prying gently.
  5. Latch operating rods from the clips on the handle by pushing the rods back.

6. Handle assembly from the end gate.



**Install or Connect (Figure 7)**

1. Handle assembly into the end gate.
  2. Latch operating rods into the clips on the handle.
- Lower the end gate.

**NOTICE:** Refer to "Notice" on page 10A5-1.

3. Two bolts and washers into the handle assembly from the back of the end gate.



**Tighten**

- End gate to handle bolts to 4 N·m (35 lbs. in.).
4. Lock assembly cover to the end gate.
- Cover must be installed with both gates closed for proper alignment.
5. End gate trim panel. Refer to "Trim Panel Replacement."



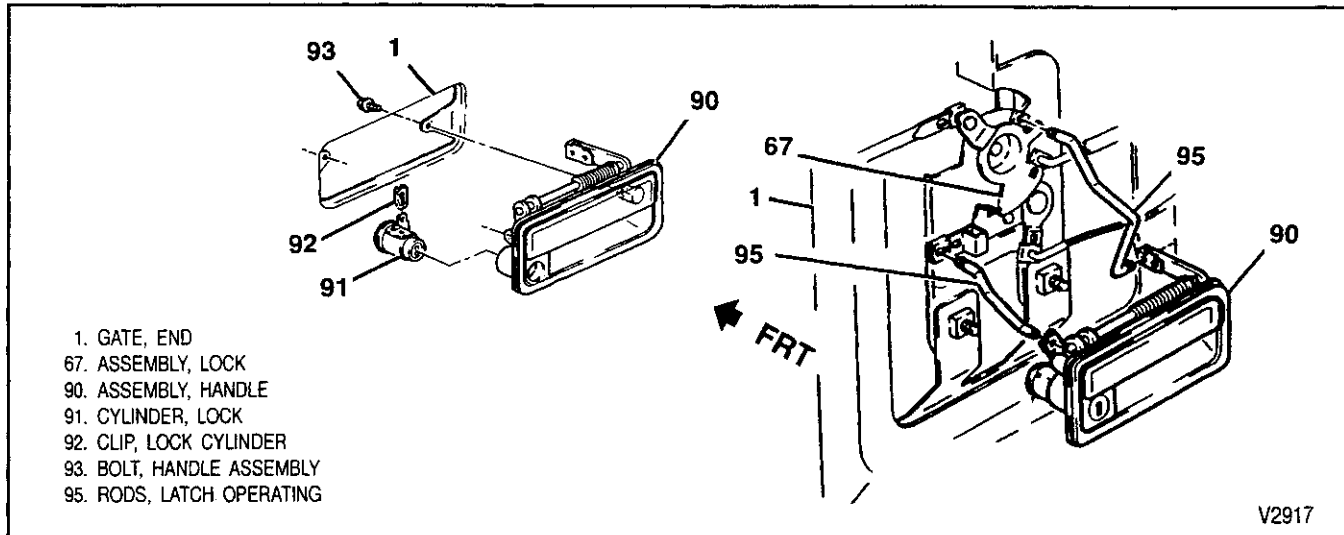


Figure 7—End Gate Operating Handle Replacement

## END GATE LATCH ASSEMBLY REPLACEMENT (RIGHT OR LEFT)

### ↔ Remove or Disconnect (Figure 8)

- Open the end gate to the horizontal position.
- 1. End gate trim panel. Refer to "Trim Panel Replacement."
- 2. Lock assembly cover.

### ↔ Install or Connect (Figure 8)

**NOTICE:** For steps 2 and 4, refer to "Notice" on page 10A5-1.

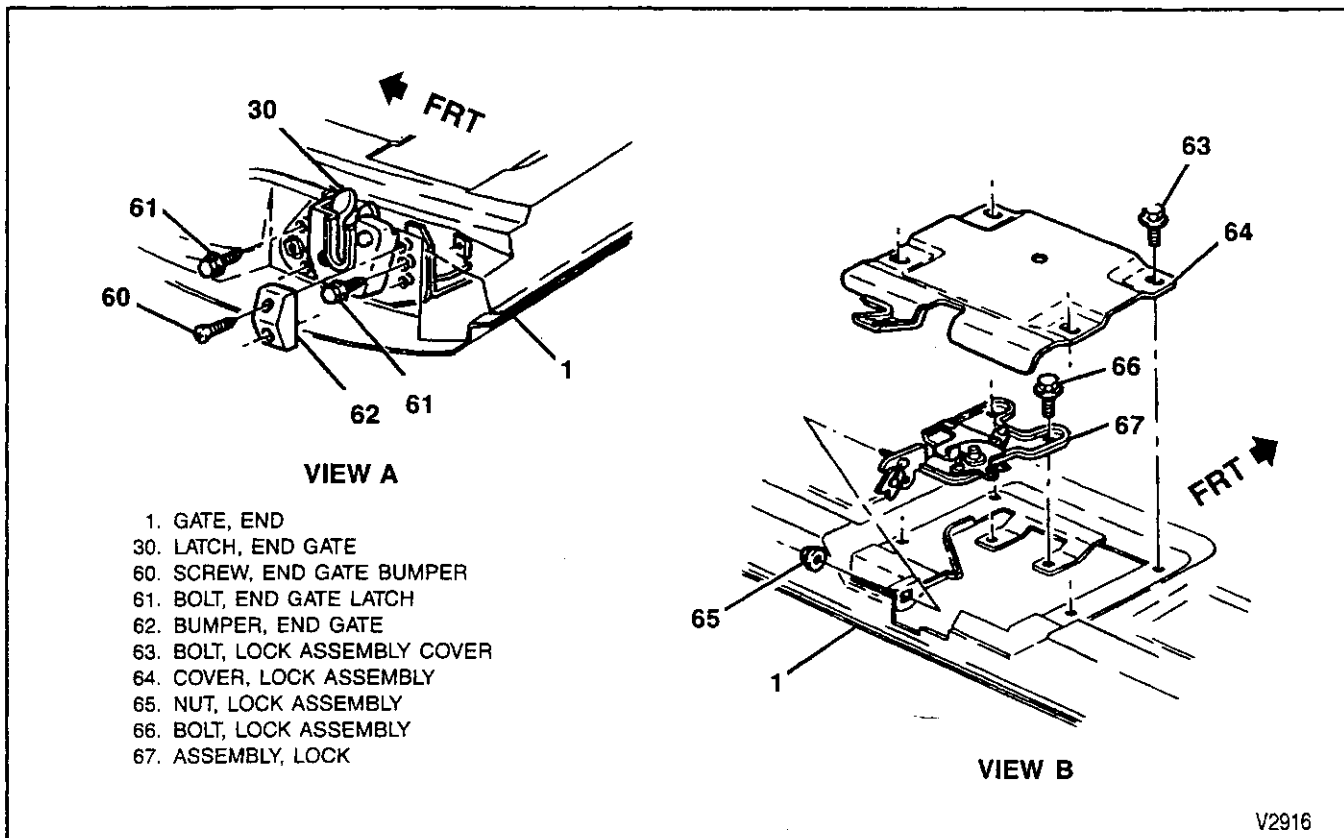


Figure 8—End Gate Latch Replacement

## 10A5-8 END GATE

1. Latch to the gate.
2. Bolts securing the latch to the end gate.



### Tighten

- Latch to the end gate bolts to 25 N.m (18 lbs. ft.).
3. Bumper to the end gate.
  4. Screws securing the bumper to the end gate.



### Tighten

- Bumper to the end gate screws to 2.8 N.m (25 lbs. in.).
5. Locking rod to the window latch.
  6. Lock assembly cover.
    - Cover must be installed with both gates closed for proper alignment.
  7. End gate trim panel. Refer to "Trim Panel Replacement."

## END GATE LATCH STRIKER ADJUSTMENT



### Adjust (Figure 6)

**NOTICE:** Refer to "Notice" on page 10A5-1.

- End gate striker assemblies up or down, forward or backward, to obtain the proper close of the end gate. The end gate should seal completely with a minimum of closing effort.



### Tighten

- Striker assemblies to 63 N.m (47 lbs. ft.).

## LOCK ASSEMBLY REPLACEMENT



### Remove or Disconnect (Figure 8)

1. Trim panel. Refer to "Trim Panel Replacement."
2. Lock assembly cover to the end gate bolts.
3. Lock assembly cover.
4. Lock rods from the lock assembly.
  - Mark the location of the lock assembly on the end gate.
5. Lock assembly to the end gate bolts.
6. Lock assembly from the end gate.



### Install or Connect (Figure 8)

**NOTICE:** For steps 2 and 5, refer to "Notice" on page 10A5-1.

1. Lock assembly to the end gate.
  - Align the assembly to the marks on the end gate inner panel.
2. Lock assembly to the end gate bolts.



### Tighten

- Lock assembly to the end gate bolts to 15 N.m (11 lbs. ft.).
3. Lock rods to the lock assembly.
  4. Lock assembly cover.
    - Cover must be installed with both gates closed for proper alignment.
  5. Lock assembly cover to end gate bolts.



### Tighten

- Cover to end gate bolts to 15 N.m (11 lbs. ft.).
6. Trim Panel. Refer to "Trim Panel Replacement."

## END GATE BELT WEATHERSTRIP REPLACEMENT



### Remove or Disconnect (Figure 6)

1. Trim panel. Refer to "Trim Panel Replacement."
2. Weatherstrip from the end gate flange.



### Install or Connect (Figure 6)

1. Weatherstrip onto end gate flange.
  - A. Install ends of weatherstrip first by pressing fastener into end gate hole.
  - B. Push center of weatherstrip onto center of end gate flange and work out to ends.
2. Trim panel. Refer to "Trim Panel Replacement."

## END GATE WINDOW STRIKER REPLACEMENT



### Remove or Disconnect (Figure 9)

- Open the end gate window.
1. Striker to the end gate window pin.
  2. Striker to the end gate window bolt.
  3. Striker from the end gate window.



### Install or Connect (Figure 9)

**NOTICE:** For steps 2 and 3, refer to "Notice" on page 10A5-1.

1. Striker to the end gate window.
2. Striker to the gate window bolt.



### Tighten

- Striker to the end gate window bolt to 10 N.m (89 lbs. in.).
3. Striker to the end gate window pin.



### Tighten

- Striker to the end gate window pin to 10 N.m (89 lbs. in.).

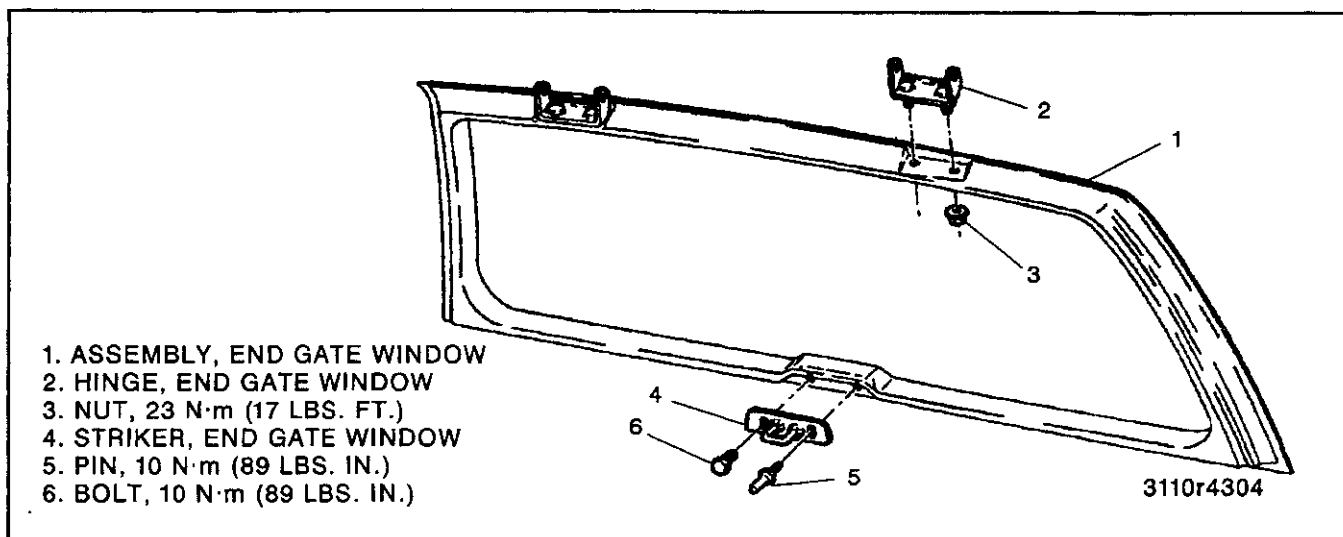


Figure 9—End Gate Window Striker and Hinge

## END GATE WINDOW HINGE REPLACEMENT

### ↔ Remove or Disconnect (Figure 9)

1. End gate window supports. Refer to "End Gate Window Support Replacement."
2. Hinge pin retainers and the hinge pins.
3. End gate window assembly from the vehicle.
4. End gate window garnish molding.
5. Hinge to end gate window assembly nuts.
6. Hinge from the end gate window.

### ↔ Install or Connect (Figure 9)

1. Hinge to the end gate window.

**NOTICE:** Refer to "Notice" on page 10A5-1.

2. Hinge to end gate window assembly nuts.

### Tighten

- Hinge to end gate window assembly nuts to 23 N·m (17 lbs. ft.).
3. End gate window garnish molding.
  4. End gate window assembly to the vehicle.
  5. Hinge pins and the hinge pin retainers.
  6. End gate window supports. Refer to "End Gate Window Support Replacement."

## END GATE WINDOW SUPPORT REPLACEMENT

**CAUTION:** Do not attempt to remove or loosen gas support assembly attachments with glass in any position other than fully open as personal injury may result.

Do not intermix original quality gas supports with other quality supports, since not all supports have the same output level.

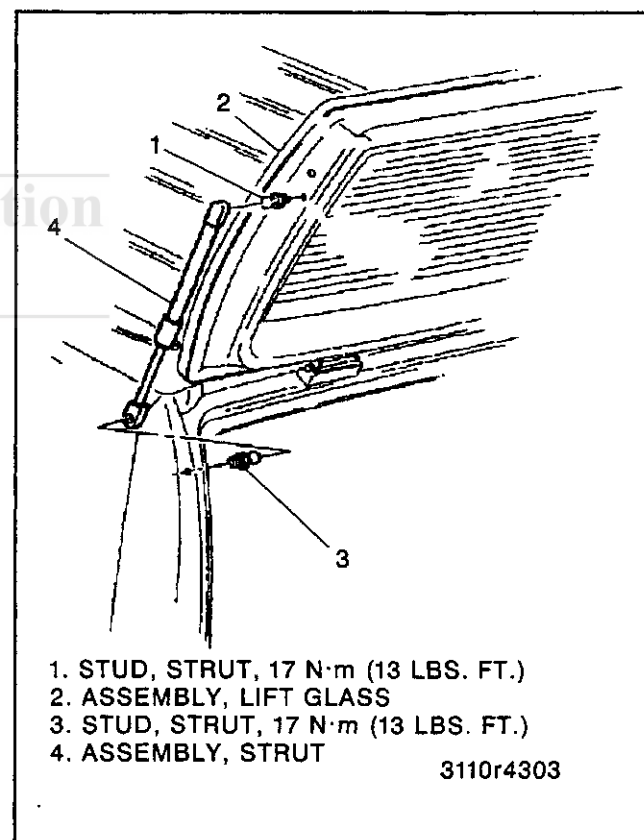


Figure 10—Window Support

### ↔ Remove or Disconnect (Figure 10)

1. Rear window defogger wires attached to the gas supports (if equipped).
2. Ball sockets from the glass side.
  - Carefully pry the gas support ball socket from the ball. Insert a small screwdriver between the ball and the ball socket and pull the gas support from the window.
  - Support the rear window glass.
3. Ball sockets from the body side.

## 10A5-10 END GATE



Install or Connect (Figure 10)

1. Gas support ball socket to the body and glass sides.
  - Push the ball socket onto the ball.
2. Rear window defogger wires to the gas supports (if equipped).

## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

	N-m	Lbs. Ft.	Lbs. In.
<b>Utility Vehicle</b>			
End Gate Bumper to End Gate Screws .....	2.8	—	25
End Gate Latch to End Gate Bolts .....	10	—	89
End Gate Window Assembly Hinge Nuts .....	23	17	—
End Gate Window Assembly Striker Bolts .....	10	—	89
Latch Operating Handle to End Gate Bolts .....	4	—	35
Lock Assembly Cover to End Gate Bolts .....	15	11	—
Lock Assembly to End Gate Bolts .....	15	11	—
Support Cable to Body Bolts .....	29	21	—
Support Cable to End Gate Bolts .....	2.8	—	25
Torque Rod Bracket Bolts .....	15	11	—
Trim Panel to End Gate Screws .....	1.9	—	17
Striker to Body Bolts .....	63	47	—
Strut Stud to the Body .....	17	13	—
Strut Stud to the End Gate Window Assembly	17	13	—
<b>Pickup</b>			
Body Side Hinge Bolts .....	27	20	—
End Gate Side Hinge Bolts .....	27	20	—
End Gate Striker Bolts .....	30	22	—
Latch Operating Handle Bolts .....	25	18	—
Latch to End Gate Bolts .....	30	22	—

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## SECTION 10B

# CAB AND BODY MAINTENANCE

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## ON-VEHICLE SERVICE

### CLEANING AGENTS

**CAUTION:** Follow the manufacturer's advice when cleaning agents or other chemicals are used inside or outside the vehicle. Some cleaners may be poisonous or flammable, and improper use may cause personal injury or damage. When cleaning the interior or exterior of the vehicle, do not use the following cleaners except as specifically directed in the fabric cleaning procedures contained in this manual:

- acetone
- lacquer thinners
- enamel reducers
- nail polish removers
- laundry soaps
- bleaches
- reducing agents

Never use carbon tetrachloride, gasoline, benzene, or naphtha for any cleaning purpose.

Open all vehicle doors for ventilation when any cleaning agents or other chemicals are used inside the vehicle. Overexposure to some vapors, which is more likely to occur in small, unventilated spaces, may result in a health problem.

**NOTICE:** To avoid possible permanent discoloration of light colored seats, do not let materials with non-fast colors come in contact with seat trim materials until these materials are totally dry. This includes certain types of clothing, such as colored denims, corduroys, leathers, and suedes.

Use the proper cleaning techniques and cleaners on the first cleaning to avoid water spots, spot rings, or setting of stains or soilage—all of which are more difficult to remove in a second cleaning.

Remove dust and loose dirt often that collect on interior fabrics with a vacuum cleaner or soft bristle brush. Wipe vinyl trim regularly with a clean damp cloth.

### INTERIOR CLEANING

#### BASIC STEPS BEFORE CLEANING

1. Remove stains as quickly as possible before they set.
2. Use a clean cloth or sponge, and change to a clean area often. A soft brush may be used if stains persist.
3. Use solvent-type cleaners only in a well ventilated area. Do not saturate the stained area.
4. If a ring forms after spot cleaning, clean the entire area immediately.
5. Follow manufacturer's instructions for all cleaning agents.

## 10B-2 BODY MAINTENANCE

### GENERAL CLEANING OF FABRIC TRIM WITH FOAM TYPE CLEANER

Use GM Multi-Purpose Powdered Cleaner or equivalent for this type of cleaning and for cleaning panel sections where small cleaning rings may be left from spot cleaning.

Vacuum and brush the area to remove any loose dirt and mask surrounding trim along stitch or welt lines.

Clean a whole trim panel or section. Mix the cleaner following the directions on the container label. Mix in proportion for smaller quantities. Use suds on a clean sponge. Do not saturate the material or rub it harshly. Wipe off remaining residue with a slightly damp absorbent towel or cloth. Dry the material with an air hose. A heat dryer or heat lamp may be used. Use care with a heat dryer or lamp to prevent fabric damage.

### SPOT CLEANING FABRIC TRIM WITH SOLVENT TYPE CLEANER

Before trying to remove a spot or stain from fabric, try to determine the type and age of the spot or stain. Some spots or stains can be removed with water or a mild soap solution. Remove spots or stains as soon as possible.

Some types of stains or soilage, such as lipstick, inks and grease, are very difficult (sometimes impossible) to remove completely. When cleaning this type of stain, do not enlarge the soiled area. Use GM Fabric Cleaner (solvent type) or equivalent for spot-cleaning grease, oil, or fat stains.

Gently scrape excess stain from the trim material with a clean dull knife or scraper. Use very little cleaner, light pressure, and clean cloths, preferably cheesecloth. Start cleaning at the outside of the stain and feather towards the center. Keep changing to a clean section of the cloth.

After the stain has been removed, immediately dry the area with an air hose, heat dryer, or heat lamp to help prevent a cleaning ring. Use caution with heat the dryer or lamp to help prevent fabric damage.

If a ring forms, immediately repeat the cleaning operation over a slightly larger area with emphasis on "feathering" towards its center. If a ring still remains, mask off the surrounding trim sections and clean the entire area with GM Multi-Purpose Powdered Cleaner or equivalent as described earlier in this section.

### REMOVAL OF SPECIFIC STAINS

#### Grease Or Oily Stains

The following applies to stains caused by such substances as grease, oil, butter, margarine, shoe polish, coffee with cream, chewing gum, cosmetic creams, vegetable oils, wax crayon, tar, and asphalts.

- Carefully scrape off excess matter, then use GM Fabric Cleaner (solvent type) or equivalent as explained earlier in this section.
- Shoe polish, wax crayons, tar, and asphalts will stain if left on trim; remove them as soon as possible. Use care since the cleaner may cause the stains to "bleed" as it dissolves them.

#### Non-Greasy Stains

This includes stains from catsup, black coffee, egg, fruit, fruit juice, milk, soft drinks, wine, vomit, blood, and urine.

- Carefully scrape off excess matter, then sponge the stain with cool water.
- If a stain remains, use GM Multi-Purpose Cleaner (foam type) or equivalent as explained earlier in this section.
- If an odor lingers after cleaning vomit or urine, treat the area with a water/baking soda solution of 5 milliliters (1 teaspoon) of baking soda to 250 milliliters (1 cup) of lukewarm water.
- Finally, if needed, clean lightly with GM Fabric Cleaner (solvent type) or equivalent.

### Combination Stains

This includes stains from candy, ice cream, mayonnaise, chili sauce, and stains of unknown origin.

- Carefully scrape off excess matter. Clean with cold water and allow to dry.
- If a stain remains, clean it with GM Fabric Cleaner (solvent type) or equivalent.

### CLEANING VINYL TRIM

Ordinarily soilage can be removed from vinyl with warm water and mild soap.

Apply a small amount of soap solution and let it soak for a few minutes to loosen the dirt; then rub briskly with a clean damp cloth to remove dirt and traces of soap. This may be repeated several times, if needed.

Soilage from such things as tars, asphalts, shoe polish, etc. will stain if left on trim. Wipe off these compounds as quickly as possible and clean the area with a clean cloth dampened with GM Vinyl/Leather Cleaner (solvent type) or equivalent.

### SEAT BELT CARE

**CAUTION: Do not bleach or dye seat belts since this may severely weaken them. Damaged seat belts are a safety hazard.**

- Keep the belts clean and dry.
- Clean seat belts only with mild soap and lukewarm water.

### GLASS SURFACES

Glass surfaces should be cleaned on a regular basis. Use GM Glass Cleaner or equivalent to remove normal tobacco smoke and dust films.

A non-abrasive cleaner may be used on the outside of the windshield. Clean wiper blades with a cloth soaked in a solution of one-half water and one half GM Opticlean or equivalent. A solution of one-half water and one-half methanol alcohol may also be used. Then rinse the blade with water.

## EXTERIOR CLEANING

### WASHING AND WAXING

Wash the vehicle in lukewarm or cold water. Do not use hot water or wash the vehicle in the direct rays of the sun. Do not use strong soap or chemical detergents. All cleaning agents should be promptly flushed from the surface and not allowed to dry on the finish.

Painted body surfaces and chrome plating should be protected by a coating of wax. Any good body wax can be used for both painted and chrome surfaces. Apply wax immediately after the vehicle has been cleaned. Periods between applications should be short enough to ensure continuous protection of the finish.



## **BODY MAINTENANCE 10B-3**

### **FOREIGN MATERIAL DEPOSITS**

Calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, and other foreign matter may damage vehicle finishes if left on painted surfaces. Use cleaners that are marked safe for painted surfaces for these deposits.

### **CLEANING BRIGHT METAL PARTS**

Clean bright metal parts regularly. Washing with water is all that is usually needed. Use GM Chrome Polish or equivalent on chrome or stainless steel trim, if necessary.

Use special care with aluminum trim. Do not use auto or chrome polish, steam, or caustic soap to clean aluminum. A coating of wax, rubbed to a high polish, is recommended for all bright metal parts.

### **WEATHERSTRIP LUBRICATION**

Use silicone grease to lengthen weatherstrip life, to help sealing, and to help eliminate squeaks. Use a clean cloth to apply a thin film of silicone grease to all weatherstrips.

### **WATER LEAKS**

If water has leaked into the interior, test for leak points. Refer to "Water Leak Tests" in SECTION 10A3. Mark the location(s) of any leaks.

Water which appears at a certain place inside the body may actually be entering from another point. It may be necessary to remove the floor mat, insulation, instrument panel, etc. in order to backtrack the path of the water to the point of entry. If it is still not possible to locate the point of entry, do the following:

1. Close all windows and vents.
2. Cover the air pressure relief valves.
3. Place the air lever in position to use outside air.

4. Turn the fan lever to the "HI" position.
5. Close the doors.
6. Run a small stream of water over the area suspected of leaking.
7. Check for pressure bubbles that indicate air is escaping from the interior.

### **CORRECTIVE MEASURES**

If the leak is between body panels, use an air drying body sealing compound.

If the leak is around a door, it may be because the door is not properly aligned. Refer to SECTION 10A1 and align the door. If the door is contacting the weatherstrip correctly, make sure the weatherstrip is not damaged and is properly seated on the opening flange. If the weatherstrip is damaged, replace it.

### **DUST LEAKS**

Dust will leak into the vehicle where water will not, particularly in the lower portion of the interior. Forward motion of the vehicle can create a slight vacuum which pulls air and dust inside.

To determine the location of dust leaks:

1. Remove the mats and insulation from the floor and toe panel.
2. Drive the vehicle on a dusty road.
3. Examine the interior. Dust in the shape of a small cone or slit will usually be found at the point of leakage.
4. Mark the points of leakage.
5. With the interior of the vehicle darkened, shine bright lamps on the underside of the floor and cowl, and have an assistant check inside for any points where the light shines through. Mark the leakage points. Check weld joints and body mounts.

Sealing of leaks should be done with an air-drying body-sealing compound.



## **10B-4 BODY MAINTENANCE**

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### **NOTES**

