SECTION 6
DOORS
INDEX

FRONT AND REAR DOORS

INTRODUCTION

This section of the manual contains the service operations that are necessary for the removal, installation, adjustment and sealing of door assemblies and individual door hardware components. The procedures are arranged in the sequence that they would be performed when servicing a door. To locate specific procedures, refer to the "Door Index".

Hardware items are divided into three categories. Those which are common to all doors are found under "Front and Rear Doors", which also includes door and side roof rail weatherstrips. Items which are peculiar to front or rear doors are found under "Front Doors" or "Rear Doors" respectively.

Door trim service procedures are covered in Section 14 of this manual (See Index).

Body series or style references in the procedures are explained under "General Information" in Section 1 of this manual.

FRONT AND REAR DOOR WEATHERSTRIPS—

Both the front and rear doors use nylon fasteners to retain the door weatherstrips. The fasteners are a component part of the weatherstrip and secure the weatherstrip to the door by engaging piercings in the door panels. The serrations of the fastener retain the fastener in the piercing and also seal the openings from water entry (Fig. 6-1).

On "B" Body Sedan Styles, nylon fasteners are used around the entire perimeter of the door. On "A & X" Closed Styles, nylon fasteners are used below the beltline only. Weatherstrip adhesive retains the weatherstrip around the door upper frame above the beltline (Fig. 6-2).

In addition to the nylon fastener, "B" Body Sedan Styles use weatherstrip adhesive at the beltline and down the front door hinge pillar. All styles other than closed styles use plastic fasteners at the belt.

To disengage nylon fasteners from door panel piercings use tool J-21104 or equivalent (Fig. 6-1). This tool permits removal of the weatherstrip without damaging the serrations on the fasteners so that the weatherstrip can be reinstalled if desired.

Although a replacement door weatherstrip will include the nylon fasteners, individual fasteners are available as service parts.

Removal

1. On all hardtop and convertible styles, remove door trim pad to gain access to weatherstrip fasteners hidden under trim assembly and remove fasteners (Fig. 6-3).

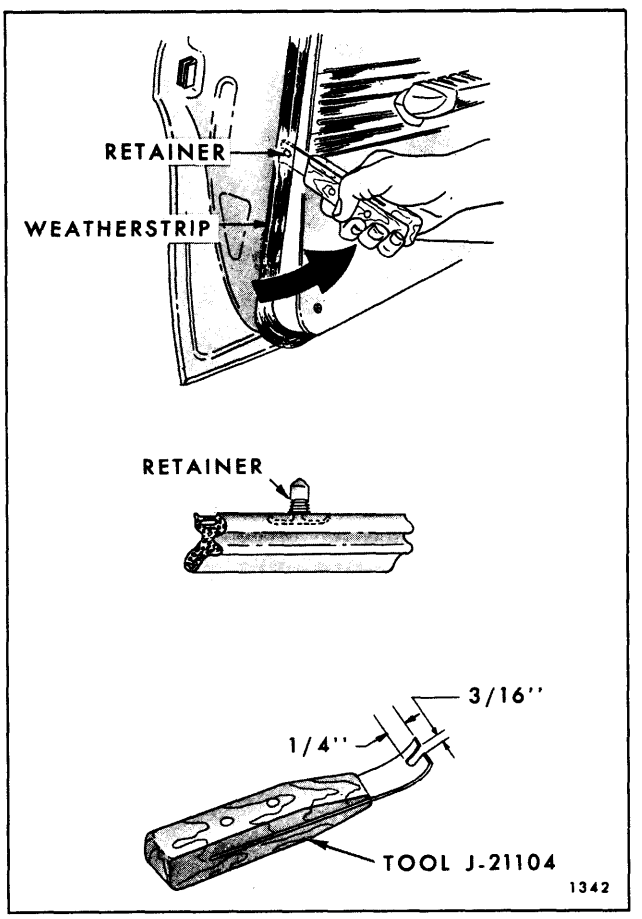


Fig. 6-1—Door Weatherstrip Removal

2. On sedan styles, use a flat-bladed tool to break cement bond between door and weatherstrip. On "B" Body Sedan Styles, weatherstrip adhesive is used for a distance of 9" on door lock pillar and the entire length of the front door hinge pillar ("D", Fig. 6-4). On "A & X" sedan styles, weatherstrip is retained by weatherstrip adhesive completely around door upper frame (Fig. 6-2).

3. On all styles, use tool J-21104 or equivalent to disengage weatherstrip from door where weatherstrip is retained by nylon fasteners. Nylon fastener usage is below the beltline on all styles, and above the belt only on "B" Body Sedan Styles.

Installation

1. If previously removed weatherstrip is to be reinstalled, inspect nylon fasteners and replace those that are damaged.

2. Clean off old weatherstrip adhesive from door.

3. On sedan styles, apply black weatherstrip adhesive to door surface contacted by weatherstrip (Circle "C", Fig. 6-4) to effect a positive seal at point where door upper frame enters door.

4. On styles without door upper frames, position weatherstrip to door and install plastic fasteners at front and rear ends of weatherstrip.

5. On styles with door upper frames, position weatherstrip to door as follows:

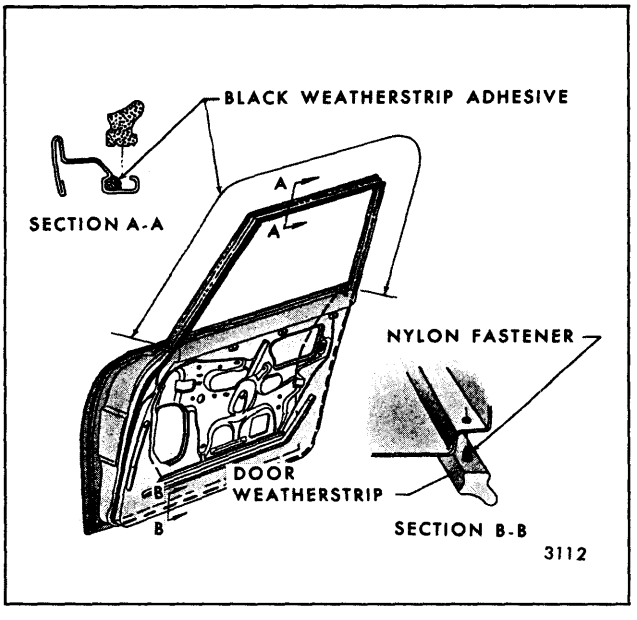


Fig. 6-2—Door Weatherstrip - "A & X" Closed Styles

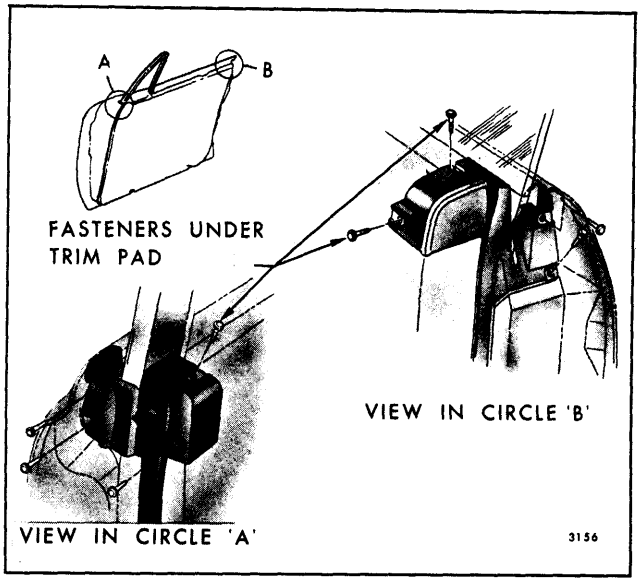


Fig. 6-3—Door Weatherstrip - Hardtop Styles

   a. On front doors, locate weatherstrip from rear upper corner which is color-coded (Fig. 6-4).

   b. On rear doors, locate weatherstrip from molded front upper corner.

6. Tap nylon fasteners into door piercing using a hammer and blunt caulking tool.

7. On "A & X" Sedan Styles, apply a bead of black weatherstrip adhesive to gutter of door upper frame as shown in section "A-A", Fig. 6-2, then, install weatherstrip.

8. After all fasteners have been installed on sedan styles, apply weatherstrip adhesive between door and weatherstrip outboard surface at the following locations:

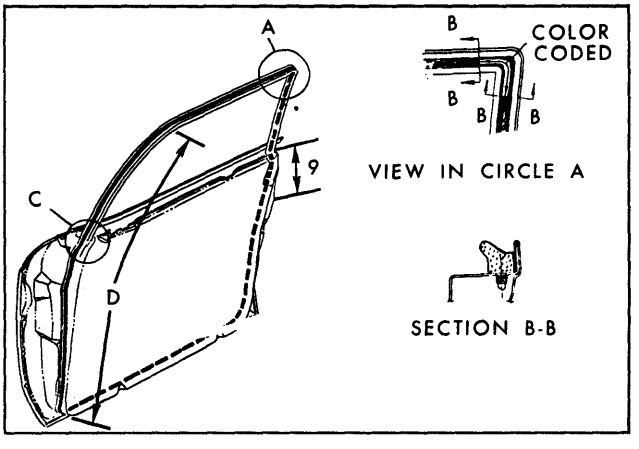


Fig. 6-4—Door Weatherstrip - "B" Closed Styles

a. For 5" around rear upper corner of front door upper frame (Circle "A", Fig. 6-4), 9" down door lock pillar starting at beltline and down entire hinge pillar facing indicated "D".

b. On sedan rear doors, 9" down both door lock pillar and door hinge pillars starting at beltline.

c. On hardtop style front and/or rear doors starting at beltline and extending 9" down both door lock and door hinge pillars.

NOTE: . If weatherstrip becomes damaged at fastener location and will not retain fastener, remove fastener and secure weatherstrip to door with weatherstrip adhesive. If more than two consecutive fastener locations become damaged, replace weatherstrip.

Although weatherstrip adhesive is specified only at specific locations, it can be used at any point where additional retention or sealing is required.

DOOR BOTTOM DRAIN HOLE SEALING STRIPS

Door bottom drain slot sealing strips are attached to door inner panels over door bottom drain slots to prevent entry of roadnoise, dust and cold air at these locations (Fig. 6-5).

To remove sealing strips, use a flat-bladed tool to pry retaining plugs from door inner panel piercings.

To install, insert a blunt pointed tool such as dull ice pick or scratch awl into strip retaining plugs and push plugs into door panel piercings.

DOOR BOTTOM AUXILIARY SEALING STRIP—Chev. 16600 Styles, Pontiac 26000 Series Except "67" Styles, All Cadillac Styles and All "E" Body Styles Except Buick

The door bottom auxiliary sealing strip is secured to the door inner panel with weatherstrip adhesive. The strip is installed after water deflector installation and prior to trim installation. As shown in section "A", Figure 6-6, the upper edge of the strip is aligned with the water deflector drain slot. The rolled, semi-bulbular section of the sealing strip extends down below the door trim pad when the trim is installed and fills the opening between the door and door sill plate.

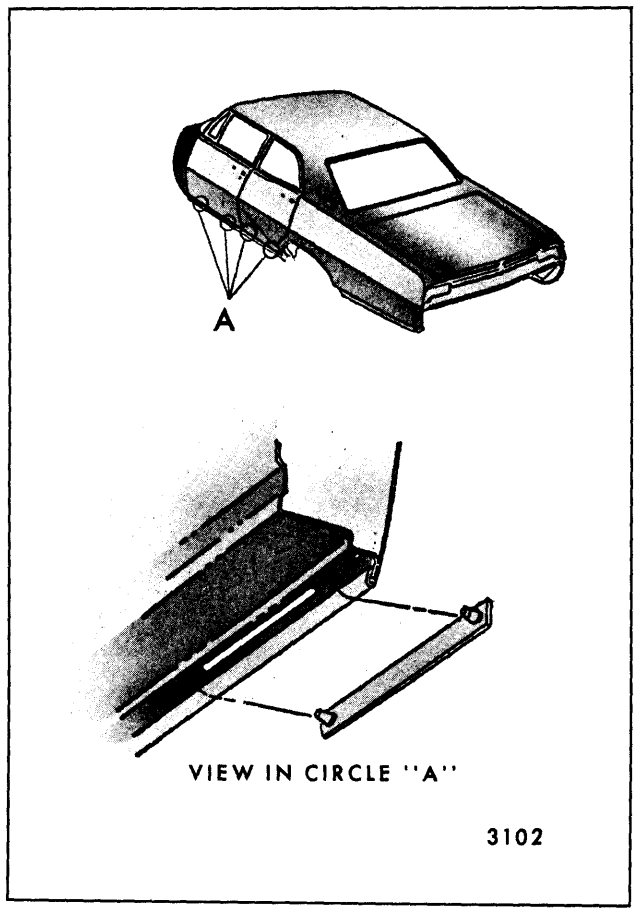


Fig. 6-5—Door Bottom Drain Hole Sealing Strips

FRONT AND REAR DOOR INNER PANEL WATER DEFLECTOR

A waterproof deflector is used to seal the door inner panel and prevent entry of water into body. The deflector is secured by a string-loaded sealing material along both front and rear edges and by the

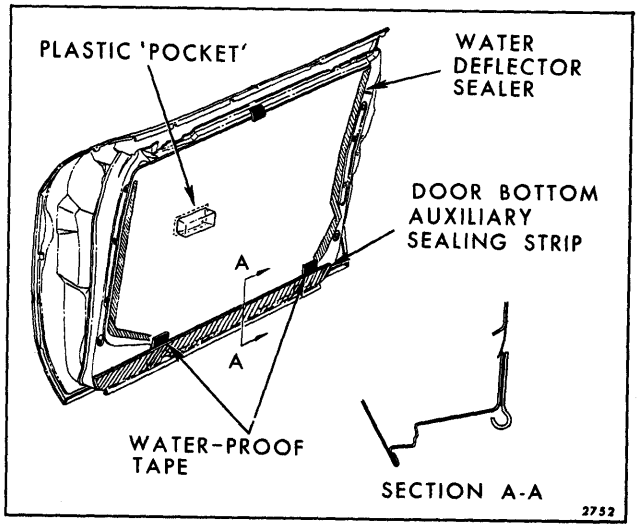


Fig. 6-6—Door Inner Panel Sealing

application of waterproof sealing tape at front and rear lower corners. Whenever work is performed on front or rear doors where the water deflector has been disturbed, the deflector must be properly sealed and taped to the inner panel to prevent waterleaks (Fig. 6-6). For service sealing, body caulking compound is recommended if additional sealing material is required.

When access to the inner panel is required to perform service operations, the deflector may be completely or partially detached from the inner panel. If the existing water deflector is damaged so that it will not properly seal the door, replacement of the deflector is required.

The following procedure covers complete removal and installation of the water deflector. If only partial removal of the deflector is required, perform only those steps which are necessary to expose the required area of the door inner panel.

Removal

1. Remove the door trim assembly.
2. Remove waterproof body tape securing top of water deflector to door inner panel.
3. Using a flat-bladed tool such as a putty knife, carefully break cement bond between water deflector and door inner panel down both sides of deflector. Make certain tool blade is between inner panel and string that is embedded in sealer.
4. When seal has been broken down both sides of deflector, carefully remove tape from inner panel at lower corners of water deflector (Fig. 6-6). Disengage water deflector from inner panel drain slot and remove deflector. On styles so equipped, it will be necessary to partially remove door bottom auxiliary sealing strip to permit removal of tape at bottom of deflector (Fig. 6-6).

Installation

1. Inspect water deflector and, where necessary, repair any tears or holes with waterproof body tape applied to both sides of deflector.
2. If a new deflector is to be installed, use old deflector as a template. On styles where deflector has small individual plastic "pockets", transfer "pockets" from old to new deflector (Fig. 6-6). Use waterproof body tape or black weatherstrip adhesive to form a watertight seal completely around "pocket". Seal on opposite side from which "pocket" deflector protrudes (dotted line, Fig. 6-6).

   NOTE: If "pocket" deflector is damaged beyond repair, replace with new part which is available as service part.
3. Position water deflector to door inner panel and insert lower edge of deflector in retaining slot. Then, firmly roll or press edges of deflector to obtain a good bond between deflector and door inner panel.

   If old sealer does not effect a satisfactory seal, apply additional body caulking compound to inner panel at unsealed areas.
4. Seal lower corners of deflector by re-applying previously removed tape or new pieces of 2" or 2-1/2" waterproof body tape.
5. On styles with door inner panel hardware attachments that are outboard of water deflector, seal attaching bolt head and panel piercing with body caulking compound.

DOOR WINDOW GLASS RUN CHANNEL SEALING STRIP ASSEMBLIES (At Belt)

Glass run channel sealing strips are used to form a seal between the door inner and outer panels and the window at the beltline. The construction and attachment of these strips vary with the body style involved.

On styles with a door window lower reveal molding, the outer strip assembly is clipped to the molding and, therefore, removed with the molding (See "Exterior Moldings"). The entire assembly is available as a service part, as is the strip assembly itself. The molding is not serviced independent of the strip assembly.

On styles without a door window lower reveal molding, the outer strip assembly is an independent part that is secured to the door outer panel return flange by clips or screws, or a combination thereof. The following procedures pertain to this type of construction.

Fig. 6-7—Clip Retained Glass Run Channel Strip Assembly Removal

On all except "Z" body styles, the inner strip assembly is attached to the door trim pad and is removed from the door with the trim pad. The "Z" style strip assembly is secured to the door inner panel with clips and must be removed to permit removal of the door window assembly.

NOTE: To remove either the clip or screw retained strip assembly, the glass must be low enough to gain access to the attachments. In most cases this will require removal of the window lower stop bumpers to permit further lowering of window assembly.

Removal and Installation

1. On styles with screw retained strip assemblies, remove strip assembly by removing attaching screws.

2. On styles with clip retained inner or outer strip assemblies, remove strip assembly as follows:

   a. Apply cloth-backed tape as a protective cover over painted surface of door panel adjacent to strip assembly.

   b. Using a flat-bladed tool that is slotted to fit over tang of clip, disengage clips from slots in door panel return flange as shown in Figure 6-7.

   c. To install strip assembly, position strip so that each clip tang starts into slot in door panel; then, engage clips by pressing downward. Prior to installation, re-form clip tangs to assure positive retention when installed.

   NOTE: To fabricate strip assembly removal tool, make a 1/4" wide by 3/8" deep slot in a flat-bladed tool similar to the J-2772 headlining inserting tool.

SIDE ROOF RAIL WEATHERSTRIP AND RETAINER

The side roof rail weatherstrip is cemented to a side roof rail weatherstrip retainer, which, in turn is secured with screws to the side roof rail. The adhesive that retains the weatherstrip also protects against water entry between the retainer and weatherstrip. A saturated polyurethane foam sealing strip prevents water entry between the retainer and side roof rail.

Removal—All Hardtop Styles Except "E" Body

1. Remove plastic fasteners at front of side roof rail weatherstrip (Fig. 6-8 is typical of all styles at front hinge pillar).

2. While carefully pulling weatherstrip out of retainer, simultaneously break cement bond

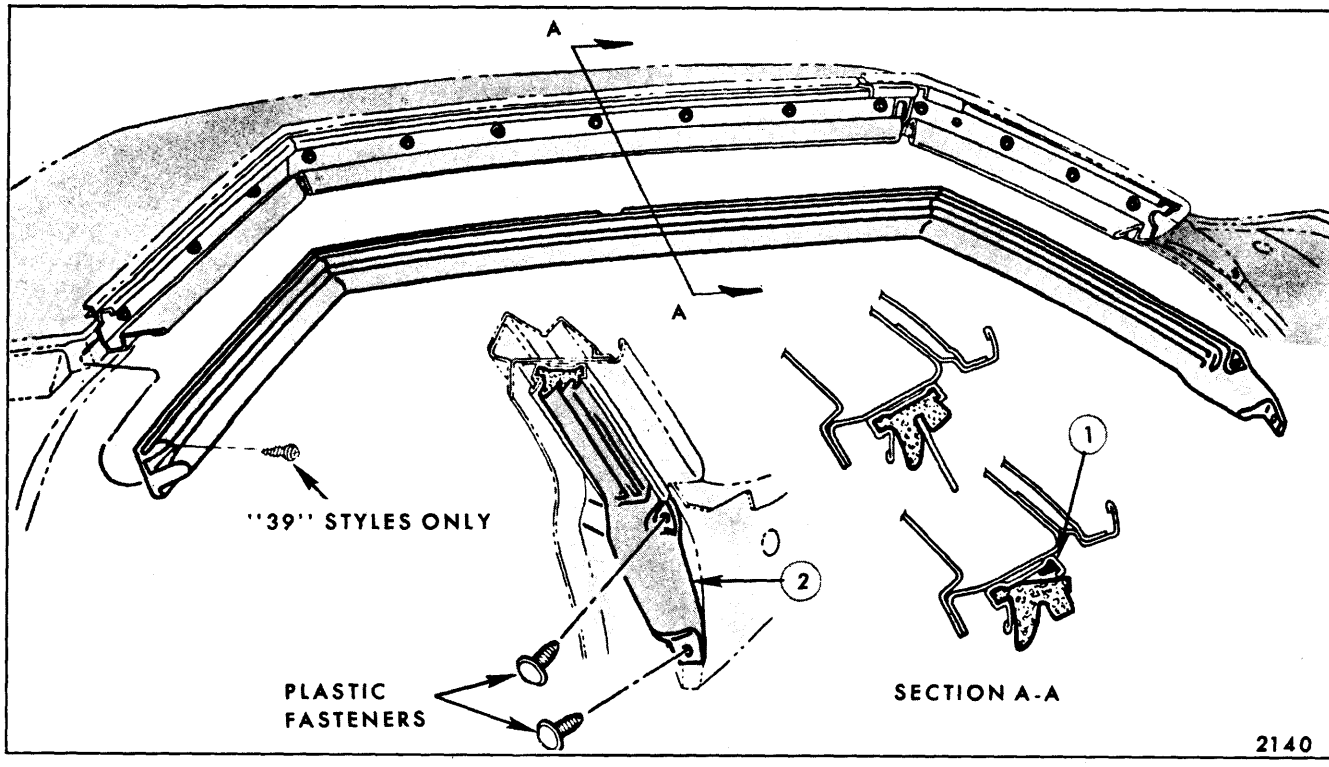


Fig. 6-8—Side Roof Rail Weatherstrip

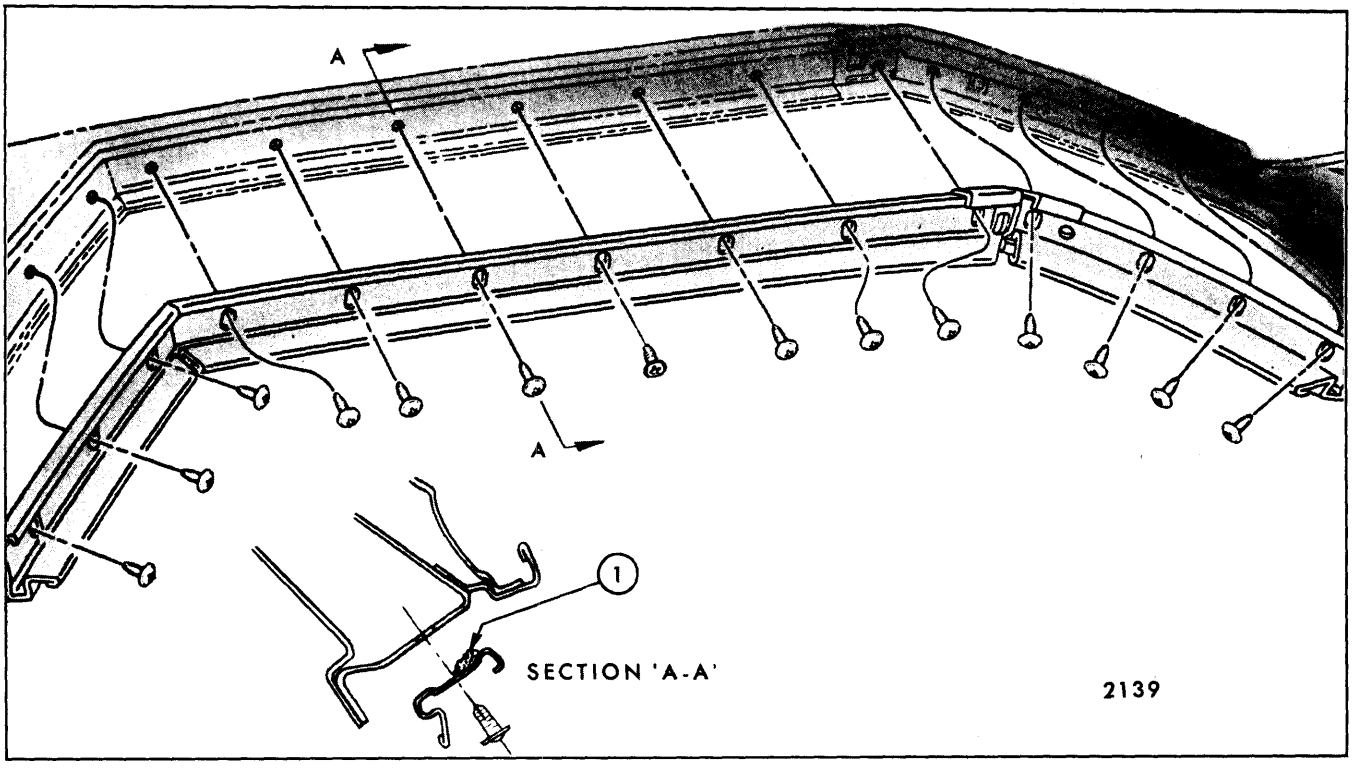


Fig. 6-9—Side Roof Rail Weatherstrip Retainer

between weatherstrip and weatherstrip retainer using a flat-bladed tool.

3. With weatherstrip removed, screws securing weatherstrip retainer to side roof rail are exposed. Remove screws to remove retainer (Figs. 6-9 and 6-10).

Removal—(Buick and Oldsmobile "E-87" Styles)

1. Remove plastic fasteners at front of weatherstrip similar to those shown in Figure 6-8.

2. Remove rear seat cushion, rear seat back and rear quarter upper trim assembly (See Trim Index).

3. Remove screw(s) securing side roof rail weatherstrip (rear section) to side roof rail (Fig. 6-11), and rear quarter panel.

4. While carefully pulling weatherstrip out of retainer, simultaneously break cement bond between weatherstrip and retainer using a flat-bladed tool.

5. With weatherstrip removed, screws securing weatherstrip retainer to side roof rail are exposed. Remove screws to remove side roof rail weatherstrip retainer.

NOTE: The following procedure outlines the recommended process of servicing side roof rail weatherstrips on "E-87" styles when only that portion over the door glass requires replacement.

The side roof rail weatherstrip consists of two sections connected by a vulcanized joint. The front section (over door glass) can be serviced separately from the rear section (over rear quarter window). Replacement of the rear section requires replacement of the entire side roof rail weatherstrip. Replacement of front section, however, can be accomplished individually by utilizing the following procedure.

1. With a sharp implement, sever the vulcanized joint and remove front section of side roof rail weatherstrip as outlined in the preceding procedure. The service weatherstrip is equipped with a nylon patch, half of which is cemented in place (Fig. 6-12). The other half is to be cemented over the rear section of side roof rail weatherstrip (over quarter window) as directed in Step #3.

2. Install replacement weatherstrip in the normal manner and form a butt joint to quarter run channel (see illustration). Use an approved weatherstrip adhesive (preferably black) to form butt joint.

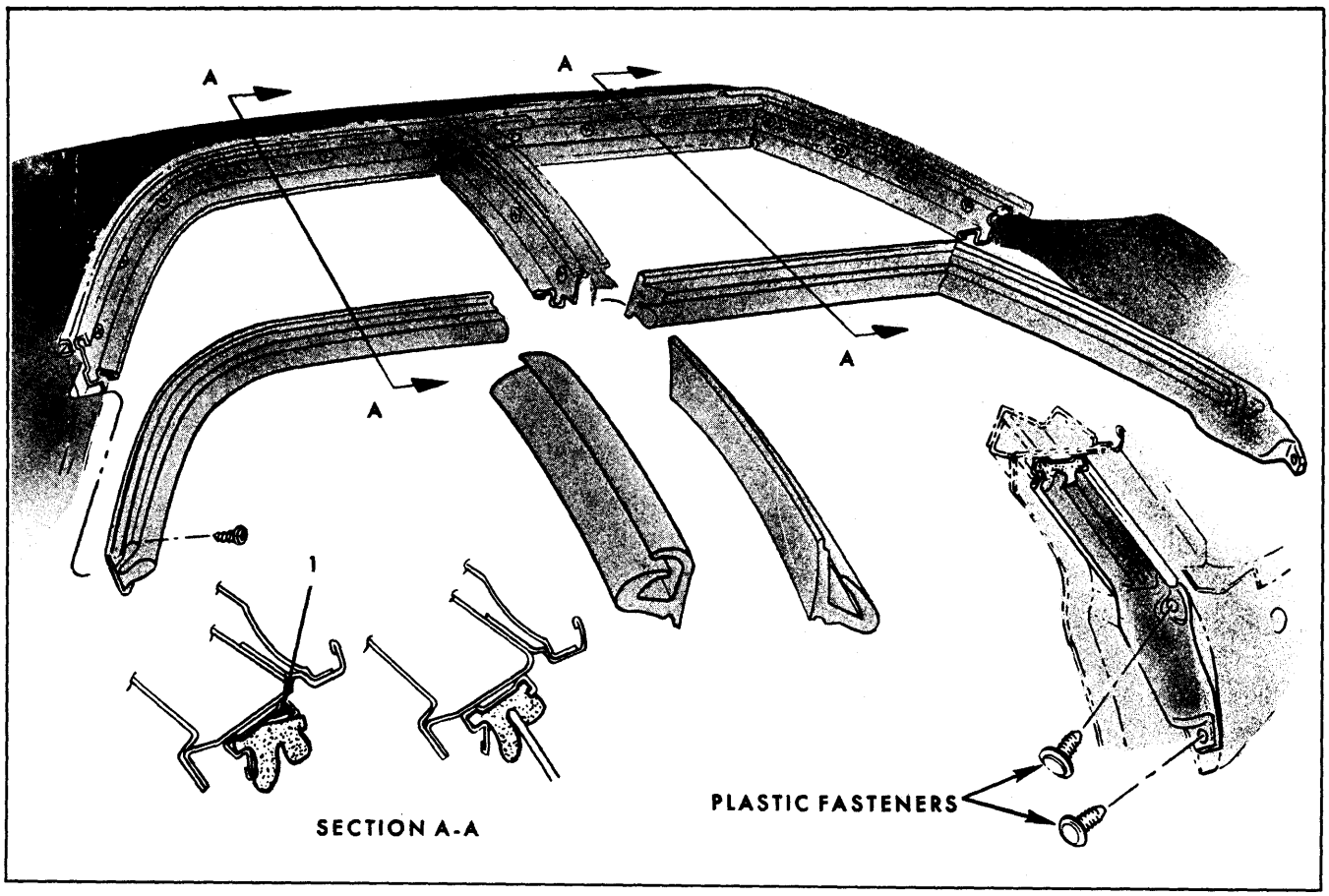


Fig. 6-10—Side Roof Rail and Center Pillar Weatherstrip
"C-69" Styles

3. With an approved neoprene cement, install remainder of nylon patch (Fig. 6-12) to cover butt joint.

Removal—(Cadillac "E-47" Styles)

1. At front of weatherstrip, disengage plastic fasteners from front body hinge pillar similar to those shown in Figure 6-8.

2. Lower rear quarter window and remove screw at rear of side roof rail weatherstrip (Fig. 6-13).

3. While carefully pulling weatherstrip out of retainer, simultaneously break cement bond between weatherstrip and retainer, using a flat-bladed tool.

4. With weatherstrip removed, screws securing weatherstrip retainer to side roof rail are exposed. Remove screws to remove side roof rail weatherstrip retainer (similar to Fig. 6-9).

Installation (All Styles)

1. If retainer has been removed, remove and discard saturated polyurethane foam sealing strip from side roof rail weatherstrip retainer and/or side roof rail (Sec. 'B-B', Fig. 6-11).

2. Scrape off any excess black weatherstrip adhesive from weatherstrip retainer.

3. Apply a continuous bead of a "pumpable" type body caulking compound to surface of retainer that mates with side roof rail ("1", Fig. 6-9). Apply bead outboard of attaching screw holes.

4. Position retainer to body and install attaching screws.

5. Apply a bead of black weatherstrip adhesive to outboard flange of weatherstrip retainer ("1", Figs. 6-8 and 6-10). Extend adhesive down front body hinge pillar to seal lower front end of weatherstrip that is retained with plastic fasteners.

   NOTE: For Steps 5 & 6, Figures 6-8 and 6-10 are to be considered as typical for all hardtop styles.

6. Position front end of weatherstrip to body and

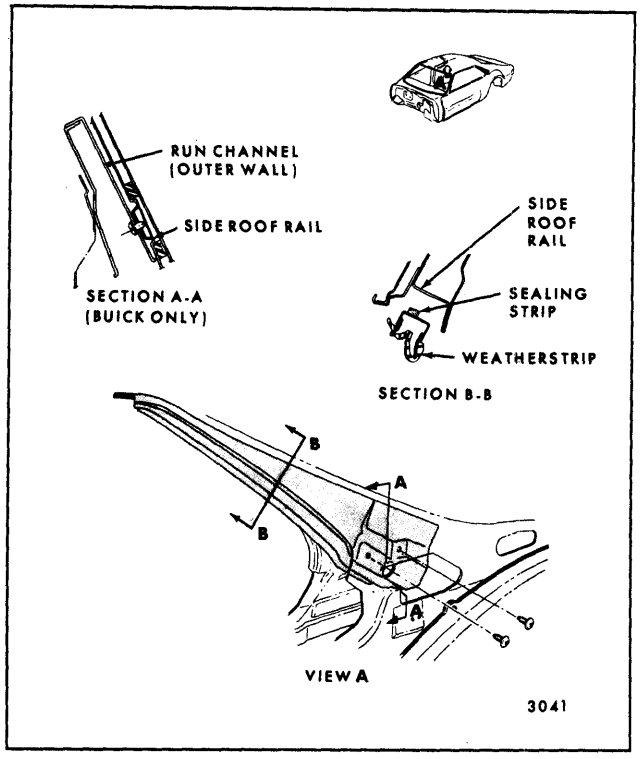


Fig. 6-11—Rear Quarter Glass Run Channel (Above Belt) "E-87" Styles

install plastic fasteners. Then, using a flat-bladed tool, begin engaging weatherstrip with retainer as shown in Section "A-A", Figs. 6-8 and 6-10. Engage inboard lip of weatherstrip first, then, outboard lip.

7. After weatherstrip has been installed along length of retainer, install screw at rear end of weatherstrip where so equipped.

SIDE ROOF RAIL WEATHERSTRIP ADJUSTMENT

The side roof rail weatherstrip can be adjusted either inboard or outboard to obtain a better seal with the door or quarter window.

To reposition the weatherstrip, disengage the inboard edge of weatherstrip from retainer and remove retainer attaching screws. Using a flat-bladed tool, carefully break the adhesive bond formed by the saturated polyurethane sealing strip between retainer and body. Adjust retainer as required and replace screws. Reinstall weatherstrip using black weatherstrip adhesive to seal weatherstrip to retainer.

For proper relationship of weatherstrip to door window, refer to "Front Door Window Adjustments".

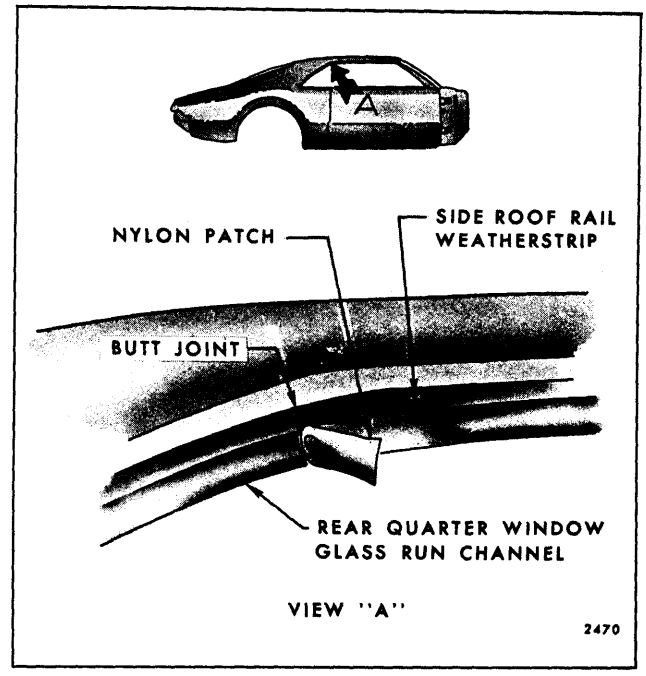


Fig. 6-12—Side Roof Rail Weatherstrip Replacement - "E-87" Styles

NOTE: Major retainer adjustments will require resealing retainer to body using body caulking compound.

CENTER PILLAR WEATHERSTRIPS— "C-69" Styles

The center pillar weatherstrips are retained with adhesive in retainers that are screwed to the center pillar (Fig. 6-10). In addition, the weatherstrips are retained at the top by a barb in the retainer that engages the weatherstrip. Due to the

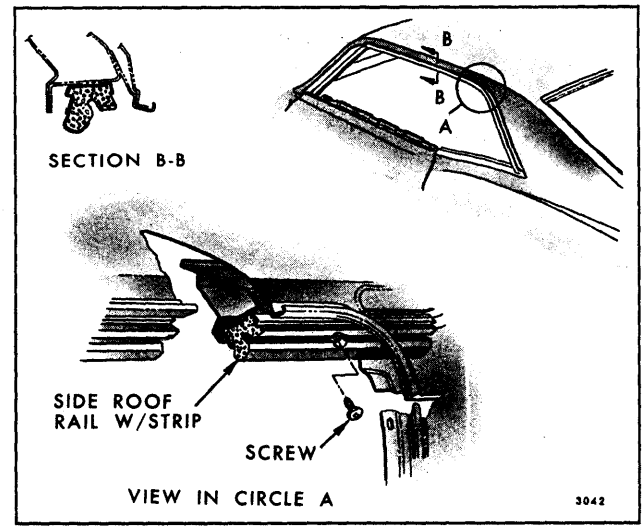


Fig. 6-13—Side Roof Rail Weatherstrip - "47-57" Styles

presence of the barb, a center pillar weatherstrip cannot be removed by sliding it out at the bottom of the retainer. Instead, it must be worked out of the retainer with a flat-bladed tool. Starting at the lower end and working upward, disengage weatherstrip from retainer outboard flange.

Although the weatherstrip cannot be slid out of the retainer, it is installed by engaging the upper end of the strip with the lower end of the retainer and sliding the strip upward. Prior to installing weatherstrip, apply a bead of black weatherstrip adhesive to outboard flange of retainer to secure weatherstrip when it is installed.

NOTE: The center pillar weatherstrips can be adjusted inboard or outboard to achieve a better seal with the door window. To reposition the weatherstrip, remove weatherstrip from retainer and adjust retainer in or out as required.

SPECIFIED BODY OPENING CLEARANCE TOLERANCES—All Styles

Figures 6-14 through 6-18 show specified body opening gap spacing tolerances and deviations from flush alignment permissible between fender and front door and front to rear door on all 1969 body styles.

Deviations from flush alignment are required at those locations where a swing-in type hinge is used and the leading edge of the door swings inboard of adjacent body metal.

SPRING CLIPS

A spring clip is used to secure remote control connecting rods and inside locking rod connecting links to door lock levers. A slot in the clip provides for disengagement of the clips, thereby facilitating detachment of linkage.

To disengage a spring clip, use a screwdriver, or other suitable tool, to slide clip out of engagement (See Fig. 6-19).

FRONT AND REAR DOOR OUTSIDE HANDLE ASSEMBLY—All Styles

Removal and Installation

1. Raise door window. Remove door trim assembly and detach upper rear corner of inner panel water deflector sufficiently to gain access to door outside handle attaching screws (Refer to Fig. 6-20 for "G" styles and Fig. 6-21 for all other styles).

2. Remove screws through access hole and remove door handle and gaskets from outside of body.

3. To install, reverse removal procedure.

DOOR OUTSIDE HANDLE DISASSEMBLY AND ASSEMBLY—All Styles Except "G" Styles

1. Remove door outside handle as previously described.

2. Depress retainer slightly and rotate 1/4 turn in either direction. Remove retainer, spring, push button and shaft and sealing washer from handle (See Fig. 6-22 for front door handles and Fig. 6-23 for rear door handles).

   NOTE: Parts are serviced as shown in the illustrations; separate components for the front door handle, and a push button, spring, and retainer assembly for the rear door handle except on "E & G" Body Styles. On "E" Styles the front door push button, spring, and retainer are serviced as an assembly. "G" style front door handles are serviced as an assembly only.

3. To assemble, reverse disassembly procedure.

FRONT AND REAR DOOR LOCK STRIKERS—All Styles

The front and rear door lock striker consists of a single metal bolt and washer assembly that is threaded into a tapped, floating cage plate located in the body lock pillar. With this design, the door is secured in the closed position when the door lock fork-bolt snaps-over and engages the striker bolt.

Removal and Installation

1. Mark position of striker on body lock pillar using a pencil.

2. Insert a 5/16" wrench into hex-head fitting in head of striker bolt and remove striker (Fig. 6-24). On bodies equipped with a star shaped tool fitting in the head of striker bolt (Fig. 6-24), use tool J-23302.

3. To install, reverse removal procedure. Make certain striker is positioned within pencil mark.

   NOTE: When replacing striker, touch-up any exposed unpainted surface on lock pillar adjacent to striker assembly.

   IMPORTANT: Whenever a door has been removed and reinstalled or realigned, the door should not be closed completely until a visual check is made to determine if lock fork-bolt will correctly engage with striker.

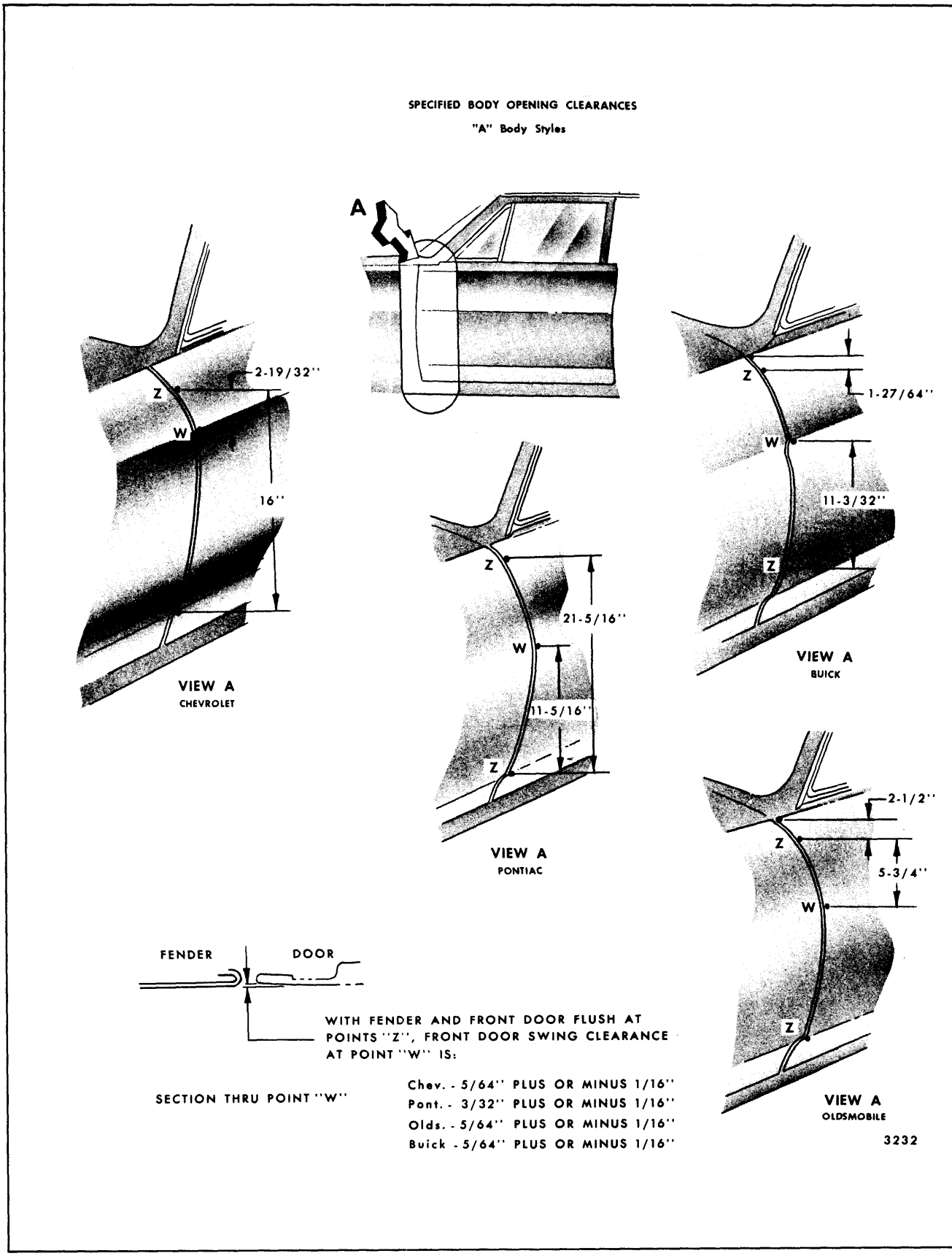
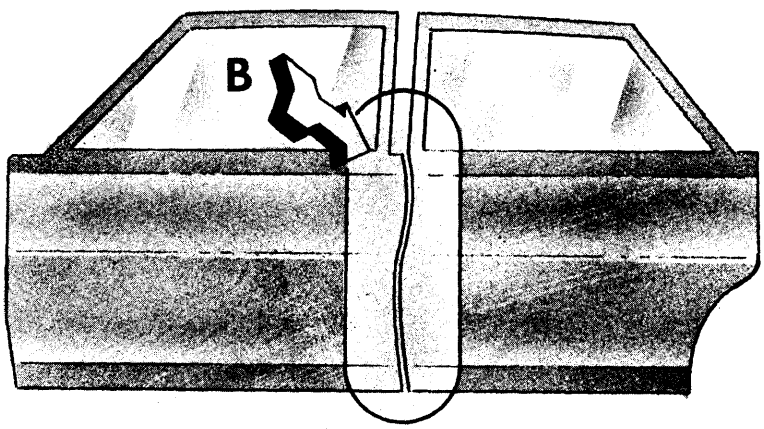
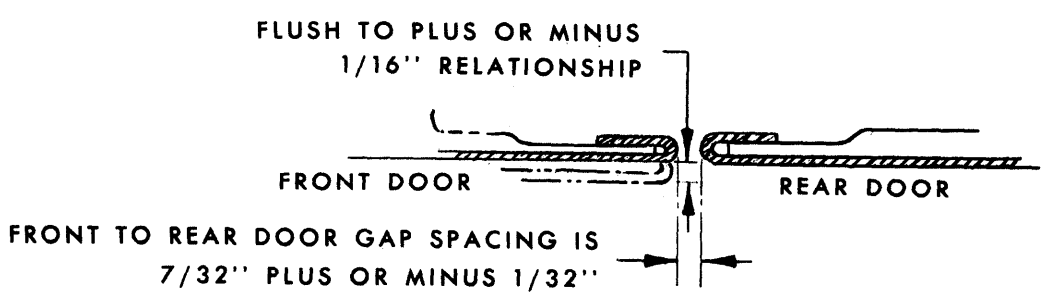


Fig. 6-14—Specified Body Opening Clearance Tolerances - "A" Styles

SPECIFIED BODY OPENING CLEARANCE TOLERANCES

"A, B and C" Body 4 Door Styles





VIEW B

SECTION SHOWING CLEARANCE BETWEEN FRONT AND REAR DOOR

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Fig. 6-15—Specified Body Opening Clearance Tolerances - "A, B and C" Body Four Door Styles

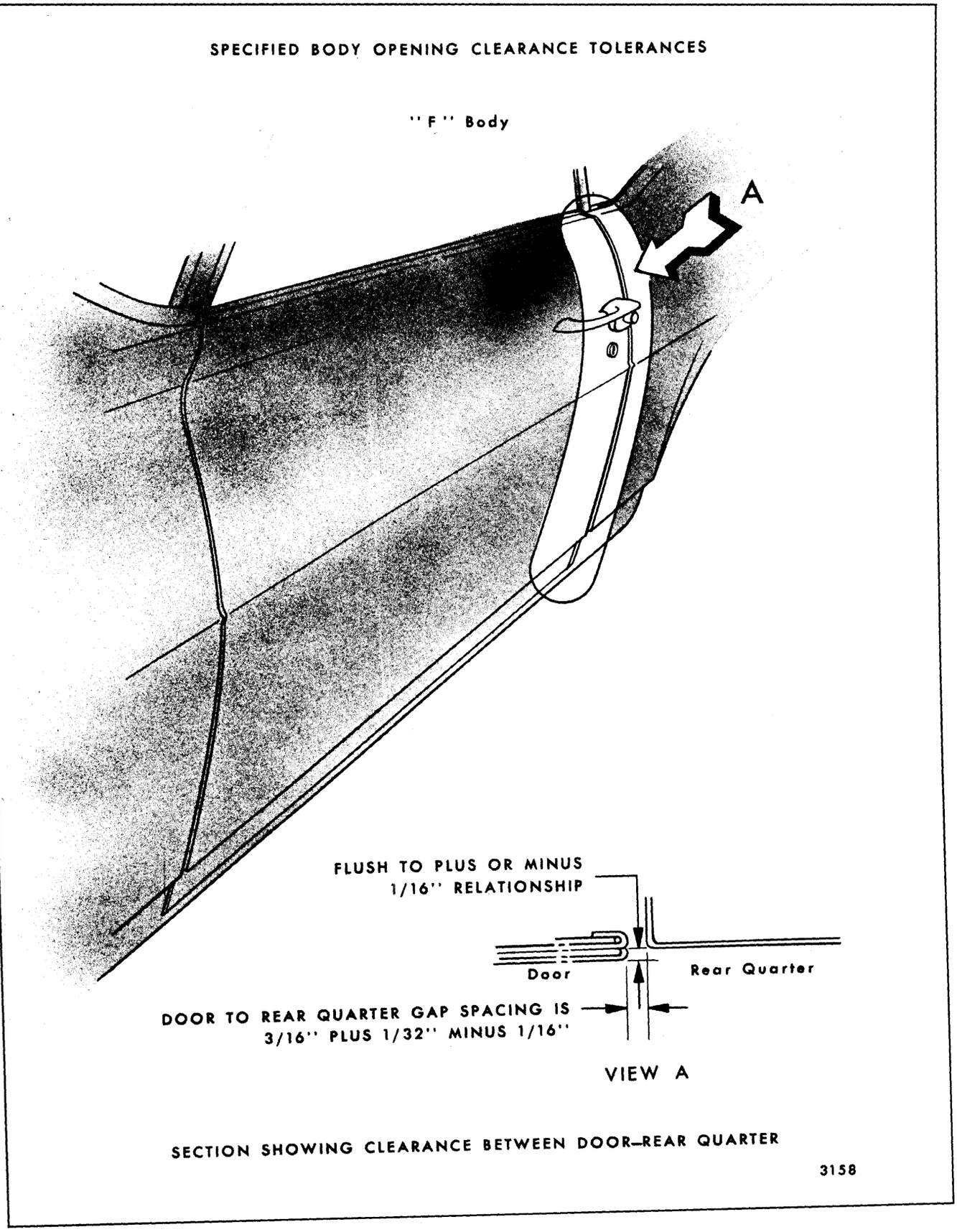


Fig. 6-16—Specified Body Opening Clearance Tolerances - "F" Styles

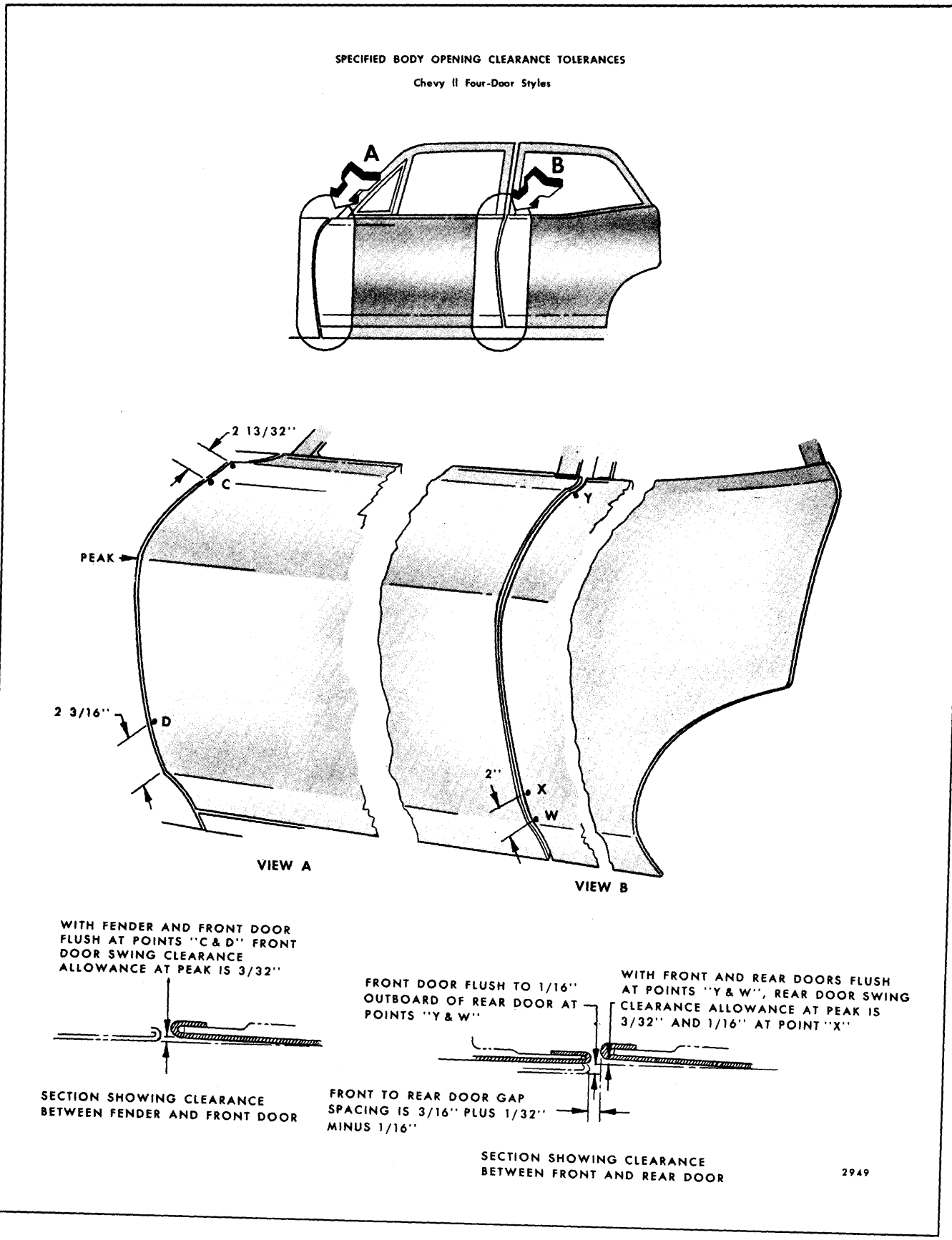
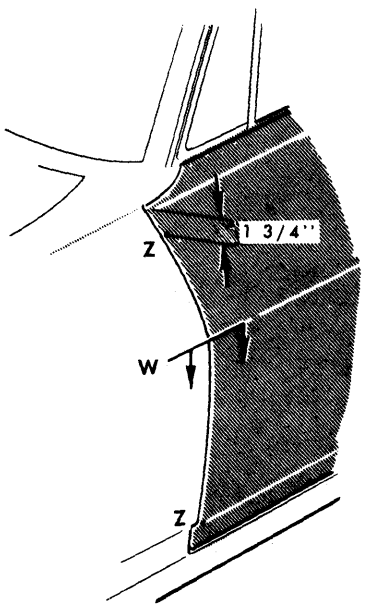


Fig. 6-17—Specified Body Opening Clearance Tolerances - "X" Styles

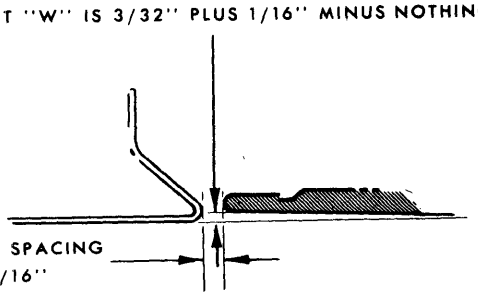
SPECIFIED BODY OPENING CLEARANCE TOLERANCES

Corvair Body Styles



VIEW A

WITH FENDER AND DOOR FLUSH AT POINTS "Z", FRONT DOOR SWING CLEARANCE ALLOWANCE AT POINT "W" IS 3/32" PLUS 1/16" MINUS NOTHING



FENDER TO FRONT DOOR GAP SPACING IS 3/16" PLUS 1/32" MINUS 1/16"

Section "W" of View A

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Fig. 6-18—Specified Body Opening Clearance Tolerances - "Z" Styles

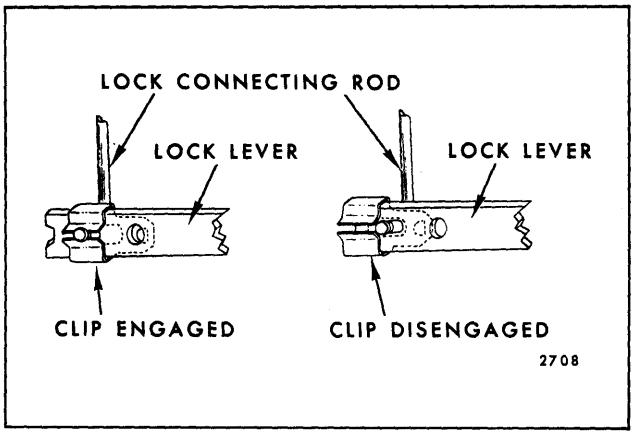

Fig. 6-19—Door Lock Spring Clip

Adjustments

1. To adjust striker up or down, or in or out, loosen striker bolt and shift striker as required, then tighten striker.

2. To determine if striker fore or aft adjustment is required, proceed as follows:

   a. Make certain door is properly aligned.

   b. Apply modeling clay or body caulking compound to lock bolt opening as shown in Figure 6-25.

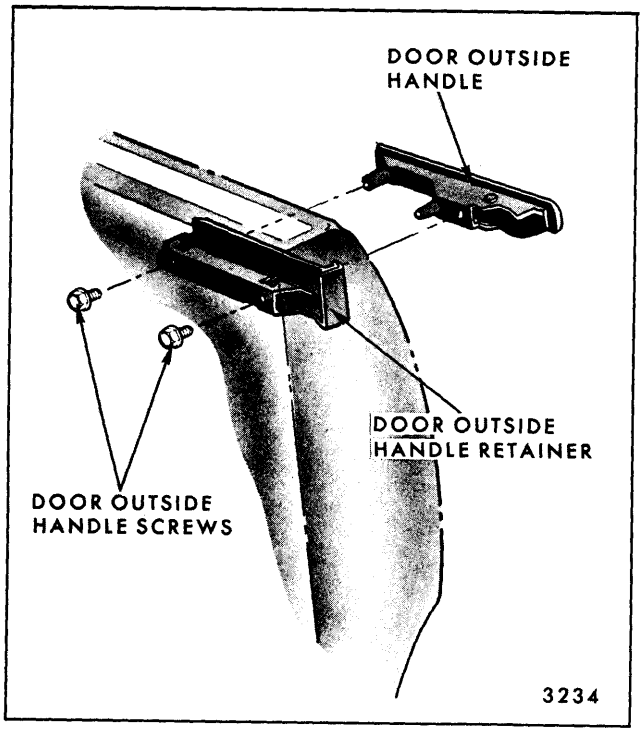

Fig. 6-20—Door Outside Handle Removal - "G" Styles

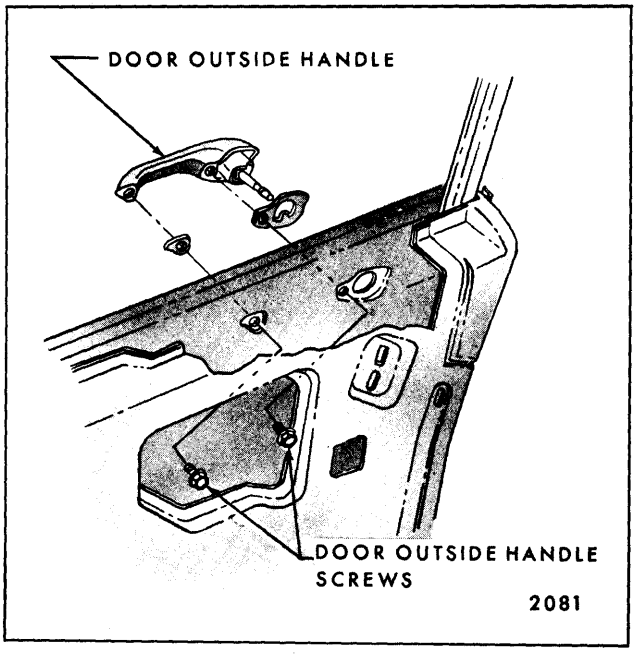

Fig. 6-21—Door Outside Handle Removal - All Styles Except "G" Styles

   c. Close door only as far as necessary for striker bolt to form an impression in clay or caulking compound as shown in Figure 6-25.

   CAUTION: Do not close door completely. Complete door closing will make clay removal very difficult.

   d. Measure striker impressions as follows: Striker head should be centered fore and aft as shown, however, some tolerances are allowed. In any alignment, it is important that minimum dimensions, as outlined in Figure 6-25 be strictly maintained. The following spacers are available as service parts and can be used individually or in combination to achieve the desired alignment.

      5/64" spacer - Part #4469196
      5/32" spacer - Part #4469197
      1/4" spacer - Part #4469194
      5/16" spacer - Part #4469195

VACUUM DOOR LOCK SYSTEM

The vacuum door lock system is operated by selector valves located in the front door trim assemblies. When either valve is actuated upward, all door locks simultaneously unlock. When either valve is actuated downward, all door locks lock. Vacuum is supplied to the selector valve in the red color-coded hose and is present at all times at both valves. Only when the selector valve is

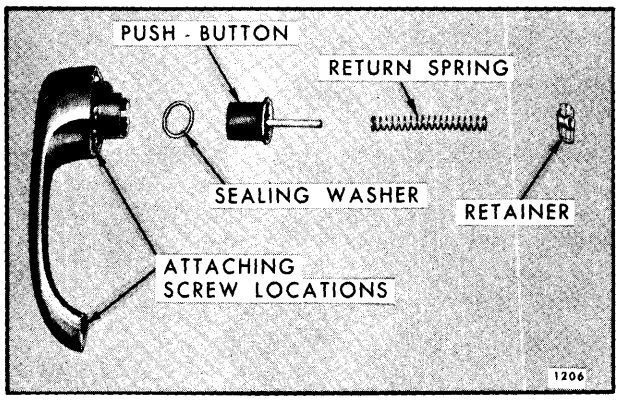

Fig. 6-22—Front Door Outside Handle - All Styles Except "G" Styles

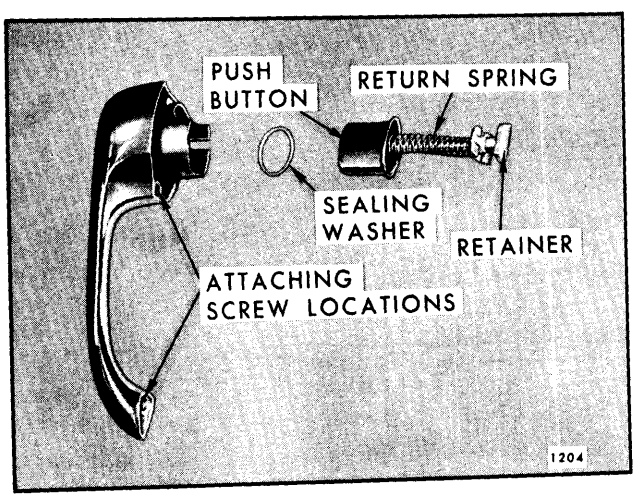

Fig. 6-23—Rear Door Outside Handle - All Styles

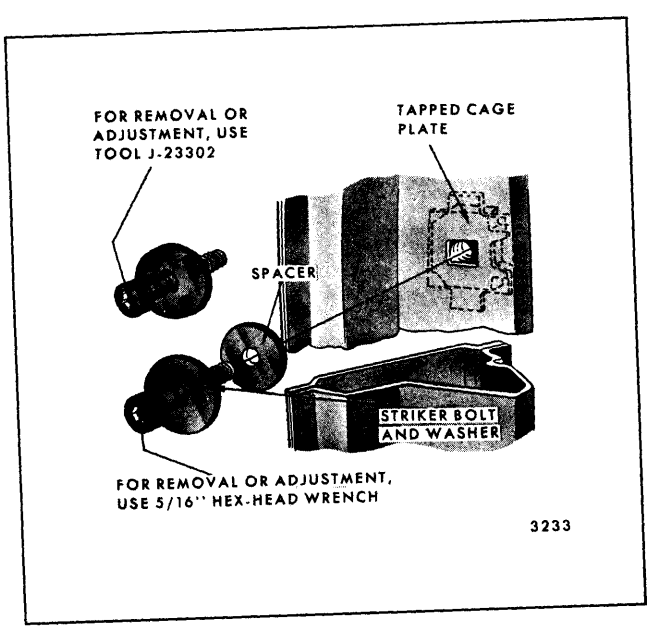

Fig. 6-24—Door Lock Striker Installation

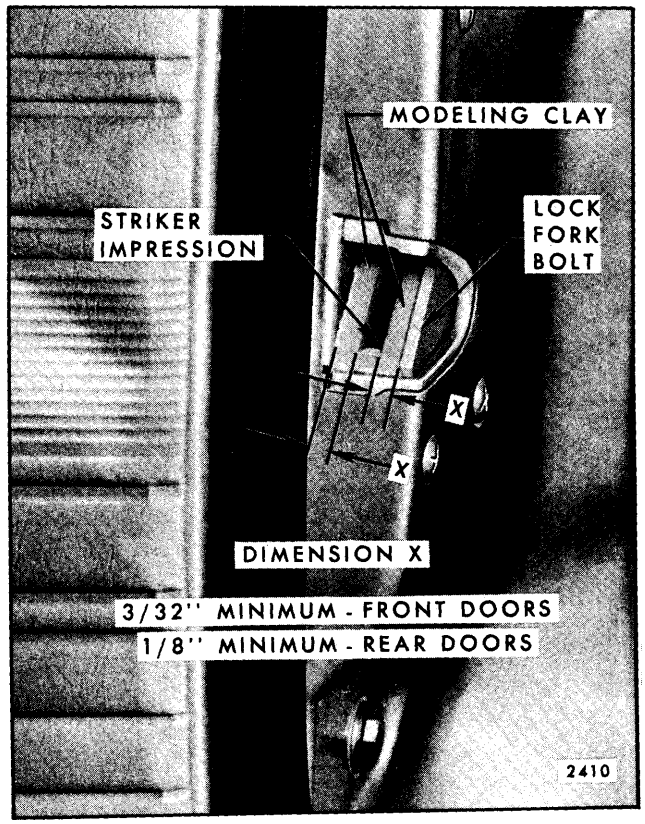

Fig. 6-25—Lock to Striker Engagement

actuated is vacuum supplied to the balance of the system (Fig. 6-26).

FRONT DOOR VACUUM LOCK SELECTOR VALVES

Removal and Installation

1. Remove door trim pad and carefully disconnect vacuum hose from selector valve.

2. Carefully disengage valve assembly from door trim assembly.

3. To install, reverse removal procedure. When installing vacuum hoses to selector valve, install color-coded hoses to corresponding color-coded connections on the selector valve for proper valve operation. Check all operations of door lock vacuum system prior to installing door trim and inside hardware.

VACUUM DOOR LOCK ACTUATOR AND ELECTRIC DOOR LOCK SOLENOID

Removal and Installation

1. Raise door window, remove trim pad and detach inner panel water deflector.

2. Disconnect vacuum hoses from actuator or

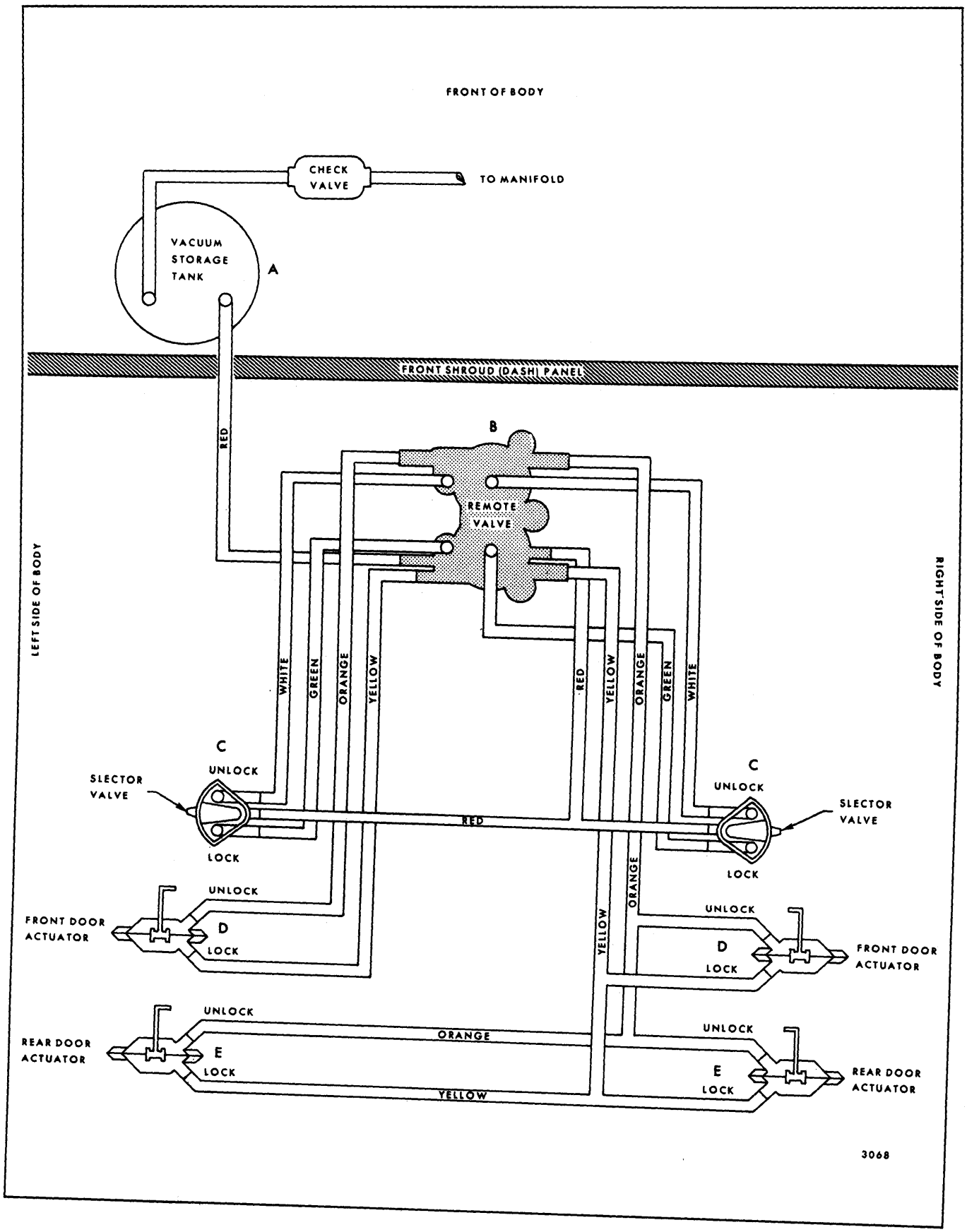

Fig. 6-26—Vacuum Door Lock System

wire harness from solenoid.

3. On front doors, remove vacuum actuator or electric solenoid to door lock pillar attaching screws, disconnect rod and remove through access hole (Fig. 6-27).

4. On rear doors, remove vacuum actuator or electric solenoid to door inner panel attaching screws and connecting rod to door inside locking rod connecting link attaching clip. Remove through access hole (Fig. 6-28).

5. To install, reverse removal procedure.

VACUUM DOOR LOCK REMOTE CONTROL ASSEMBLY—All Styles with Vacuum Door Locks

The function of the remote control assembly is to momentarily release the interrupted main vacuum in the red hose into the entire system upon receipt of the vacuum signal from the selector valve. A lock signal received from the selector valve through the green hose will open the ports to momentarily introduce vacuum into the yellow (lock) hoses. Conversely, an unlock signal received through the white hose will introduce vacuum into the orange (unlock) hoses.

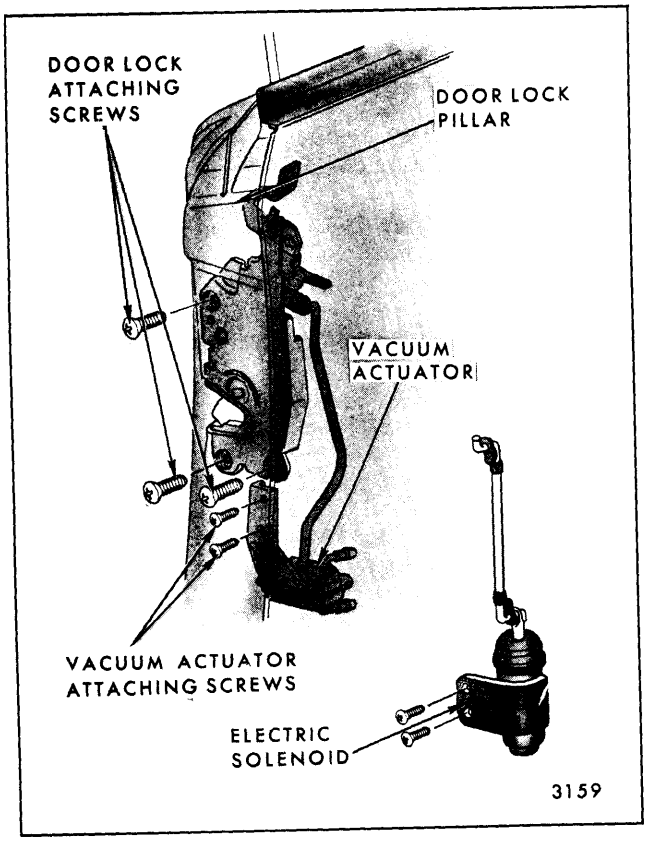

Fig. 6-27—Front Door Lock Vacuum Actuator or Electric Solenoid Installation

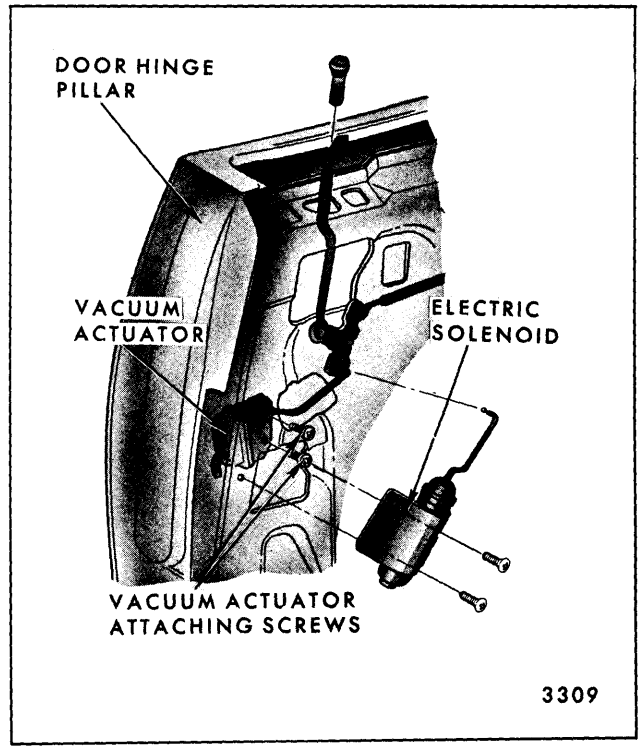

Fig. 6-28—Rear Door Lock Vacuum Actuator or Electric Solenoid Installation

The remote control valve is located under the instrument panel on the right or left side. All ports and hoses are color-coded for ease of hose installation (Fig. 6-29).

DOOR LOCK VACUUM STORAGE TANK

The door lock vacuum storage tank is mounted in the engine compartment and is connected to the engine manifold by a hose (Fig. 6-26). A check valve at the tank connector maintains the vacuum in the tank. The storage tank supplies vacuum at

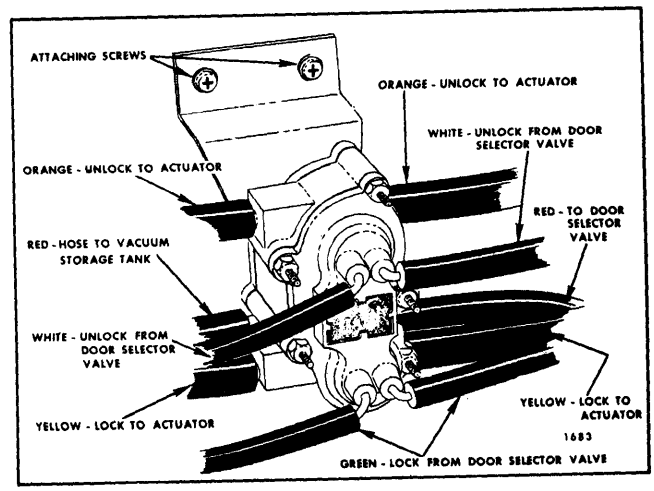

Fig. 6-29—Vacuum Lock Remote Control Valve

all times to the remote valve and door lock selector valves. The tank should provide a minimum of three complete cycles of operation (lock and unlock) immediately after the engine has been shut off.

VACUUM DOOR LOCK TROUBLE DIAGNOSIS PROCEDURE

When an external air leak in the vacuum locking system is not severe enough to be heard, the leak-down testing device shown in Figure 6-30 will aid in determining which part is leaking. This device can be easily constructed from common items that are normally available. The following chart lists the necessary components. The item numbers are referenced to Figure 6-30.

Although several transparent glass containers may be satisfactory for use as a testing device, a quart jar with a metal cap that can be sealed is recommended.

Item	Description	ID	OD	Length	Quan.
1	Quart Glass Container				1
2	Metal Cap				1
3	Cap Sealing Ring				1
4	Cap Ports	3/16"	1/4"	2-1/2"	2
5	Hose Port	3/16"	1/4"	2-1/2"	1
6	Hose	7/32"	3/8"	2"	2
7	Hose	5/32"	5/16"	1"	1
8	Glass Tube	1/8"	5/16"to 3/8"	4"	1

Install ports in cap by drilling 2 holes and inserting ports half-way through cap. Solder ports to cap to make an air-tight seal.

NOTE: There cannot be any air leaks in leak-down testing device to check a vacuum system. The lower end of the glass tube in the jar should be cut on a 45° angle. If glass tubing is not available, plastic tubing may be substituted provided it has the specified inside diameter.

a. Installation of Testing Device Into Vacuum System:

The testing device is installed between the vacuum storage tank and the remote control valve. To install testing device, proceed as follows:

1. Add water to jar until level is approximately 1" above lower end of tube.
2. Raise hood and remove storage tank to remote control valve hose (red) from storage tank check valve.

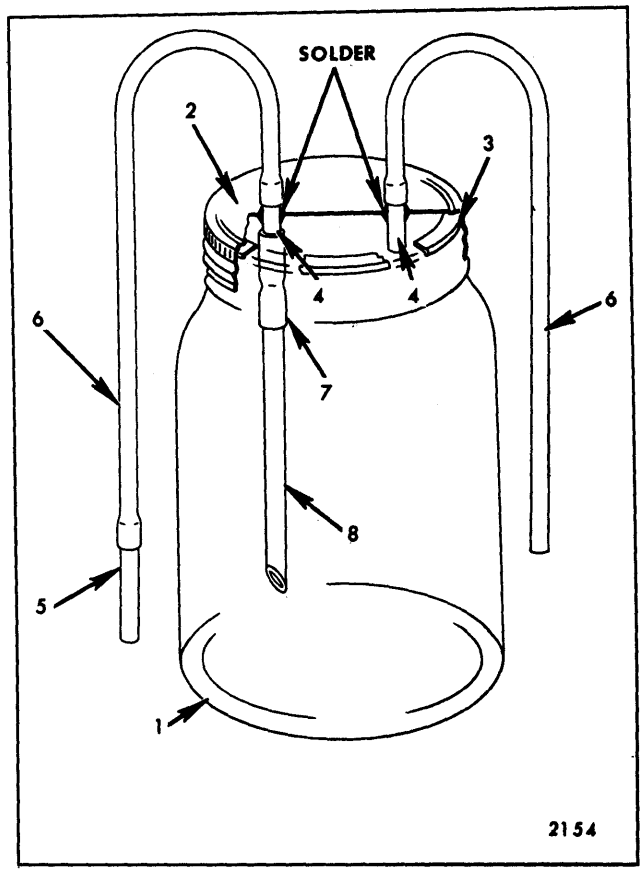

Fig. 6-30—Leak-Down Testing Device (See Text for Specifications of Components)

3. Install hose from testing device (hose without port) to bottom of check valve on storage tank.
4. Install other hose (with attached port) on testing device to hose leading to remote control valve.
5. Set testing device in an upright position.

b. Recharging Vacuum Storage Tank

Vacuum will usually have been depleted after four or five cycles of lock operation, or after testing device has been installed. To recharge storage tank to normal vacuum (22-24 inches of mercury), proceed as follows:

1. Turn testing device on its side until glass tube is out of water.
2. Start engine and run for approximately one minute.
3. Turn engine off and return testing device to a normal upright position.

NOTE: If water rises in glass tube, quickly pinch-off hose leading from testing device to

remote control valve. If hose is not pinched, and then disconnected, water rising up tube will enter vacuum lock system components. Condition is the result of a defective storage tank which must be replaced, provided hose connections check out satisfactorily.

4. Allow 15 to 30 seconds for water in testing device to stop bubbling. The waiting period is necessary due to different pressures in the system on both sides of testing device. The bubbling is the result of these pressures trying to equalize themselves. The storage tank may be recharged as often as required when checking vacuum system for an external air leak.

   CAUTION: Be certain to turn testing device on its side each time system is reacharged. If this is not done, water in jar may be drawn up into vacuum system components.

c. Determining Size of Air Leak from Bubbles in Testing Device:

If bubbles appear in water at a rate of approximately one every fifteen seconds or faster, an air leak is present at either the remote control valve or door selector valve. This assumes, of course, that the hoses are properly connected and free of defects. The faster bubbles appear in the water, the more severe is the air leak. In most cases, where the air leak rate is slower than one bubble every fifteen seconds, the vacuum loss is usually insufficient to affect the operation of the vacuum locking system.

d. Isolating a Leaking Vacuum Part (External Leak) Using the Leak-Down Testing Device:

After a specific part has been isolated as a leaking component, first check the hose color-coded red that attaches to that part. Make sure hose is properly installed to the port and that hose is not split.

When the testing device has been properly installed and storage tank recharged, watch glass tube in testing device and proceed as follows:

1. If water rises in glass tube, storage tank is leaking. Replace vacuum storage tank.
2. If bubbles appear in water, an air leak is present in either the remote control valve or in one of the door lock selector valves.
3. Remove right and left front door hinge pillar conduits.
4. Pinch right and left, vacuum hose color-coded red.

   NOTE: This has eliminated the right and left door lock selector valves from vacuum system.

5. Check testing device. If bubbles continue to appear in water, the remote control valve is leaking. (If bubbles stop, See Step 6).
6. If bubbles stop forming in testing device, air leak is at either door valve. Discontinue pinching left valve hose at hinge pillar.
7. Check testing device. If bubbles appear in water, left door valve is leaking. (If no bubbles appear, See Step 8).

   NOTE: Before replacing a door lock selector valve, tighten screws on back of valve, then recheck valve. If valve continues to leak, replace left door lock selector valve assembly.

8. If no bubbles appear in testing device after discontinuing pinching of left valve hose, then air leak is at right door valve. This may be shown by discontinuing pinching of right valve hose at hinge pillar. Bubbles will appear immediately in water of testing device.

VACUUM DOOR LOCK DIAGNOSIS CHART (Ref. Fig. 6-26)

CONDITION	APPARENT CAUSE	REPAIR
A. System inoperative.	1. Hoses crossed at vacuum supply tank.	Reverse hoses at vacuum supply tank.
	2. Vacuum supply hose pinched at remote valve.	Straighten hose at "B" (Red).
	3. Door valve supply hose pinched at remote valve.	Straighten hose at "B" (Red).

CONDITION	APPARENT CAUSE	REPAIR
A. System inoperative—Cont'd.	4. Vacuum supply hose disconnected at tank, remote valve, or engine.	Install hose at "A or B" (Red).
	5. Remote valve diaphragm leaking.	Replace remote valve at "B".
B. All doors can be locked but not unlocked.	1. Main supply hose crossed lock supply hose at remote valve.	Reverse hoses at remote "B" (Red and Green).
	2. Unlock selector hose or supply hose disconnected at remote valve.	Hook up hose at remote "B" (White).
C. All doors can be unlocked but not locked.	1. Main supply hose crossed with unlock supply hose on remote valve.	Reverse hoses at remote "B" (Red and White).
	2. Lock selector hose or supply hose disconnected at remote.	Hook up hose at remote "B" (Green).
D. Moving either door valve to lock or unlock produces the opposite action of all locks.	1. Door lock selector valve hoses (small) crossed at remote valve.	Reverse selector hoses at remote valve "B" (White and Green), or reverse selector hoses at each door lock selector valve "C" (White and Green).
	2. Actuator supply hoses (large) crossed at remote valve.	Reverse hoses at remote "B" (Orange and Yellow).
E. Moving one of the door valves to lock or unlock produces the opposite action of the lock.	1. Valve selector hoses crossed at one door valve.	Reverse small hoses at affected door valve "C" (White and Green).
	2. Door selector valve reversed in trim assembly.	Reverse affected door selector valve in trim assembly "C".
F. System inoperative from one door valve.	Vacuum supply hose pinched or disconnected at affected door valve.	Connect hose or check for pinching at: 1. Affected door valve "C". 2. Front door conduit on side affected "E".
G. System will not lock from one door valve, or system will not unlock from one door valve.	Lock or unlock selector valve hose pinched or disconnected from affected door valve.	Connect hose or check for pinching at: 1. Affected door valve "C" (White or Green). 2. Front door conduit on that side "E".
H. Lock movement on any one door not synchronized with other door(s).	Hoses crossed at affected door lock actuator.	At Front Door Reverse hoses at lock actuator "D" (Orange and Yellow). At Rear Door Reverse hoses at lock actuator in door "F" (Orange and Yellow). Or reverse hoses at tubing center pillar "G".

CONDITION	APPARENT CAUSE	REPAIR
I. One door lock lags behind others when locked or unlocked.	Lock or linkage binding.	Front Door 1. Lubricate lock and check inside locking control rod for freedom of movement. 2. Check drive link for freedom of movement in lock trip lever. Rear Door 1. Lubricate lock and check inside locking control rod and linkage for freedom of movement. 2. Check clearance of lock and actuator to door hardware. Coupe 1. Lubricate lock and check inside locking control rod for freedom of movement. 2. Check freedom of movement of actuator and lock.
J. One door lock will not lock or unlock.	Actuator hoses pinched or disconnected.	Front Door 1. Check for pinched hoses at front door, conduit on side affected. 2. Check for hose disconnected at affected actuator. (Orange or Yellow). Rear Door 1. Check for pinched hose at rear door conduit and at center pillar. 2. Check for kinked or flattened hoses under front door carpet support plate. 3. Check for disconnected hose at metal tubing or at actuator (Orange or Yellow).
K. System will not hold vacuum for 48 hours.	1. Excessive leakage in any one of the following units can be the cause: a. Remote valve b. Door valves (2) c. Storage tank and check valve. d. That part of the harness assembly that contacts these components.	1. Actuate system through several lock and unlock cycles, and recheck leakage. 2. Isolate leaking component and replace. **IMPORTANT:** If a door valve is found to be leaking, tighten screws on back of valve, then recheck valve. If valve continues to leak, replace valve.
L. Lock(s) inoperative with front door closed but operates with door open.	Door valve vacuum supply hose pinched at front body hinge pillar on side affected.	Check for pinched hose of affected door at conduit.

CONDITION	APPARENT CAUSE	REPAIR
M. Door selector valve leaks.	Pinch vacuum supply hose (Red) at affected valve. If air leak stops, valve is defective.	Replace affected selector valve. **IMPORTANT:** If selector valve leaks, first tighten screws on back of valve, then recheck valve. If valve continues to leak, replace valve assembly.
N. Storage tank leaks.	Turn engine off and disconnect manifold to storage tank supply hose at tank check valve; then pinch storage tank to remote valve supply hose. Actuate either door lock selector to equalize pressure in balance of system. If air continues to leak, tank is defective.	Replace vacuum storage tank.
O. Actuator assembly inoperative.	Connect hose or check for pinched hose at front door hinge pillar conduit "E", at rear door hinge pillar conduit "H" or at remote control valve "B", then actuate door lock selector valve. If actuator does not operate, actuator is defective.	Replace actuator assembly.
P. Remote valve leaks.	Check remote valve for pinched or disconnected hose(s). If balance of system is checked and found to be in satisfactory condition, replace remote valve with new part. If system then operates properly, original remote valve was defective.	Replace remote control valve assembly.

DOOR WINDOW REGULATOR ELECTRIC MOTOR

The electric motor assembly which powers the electrically operated window regulators is a twelve volt, reversible direction motor with an internal circuit breaker and a self-locking gear drive. The motor is secured to the regulator assembly with bolts.

Removal and Installation—All Styles Except "E" Styles

1. Remove door trim assembly and inner panel water deflector. Disconnect harness connector at motor.

2. Refer to Figures 6-31 through 6-35 and select the appropriate template for locating window motor to regulator attaching bolts by using window regulator to door inner panel attaching bolts as reference points.

3. Align regulator bolt locations specified on template with appropriate regulator attaching bolts on door. Secure template in place with a piece of tape.

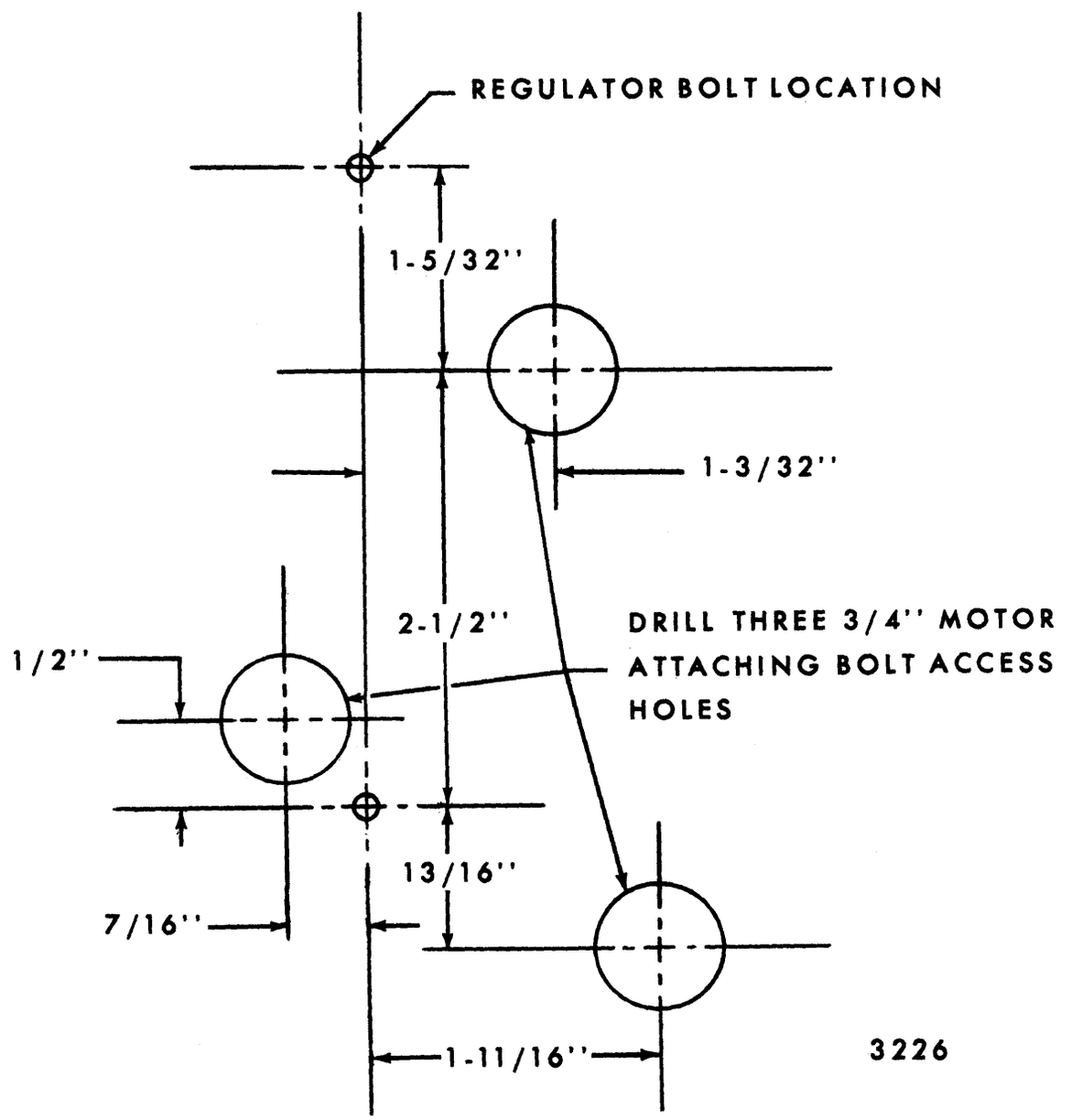

Fig. 6-31—Window Regulator Upper and Lower Left Attaching Bolt Reference Points for Locating Window Motor to Regulator Attaching Bolts - "A-27 and 77" Styles

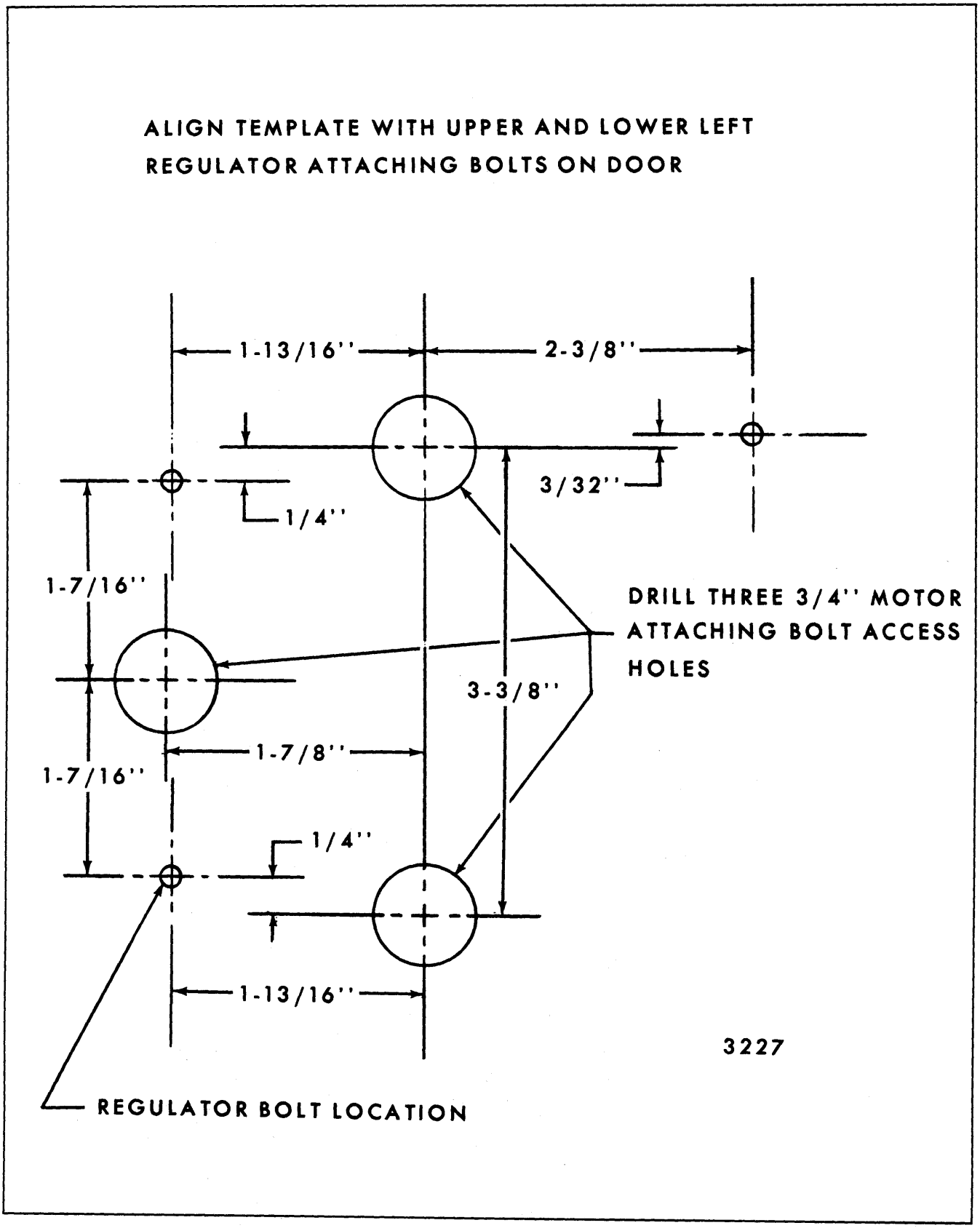

Fig. 6-32—Window Regulator Upper and Lower Left Attaching Bolt Reference Points for Locating Window Motor to Regulator Attaching Bolts - "A-35, 39, 45, 55, 69" Style Front Doors

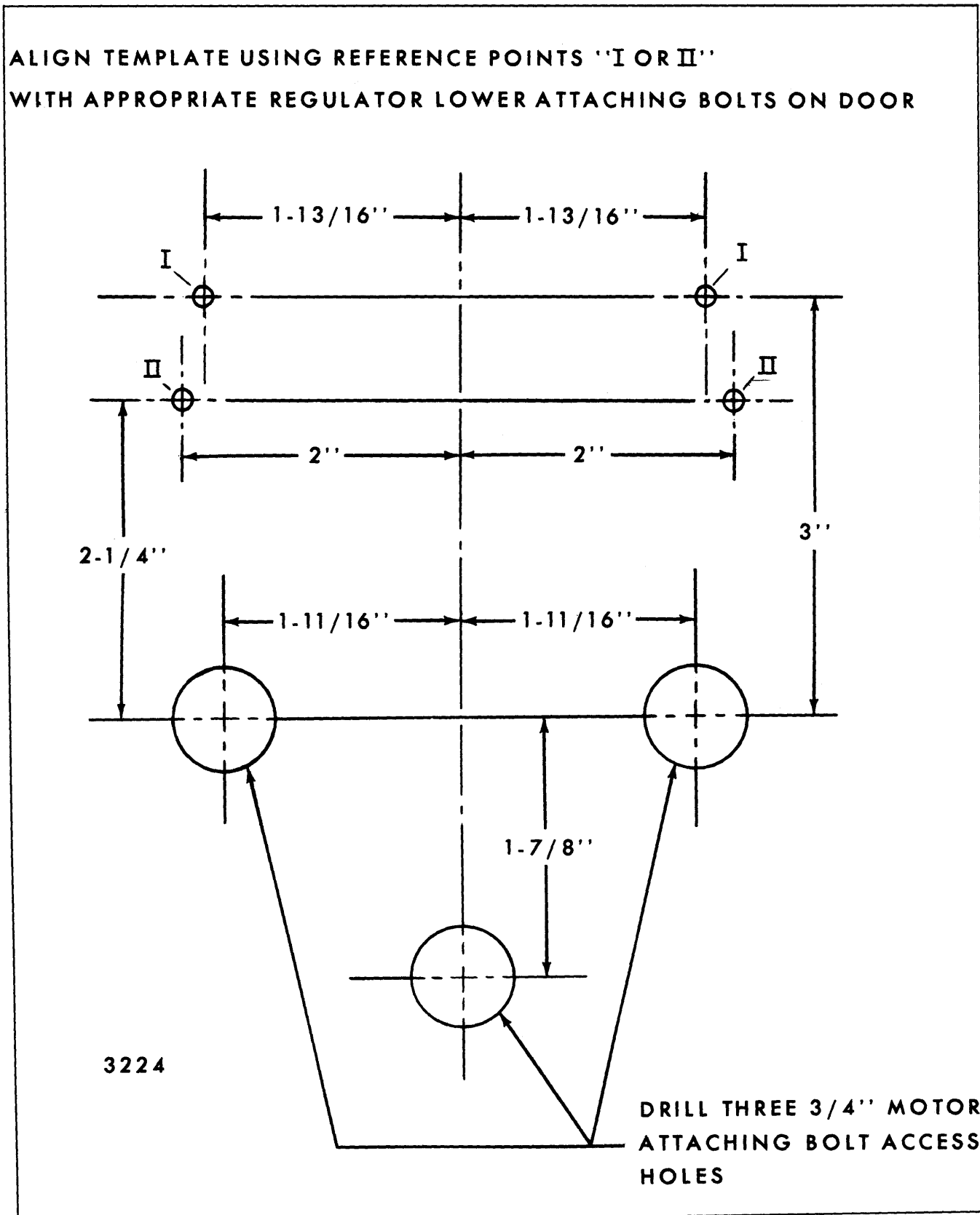

Fig. 6-33—Window Regulator Lower Attaching Bolt Reference Points for Locating Window Motor to Regulator Attaching Bolts: "I" for "A-35, 45, 39 and 69" Style Rear Doors; "II" for "A-37, 67 and 87" and "G-57" Style Front Doors

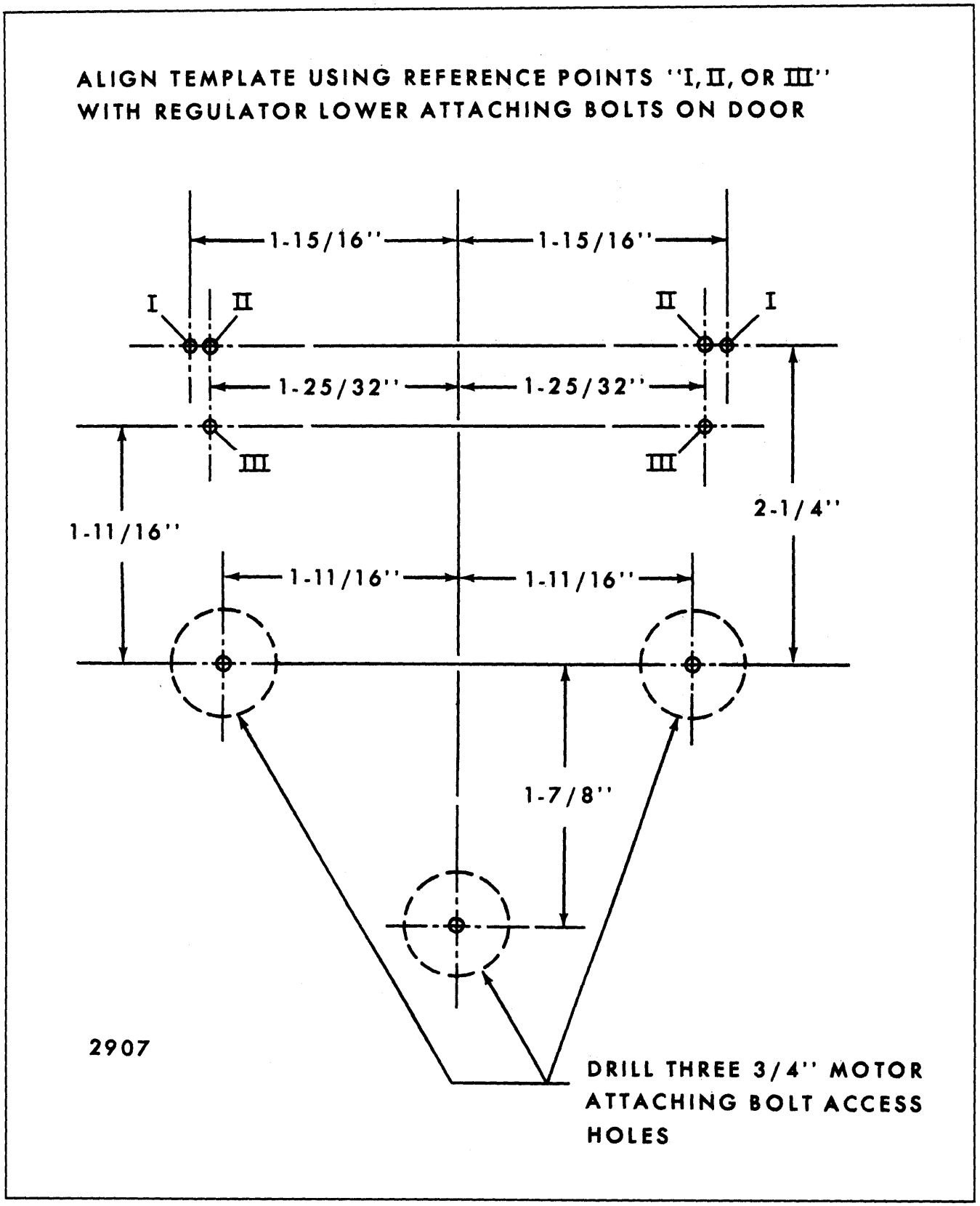

Fig. 6-34—Window Regulator Lower Attaching Bolts Reference Points for Locating Window Motor to Regulator Attaching Bolts: "I" for "B and C-11, 37, 47, 57 and 67" Style Front Doors; "II" for "C-69" Style Rear Doors; "III" for "B-36, 39, 46 and 69" and "C-49 and 69" Style Front and Rear Doors, Except "C-69" Style Rear Doors

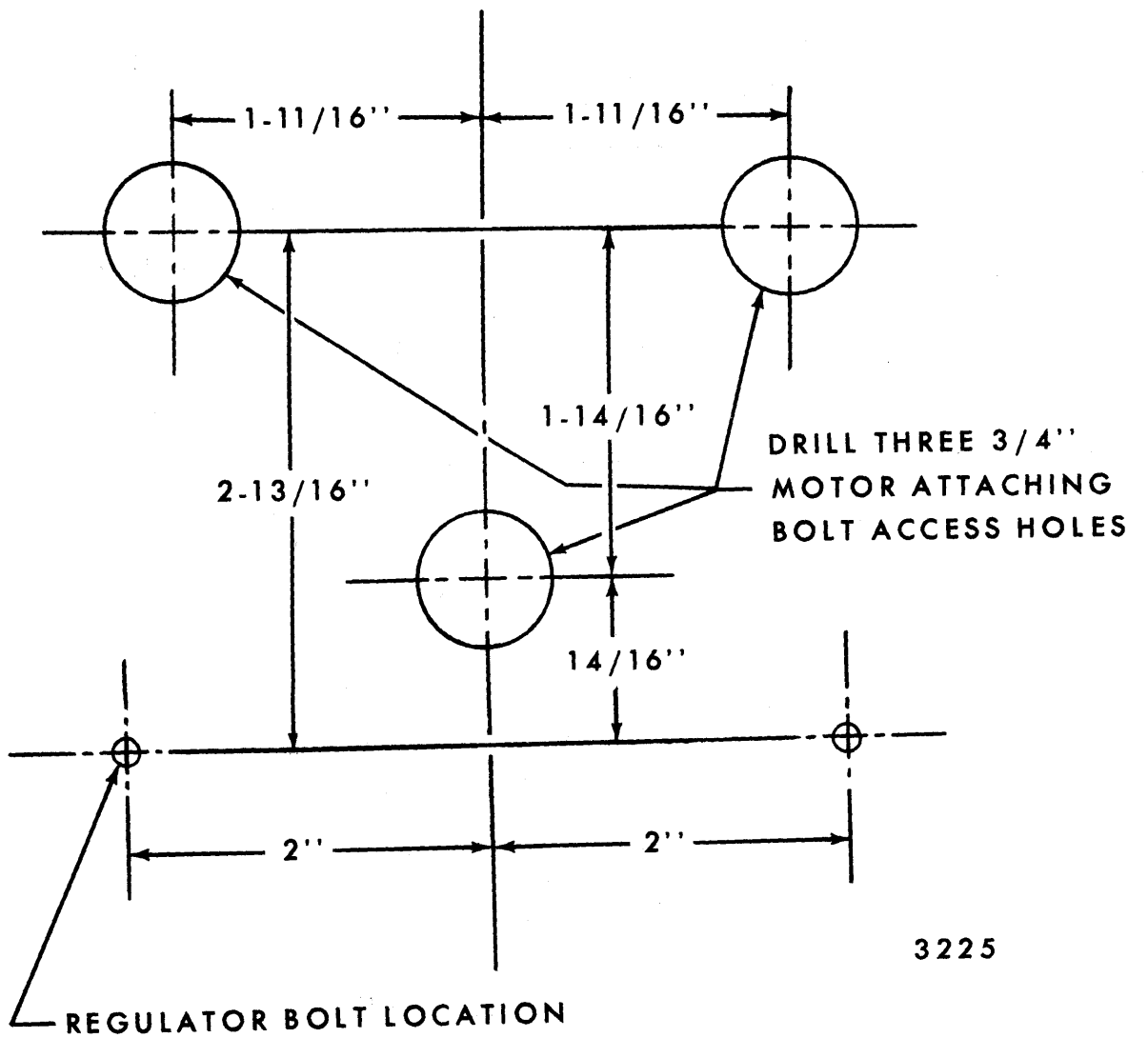

Fig. 6-35—Window Regulator Lower Attaching Bolt Reference Points for Locating Window Motor to Regulator Attaching Bolts - "F" Styles

4. Using a center punch, dimple the door inner panel at the center of each of the 3/4" holes to be drilled as indicated on the template.

5. Using a 3/4" hole saw, drill three 3/4" motor to regulator attaching bolt access holes as indicated.

6. Remove motor attaching bolts and remove motor through access hole.

   NOTE: Although window regulator lift arm is under tension of counterbalance spring, weight of window assembly prevents lift arm from moving. If necessary, window can be moved manually to clear acdess holes.

7. After replacing motor and prior to trim installation, apply waterproof tape to seal any motor bolt access hole that is outside of the sealing area of the water deflector.

Removal and Installation—"E" Styles

1. Remove front door window electric regulator and clamp assembly in a vise (Fig. 6-36).

   NOTE: The position of regulator assembly in vise will vary with type of regulator and position of lift arm.

2. Drill a 1/4" hole through regulator back plate and sector gear. The exact point of this hole will be dependent on the position of the regulator lift arm.

   IMPORTANT: DO NOT drill into the motor housing, part of which is indicated by the dotted line illustrated in Figure 6-36. In addition, locate hole sufficient distance from edge of sector gear to insure proper retention of sector gear to back plate.

3. Install a 3/16" bolt through hole in regulator back plate and sector gear and install a nut on the bolt. DO NOT tighten nut.

   CAUTION: Be sure to perform steps 2 and 3 before attempting to remove motor from regulator assembly. The regulator lift arm is under tension from the regulator counterbalance spring and can cause SERIOUS INJURY if motor is removed from regulator without locking the sector gear in position with a nut and bolt.

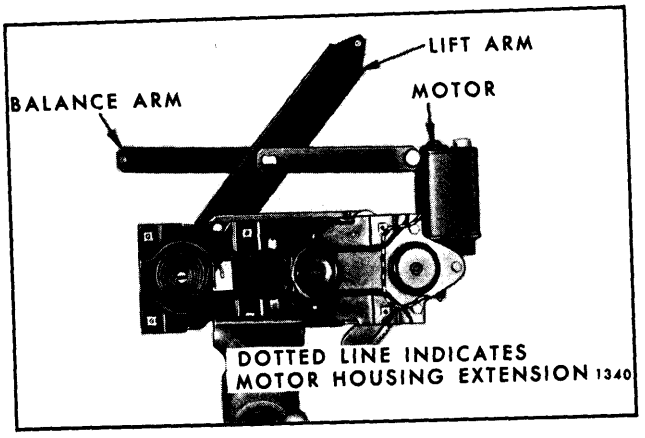

Fig. 6-36—Door Window Regulator and Electric Motor Assembly

4. Remove regulator motor attaching bolts and remove motor from regulator assembly (Fig. 6-36).

   NOTE: Clean off any steel chips from regulator sector gear and motor pinion gear.

5. To install, reverse removal procedure. If difficulty is encountered in lining up motor attaching holes with regulator assembly, the regulator lift arm may be moved into position manually so that motor pinion gear will mesh with teeth on regulator sector gear. After installation of front door window assembly, cycle electric regulator several times before installing inner panel water deflector and door trim pad.

   NOTE: Be sure to remove temporary nut and bolt securing regulator back plate to regulator sector gear before installing assembly into door.

FRONT DOORS

DESCRIPTION

All doors fall into two basic categories, closed styles (those with door upper frames) and hard top or convertible styles (those without door upper frames). Although both types of front doors utilize similar hardware, the presence or lack of a door upper frame usually determines the removal or installation sequence of any particular part.

Any work performed on door hardware usually requires removal of trim pad and inner panel water deflector. The procedures for water deflectors are covered in the preceding "Front and Rear Doors" section. Trim procedures are in Section 14 (see index).

Unless otherwise stated, the front door service procedures listed here pertain to all body styles.

Figures 6-37 through 6-58 are typical of front doors with the trim assembly and inner panel water deflector removed. These figures identify the component parts of the front door assembly (by style), their relationship and various attaching points.

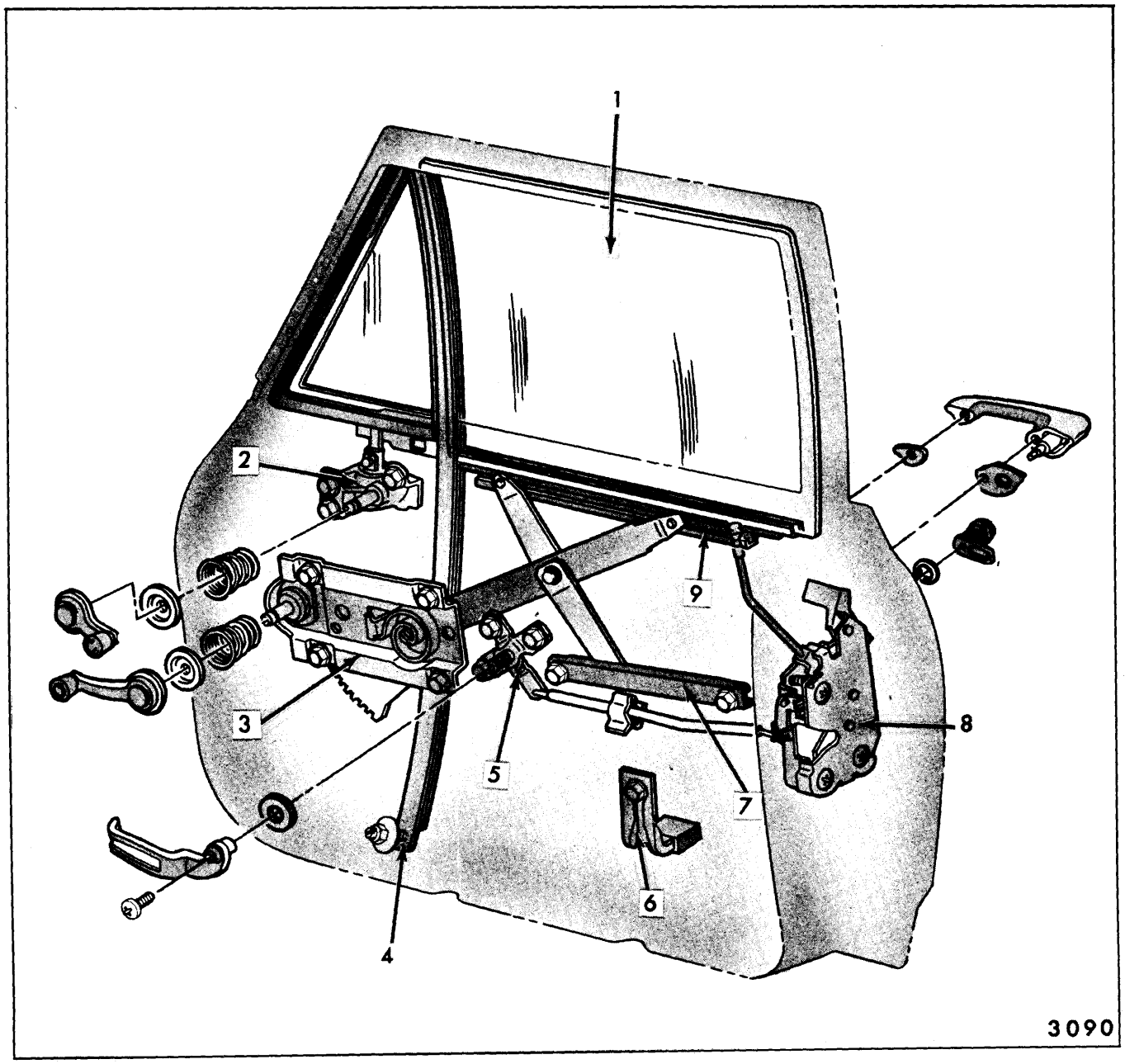

Fig. 6-37—Front Door Hardware - "A" Closed Styles

1. Front Door Window Assembly
2. Ventilator Regulator
3. Window Regulator
4. Ventilator Division Channel
5. Door Lock Remote Control
6. Window Down Stop Support
7. Inner Panel Cam
8. Door Lock
9. Lower Sash Channel Cam

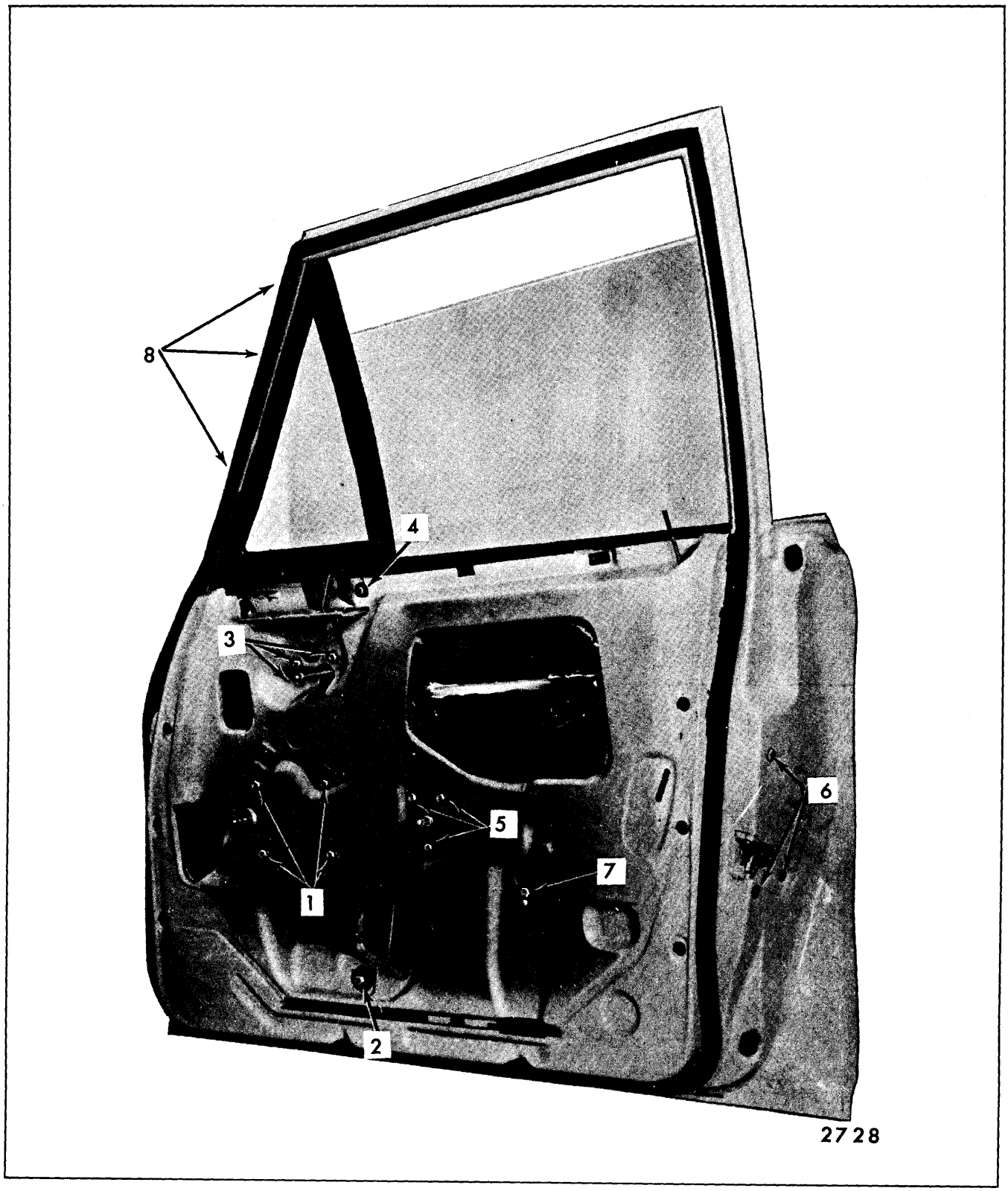

Fig. 6-38—Front Door Hardware—"A" Closed Styles

1. Window Regulator Attaching Bolts
2. Ventilator Division Channel Lower Adjusting Stud
3. Ventilator Regulator Attaching Bolts
4. Ventilator Frame to Outer Panel Attaching Bolt
5. Door Lock Remote Control Attaching Bolts
6. Door Lock Attaching Screws
7. Down Stop Support Attaching Bolt
8. Ventilator to Door Upper Frame Attaching Screws

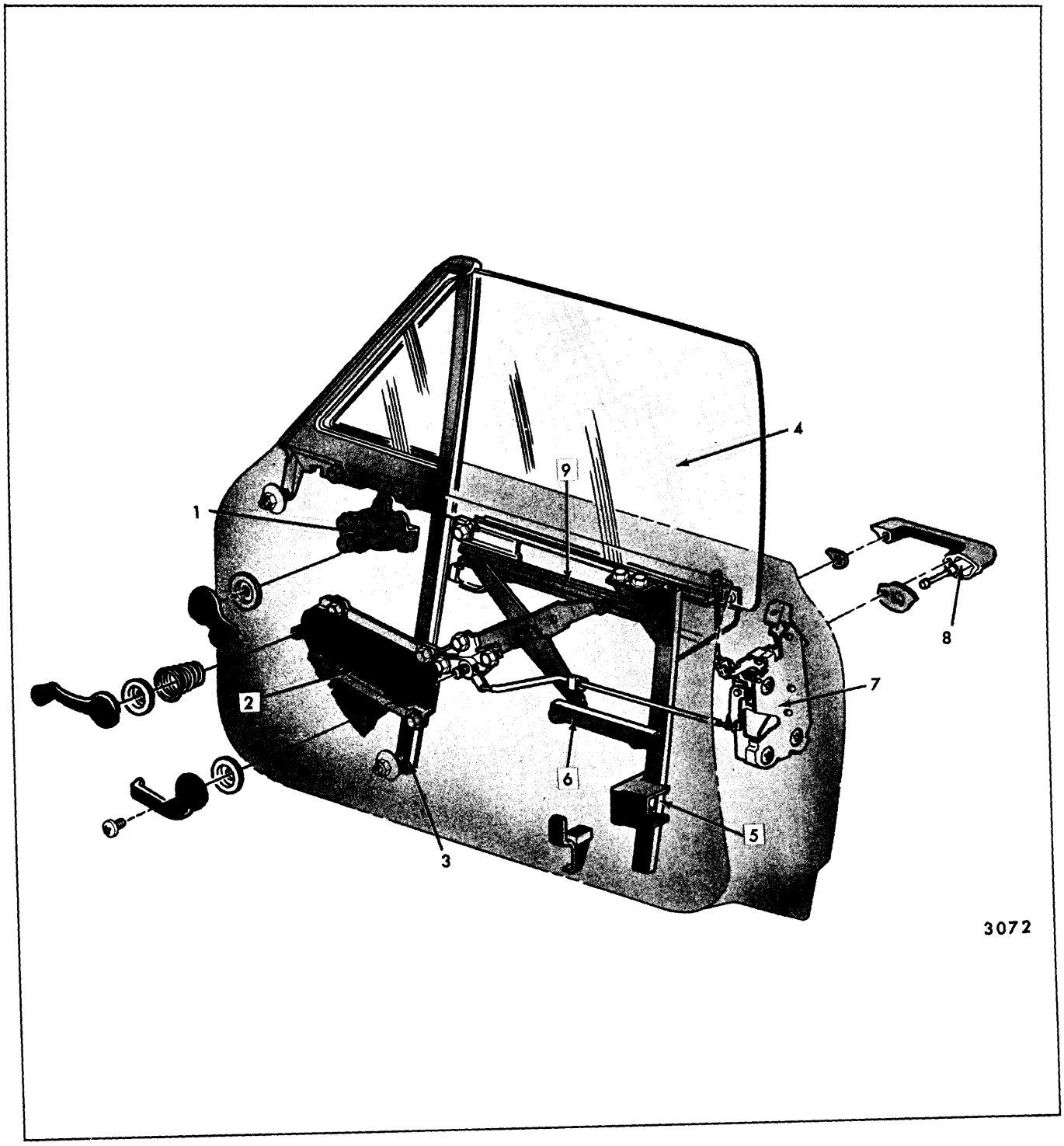

Fig. 6-39—Front Door Hardware - "A-39" Styles

1. Ventilator Regulator
2. Window Regulator
3. Ventilator Division Channel
4. Front Door Window Assembly
5. Rear Guide
6. Inner Panel Cam
7. Door Lock
8. Door Outside Handle
9. Lower Sash Channel Cam

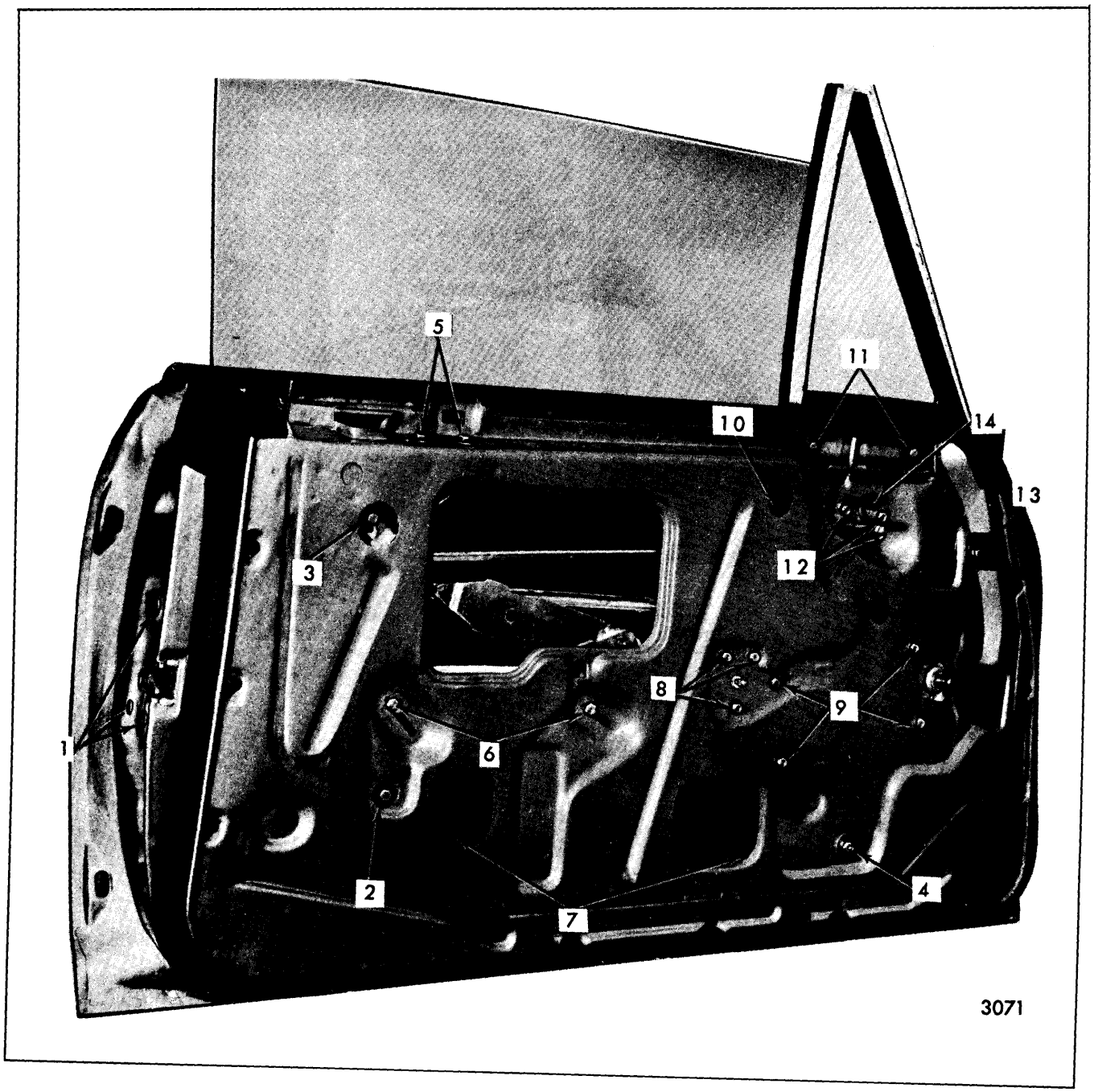

Fig. 6-40—Front Door Hardware - "A-39"

1. Door Lock Attaching Screws
2. Rear Guide Lower Attaching Bolt
3. Window Rear Upper Stop Bolt
4. Ventilator Division Channel Lower Adjusting Stud and Nut
5. Rear Guide Upper Attaching Bolts
6. Inner Panel Cam Attaching Bolts
7. Lower Sash Channel Cam Attaching Screws Access Holes
8. Door Lock Remote Control Attaching Bolts
9. Window Regulator Attaching Bolts
10. Window Front Upper Stop Access Hole
11. Ventilator Frame to Door Outer Panel Attaching Bolts
12. Ventilator Regulator Attaching Bolts
13. Ventilator Lower Frame Adjusting Stud and Nut
14. Ventilator "T" Shaft to Regulator Screw Access Hole

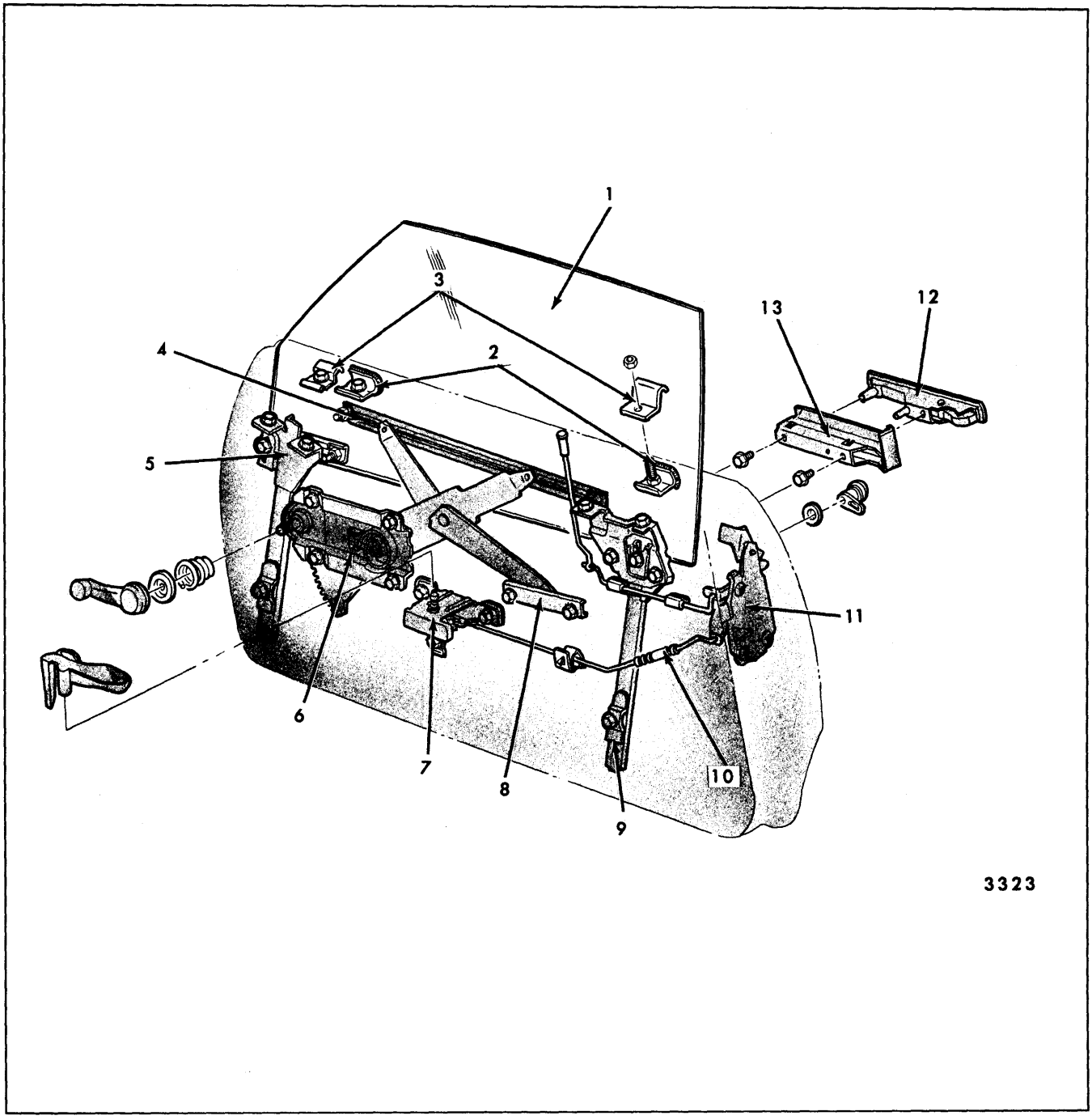

Fig. 6-41—Front Door Hardware - "G-57" Style Shown, "A-37, 67 and 87" Style Similar

1. Window Assembly
2. Stabilizer Strips
3. Trim Pad Adjusting Plates
4. Lower Sash Channel Cam
5. Front Guide
6. Window Regulator
7. Door Lock Remote Control (Squeeze Type)
8. Inner Panel Cam
9. Rear Guide
10. Adjustable Remote Control to Lock Rod
11. Door Lock
12. Door Outside Handle (Pull Type)
13. Door Outside Handle Retainer

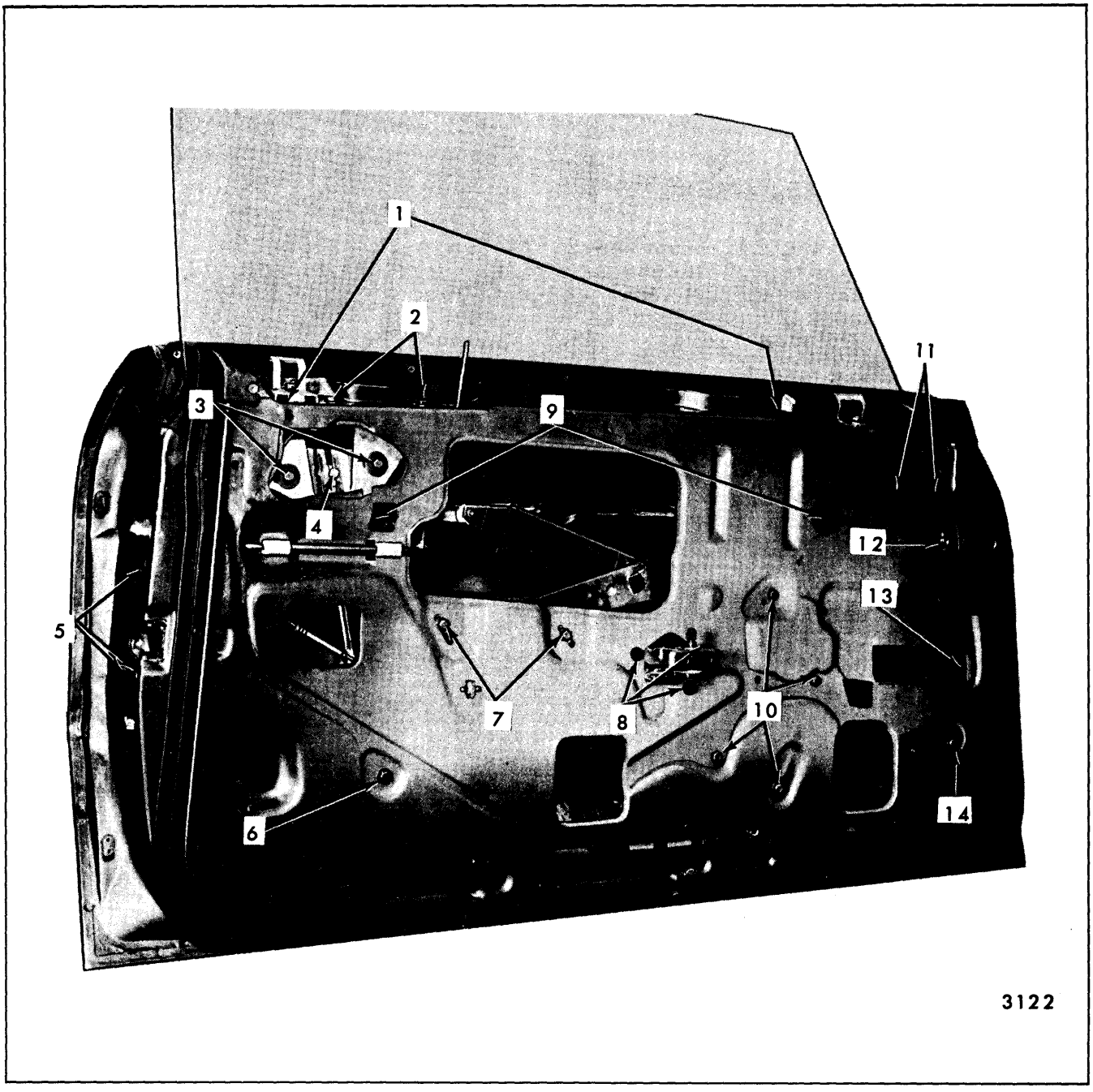

Fig. 6-42—Front Door Hardware - "G-57" Style Shown, "A-37, 67 and 87" Style Similar

1. Window Stabilizer Strips
2. Rear Guide Upper Bracket Attaching Bolts
3. Rear Guide Upper Bracket to Guide Attaching Bolts
4. Window Rear Up - Travel Stop Bolt
5. Door Lock Attaching Screws
6. Rear Guide Lower Attaching Bolt
7. Inner Panel Cam Attaching Bolts
8. Door Lock Remote Control Attaching Bolts
9. Window Lower Sash Channel Cam Stud Nut Access Holes
10. Window Regulator Attaching Bolts
11. Front Guide Upper Attaching Bolts
12. Window Front Up - Travel Stop Bolt (on Guide)
13. Window Front Up - Travel Stop Nut (on Window)
14. Front Guide Lower Attaching Bolt

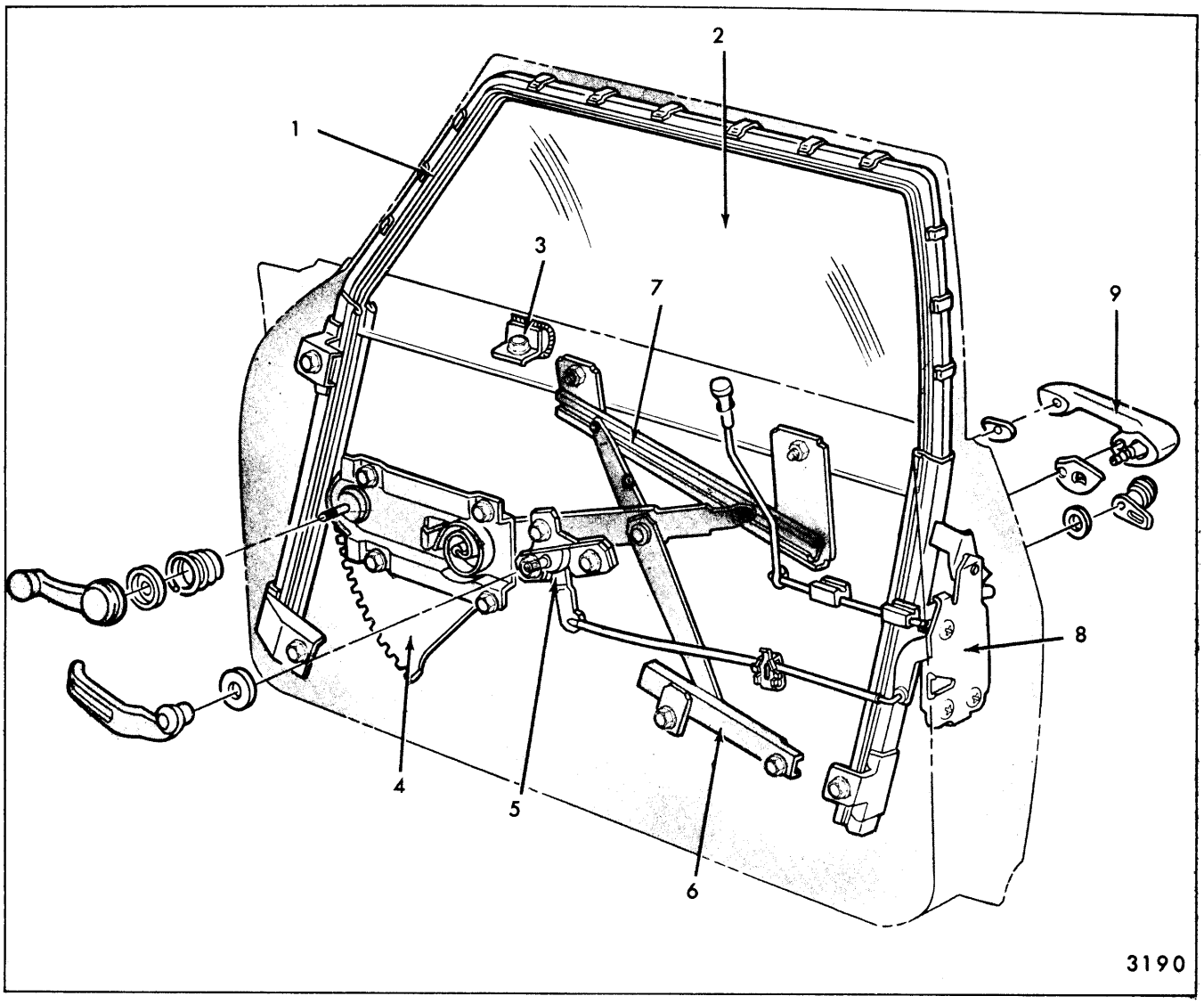

Fig. 6-43—Front Door Hardware - "B-11" Styles

1. Window Glass Run Channel
2. Window Assembly
3. Stabilizer Strip
4. Window Regulator
5. Door Lock Remote Control
6. Inner Panel Cam
7. Lower Sash Channel Cam
8. Door Lock
9. Door Outside Handle

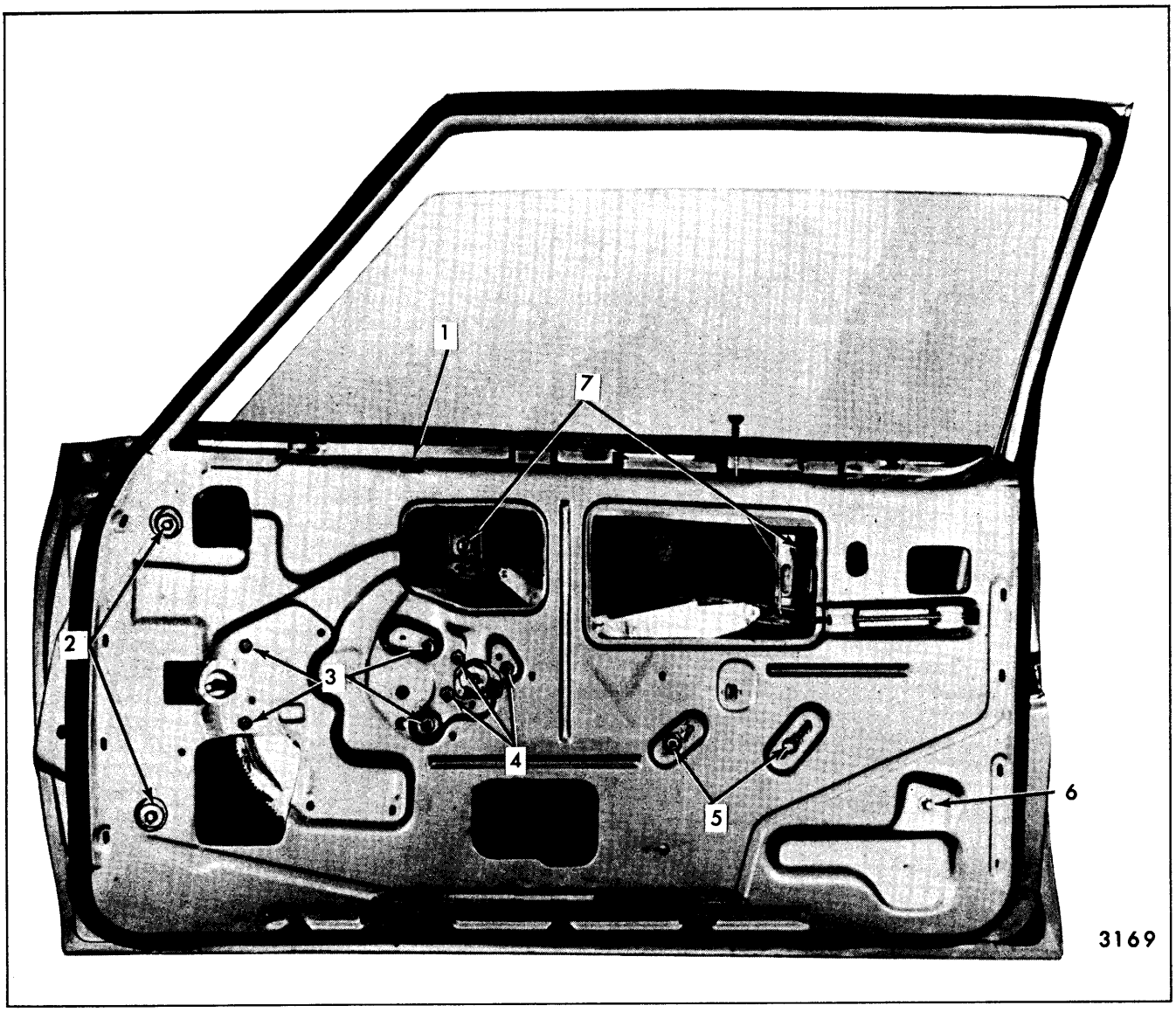

Fig. 6-44—Front Door Hardware - "B-11" Styles

1. Window Stabilizer Strip Bolt
2. Glass Run Channel Front Upper and Lower Attaching Bolts
3. Window Regulator Attaching Bolts
4. Door Lock Remote Control Attaching Bolts
5. Inner Panel Cam Attaching Bolts
6. Glass Run Channel Rear Attaching Bolt
7. Lower Sash Channel Cam to Glass Nuts

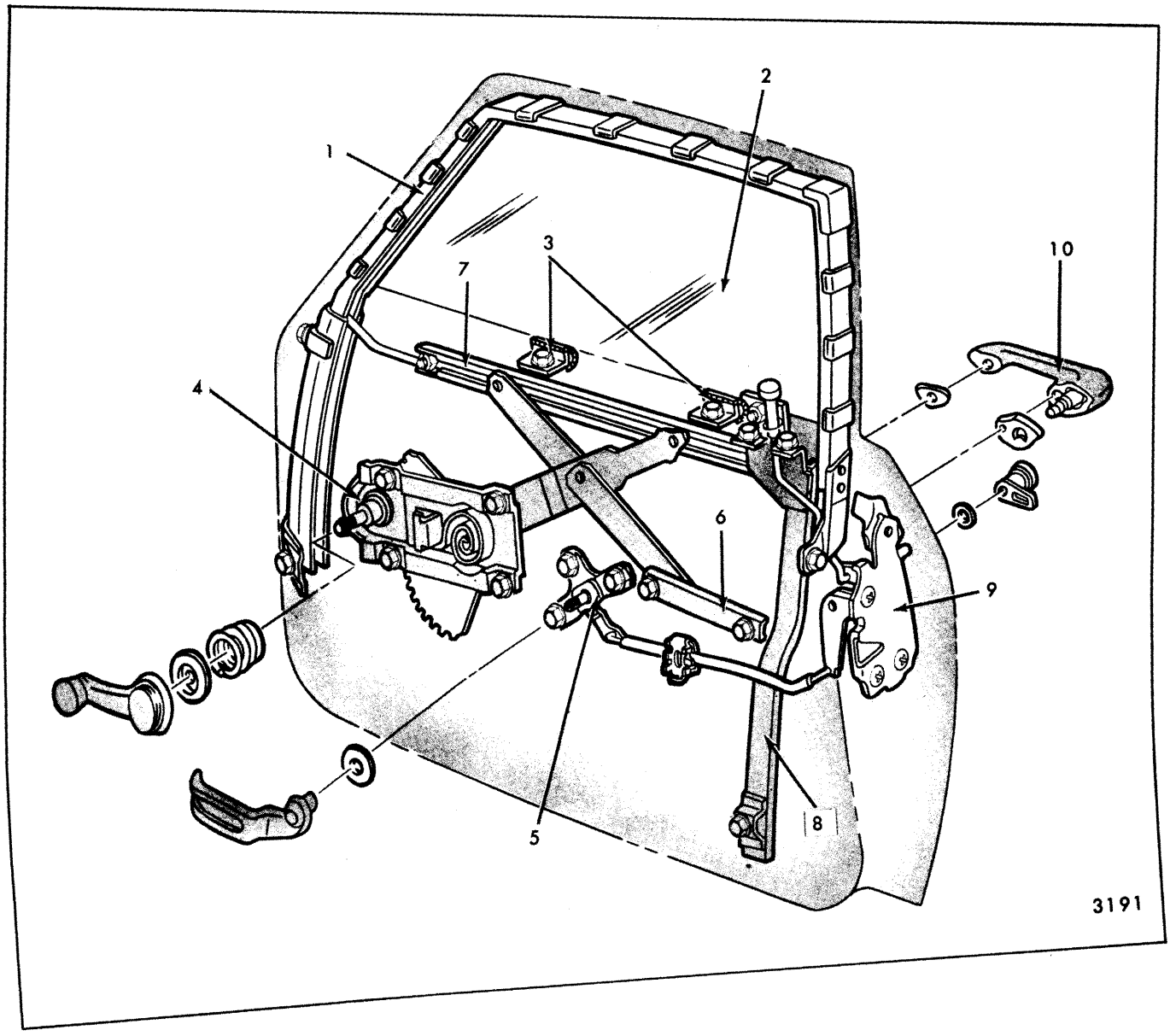

Fig. 6-45—Front Door Hardware - "B-69" Styles

1. Window Glass Run Channel
2. Window Assembly
3. Stabilizer Strips
4. Window Regulator
5. Door Lock Remote Control
6. Inner Panel Cam
7. Lower Sash Channel Cam
8. Rear Guide
9. Door Lock
10. Door Outside Handle

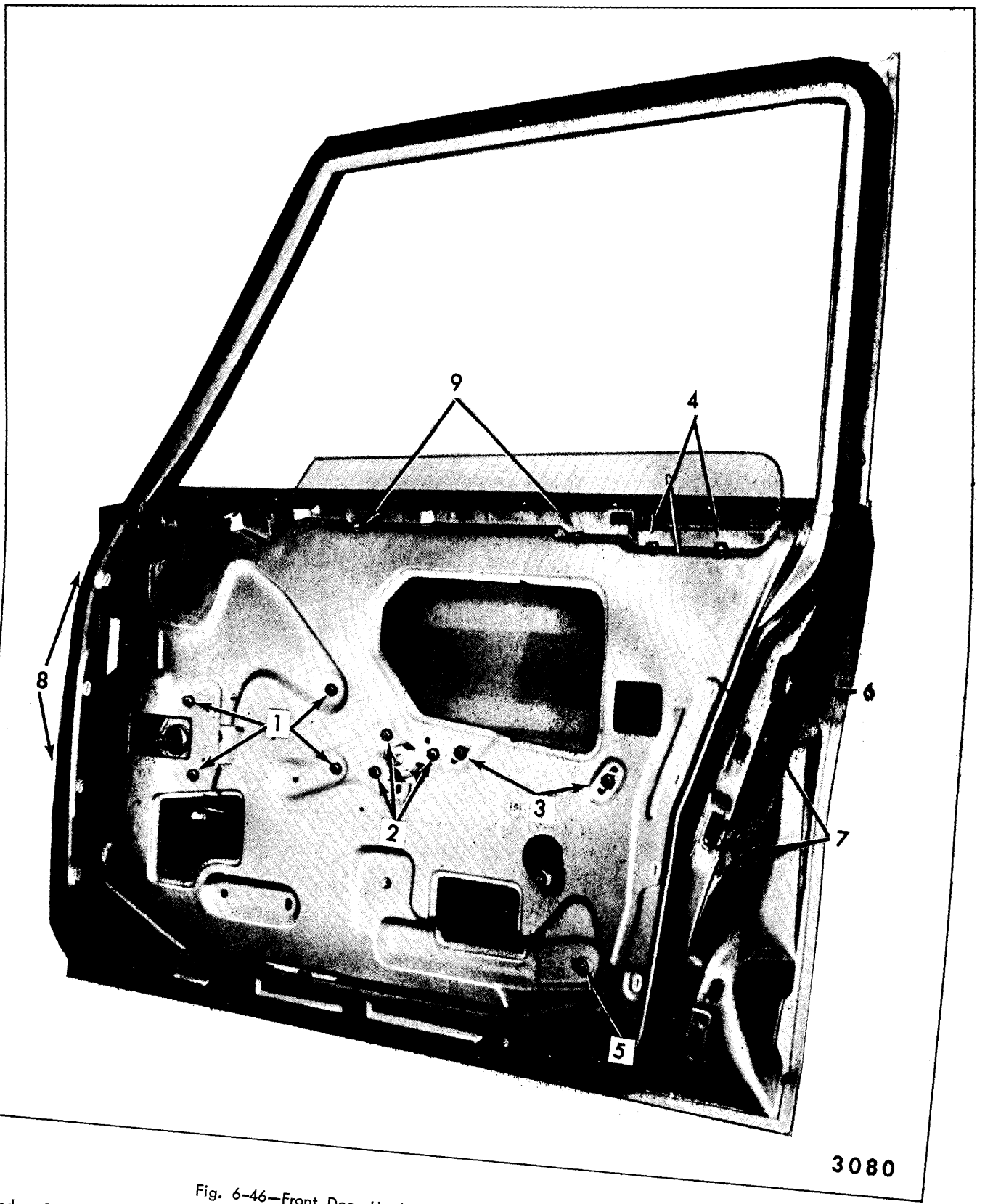

Fig. 6-46—Front Door Hardware – "B" Four Door Closed Styles

1. Window Regulator Attaching Bolts
2. Door Lock Remote Control Attaching Bolts
3. Inner Panel Cam Attaching Bolts
4. Rear Guide Upper Attaching Bolts
5. Rear Guide Lower Attaching Bolt
6. Glass Run Channel Rear Attaching Bolt
7. Door Lock Attaching Screws
8. Glass Run Channel Front Upper and Lower Attaching Bolts
9. Window Stabilizer Strip Attaching Bolts

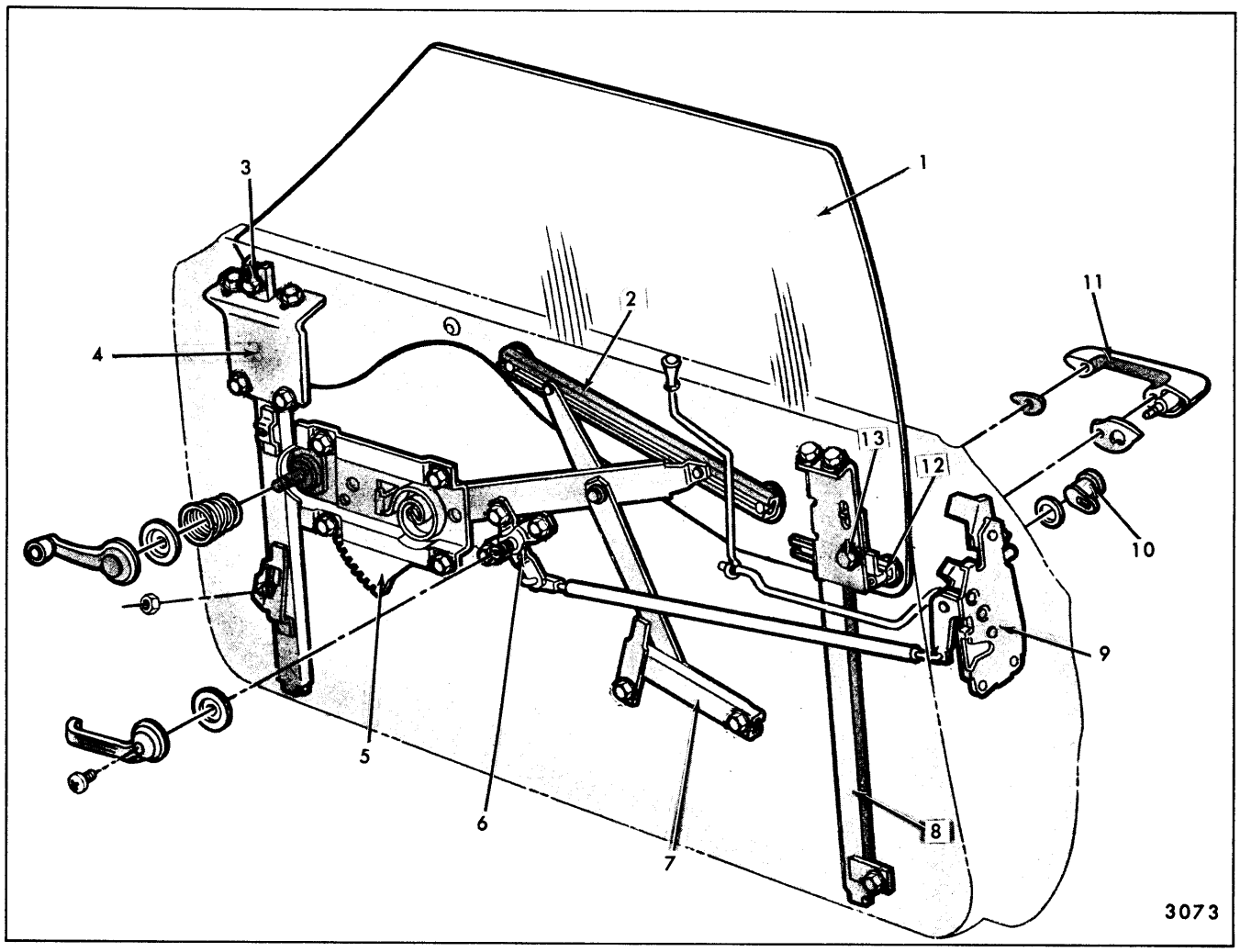

Fig. 6-47—Front Door Hardware - "B and C" Coupe Hardtop and Convertible Styles

1. Front Door Window Assembly
2. Lower Sash Channel Cam
3. Window Front Upper Stop
4. Front Guide
5. Window Regulator - Manual
6. Door Lock Remote Control
7. Inner Panel Cam
8. Rear Guide
9. Door Lock
10. Door Lock Cylinder
11. Door Outside Handle
12. Window Rear Upper Stop (on Window)
13. Window Rear Upper Stop (on Guide)

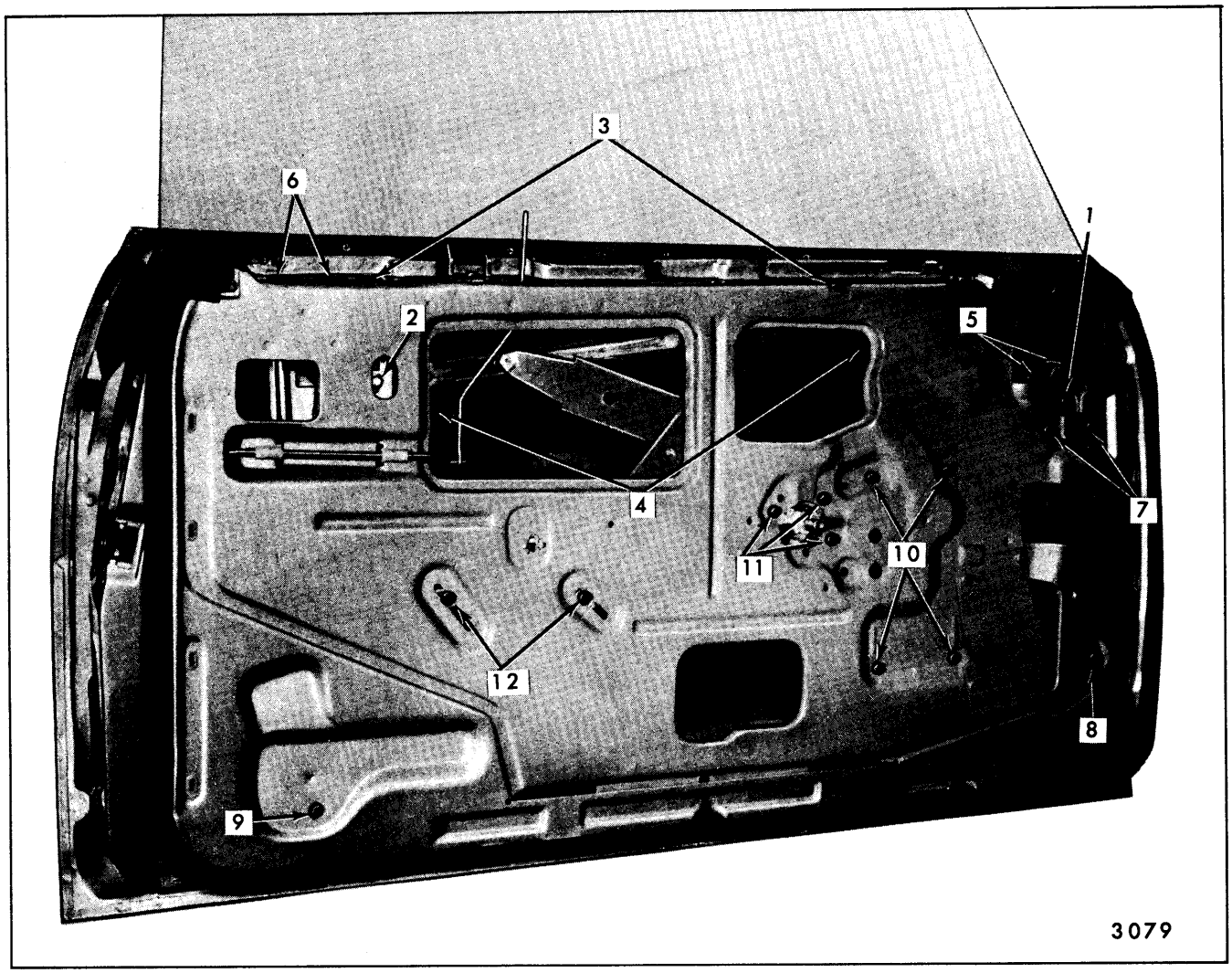

Fig. 6-48—Front Door Hardware - "B and C" Coupe Hardtop and Convertible Styles

1. Window Front Upper Stop Attaching Bolt
2. Window Rear Upper Stop Attaching Bolt
3. Window Stabilizer Strip Assembly Attaching Bolts
4. Window Lower Sash Channel Cam Stud Nut Access Holes
5. Front Guide Upper Support Bracket Attaching Bolts
6. Rear Guide Upper Attaching Bolts
7. Front Guide to Upper Support Bracket Attaching Bolts
8. Front Guide Lower Attaching Bolt
9. Rear Guide Lower Attaching Bolt
10. Window Regulator Attaching Bolts
11. Door Lock Remote Control Attaching Bolts
12. Inner Panel Cam Attaching Bolts

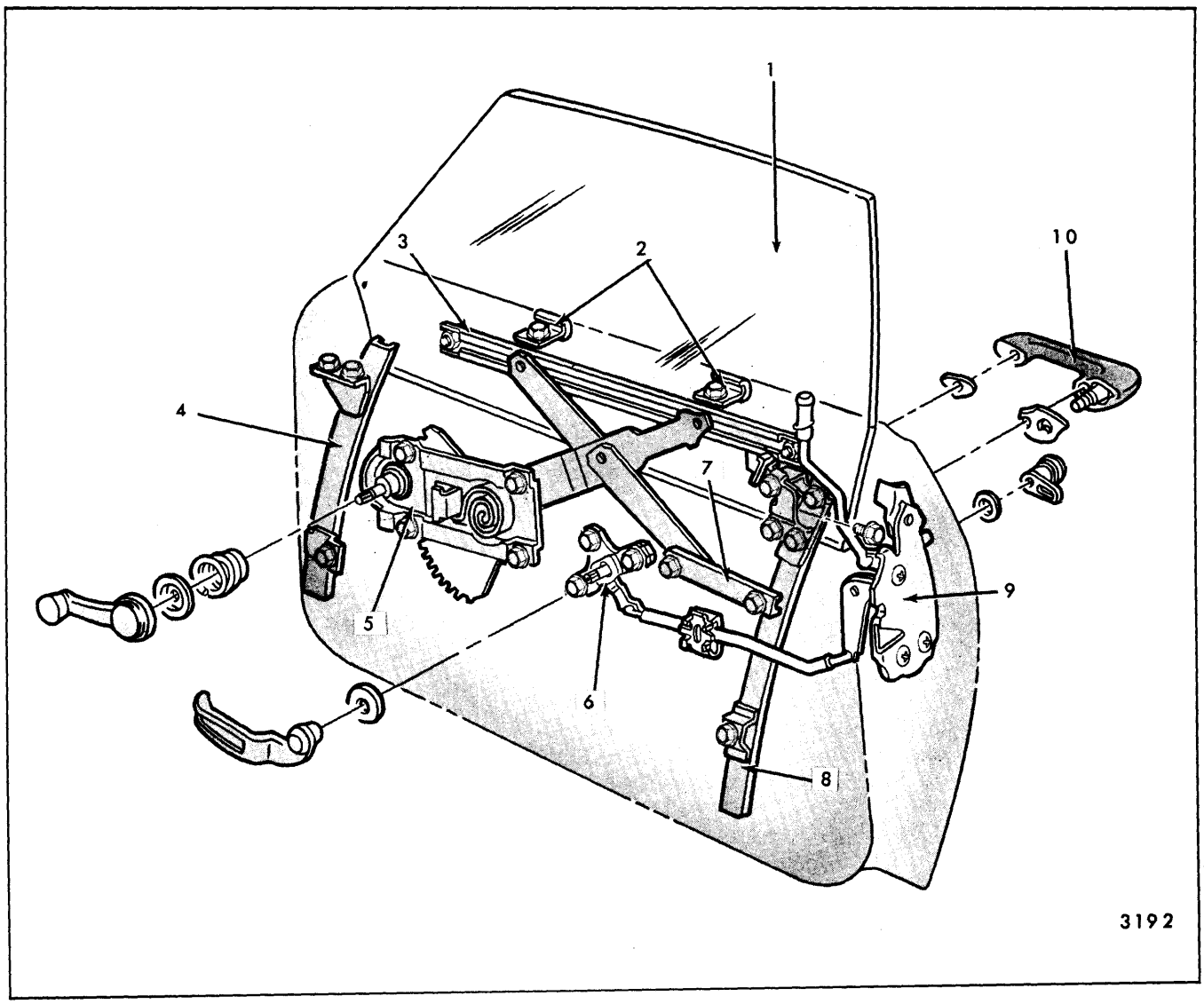

Fig. 6-49—Front Door Hardware - "B-39" and "C-39, 49 and 69" Styles

1. Window Assembly
2. Stabilizer Strips
3. Lower Sash Channel Cam
4. Front Guide
5. Window Regulator
6. Door Lock Remote Control
7. Inner Panel Cam
8. Rear Guide
9. Door Lock
10. Door Outside Handle

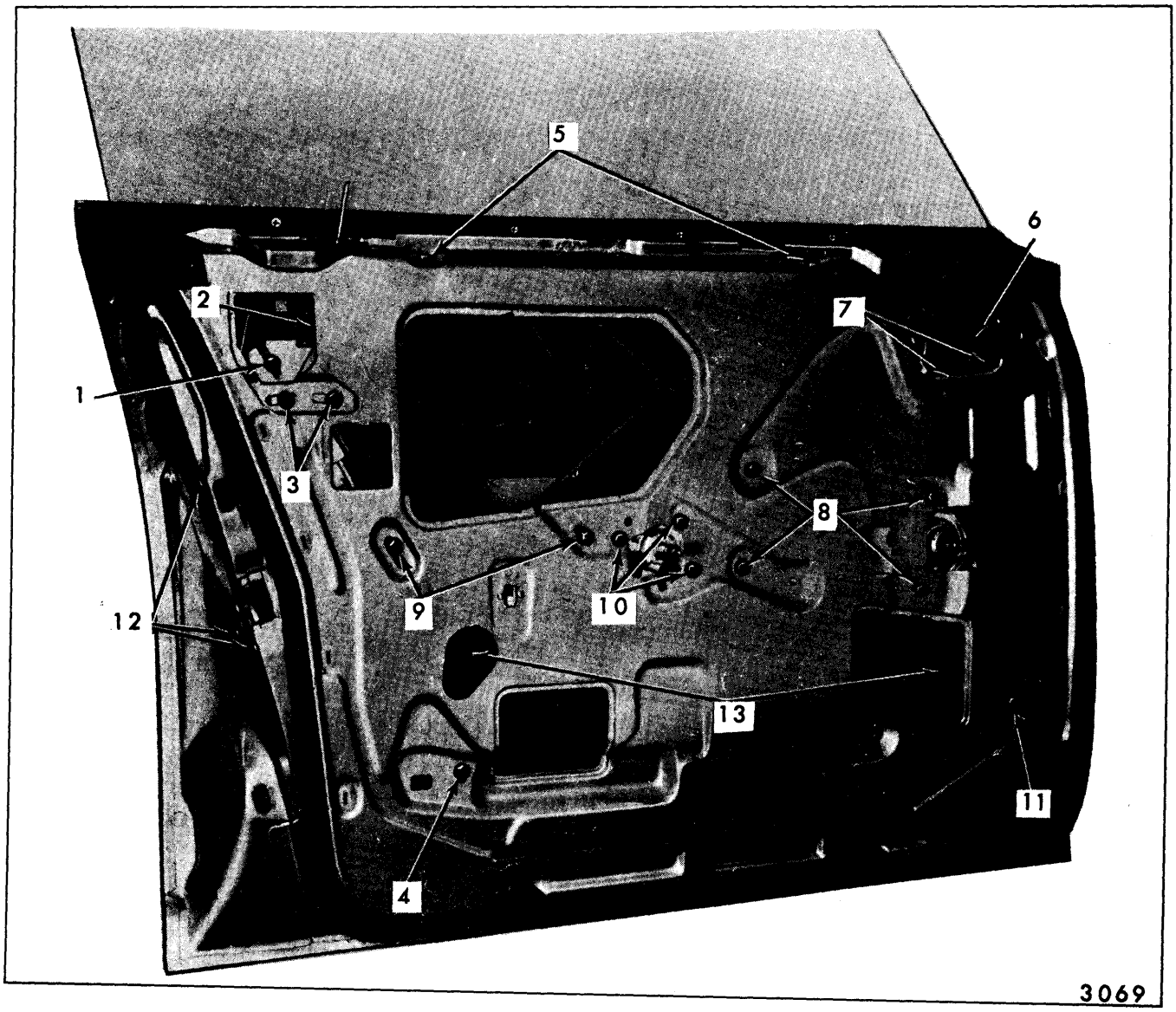

Fig. 6-50—Front Door Hardware - "B-39" and "C-39, 49 and 69" Styles

1. Window Rear Upper Stop Attaching Bolt
2. Rear Guide Upper Bracket Attaching Bolts
3. Rear Guide to Upper Bracket Attaching Bolts
4. Rear Guide Lower Attaching Bolt
5. Window Stabilizer Strip Attaching Bolts
6. Window Front Upper Stop Attaching Bolt
7. Front Guide Upper Attaching Bolts
8. Window Regulator Attaching Bolts
9. Inner Panel Cam Attaching Bolts
10. Door Lock Remote Control Attaching Bolts
11. Front Guide Lower Attaching Bolt
12. Door Lock Attaching Screws
13. Window Lower Sash Channel Cam Stud Nuts Access Holes

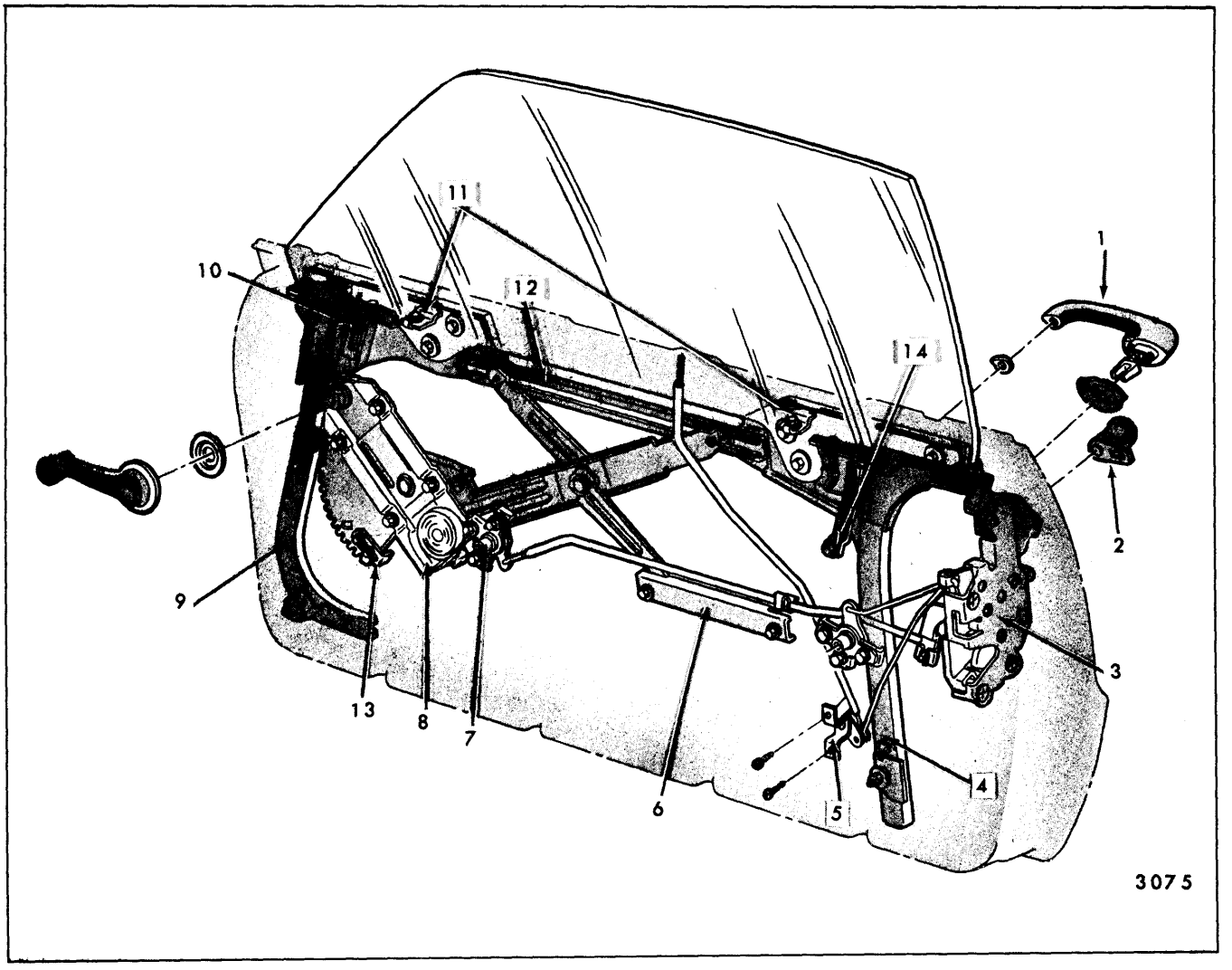

Fig. 6-51—Front Door Hardware - "E" Styles

1. Door Outside Handle
2. Lock Cylinder
3. Door Lock
4. Rear Guide
5. Inside Locking Rod to Lock Connecting Link
6. Inner Panel Cam
7. Door Lock Remote Control
8. Window Regulator
9. Front Guide
10. Window Front Up-Stop
11. Trim Pad Adjusting Plates
12. Lower Sash Channel Cam
13. Window Regulator Sector Stop (Manual)
14. Window Rear Up-Stop

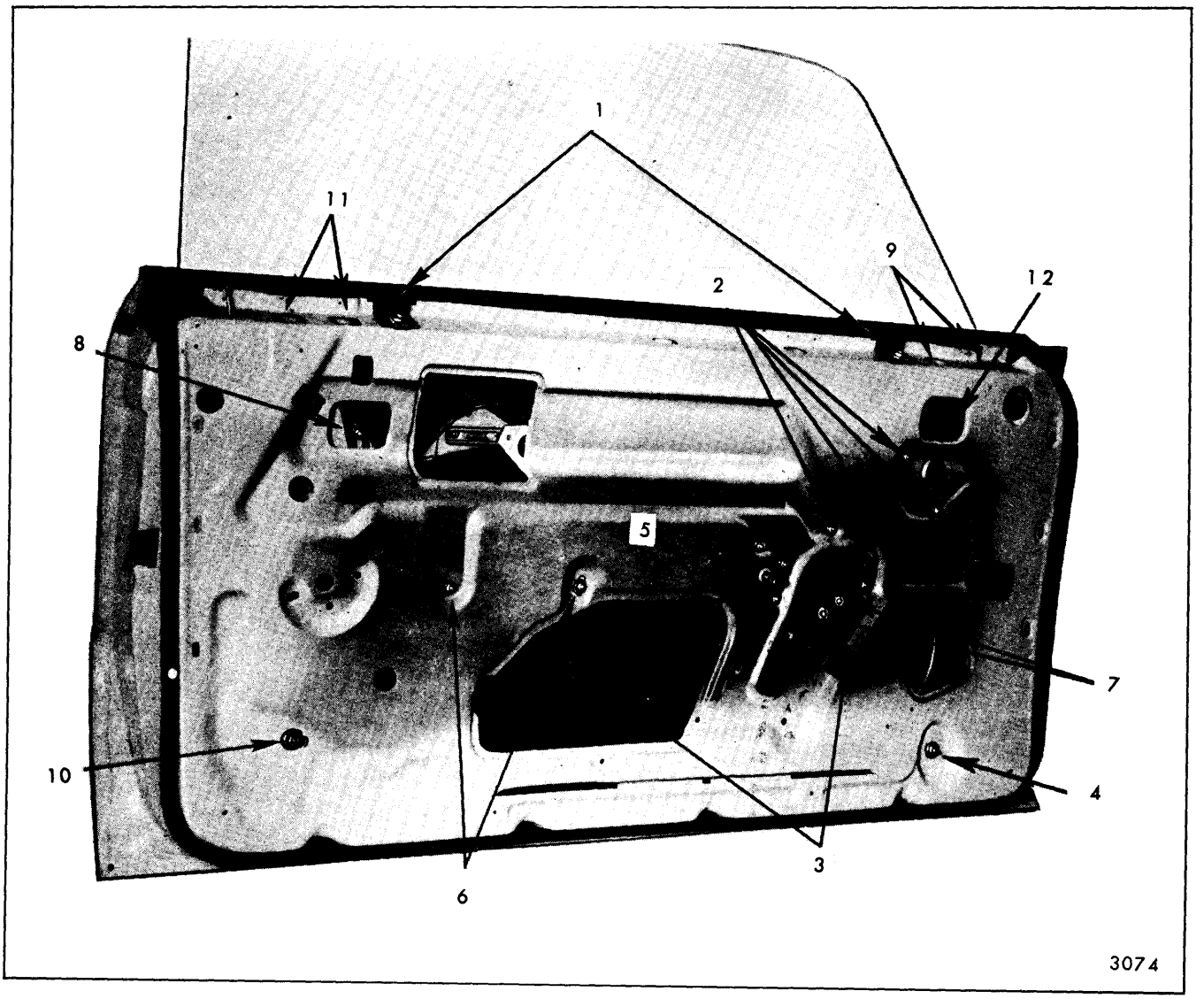

Fig. 6-52—Front Door Hardware - "E" Styles

1. Trim Pad Adjusting Plates
2. Window Regulator Attaching Bolts
3. Glass Sash Channel Attaching Screws Access Holes
4. Front Guide Lower Adjusting Stud and Nut
5. Remote Control (Standard) Attaching Bolts
6. Inner Panel Cam Attaching Bolts
7. Sector Gear Stop Bolts (manual only)
8. Window Rear Up-Travel Stop
9. Window Front Guide Upper Bolts
10. Rear Guide Lower Adjusting Stud and Nut
11. Window Rear Guide Upper Bolts
12. Window Front Up-Travel Stop

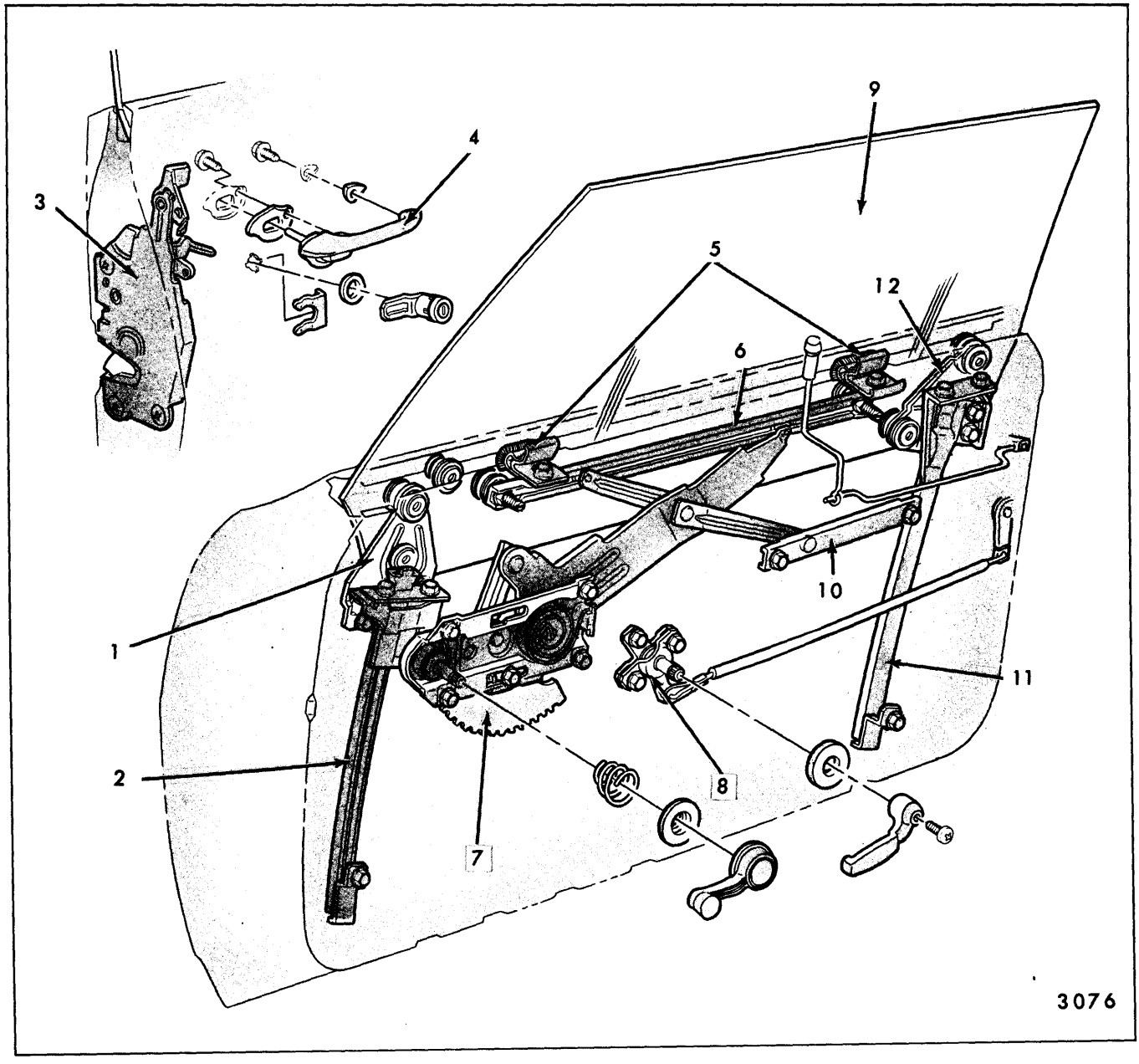

Fig. 6-53—Front Door Hardware - "F" Styles

1. Front Lower Sash Channel and Window Roller Cam Assembly
2. Front Guide
3. Door Lock
4. Door Outside Handle
5. Stabilizer Strips
6. Lower Sash Channel Cam
7. Window Regulator
8. Door Lock Remote Control
9. Front Door Window Assembly
10. Inner Panel Cam
11. Rear Guide
12. Rear Lower Sash Channel and Window Roller Assembly

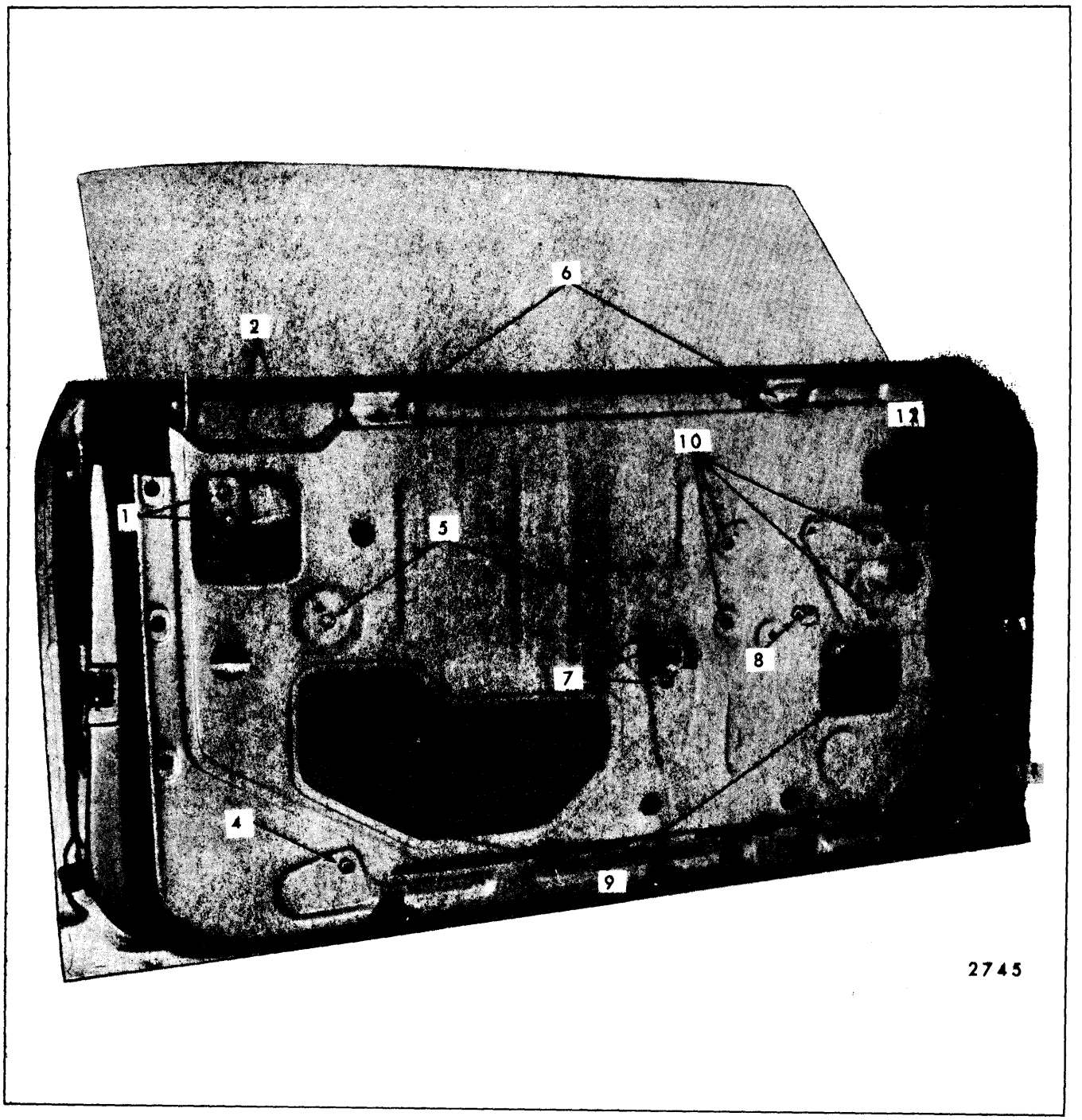

Fig. 6-54—Front Door Hardware - "F" Styles

1. Window Rear Up-Travel Stop
2. Rear Guide Upper Attaching Bolts
3. Window Front Up-Travel Stop
4. Rear Guide Lower Attaching Bolt
5. Inner Panel Cam Attaching Bolts
6. Window Front and Rear Stabilizer Strips
7. Door Lock Remote Control Attaching Bolts
8. Sector Gear Stop Bolt
9. Window Lower Sash Channel Cam Stud Nut Access Holes
10. Window Regulator Attaching Bolts
11. Front Guide Lower Attaching Bolt
12. Front Guide Upper Attaching Bolts

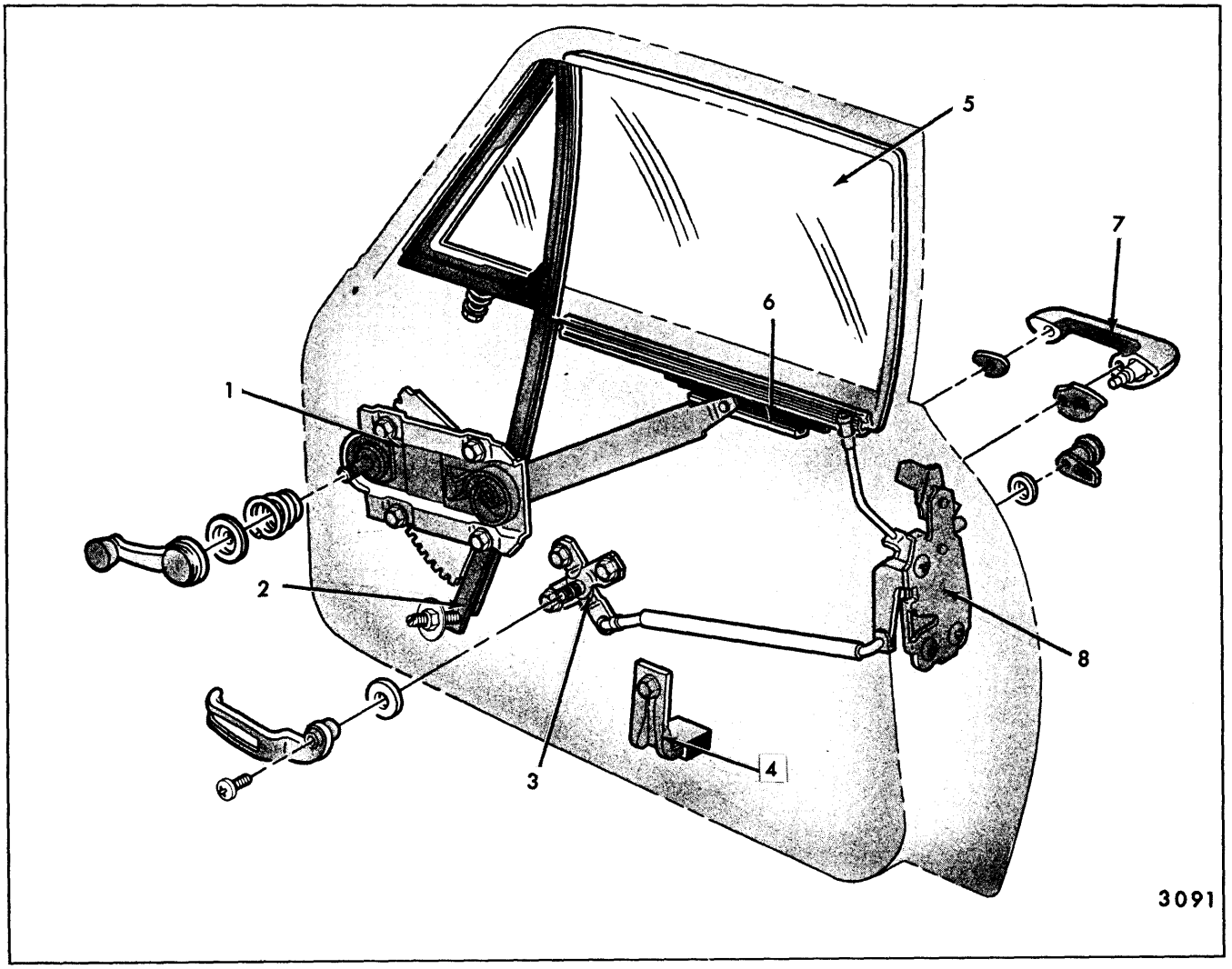

Fig. 6-55—Front Door Hardware - "X-69" Style Shown, "X-27" Style Similar

1. Window Regulator
2. Ventilator Division Channel
3. Door Lock Remote Control
4. Window Down-Travel Stop Support
5. Front Door Window Assembly
6. Lower Sash Channel Cam
7. Door Outside Handle
8. Door Lock

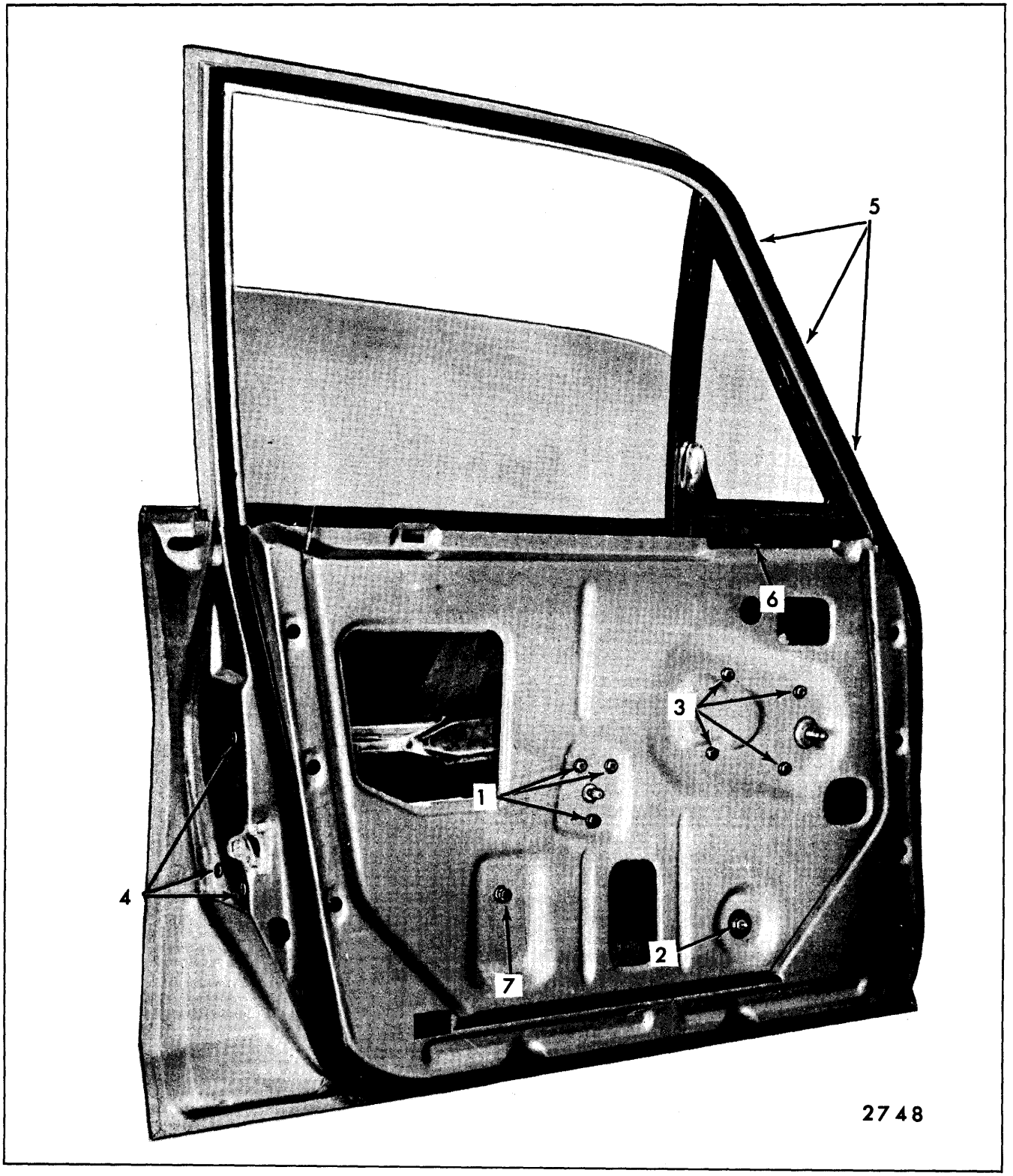

Fig. 6-56—Front Door Hardware - "X-69" Style Shown, "X-27" Style Similar

1. Door Lock Remote Control Attaching Bolts
2. Ventilator Division Channel Lower Adjusting Stud
3. Window Regulator Attaching Bolts
4. Door Lock Attaching Screws
5. Door Upper Frame to Ventilator Frame Attaching Screws
6. Ventilator Frame to Door Outer Panel Attaching Bolt
7. Window Down Stop Support Attaching Bolt

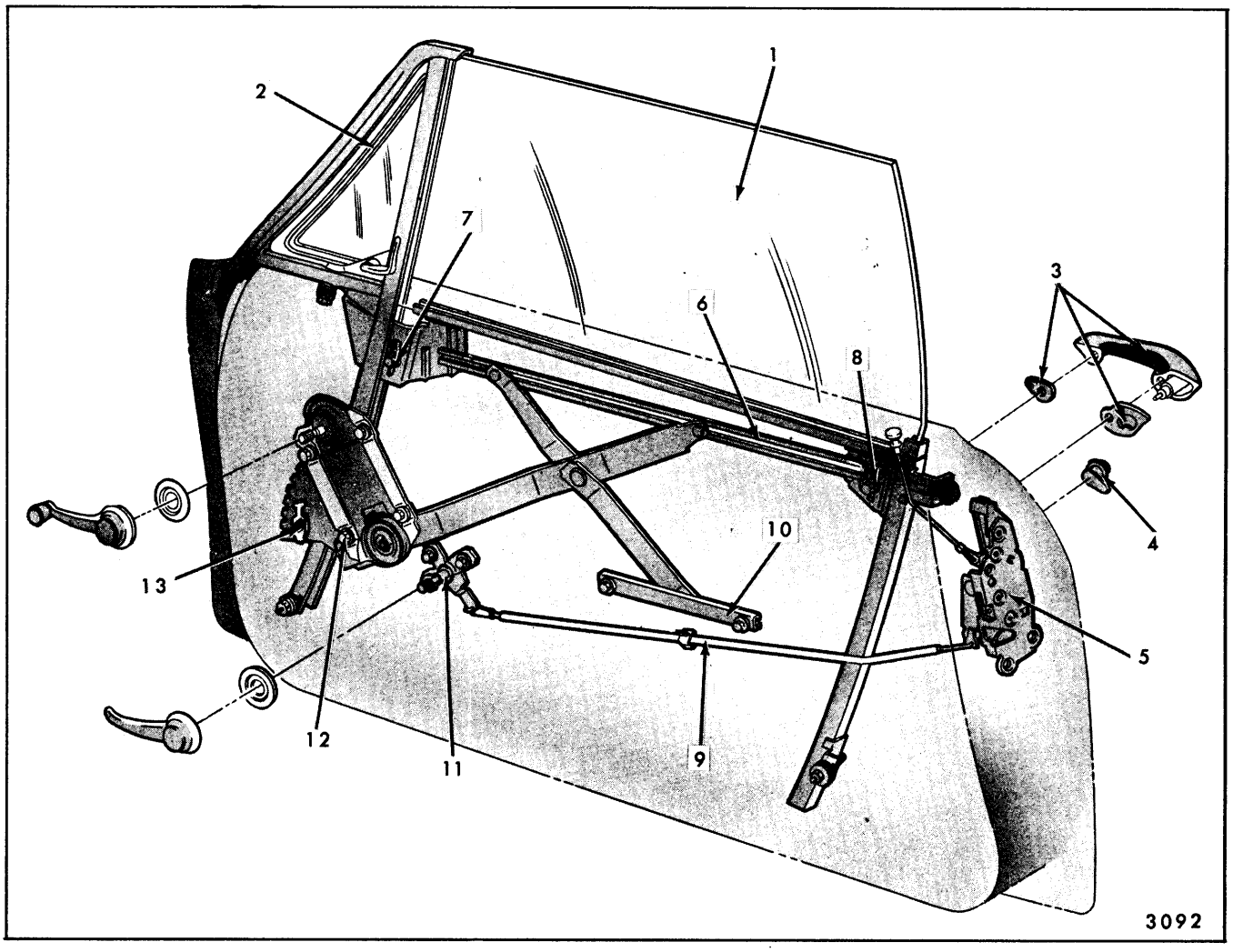

Fig. 6-57—Front Door Hardware - "Z" Styles

1. Window Assembly
2. Ventilator Assembly
3. Outside Handle and Sealing Gaskets
4. Lock Cylinder
5. Lock
6. Sash Channel Cam
7. Window Front Up-Travel Stop
8. Window Rear Up-Travel Stop
9. Remote Control Connecting Rod
10. Inner Panel Cam
11. Remote Control
12. Window Regulator
13. Sector Gear Up-Stop

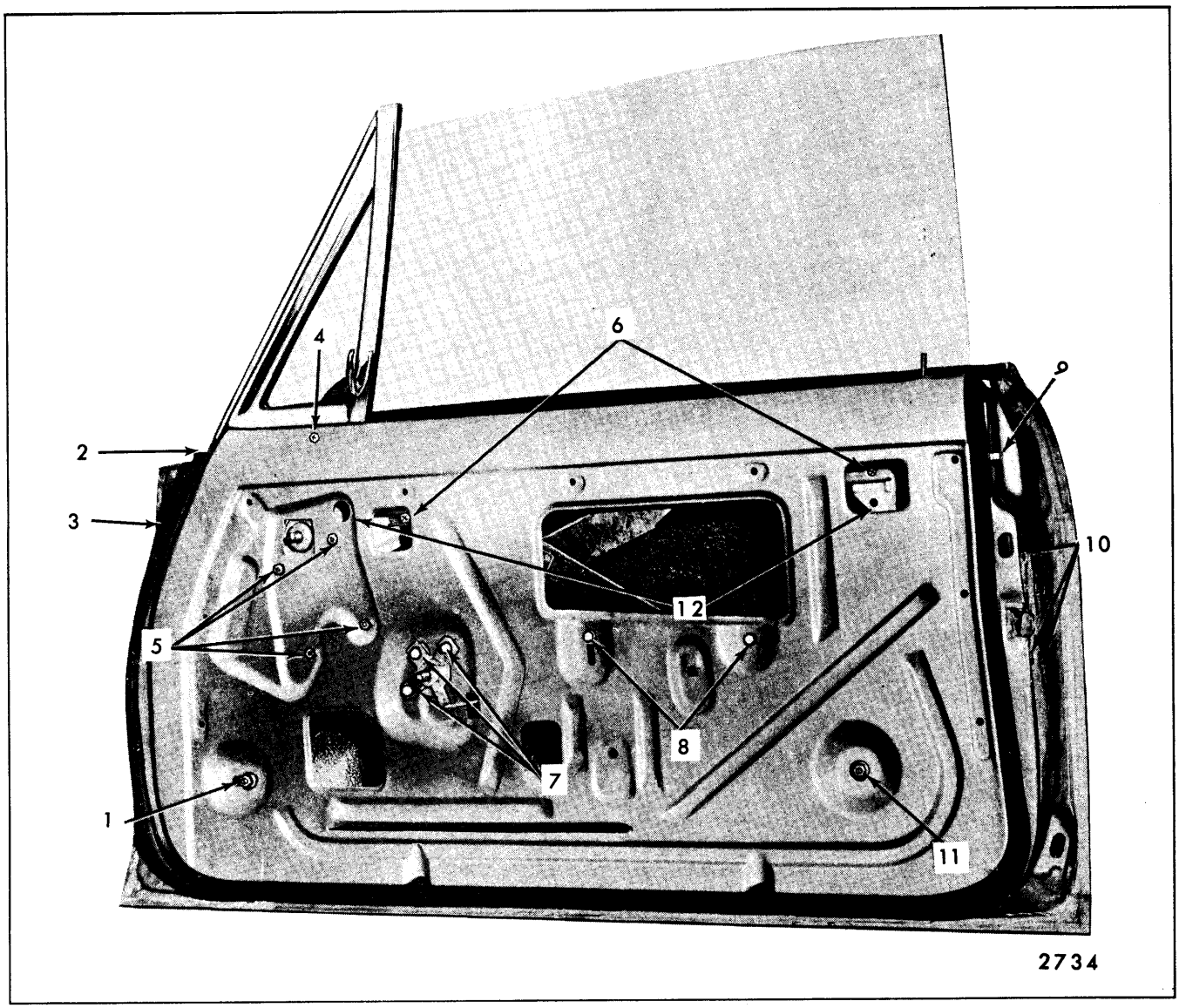

Fig. 6-58—Front Door Hardware - "Z" Styles

1. Ventilator Division Channel Lower Adjusting Stud
2. Ventilator Frame Attaching Bolt
3. Ventilator Frame Lower Adjusting Stud
4. Door Inner Panel to Ventilator Frame Attaching Screw
5. Window Regulator Attaching Bolts
6. Window Lower Sash Channel Cam Attaching Screws
7. Door Lock Remote Control Attaching Bolts
8. Inner Panel Cam Attaching Bolts
9. Rear Glass Run Channel Upper Attaching Bolt
10. Door Lock Attaching Screws
11. Rear Glass Run Channel Lower Adjusting Stud and Nut
12. Window Front and Rear Upper Stops Access Holes

FRONT DOOR HINGES

All hinges are constructed of steel, except the "Z" style lower hinge door-side strap which is constructed of malleable iron. A two stage hold-open feature is incorporated in all lower hinges, except on "B and C" styles. On "B and C" styles, the two stage hold-open feature is incorporated into the upper hinge.

The front door is mounted to the front body hinge pillar with an upper and lower hinge. Figure 6-59 illustrates typical front door hinge installation. On "E" styles, the hinges are the "swing-out" type, which means that the leading edge of the door swings outboard of the front fender when the door is opened. All other styles use "swing-in" type hinges, which means the leading edge of the door swings inboard of the front fender when opened.

Although the door can be removed from the body with or without the hinges attached to the door, it is recommended that when removing the door only, remove the door from the hinges. Accessibility to the door side hinge bolts is better than to the body side bolts.

When servicing both door hinges, remove the door from the hinges, then the hinges from the body. When servicing only one hinge, however, make replacement while supporting the door in the open position.

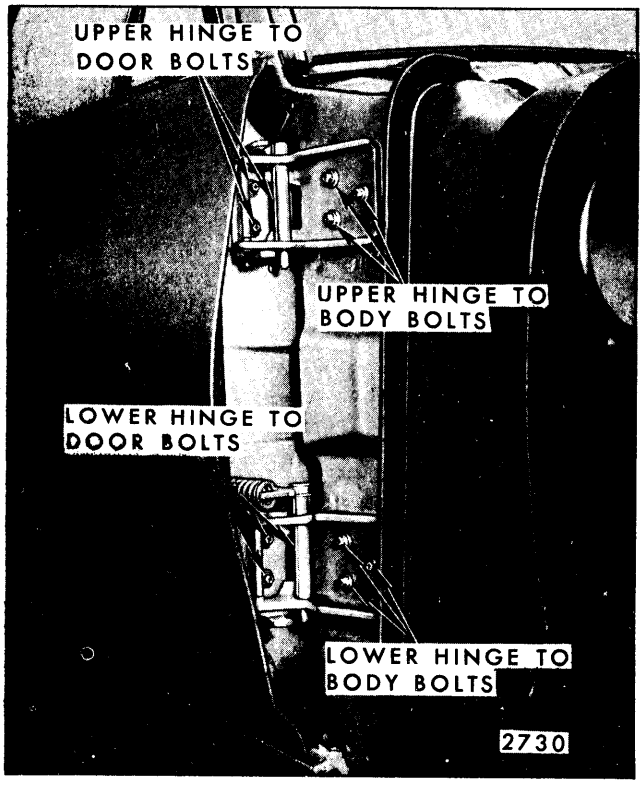

Fig. 6-59—Typical Front Door Hinge Attachment

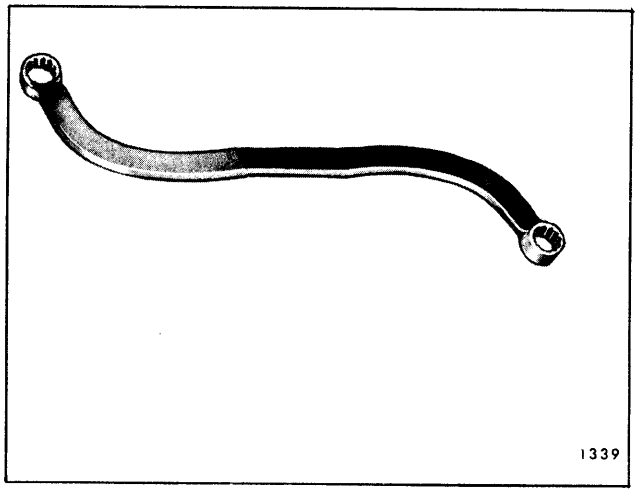

Fig. 6-60—Front Door Hinge Tool J-21550 (1/2" Box) - "F, X & Z" Styles

Door Removal and Installation

1. Prior to loosening any hinge bolts, mark position of hinge on door to facilitate adjustment when reinstalling door on hinge.

2. For removal or adjustment of front door hinge to body attaching bolts, use tools outlined below:

   a. On "F, X & Z" body styles, use tool J-21550 - 1/2" wrench (Figure 6-60).

   b. On "A, B & C" body styles, use tool J-22810 - 1/2" wrench (Figure 6-61).

   c. On "E" body styles, use tool J-22729 - 9/16" wrench (Figure 6-62).

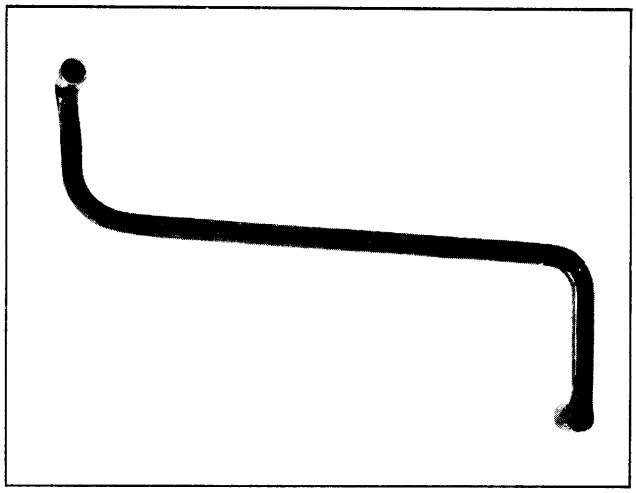

Fig. 6-61—Front Door Hinge Tool J-22810 - "A, B & C" Styles

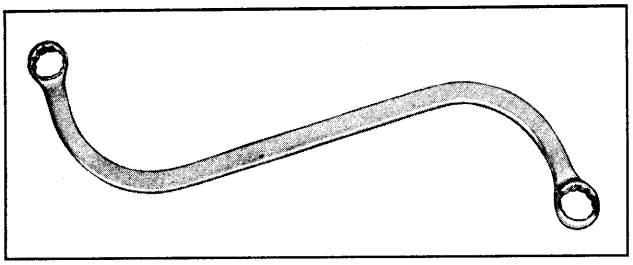

Fig. 6-62—Front Door Hinge Tool J-22729 (9/16" Box) - "E" Styles

3. On doors equipped with power operated windows and/or door locks, remove trim pad and detach inner panel water deflector sufficiently to disconnect harness assembly(ies) and remove same from door.

Hinge Removal

1. If both hinges are to be removed, remove front door as previously described. Mark position of hinge on body hinge pillar and remove hinge to body hinge pillar attaching bolts (Figure 6-59).

NOTE: On "E" body styles, loosen front fender lower attaching bolts as required to permit usage of a wrench when removing lower hinge lower attaching bolts (Fig. 6-63). Car Division Publications should, however, be referenced prior to any movement of front end sheet metal.

NOTE: All "E" body doors are equipped with a torque rod to ease door opening effort (Figure 6-64). This torque rod is secured under the upper hinge lower rearward bolt, body side, on right and left front doors. The lower end of rod is retained by the lower hinge box. Removal and installation of this rod usually requires loosening of front fenders. Remove rod with door fully opened, when tension on rod is relieved.

2. With the aid of a helper to support door, remove upper and lower hinge to door attaching bolts (Figure 6-59) and remove door from body.

NOTE: On all styles except "E" body, removal of door from body with or without hinges attached can be accomplished without loosening front fender. On "E" body styles, removal of lower hinge from body hinge pillar necessitates loosening fender along lower edge (Figure 6-63).

3. To install door, reverse removal procedure. Prior to installation, apply a coat of heavy body sealer to surface of hinge that contacts door for protection against corrosion.

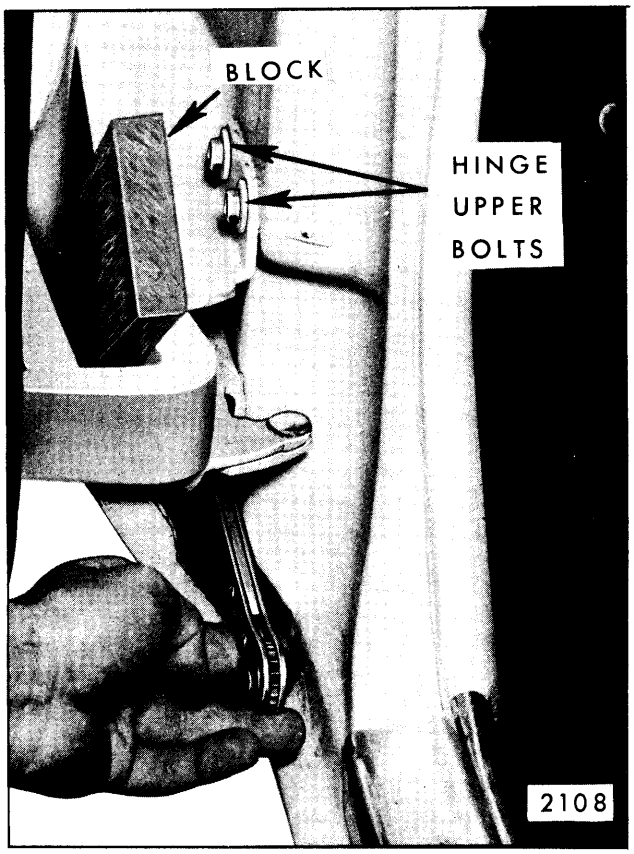

Fig. 6-63—Front Door Hinge Removal - "E" Styles

Front Door Hinge Adjustment

Door adjustments are provided through the use of floating anchor plates in the door and front body hinge pillars. When checking the door for alignment, and prior to making any adjustments, remove door lock striker from body to allow door to hang freely on its hinges. Loosen front fender where required.

NOTE: When making door adjustments, refer to the door gap spacing and lock striker engagement specifications in the "Front and Rear Door" section of this manual.

1. Adjustments provided at body hinge pillars - up and down and fore and aft on all body styles.

2. Adjustments provided at door hinge pillars - in and out on all body styles.

INSIDE LOCKING ROD—Coupe Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

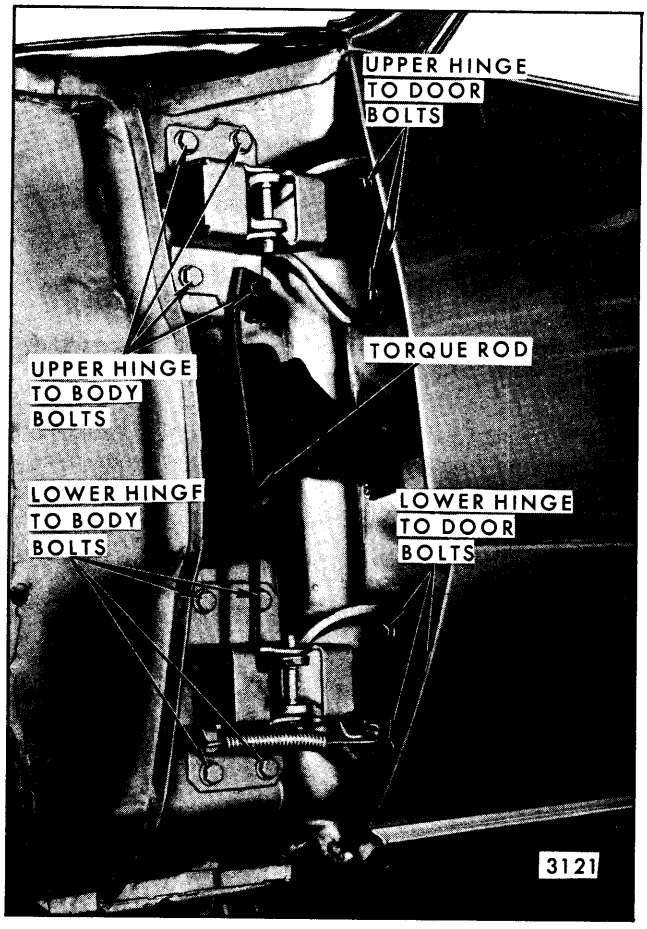

Fig. 6-64—Front Door Hinge and Torque Rod Installation - "E" Styles

2. Slide inside locking rod to door inner panel plastic retainers in direction of arrows shown in Figure 6-65.

3. Disengage rod from lock and lower locking rod through belt line to remove.

4. To install, reverse removal procedure.

FRONT DOOR LOCK REMOTE CONTROL AND CONNECTING ROD

There are three basic types of remote controls; spindle type (Figure 6-50), inward acting type (Figure 6-54) and squeeze type ("G" Body only, Figure 6-42).

All remote controls are secured to the door inner panel by three attaching bolts. On some styles, the remote is attached to the inboard surface of the inner panel and on other styles to the outboard surface. The removal and installation is similar, however, for either method of attachment.

Removal and Installation

1. Raise door window, remove door trim pad and detach inner panel water deflector.

NOTE: Some "E" body styles are equipped with two remote controls, one front and one rear. Attachment of both is the same; however, removal procedures differ in that the forward remote (standard equipment) is located in such close proximity to the window regulator that regulator must first be loosened. This can be accomplished by removing three of the four regulator to inner panel attaching bolts and pivoting regulator to a position that remote can be removed (See Figure 6-38). On "B & C" hardtop and convertible styles, remove window regulator two rear attaching bolts and loosen front attaching bolts (Figure 6-50).

2. Remove bolts securing remote control to door inner panel (Figure 6-50).

3. Inside of door, pivot remote control to disengage lock connecting rod and remove remote through access hole.

NOTE: On "B" closed styles, remove rubber bumper from down stop support bracket and remote control to lock rod anti-rattle clip.

4. If remote control to lock connecting rod is to

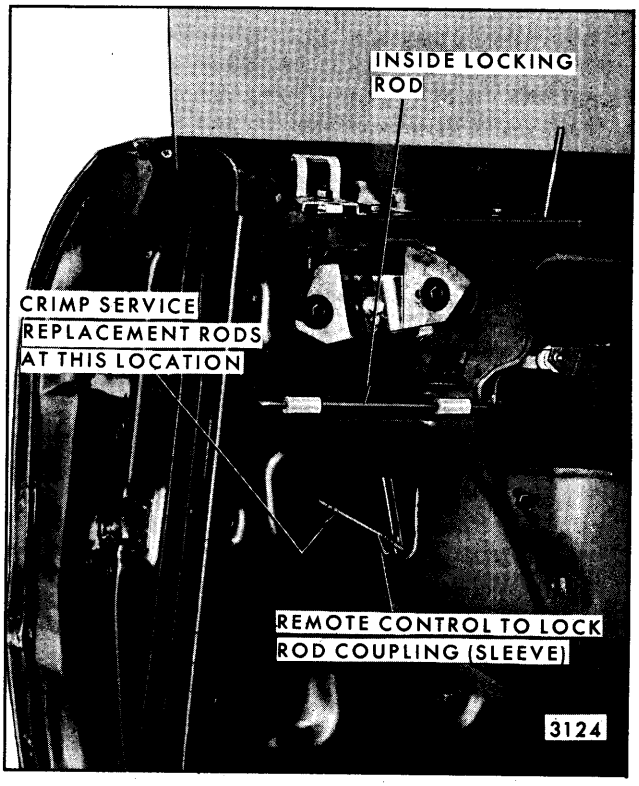

Fig. 6-65—Front Door Inside Locking Rod - Coupe Styles

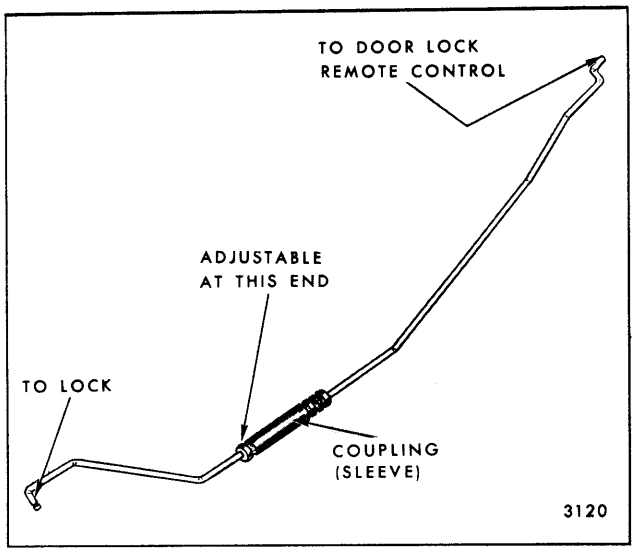

Fig. 6-66—Door Lock Remote Control to Lock Connecting Rod - "G" Styles

be removed, refer to "Front and Rear Door" section for method of disengaging spring clip at lock end of rod.

NOTE: Due to the limited operating travel of the squeeze type remote control handle on "G" styles, an adjustable remote control to lock rod coupling (sleeve, Figure 6-65) is utilized to insure proper locking operation.

The overall length of the "G" body remote control to lock rod can be reduced, to correct insufficient travel of the remote handle to unlock the door, by removing the rod assembly and turning the portion of the rod between the coupling and lock assembly clockwise (Refer to Figure 6-66). To increase the rod assembly length, turn counterclockwise. Proper rod length is determined to be correct when the connecting rod assembly aligns with the attaching holes in the door lock remote control and lock assembly.

Service Replacement "G" body remote control to lock rods are uncrimped at the adjustable end of the coupling (Figure 6-66). This permits the rod to telescope to the desired length when installing, but necessitates crimping of the coupling after installation. Crimping can be done with a pair of diagonal cutters or comparable tool to insure proper locking operation (Refer to Figure 6-65 for crimping location).

5. To install, reverse removal procedure.

FRONT DOOR LOCK ASSEMBLY

All styles use the fork bolt lock design which includes a safety interlock feature. Where necessary, striker spacers should be used to insure satisfactory lock and striker engagement. Refer to "Front and Rear Door" section for spacer usage.

NOTE: Figure 6-67 depicts a typical front door lock assembly which can be used for identifying locking problems. Do not attempt repairs to correct lock discrepancies. Make corrections through replacement of lock assembly.

Removal and Installation

1. Raise door window, remove trim pad and detach inner panel water deflector.

2. Working through large access hole, disengage remote control to lock connecting rod at lock as specified under "Door Lock Spring Clips" in the preceding "Front and Rear Door" section.

NOTE: On coupe styles, it may be necessary to remove the inside locking rod.

3. On styles equipped with vacuum or electric door locks, remove the vacuum actuator or electric solenoid as described in the "Front and Rear Door" section.

4. Remove three screws securing lock to door lock pillar ("1", Figure 6-40) and remove lock assembly from door.

NOTE: On four-door styles, the design of the lock to inside locking rod attaching clip does not allow disengagement of rod from lock with lock in an installed position. This rod can be removed from lock in a bench operation after removal of lock assembly.

5. To install, reverse removal procedure.

FRONT DOOR LOCK CYLINDER ASSEMBLY

Removal and Installation

1. Remove door trim assembly and partially detach inner panel water deflector. Raise door window.

2. With a screwdriver or other comparable tool, slide lock cylinder retaining clip (on door outer panel) out of engagement and remove lock cylinder from door (Figure 6-68).

3. To install, reverse removal procedure.

Disassembly and Assembly

1. Remove lock cylinder from door as previously described.

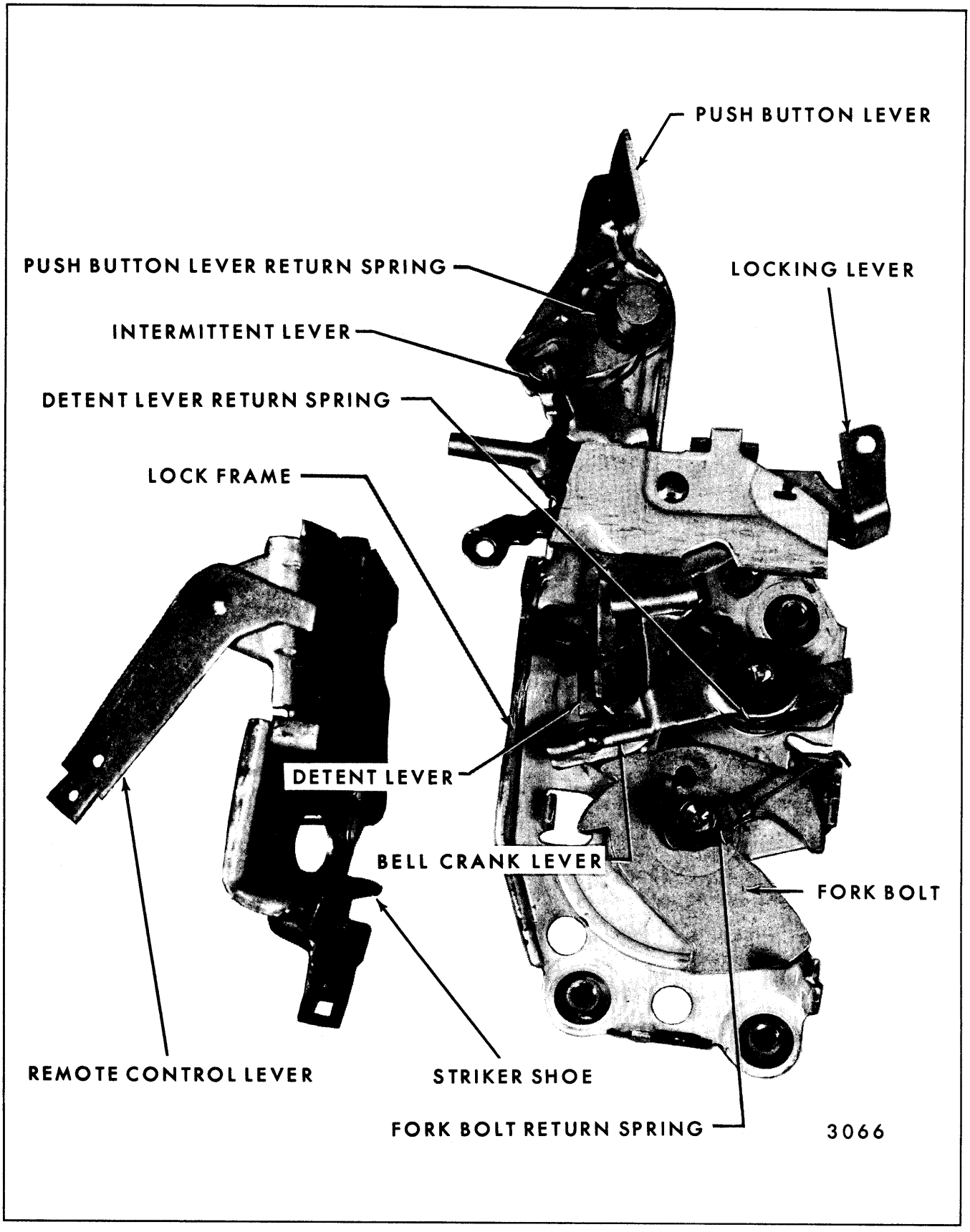

Fig. 6-67—Front Door Lock Assembly - All Styles

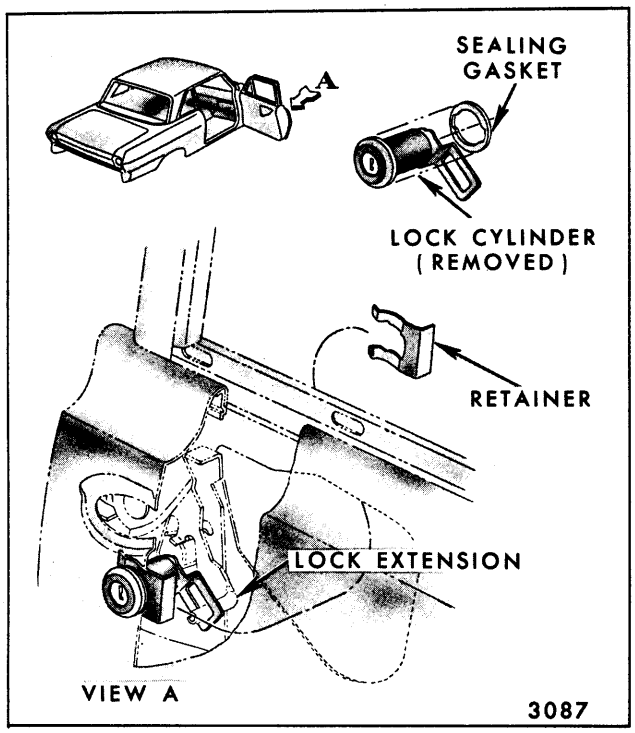

Fig. 6-68—Front Door Lock Cylinder Removal - All Styles

2. With a pointed tool, disengage pawl retaining clip and remove pawl (Figure 6-69).
3. With a flat-bladed tool, straighten out crimped-over edges of lock cylinder housing scalp and remove scalp and lock cylinder from housing.

NOTE: Refer to General Information Index (Section 1 of this manual) for lock cylinder coding.

4. To install, reverse removal procedure.

NOTE: The lock cylinder housing scalp is usually damaged in the removal procedure and, therefore, must be replaced. Replacement scalps are available as service parts.

DOOR OUTSIDE REMOTE CONTROL MIRROR—All Styles Without Door Ventilators

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector sufficiently to gain access to remote control mirror cable.
2. On all styles except Cadillac and Pontiac styles remove remote control mirror to door outer panel attaching screw(s) in base of mirror. On Cadillac and Pontiac styles, remove remote control mirror to door outer panel stud nuts from inside door.
3. Detach mirror cable from retaining tabs or hog rings where used and remove mirror and cable assembly from door.
4. To install, reverse removal procedure.

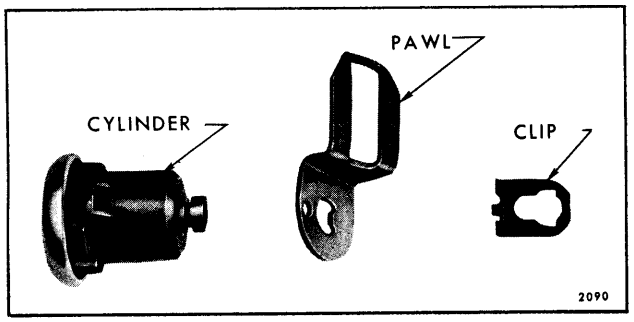

Fig. 6-69—Door Lock Cylinder Assembly

FRONT DOOR INNER PANEL CAM—All Except "A & X-69" Styles

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. With window in raised position, remove cam attaching bolts (Figure 6-50) and slide cam off regulator balance arm roller.

NOTE: Figure 6-50 depicts "B & C" styles - other styles similar.

3. To install, reverse removal procedure.

NOTE: One end of the cam has provisions for up and down adjustment to correct a "cocked" window (not parallel with top of door upper frame or side roof rail weatherstrips).

FRONT DOOR VENTILATOR REGULATOR—"A" Styles

Removal and Installation

1. With front door window in full-up position, remove door trim assembly and partially detach inner panel water deflector.
2. Remove ventilator T-shaft bolt ("6", Figure 6-70) and ventilator regulator to inner panel attaching bolts ("4", Figure 6-70).
3. Pull regulator down to disengage from ventilator T-shaft and remove regulator through access hole.
4. To install, reverse removal procedure.

FRONT DOOR VENTILATOR ASSEMBLY—"A" Closed Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

2. With window in up position, loosen down stop support attaching bolts and remove support ("2", Figure 6-70).

3. Remove ventilator regulator as previously described.

4. Lower window to full down position and remove bolt securing ventilator lower frame to door outer panel ("4", Figure 6-70).

5. Remove division channel lower adjusting stud nut ("1", Figure 6-70).

6. Remove ventilator to door upper frame attaching screws ("3", Figure 6-70). Disengage upper front end of glass run channel from door upper frame to permit rearward movement and removal of vent from door upper frame (refer to glass run channel removal procedure).

7. Tilt vent assembly rearward and remove vent inboard of door upper frame.

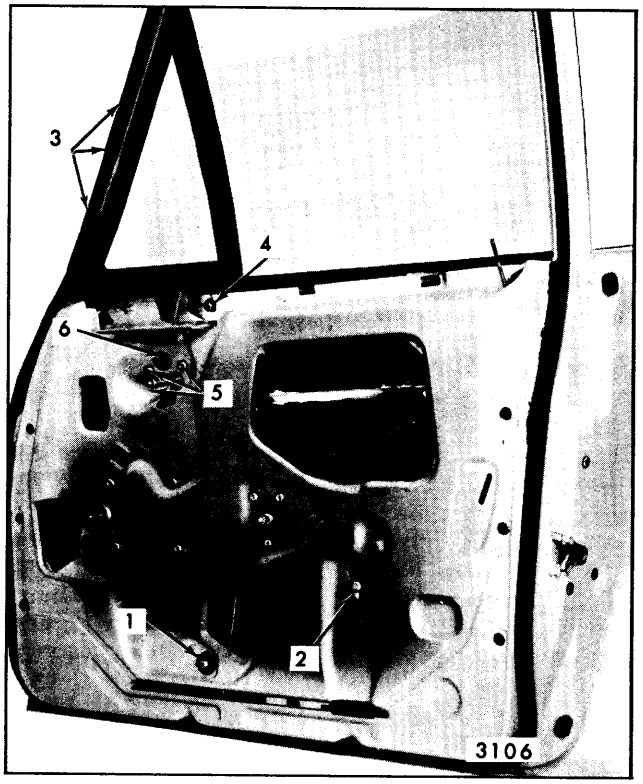

Fig. 6-70—Front Door Ventilator and Window Removal and Adjustments - "A" Closed Styles

1. Ventilator Division Channel Lower Adjusting Stud
2. Window Down Stop Support Attaching Bolt
3. Ventilator to Door Upper Frame Attaching Screws
4. Ventilator Frame to Door Outer Panel Attaching Bolt
5. Ventilator Regulator Attaching Bolts
6. Ventilator Regulator to "T-Shaft" Attaching Bolt Access Hole

8. To install, reverse removal procedure.

Adjustments

Some in-and-out, or fore-and-aft adjustment of the ventilator division channel is available at the lower adjusting stud ("1", Figure 6-70). Adjustment at this location is required only to eliminate any misalignment between the ventilator division channel and window glass run channel.

VENTILATOR DISASSEMBLY AND ASSEMBLY—"A" Closed Styles

The ventilator front frame is attached to the division channel with rivets at the bottom and a screw at the top (Figure 6-71).

The parts that can be replaced are the division channel strip assembly, ventilator weatherstrip (on division channel) and the vent glass.

FRONT DOOR VENTILATOR ASSEMBLY—"A-39" Styles

Removal and Installation

1. Remove door window and ventilator regulator (see index for removal procedures).

2. Remove ventilator frame to door panel bolts

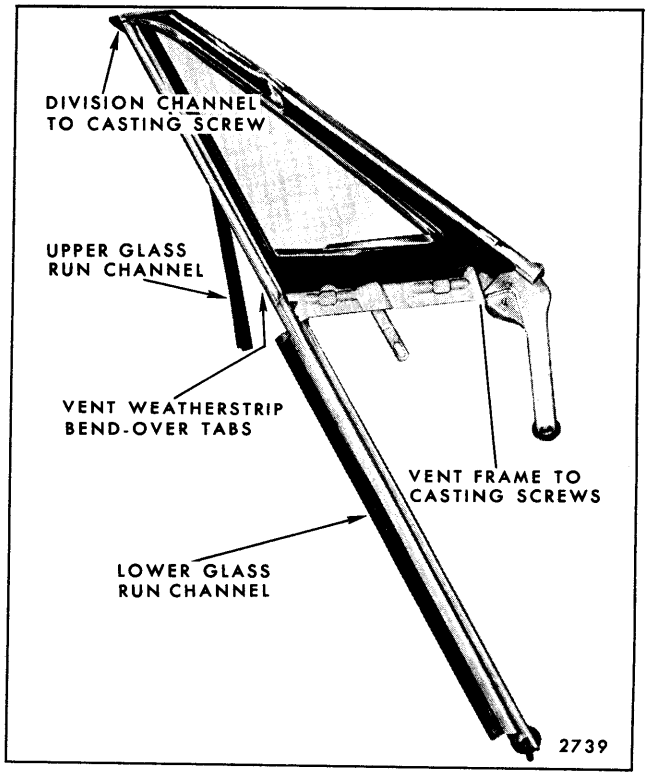

Fig. 6-71—Front Door Ventilator Assembly - "A" Closed Styles

("1", Figure 6-72) and trim pad hanger plate retained by rear bolt.

3. Remove ventilator lower frame adjusting stud ("2", Figure 6-72).

4. Remove division channel lower adjusting stud ("3", Figure 6-72).

5. Lift the ventilator upward, then rotate it so that division channel lower attaching bracket can clear the beltline adjacent to rear guide.

6. To install, reverse removal procedure. Adjust ventilator for proper operation and alignment as described below.

Ventilator Adjustments

The ventilator assembly can be positioned up or down and fore or aft. In addition, the top of the vent can be adjusted in or out in relation to the side roof rail.

To reposition the ventilator assembly up or down or fore or aft, it is necessary to have the vent completely loose at all attaching locations, including the ventilator regulator attaching bolts ("4", Figure 6-72).

To adjust the top of the ventilator in or out, loosen only the adjusting stud nuts ("2" and "3", Figure 6-72) and adjust the studs in or out as required.

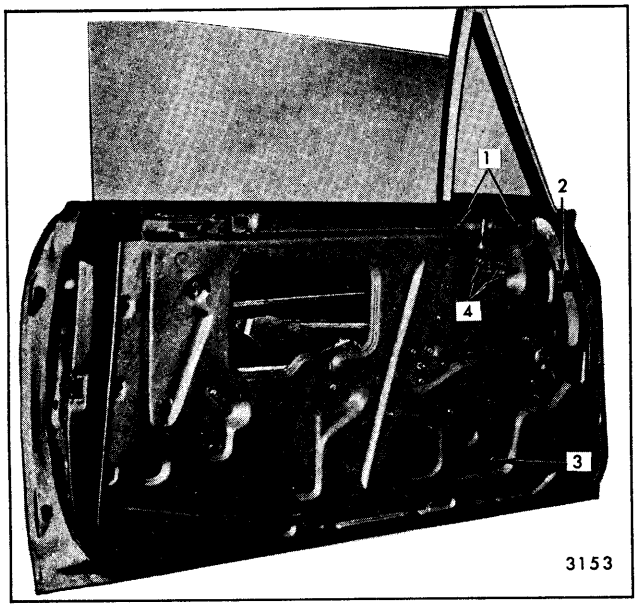

Fig. 6-72—Front Door Ventilator Assembly Removal and Adjustment "A-39" Styles

1. Ventilator Frame to Door Panel Bolts
2. Ventilator Lower Frame Adjusting Stud
3. Division Channel Lower Adjusting Stud
4. Ventilator Regulator Attaching Bolts

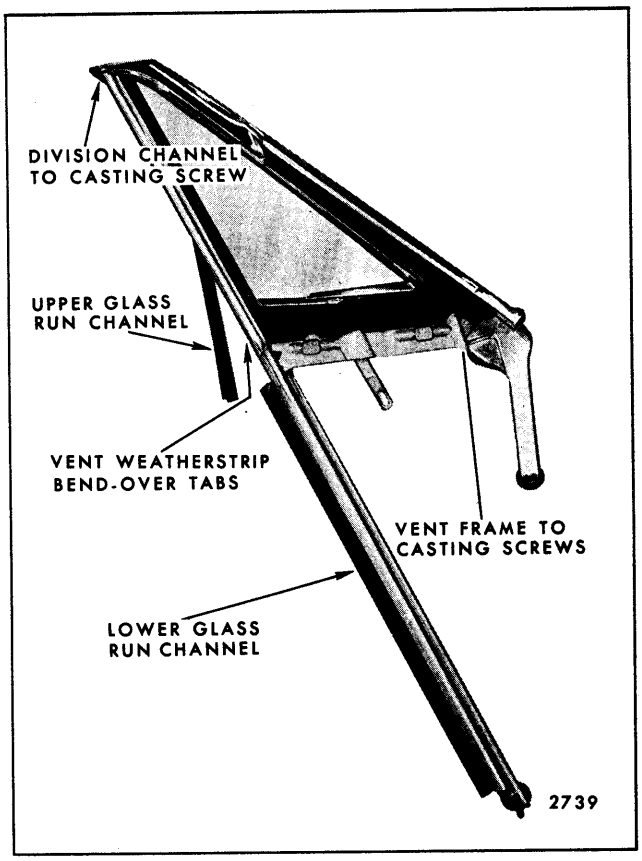

Fig. 6-73—Front Door Ventilator Assembly - "A-39" Styles

It is not necessary to loosen the vent to outer panel bolts ("3", Figure 6-72).

Ventilator Disassembly and Assembly "A-39" Styles

The "hardtop" style ventilator permits more disassembly than does the "closed" style vent. The parts that can be removed and replaced are as follows: upper glass run channel; division channel and component lower glass run channel and vent lower frame; ventilator casting; ventilator window assembly; ventilator weatherstrip (on casting); ventilator rear weatherstrips (on division channel).

As shown in Figure 6-73, it is necessary to remove the vent from the door to gain access to the vent casting to vent frame screws.

The vent window and sash channel assembly can be removed without removing the vent from the door; however, the vent regulator must be removed (see preceding removal procedure). With the regulator out, open the vent window to align the bosses on the T-shaft with the slots in the vent lower frame. Then, press the vent window downward to disengage the vent upper pivot from the vent casting. Remove the vent window by lifting upward.

The division channel to casting screw (Figure 6-73), also retains the top of the division channel strip assembly. To remove the strip assembly, or to gain access to the vent weatherstrip bend-over tabs (weatherstrip on division channel), remove the screw and pull the strip assembly out of the division channel.

FRONT DOOR VENTILATOR ASSEMBLY— "X" Styles

The front door ventilator is a manually operated friction type unit on all styles.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. With window in "full-up" position loosen down stop support attaching bolt, remove support ("7", Figure 6-56).
3. Lower door window and remove ventilator division channel lower adjusting stud nut and ventilator to door outer panel attaching screw (View "A" in Figure 6-74).
4. Remove ventilator to door upper frame attaching screws (View "A", in Figure 6-74).
5. Lift ventilator rearward and upward until lower forward corner of assembly is free of door upper frame (View "B" in Figure 6-74).
6. Rotate ventilator assembly in an outboard movement and remove unit outboard of door upper frame (View "C" in Figure 6-74).
7. To install, reverse removal procedure.

Adjustment

A slight fore and aft adjustment of the ventilator

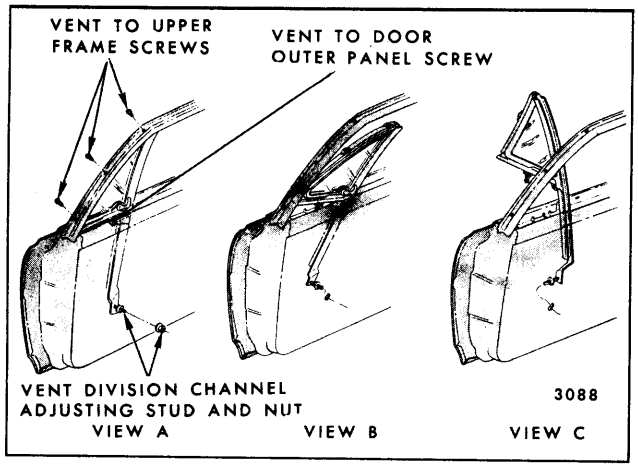

Fig. 6-74—Front Door Ventilator Removal

division channel is available at the lower adjusting stud by loosening attaching nut and sliding stud in slot provided. The division channel can also be positioned in or out by loosening nut and turning stud in or out as required.

FRONT DOOR VENTILATOR ASSEMBLY— "Z" Styles

The front door ventilator assembly is a manually operated friction type unit.

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. Remove ventilator division channel lower adjusting stud nut and ventilator to door inner panel attaching screw (See Figure 6-75). Turn stud as far as possible out of contact with door inner panel.
3. On door hinge pillar, remove ventilator frame attaching bolt and ventilator frame lower adjusting stud nut (See Figure 6-75).
4. Loosen rear glass run channel upper attaching screw ("9", Figure 6-58) and remove run channel lower adjusting stud nut ("11", Figure 6-58). Move door glass as far rearward as possible.

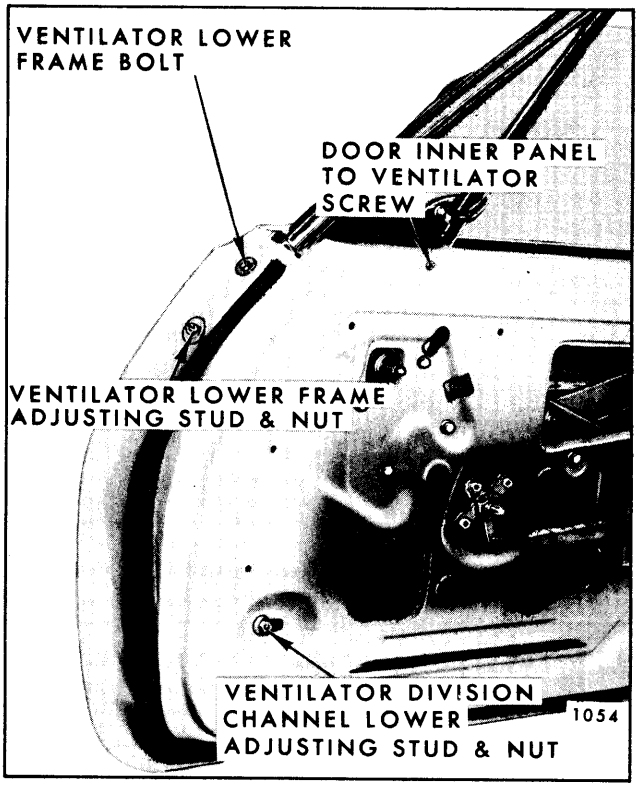

Fig. 6-75—Front Door Ventilator Attachments - "Z" Styles

5. Push ventilator lower adjusting stud free of inner panel and move ventilator rearward until front frame clears hinge pillar (See Figure 6-76).

6. Turn ventilator 90 degrees, as shown in Figure 6-76, and remove assembly from body.

7. To install, reverse removal procedure.

Adjustments

It will generally be necessary to remove door trim pad and detach inner panel water deflector (as required) prior to ventilator assembly adjustments. In addition, removal of ventilator to door inner panel and ventilator front frame to door hinge pillar panel attaching screws is usually required.

1. A slight fore and aft adjustment of ventilator division channel is available at lower adjusting stud and nut (Figure 6-75) by loosening attaching nut and sliding stud in slot provided. The division channel can also be positioned in or out by loosening nut and turning stud in or out as required and tightening nut.

2. The ventilator frame lower adjusting stud and nut provides in or out adjustment by use of an oversize attaching hole and fore or aft adjustment by turning stud in or out as required.

NOTE: Adjustment No. 2 first requires loosening of ventilator front frame lower attaching bolt (See Figure 6-75).

3. The effort required to open or close the ventilator can be set by straightening retaining washer tab and tightening or loosening the adjusting nut. Tightening increases effort and loosening decreases effort. When desired adjustment has been obtained, bend down washer tab to lock nut in position (See Figure 6-77).

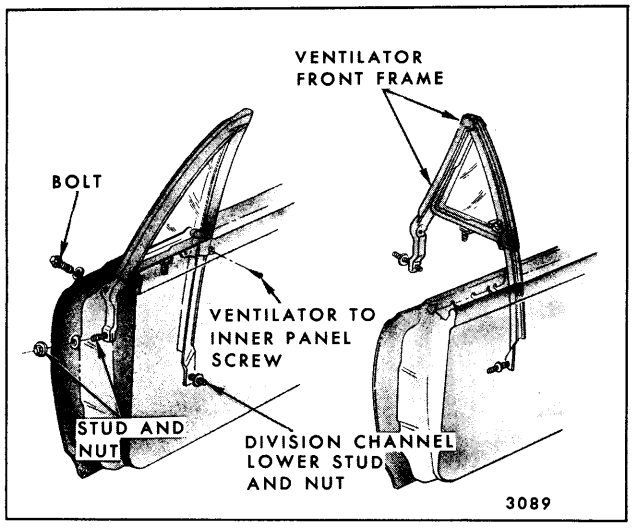

Fig. 6-76—Front Door Ventilator Removal - "Z" Styles

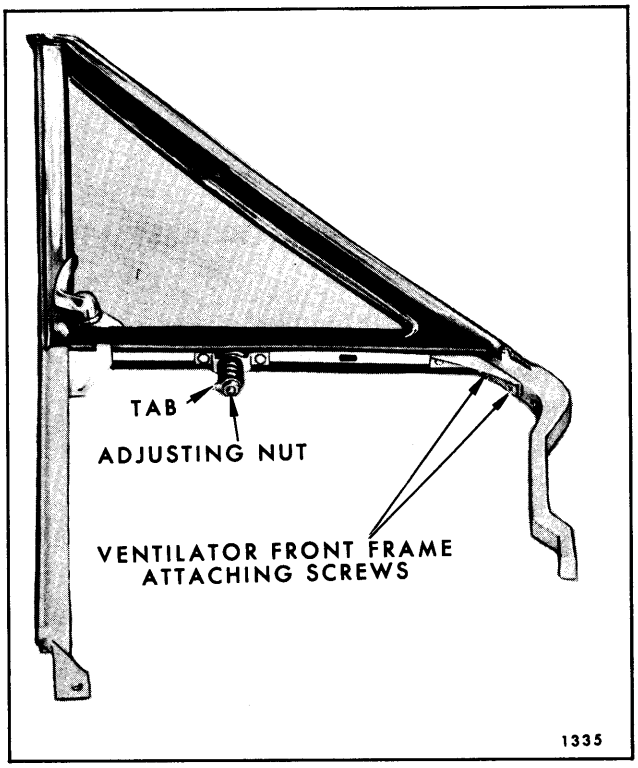

Fig. 6-77—Front Door Ventilator Assembly
"X & Z" Styles

NOTE: This adjustment should be performed as a bench operation.

FRONT DOOR VENTILATOR ASSEMBLY WEATHERSTRIP—"Z" Styles

Removal and Installation

1. Remove front door ventilator assembly.

2. Remove ventilator division channel upper rubber bumper attaching screw.

3. Remove two attaching screws securing ventilator casting to frame and separate ventilator casting from frame so that the ventilator weatherstrips can be removed (Fig. 6-77).

4. To install, reverse removal procedure. Prior to installation, apply a ribbon of medium bodied sealer between ventilator weatherstrip and casting.

FRONT DOOR WINDOW ASSEMBLY—"A & X" Closed Styles

The front door window assembly consists of a frameless piece of solid tempered safety plate

glass pressed into a thin section lower sash channel. When cycled, the glass operates within the ventilator division channel and window glass run channel.

Removal and Installation

1. Remove front door ventilator assembly as previously described.

2. Slide window lower sash channel cam off window regulator lift arm and balance arm rollers on two door styles and off lift arm roller on four door styles. Remove window inboard of door upper frame.

3. To install, reverse removal procedure. Adjust window for proper alignment as described in the following procedure.

Adjustments

1. To adjust lower portion of ventilator division channel for proper alignment with door window assembly, lower door window and loosen ventilator adjusting stud nut (Figure 6-78). Turn adjusting stud in or out or position lower end of channel fore or aft as required; then, tighten adjusting stud nut.

2. On two-door styles, the door window inner panel cam is adjustable at the front and can correct a rotated (cocked) front door window (Refer to index for inner panel cam adjustment).

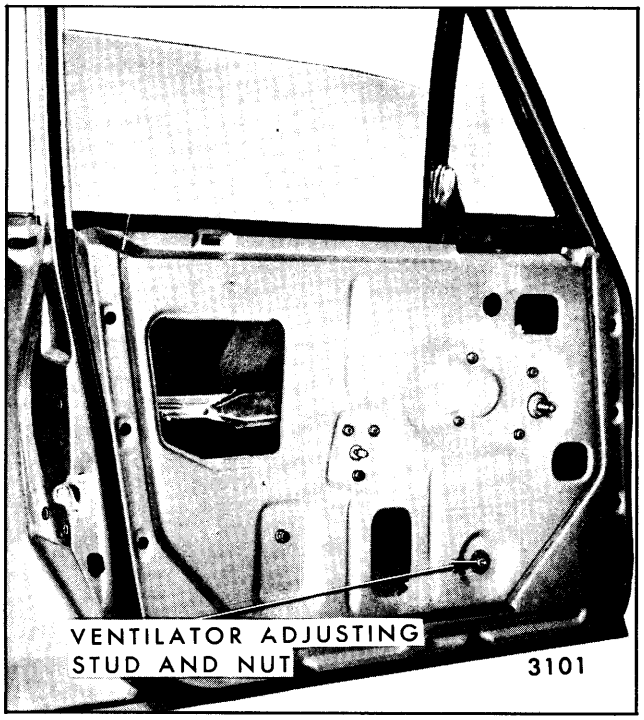

Fig. 6-78—Front Door Window Removal and Adjustment - "A and X" Closed Styles

FRONT DOOR WINDOW ASSEMBLY— "A-39" Styles

The front door window assembly consists of a solid tempered safety plate window and a combination pressed-on and bolt-on lower sash channel assembly which includes a screw-on lower sash channel cam. With this design, the door glass and sash channel are removed from the door as a unit and replacement glasses installed in bench operations.

Figure 6-79 is an exploded view of the front door window assembly and identifies the various components and their assembly sequence.

CAUTION: When installing the glass to sash channel bolts, torque nuts to 72 inch pounds (6 foot pounds). Also, when replacing door glass, replace glass spacers.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

2. Operate window to a one-quarter down position; remove front up travel stop from lower

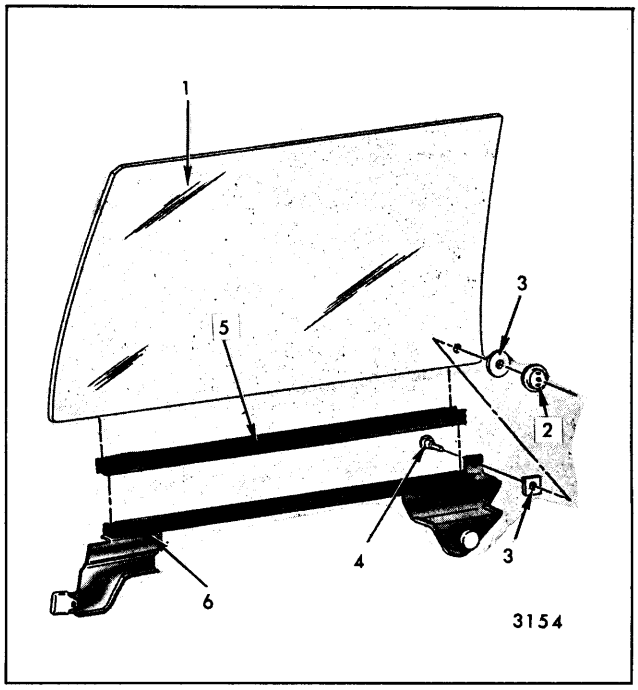

Fig. 6-79—Front Door Window Assembly - "A-39" Styles

1. Front Door Window
2. Glass to Sash Channel Bolt Nut
3. Glass to Sash Channel Bolt Spacers
4. Glass to Sash Channel Bolt
5. Glass to Sash Channel Filler
6. Glass Lower Sash Channel

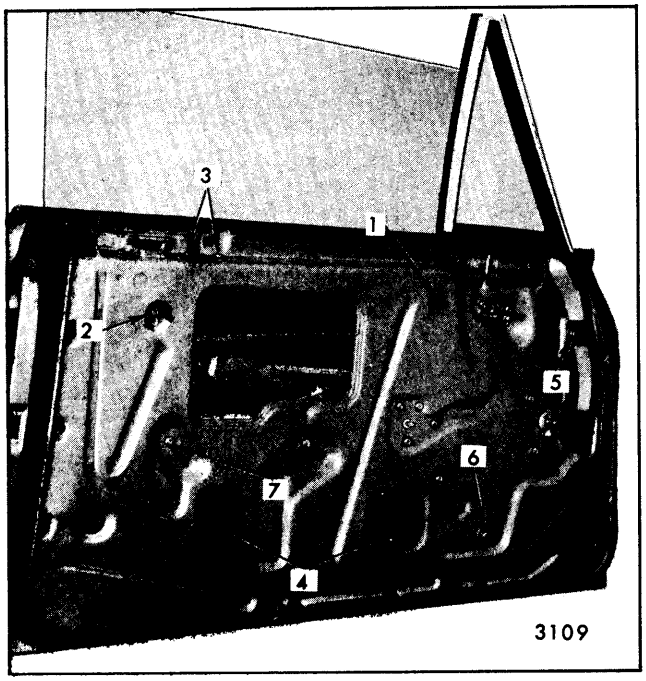

Fig. 6-80—Front Door Window Removal and Adjustments - "A-39" Styles

1. Window Front Upper Stop Access Hole
2. Window Rear Upper Stop Bolt
3. Rear Guide Upper Attaching Bolts
4. Lower Sash Channel Cam Attaching Screws Access Holes
5. Ventilator Lower Frame Adjusting Stud and Nut
6. Ventilator Division Channel Lower Adjusting Stud and Nut
7. Inner Panel Cam Attaching Bolts

sash channel and rear up stop from rear guide ("1" and "2", Figure 6-80).

3. Loosen rear guide to door inner panel attaching bolts ("3", Figure 6-80).

4. With window in a three quarter down position, remove screws securing lower sash channel cam to lower sash channel ("4", Figure 6-80).

5. Support window and disengage lower sash channel cam from regulator lift and balance arm rollers.

6. Push regulator lift arm inboard, to clear glass sash channel; remove window by lifting straight-up.

7. To install, reverse removal procedure. Adjust window for proper alignment as described in the following procedure.

Adjustments

1. A rotated window condition (glass cocked in opening) may be caused by any one or a combination of the following (Reference: Figure 6-80).

   a. Improperly adjusted inner panel cam ("7").

   b. Front or rear upper stop improperly adjusted ("1 or 2").

2. To adjust upper rear corner of window in or out in relation to side roof rail weatherstrip, loosen rear guide upper attaching bolts ("3", Figure 6-80) and position guide further inboard or outboard.

   Outboard adjustment at this location tends to move the door window upper rear corner inboard. Conversely, inboard adjustment moves the top of the glass outboard.

   If this adjustment proves inadequate, obtain additional adjustment at the ventilator front frame adjusting stud ("5", Figure 6-80).

3. To adjust window up-travel, operate window to "full-up" position and loosen front and rear upper stops ("1 and 2", Figure 6-80). Operate window to desired up position (Figure 6-81) and tighten stop bolts.

4. Adjustment has been provided to relieve a binding door glass due to a misaligned ventilator division channel ("6", Figure 6-80).

FRONT DOOR WINDOW ASSEMBLY— "A-37, 67 and 87" Styles and "G-57" Styles

The front door window assembly consists of a solid tempered safety plate glass window and an individually bolted-on roller at the rear and window roller cam assembly at the front. The lower sash channel cam is bolted to the glass, but is removed in the process of removing the window.

Figure 6-82 is an exploded view of the window assembly and identifies the various components and their assembly sequence.

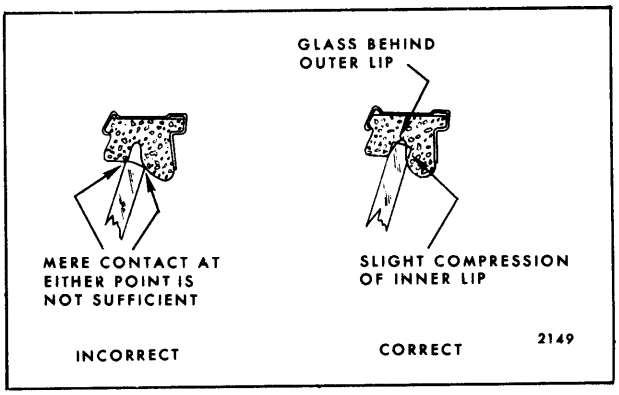

Fig. 6-81—Window to Side Roof Rail Weatherstrip Alignment

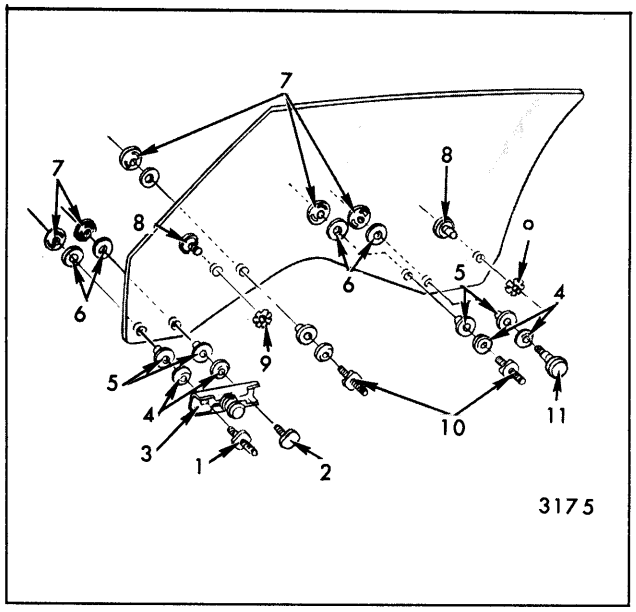

Fig. 6-82—Front Door Window Assembly "A-37, 67 and 87" Styles and "G-57" Styles

1. Stud, Front Guide Cam (Stud Portion for Up-Stop Attachment)
2. Bolt, Guide Cam Assembly
3. Front Guide Cam Assembly
4. Spacer
5. Bushing
6. Washer
7. Nut
8. Fastener, Glass Bearing
9. Cap, Glass Bearing Fastener
10. Stud, Inner Panel Cam

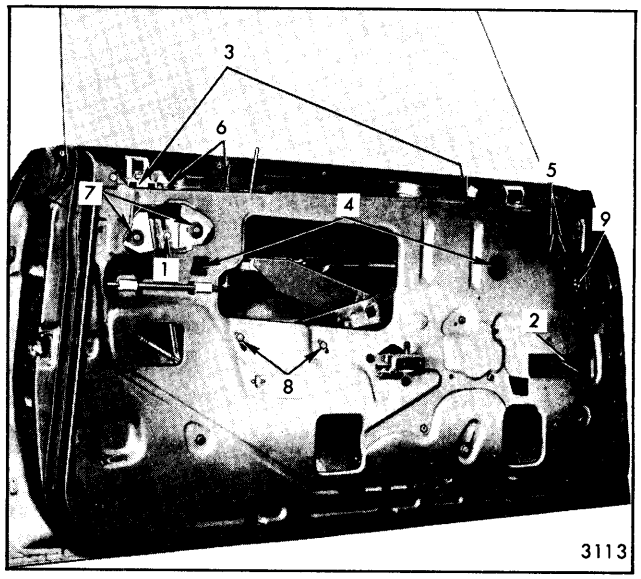

Fig. 6-83—Front Door Window Removal and Adjustment - "A-37, 67 and 87" Styles and "G-57" Styles

1. Window Rear Up-Travel Stop
2. Window Front Up-Travel Stop (On Window) Access Hole
3. Stabilizer Strips
4. Window Lower Sash Channel Cam Access Holes
5. Front Guide Upper Attaching Bolts
6. Rear Guide Upper Bracket Attaching Bolts
7. Rear Guide Upper Bracket to Guide Attaching Bolts
8. Inner Panel Cam
9. Window Front Up-Travel Stop (On Guide)

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

2. Loosen window rear up travel stop bolt ("1", Figure 6-83) and remove stop from rear guide.

3. Using a 1/4" hex-head wrench, remove front up-stop from window front roller cam ("2", Figure 6-83).

4. Remove window stabilizer strip assembly bolts ("3", Figure 6-83) and remove stabilizer strips.

5. Remove window lower sash channel cam to glass attaching stud nuts ("4", Figure 6-83). Tilt top edge of glass inboard and disengage window (with studs intact) from lower sash channel cam.

6. Raise window and disengage rear roller from rear guide, then front roller cam assembly from front guide. Remove window by aligning rollers with notches provided in door inner panel.

7. To install, reverse removal procedure. Adjust window for proper alignment and operation as described in the following adjustment procedure.

Adjustments

1. In and out adjustment of the glass is controlled by the in and out adjustment available at the top of the front and rear guides ("5" and "6", Figure 6-83) and the in and out position of the glass stabilizer strip assemblies ("3").

2. Fore and aft adjustment of the window assembly is controlled by the position of the rear guide. The upper guide bracket to guide attaching locations ("7", Figure 6-83) are slotted to permit fore and aft adjustment of the guide. Because of the free floating roller in the window front sash channel cam (Figure 6-82), the front guide does not have to be adjusted during fore or aft window alignment.

3. Ease of window operation and window stability depend to a great extent on the adjustment of the window stabilizer strip assemblies at the beltline ("3", Figure 6-83). The stabilizing strips ("3") should contact the glass throughout the full cycle of the window. Due to slight variations in glass contour, however, in some

cases the strip may lose contact with the glass halfway through the cycle. This is permissible provided it does not result in loose glass. Contact should be sufficient to stabilize glass, but not restrict ease of window operation.

4. A window that is rotated (cocked) in the window opening may be the result of an improperly adjusted inner panel cam ("8", Figure 6-83) or poorly adjusted up-travel stops ("1" or "9", Figure 6-83).

   Control up-travel at front or rear of window through up or down adjustment of either front or rear up-travel stop.

   Correct a poorly adjusted inner panel cam by loosening cam attaching bolts ("8", Figure 6-83) and adjusting front end of cam up or down as required. Adjustment of cam repositions front edge of glass up or down in relation to rear edge of glass.

5. The up-travel of the window is determined by the adjustment of the front and rear window up-travel stops ("1" and "9", Figure 6-83). To adjust window up-travel, loosen front and rear up-stops and operate window to desired position to establish proper glass to side roof rail weatherstrip contact (Figure 6-84).

FRONT DOOR WINDOW ASSEMBLY— "B-11" Styles

The front door window assembly consists of a solid tempered safety plate glass window and a bolt-on lower sash channel cam.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. Loosen window anti-rattle strip ("1", Figure 6-85).

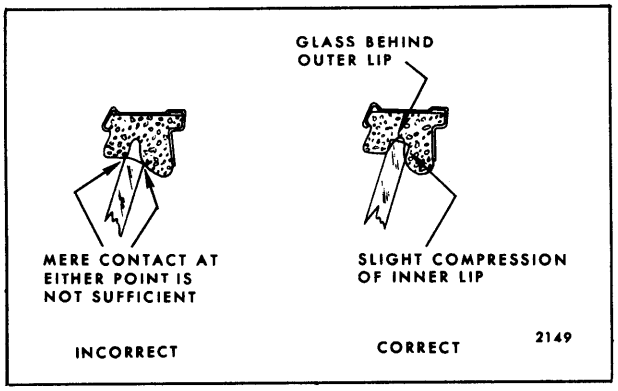

Fig. 6-84—Window to Side Roof Rail Weatherstrip Alignment

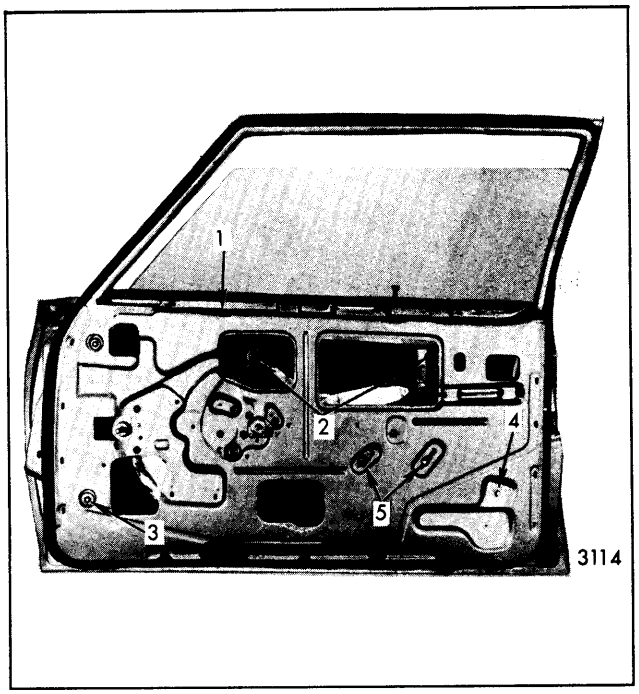

Fig. 6-85—Front Door Window Removal and Adjustment - "B-11" Styles

1. Window Anti-Rattle Strip
2. Window to Lower Sash Channel Cam to Glass Attaching Stud Nuts
3. Front Glass Run Channel Attaching Bolt
4. Rear Glass Run Channel Attaching Bolt
5. Inner Panel Cam Bolts

3. Partially lower front door window and remove window lower sash channel cam to glass attaching stud nuts ("2", Figure 6-85). Disengage lower sash channel cam from attaching studs by pressing cam inboard.

4. Tilt front edge of glass downward to disengage glass from run channel, remove window outboard of door upper frame, rear edge first, then front edge.

5. To install, reverse removal procedure. Adjust glass for proper alignment and operation by performing the following procedure.

Adjustments

Adjustments have been provided to relieve a binding front door glass due to misaligned glass run channels ("3" and "4", Figure 6-85). In addition, the door window inner panel cam is adjustable which can correct a rotated (cocked) front door window ("5", Figure 6-85).

FRONT DOOR WINDOW ASSEMBLY— "B-36, 46 and 69" Styles

The front door window assembly consists of a solid

tempered safety plate glass window and an individually bolted-on roller at the rear. The lower sash channel cam is bolted to the glass, but is removed in the process of removing the window. When cycled, the glass operates within the glass run channel at the front and guide at the rear.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

2. Loosen window stabilizer strips ("1", Figure 6-86).

3. Operate window to a three-quarter-down position, remove window lower sash channel cam to glass attaching stud nuts ("2", Figure 6-86). Tilt front edge of glass down and remove window inboard of door upper frame.

4. To install, reverse removal procedure. Adjust glass for proper alignment and operation by performing the following procedure.

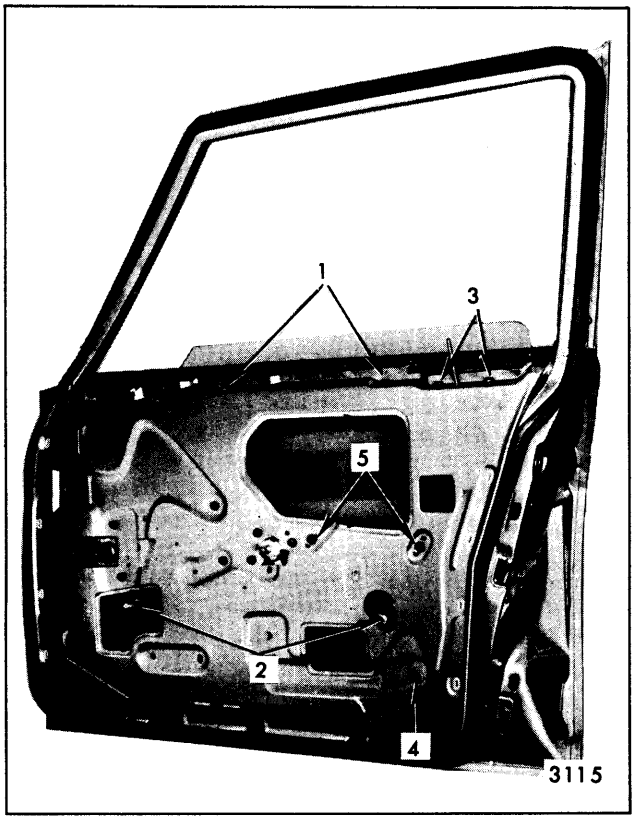

Fig. 6-86—Window Removal and Adjustment - "B-69" Styles

1. Window Stabilizer Strip Bolts
2. Window Lower Sash Channel Cam Attaching Stud Nut Access Holes
3. Window Rear Guide Upper Bolts
4. Window Rear Guide Lower Bolt
5. Inner Panel Cam Bolts

Adjustments

1. The rear guide is adjustable in and out and fore and aft at the upper and lower attaching locations ("3" and "4", Figure 6-86) to relieve a binding door glass.

2. The door window inner panel cam ("5", Figure 6-86) is adjustable at the front and rear to correct a rotated (cocked) window.

FRONT DOOR WINDOW ASSEMBLY— "B and C-37, 47, 57 and 67" Styles

The front door window assembly consists of a solid tempered safety plate glass window and an individually bolted-on roller at the front and window roller cam at the rear. The lower sash channel cam is bolted to the glass, but is removed in the process of removing the window.

Figure 6-87 is an exploded view of the window assembly and identifies the various components and their assembly sequence.

Removal and Installation

1. Remove door trim pad and inner panel water deflector. Remove outer strip assembly or window lower reveal molding.

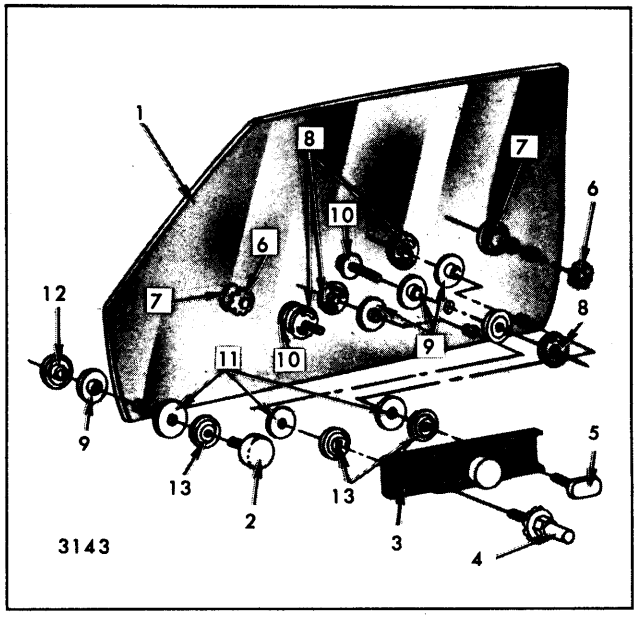

Fig. 6-87—Front Door Window Assembly - "B and C-37, 47, 57, and 67" Styles

1. Window Glass
2. Roller Assembly
3. Rear Guide Cam Assembly
4. Stud, Rear Guide Cam and Window Up-Travel Stop
5. Bolt, Rear Guide Cam
6. Glass Bearing Fastener Cap
7. Glass Bearing Fastener
8. Nut
9. Bushing
10. Bolt, Inner Panel Cam
11. Washer
12. Nut, Roller Assembly
13. Spacer

2. Loosen front up-stop bolt ("1", Figure 6-88) and remove stop from front guide.

3. Remove rear up-stop from rear guide ("2", Figure 6-88).

4. Remove window stabilizer strip assembly bolts ("3", Figure 6-88) and remove stabilizer strips.

5. Remove window lower sash channel cam to glass attaching stud nuts ("4", Figure 6-88).

6. Tilt top edge of glass inboard and disengage window (with studs intact) from lower sash channel cam.

7. Raise window and disengage front roller from front guide, then rear roller from rear guide.

8. Remove window from door by aligning rollers with notches provided in inner panel. Remove front end of window first, then rear end.

9. To install, reverse removal procedure. Adjust window for proper alignment and operation as described in the following adjustment procedure.

Adjustments

1. In and out adjustment of the glass is controlled by the in and out adjustment available at the top of the front and rear guides ("5", and "6", Figure 6-88) and the in and out position of the glass stabilizer strip assemblies "3".

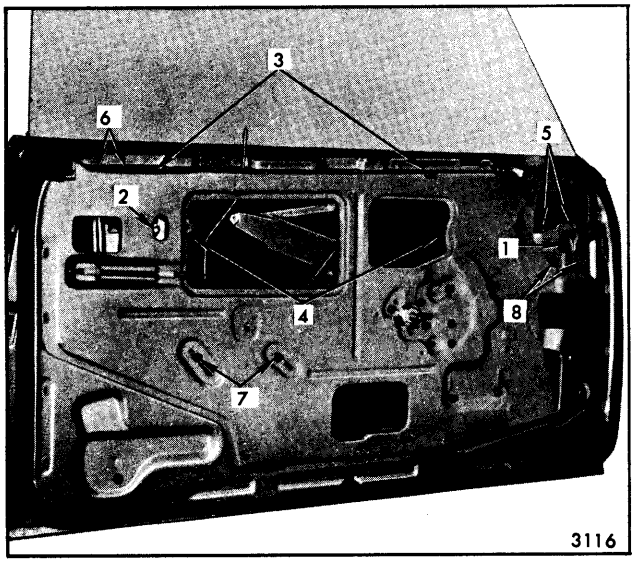

Fig. 6-88—Window Removal and Adjustments - "B and C-37, 47, 57 and 67" Styles

1. Window Front Up-Travel Stop Bolt
2. Window Rear Up-Travel Stop Bolt
3. Window Stabilizer Strip Bolts
4. Window Lower Sash Channel Cam Stud Nut Access Holes
5. Front Guide Bracket Upper Bolts
6. Rear Guide Upper Bolts
7. Inner Panel Cam Bolts
8. Front Guide to Guide Upper Bracket

2. Fore and aft adjustment of the window assembly is controlled by the position of the front guide. The upper attaching locations in the inner panel ("8", Figure 6-88) are slotted to permit fore and aft adjustment of the guide. Because of the free floating roller in the window rear sash channel cam (Figure 6-87), the rear guide does not have to be adjusted during fore or aft window alignment.

3. Ease of window operation and window stability depend to a great extent on the adjustment of the window stabilizer strip assemblies at the beltline ("3", Figure 6-88). The stabilizing strips "3" should contact the glass throughout the full cycle of the window. Due to slight variations in glass contour, however, in some cases the strip may lose contact with the glass halfway through the cycle. This is permissible provided it does not result in loose glass. Contact should be sufficient to stabilize glass, but not restrict ease of window operation.

4. A window that is rotated (cocked) in the window opening may be the result of an improperly adjusted inner panel cam ("7", Figure 6-88) or poorly adjusted up-travel stops ("1" or "2", Figure 6-88).

   Control up-travel at front or rear of window through up or down adjustment of either front or rear up-travel stop.

   Correct a poorly adjusted inner panel cam by loosening cam attaching bolts ("7", Figure 6-88), and adjusting front end of cam up or down as required. Adjustment of cam repositions front edge of glass up or down in relation to rear edge of glass.

5. The up-travel of the window is determined by the adjustment of the front and rear up-stop ("1" and "2", Figure 6-88). To adjust window up-travel, loosen front and rear up-stops and operate window to desired position to establish proper glass to side roof rail weatherstrip contact (Figure 6-89).

FRONT DOOR WINDOW ASSEMBLY— "B-39" and "C-39, 49 and 69" Styles

The front door window assembly consists of a solid tempered safety plate glass window and an individually bolted-on roller at the rear and a roller assembly (bell-crank) at the front. The lower sash channel cam is bolted to the glass, but is removed in the process of removing the window.

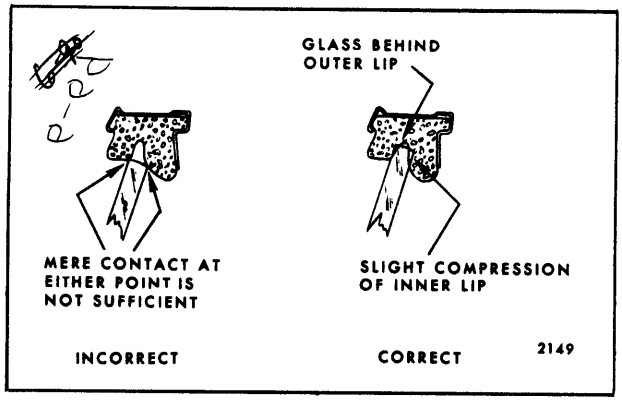

Fig. 6-89—Window to Side Roof Rail Weatherstrip Alignment

Figure 6-90 is an exploded view of the window assembly and identifies the various components and their assembly sequence.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

2. Remove front and rear window up-travel stops ("1" and "2", Figure 6-91).

3. Loosen front and rear window stabilizer strips ("3", Figure 6-91).

4. With window in three-quarter-down position, remove lower sash channel cam to glass attaching nuts ("4", Figure 6-91). Remove window by lifting straight up and aligning rollers with notches provided in the door inner panel. Remove front end of window first, then rear end.

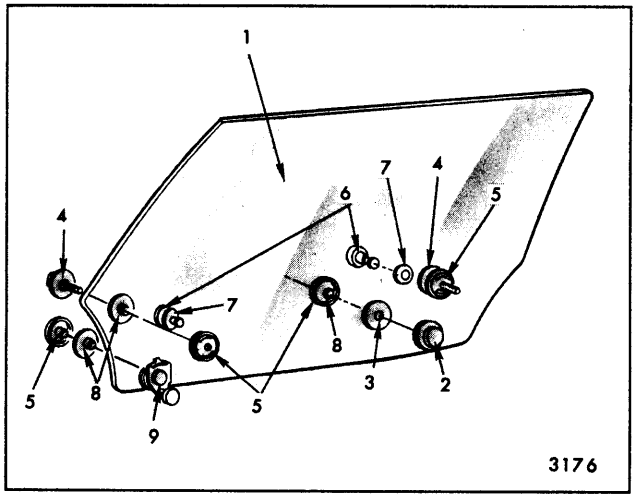

Fig. 6-90—Front Door Window Assembly - "B-39" and "C-39, 49 and 69" Styles

1. Window Assembly
2. Window Roller
3. Washer
4. Bolt Inner Panel Cam
5. Nut
6. Glass Bearing Fastener
7. Glass Bearing Fastener Cap
8. Bushing
9. Roller Assembly (Bell Crank)

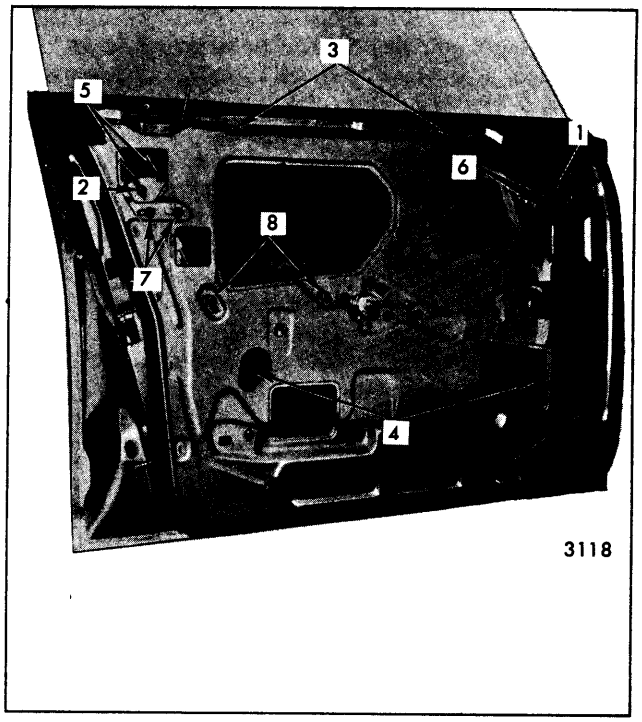

Fig. 6-91—Window Removal and Adjustment - "B-39" and "C-39, 49 and 69" Styles

1. Window Front Up-Travel Stop Bolt
2. Window Rear Up-Travel Stop Bolt
3. Window Stabilizer Strip Bolts
4. Window Lower Sash Channel Cam Nuts Access Holes
5. Rear Guide Upper Bracket Bolts
6. Front Guide Upper Bolts
7. Rear Guide to Guide Upper Bracket Bolts
8. Inner Panel Cam Bolts

5. To install, reverse removal procedure. Adjust window for proper alignment and operation as described in the following adjustment procedure.

Adjustments

1. In and out adjustment of the glass is controlled by the in and out adjustment available at the top of the front and rear guides ("5" and "6", Figure 6-91) and the in and out position of the glass stabilizer strip assemblies ("3", Figure 6-91).

2. Fore and aft adjustment of the window assembly is controlled by the position of the rear guide. The upper attaching locations in the inner panel ("7", Figure 6-91) are slotted to permit fore and aft adjustment of the guide. Because the roller assembly (bell-crank) which attaches to the glass at the front pivots, the front guide does not have to be adjusted during fore or aft window alignment.

3. Ease of window operation and window stability depends a great extent on the adjustment of the window stabilizer strip assemblies at the beltline ("3", Figure 6-91). The stabilizing strips "3" should contact the glass throughout the full cycle of the window. However, in some cases due to the slight variations in glass contour, the strip may loose contact with the glass halfway through the cycle. This is permissible provided it does not result in loose glass or restrict ease of window operation.

4. A window that is rotated (cocked) in the window opening may be the result of an improperly adjusted inner panel cam ("8", Figure 6-91) or poorly adjusted up-travel stops ("1" or "2", Figure 6-91).

   Correct a poorly adjusted inner panel cam by loosening cam attaching bolts ("8", Figure 6-91) and adjusting front end of cam up or down as required. Adjustment of cam repositions front edge of glass up or down in relation to rear edge of glass.

5. The up-travel of the window is determined by the adjustment of the front and rear up-stop ("1" and "2", Figure 6-91). To adjust window up-travel, loosen front and rear up-stops and operate window to desired position to establish proper glass to side roof rail weatherstrip contact (Figure 6-92).

FRONT DOOR WINDOW ASSEMBLY— "E" Body Styles

The front door window assembly consists of a frameless piece of solid tempered safety plate glass and bolt-on front and rear lower sash channel assemblies. With this design the window is removed from the door as an assembly and glass replacements made as bench operations. Figure 6-93 identifies the components of the door window assembly.

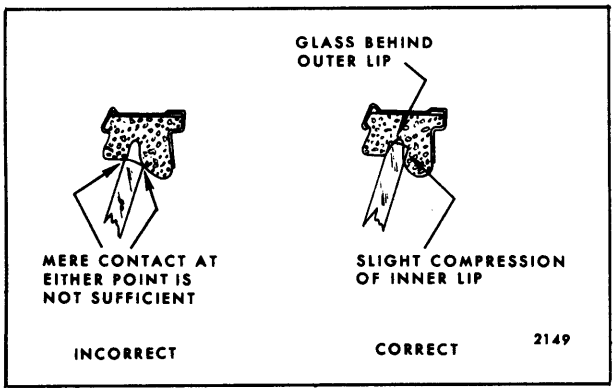

Fig. 6-92—Window to Side Roof Rail Weatherstrip Alignment

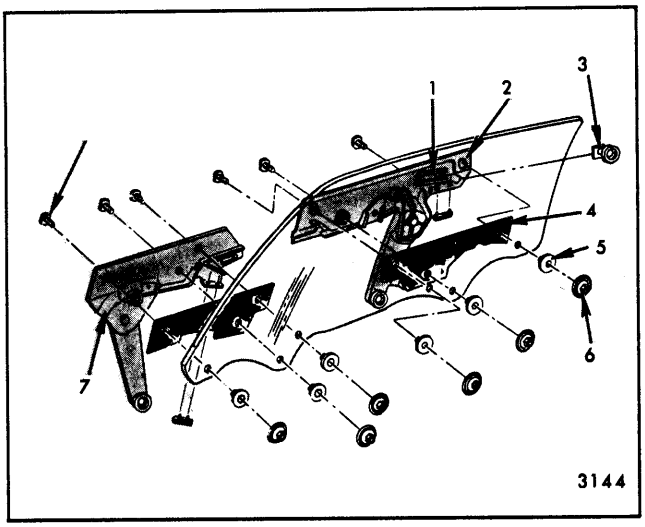

Fig. 6-93—Front Door Window Assembly - "E" Styles

1. Sash Channel Plate Rear Cam
2. Rear Sash Channel
3. Cam Roller
4. Glass Filler
5. Spacer
6. Nut
7. Front Sash Channel
8. Bolt

CAUTION: Solid tempered safety plate glass will shatter if it is ground, drilled, chipped or scratched. When installing glass to sash channel nuts and washers, torque to 72 inch pounts (6 foot pounds).

Removal and Installation

1. Remove door trim assembly, inner panel water deflector and glass run channel outer strip assembly or window lower reveal molding (Refer to Index for removal instructions).

2. With the window in the full-up position, remove front and rear up-travel stops ("1" and "2", Figure 6-94).

3. Lower window to a three-quarter-down position; remove lower sash channel cam attaching screws ("3", Figure 6-94). Remove window from door by lifting straight-up.

NOTE: If necessary, loosen front and rear guide upper attaching bolts.

4. To install, reverse removal procedure. Adjust window for proper alignment and operation as described in the following adjustment procedure.

Adjustments

A rotated glass can be corrected by adjustment of inner panel cam ("4", Figure 6-94). Up or down adjustment is available at front and rear up-travel

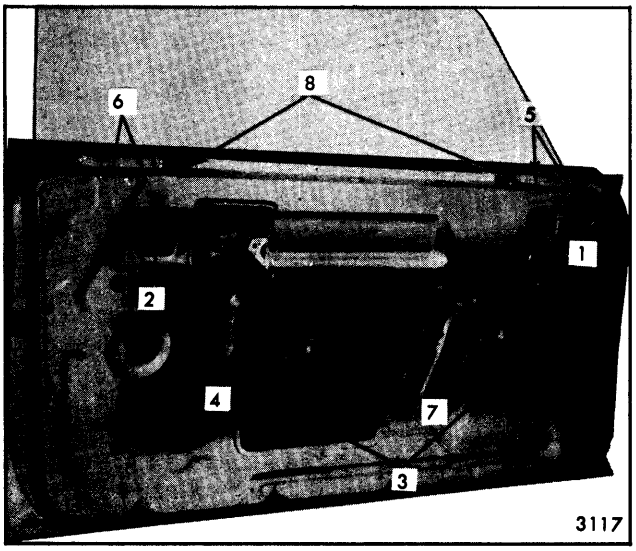

Fig. 6-94—Front Door Window Removal and Adjustment "E" Styles

1. Window Front Up-Travel Stop
2. Window Rear Up-Travel Stop
3. Lower Sash Channel Cam Attaching Screw Access Holes
4. Inner Panel Cam Bolts
5. Front Guide Upper Attaching Bolts
6. Rear Guide Upper Attaching Bolts
7. Sector Gear Stop
8. Window Stabilizer Strips

stops. In or out adjustment is available at front and rear guides. In addition, the regulator, on manually operated units, is equipped with a single up-travel sector gear stop. This stop is bolted to the inner panel and is adjustable up or down (See Figure 6-94).

The recommended sequence of total glass adjustment is as follows:

a. Adjust rear guide upper attachments ("6", Figure 6-94) for proper fore or aft position of glass.

b. Adjust upper attachments of front and rear guides ("5" and "6", Figure 6-94) for proper glass to side roof rail weatherstrip relationship.

c. Adjust window up-travel stops ("1" and "2", Figure 6-94) for proper glass to side roof rail weatherstrip contact (See Figure 6-95).

NOTE: On manually operated windows, adjust sector gear stop ("7", Figure 6-94) after adjusting up-stops "1" and "2".

d. Adjust window stabilizer strips ("8", Figure 6-94) for proper glass contact and ease of window operation. The strips should

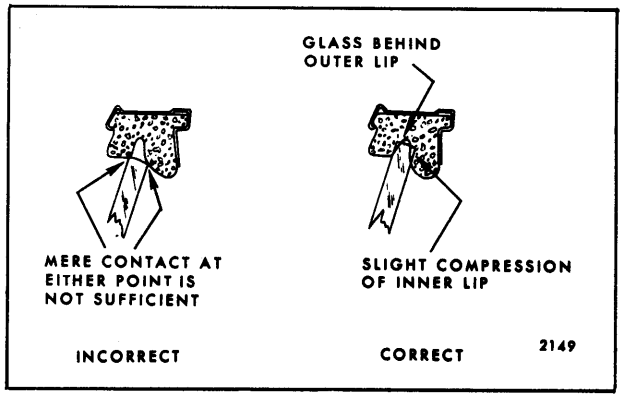

Fig. 6-95—Window to Side Roof Rail Weatherstrip Alignment

contact the glass throughout the full cycle of the window. However, in some cases due to the slight variation in the glass contour, the strip may loose contact with the glass halfway through the cycle. This is permissible provided it does not result in loose glass or restrict ease of window operation.

FRONT DOOR WINDOW ASSEMBLY— "F" Styles

The front door window assembly consists of a solid tempered safety plate glass window, an individually bolted-on sash channel and roller assembly at the rear and a sash channel and window roller cam assembly at the front. The lower sash channel cam

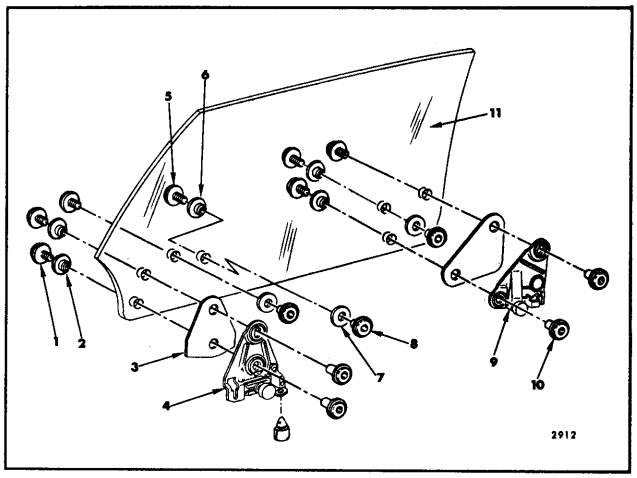

Fig. 6-96—Front Door Window Assembly - "F" Styles

1. Glass to Sash Channel Bolt
2. Glass to Sash Channel Bolt Spacer
3. Lower Sash Channel Filler
4. Front Lower Sash Channel and Window Roller Cam Assembly
5. Glass Bearing Fastener
6. Glass Bearing Spacer
7. Washer
8. Glass Bearing Fastener
9. Rear Lower Sash Channel
10. Glass to Sash Channel Bolt Nut
11. Front Door Window

is bolted to the glass, but is removed in the process of removing the window.

Figure 6-96 is an exploded view of the window assembly and identifies the various components and their assembly sequence.

Removal and Installation

1. Remove door trim pad, inner panel water deflector and outer strip assembly.

2. With window in full-up position, remove rear up-stop from rear guide ("1", Figure 6-97 and front up-stop from front lower sash channel ("2", Figure 6-97).

3. Loosen front and rear stabilizer strips ("3", Figure 6-97 and front and rear guide upper bolts ("5" and "6", Figure 6-97).

4. Lower window to full down position, remove lower sash channel cam to glass attaching nuts ("4", Figure 6-97). Remove window by lifting straight-up, tilting slightly inboard to disengage rollers from guides. Slide window forward and remove rear roller forward of stabilizer strip.

5. To install, reverse removal procedure. Adjust window for proper alignment and operation as described in the following adjustment procedure.

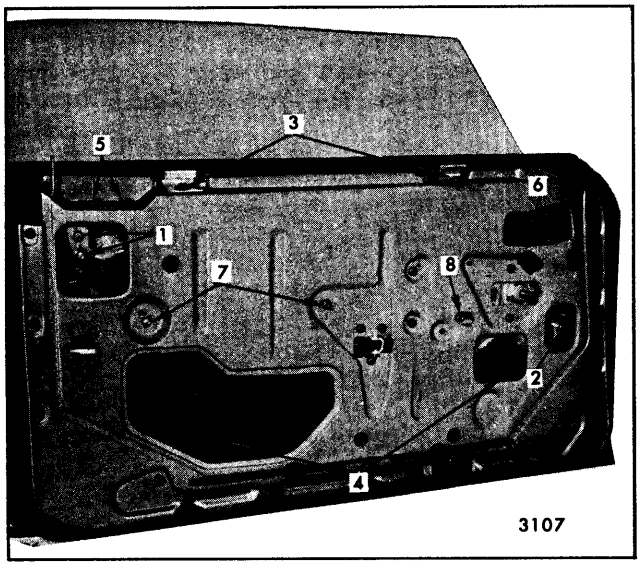

Fig. 6-97—Door Window Removal and Adjustment - "F" Styles

1. Window Rear Up-Travel Stop
2. Window Front Up-Travel Stop
3. Window Front and Rear Stabilizer Strips
4. Window Lower Sash Channel Cam Stud Nut Access Holes
5. Rear Guide Upper Attaching Bolts
6. Front Guide Upper Attaching Bolts
7. Inner Panel Cam Attaching Bolts
8. Sector Gear Stop Bolt

Adjustments

1. In and out adjustment of the glass is controlled by the in and out adjustment available at the top of the front and rear guide ("6" and "5", Figure 6-97) and the in and out position of the glass stabilizer strip assemblies "3".

2. Fore and aft adjustment of the window assembly is controlled by the position of the rear guide. The upper attaching locations in the inner panel ("5", Figure 6-97) are slotted to permit fore and aft adjustment of the guide. Because of the free floating roller in the window front sash channel cam (Figure 6-96), the front guide does not have to be adjusted during fore or aft window alignment.

3. Ease of window operation and window stability depend to a great extent on the adjustment of the window stabilizer strip assemblies at the beltline ("3", Figure 6-97). The stabilizing strips should contact the glass throughout the full cycle of the window. Due to slight variations in glass contour, however, in some cases the strip may lose contact with the glass halfway through the cycle. This is permissible provided it does not result in loose glass. Contact should be sufficient to stabilize glass, but not restrict ease of window operation.

4. A window that is rotated (cocked) in the window opening may be the result of an improperly adjusted inner panel cam ("7", Figure 6-97) or poorly adjusted up-travel stops ("1" or "2", Figure 6-97).

5. The up-travel of the window is determined by the adjustment of the front up-stop "2", rear up-stop "1" and window regulator sector gear stop ("8", Figure 6-97).

   The sequence of stop adjustment is:

   a. Loosen sector gear stop "8".

   b. Adjust stops "1" and "2" up or down for proper glass to side roof rail weatherstrip contact (Figure 6-98).

   c. Adjust stop "8" against sector gear (press stop forward) and tighten stop bolt.

FRONT DOOR WINDOW ASSEMBLY—"Z" Styles

The front door window assembly consists of a frameless piece of solid tempered safety plate

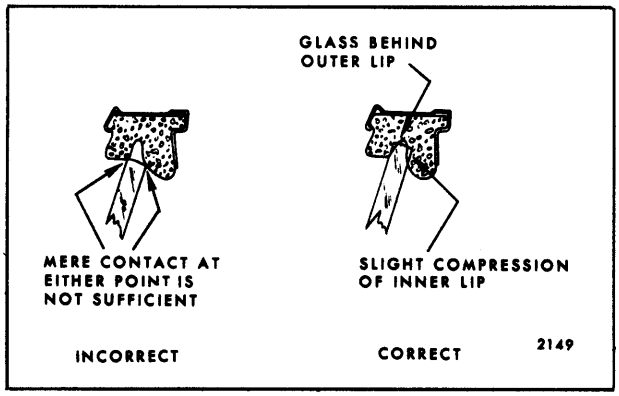

Fig. 6-98—Window to Side Roof Rail Weatherstrip Alignment

glass pressed into a thin-section lower sash channel. When cycled, the glass operates within the ventilator division run channel and the window rear run channel. Guide plates welded to the front and rear of the sash channel also operate in the run channels and give stability to the glass in the full-up position.

NOTE: Because these guide plates are not adjustable, it is imperative that replacement door glasses be installed flush with the guide plates at the front and rear of the glass. If glass is too far forward or rearward in relation to guide plates, window assembly will be tight within the run channels.

CAUTION: Handle glass with care. Edge chips can cause solid tempered safety plate glass to shatter. DO NOT attempt to grind glass.

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector. Operate window to an almost full-up position.

2. Working through front and rear upper access holes, remove bolts securing front and rear up-travel stops to lower sash channel and remove stops ("1", Figure 6-99).

3. Lower glass to approximately 3" down from full-up position and remove lower sash channel cam attaching screws ("2", Figure 6-99).

4. Supporting glass with one hand, disengage cam from regulator rollers and remove cam. Lower glass to door bottom.

5. Remove both inner and outer strip assemblies at belt as described under "Glass Run Channel Inner and Outer Strip Assemblies".

6. Loosen ventilator attaching screw and adjusting

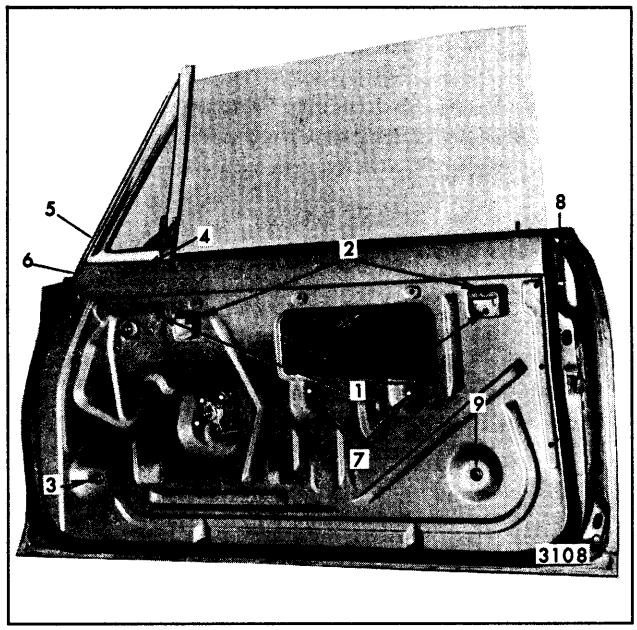

Fig. 6-99—Door Window Removal and Adjustment - "Z" Styles

1. Window Front and Rear Upper Stop Access Holes
2. Window Lower Sash Channel Cam Attaching Screws
3. Ventilator Division Channel Lower Adjusting Stud
4. Door Inner Panel to Ventilator Frame Attaching Screw
5. Ventilator Frame Upper Attaching Bolt
6. Ventilator Frame Lower Attaching Stud
7. Inner Panel Cam Attaching Bolts
8. Rear Glass Run Channel Upper Attaching Bolt
9. Rear Glass Run Channel Lower Adjusting Stud

stud nuts at points described below and illustrated in Figure 6-99.

   a. Ventilator division channel lower adjusting stud nut "3".

   b. Door inner panel to ventilator attaching screw "4".

   c. Ventilator adjusting stud nut and ventilator attaching bolt located on door hinge pillar "6" and "5".

7. Lift window assembly and remove it from between door panels at beltline.

8. To install, reverse removal procedure. Adjust window as described below. Adjust ventilator as described under "Front Door Ventilator Adjustments".

Adjustments

1. To adjust the front door window up or down, loosen the front and rear up-travel stops ("1", Figure 6-99), and operate window to desired position. Then, position and tighten adjustable stops on sash channel against welded-on stops on front and rear run channels.

2. To rotate the glass in the opening (lower or raise front edge of glass), loosen the inner panel cam attaching screws ("7", Figure 6-99). Raise or lower adjustable end of cam as required and tighten cam screws.
3. To adjust rear edge of glass in or out at the belt line, loosen the rear glass run channel upper attaching bolt ("8", Figure 6-99) and adjust the run channel in or out as required.
4. To adjust the top edge of glass in or out in relation to side roof rail, loosen lower adjusting stud nut of vent division channel and rear glass run channel ("3" and "9", Figure 6-99). Adjust studs in or out as required, then tighten stud nuts.
5. Slight fore and aft adjustment is available at the vent division channel and rear glass run channel lower adjusting stud locations ("3" and "9", Figure 6-99).

FRONT DOOR WINDOW REGULATOR—Manual—"A & X" Closed Styles

Removal and Installation

1. Remove front door trim assembly and inner panel water deflector.

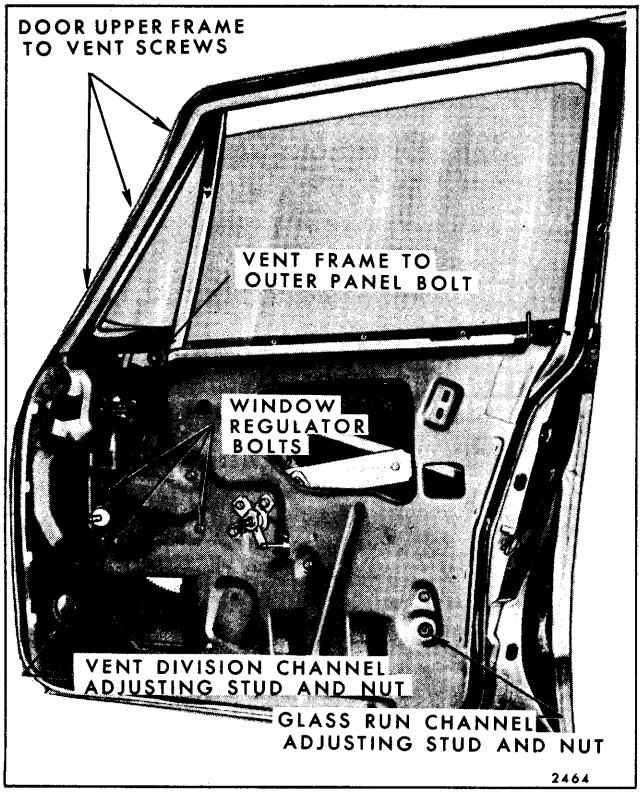

Fig. 6-100—Door Ventilator and Regulator Attachment - "A" Styles

2. Operate window to "full-up" position and secure in place with pieces of cloth-backed body tape applied over door frame.
3. On Two Door Styles, remove inner panel cam as previously described.
4. Remove ventilator division channel lower adjusting stud and nut and window regulator attaching bolts (Figure 6-100).
5. Press ventilator division channel outboard to permit disengagement of regulator spindle from inner panel, then run regulator balance arm roller and lift arm roller out of lower sash channel cam at front. Remove regulator through large access hole.
6. To install, reverse removal procedure.

FRONT DOOR WINDOW REGULATOR—Electric—"A" Closed Styles

Removal and Installation

1. Remove front door trim assembly, inner panel water deflector, window and ventilator as previously described.
2. Disconnect wire harness connector at window regulator motor.
3. Remove window regulator attaching bolts ("1", Figure 6-38) and remove regulator through access hole.
4. To install, reverse removal procedure.

FRONT DOOR WINDOW REGULATOR—Manual and Electric—"A-39" Styles

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. On manually operated regulators, prop window in full-up position and remove inner panel cam attaching bolts ("6", Figure 6-40). Remove regulator attaching bolts ("9", Figure 6-40) and remove regulator through large access hole.
3. On electrically operated regulators, remove door window as previously described and disconnect wire harness connector at window regulator motor. Remove the regulator attaching bolts ("9", Figure 6-40). Raise the regulator lift arm up through the beltline and rotate the regulator clockwise so that the regulator can be removed through the large access hole, motor coming out first.

4. To install, reverse removal procedure.

FRONT DOOR WINDOW REGULATOR—Manual—"A-37, 67 and 87", "G-57" and All "B and C" Styles

Removal and Installation (Refer to Figure 6-42 for "A and G" Styles and Figure 6-50 for "B and C" Styles

1. Remove door trim assembly and inner panel water deflector.
2. Lower window and remove lower sash channel cam attaching stud nuts, except on "B" closed styles. On "B" closed styles, the regulator lift and balance arms can be disengaged from lower sash channel cam without removal of cam from glass.

   NOTE: On "B" closed styles, raise window to full-up position and secure in place with pieces of cloth-backed body tape applied over door upper frame.

   On Hardtop and Convertible Styles, prop the window in the full-up position.
3. Remove inner panel cam attaching bolts.
4. Loosen window regulator attaching bolts, remove regulator through large access hole.
5. To install, reverse removal procedure.

FRONT DOOR WINDOW REGULATOR—Electric—"A-37, 67 and 87", "G-57" and All "B and C" Styles

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. Remove door window and inner panel cam as previously described.
3. Disconnect wire harness connector at regulator motor.
4. Remove window regulator attaching bolts ("8", Figure 6-50), remove regulator through large access hole.
5. To install, reverse removal procedure.

FRONT DOOR WINDOW REGULATOR—Manual and Electric—"F" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. Operate window to a three-quarter down position and remove lower sash channel cam attaching stud nut ("9", Figure 6-54).
3. Prop window in a full-up position, remove inner panel cam ("5", Figure 6-54).
4. On styles equipped with electric window regulators, disconnect wire harness connector at window regulator motor.
5. Remove window regulator attaching bolts ("10", Figure 6-54), remove regulator through large access hole.
6. To install, reverse removal procedure.

FRONT DOOR WINDOW REGULATOR—Manual and Electric—"E" Styles

Removal and Installation

1. Remove door trim, inner panel water deflector and window as previously described.
2. Remove inner panel cam ("6", Figure 6-52).
3. On styles equipped with electric window regulators, disconnect wire harness connector at window regulator motor.
4. Remove window regulator attaching bolts ("2", Figure 6-52) and remove regulator through large access hole.
5. To install, reverse removal procedure.

FRONT DOOR WINDOW REGULATOR—Manual—"Z" Styles

Removal and Installation

1. Remove door trim assembly, inner panel water deflector, window and ventilator assembly as previously described.
2. Remove inner panel cam ("8", Figure 6-58).
3. Remove window regulator attaching bolts ("5", Figure 6-58) and remove regulator through large access hole.
4. To install, reverse removal procedure.

FRONT DOOR WINDOW REAR GUIDE—"A-39" Styles

Removal and Installation

1. Remove front door trim assembly and inner panel water deflector.

2. With window in full-up position, loosen rear guide window up-travel stop attaching bolt ("3", Figure 6-40), remove stop from guide.

3. Remove rear guide lower attaching bracket to door inner panel attaching bolt ("2", Figure 6-40).

4. Remove rear guide upper attaching bolts ("5", Figure 6-40).

5. Work lower edge of guide past bumper bracket and disengage from roller. Remove guide through access hole.

6. To install reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW FRONT GUIDE— "A-37, 67 and 87" Styles and "G-57" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector as previously described.

2. Using a 1/4" hex-head wrench, remove front up-travel stop from window front sash channel cam ("13", Figure 6-42).

3. Remove window front guide upper and lower attaching bolts ("11" and "14", Figure 6-42). Pull guide down and rearward to disengage from window front roller and remove guide through access hole.

4. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW REAR GUIDE— "A-37, 67 and 87" Styles and "G-57" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector as previously described.

2. With window in a full-up position, remove window rear up-travel stop ("4", Figure 6-42).

3. Remove window rear guide upper and lower attaching bolts ("3" and "6", Figure 6-42). Pull guide down and forward to disengage from window rear roller. Remove guide through access hole.

4. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW FRONT GUIDE— "B and C" Hardtop and Convertible Styles

Removal and Installation

1. Remove front door trim assembly and inner panel water deflector.

2. With window in full-up position, remove front up-stop from guide (Refer to Figure 6-48) for two door styles and Figure 6-50) for four door styles).

3. Remove front guide upper and lower attaching bolts. Refer to Figure 6-48 for two door styles and Figure 6-50 for four door styles.

4. Pull guide down and rearward to disengage from window front roller, remove guide through large access hole.

5. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW REAR GUIDE— "B and C" Hardtop and Convertible Styles

Removal and Installation

1. Remove front door trim assembly and inner panel water deflector.

2. With window in full-up position, remove rear up-stop from guide (Refer to Figure 6-48 for two door styles and Figure 6-50 for four door styles).

3. Refer to Figure 6-48 for two door styles and Figure 6-50 for four door styles and remove rear guide upper and lower attaching bolts.

4. Pull guide down and forward to disengage from window rear roller, remove guide through large access hole.

5. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW REAR GUIDE— "B-36, 46 and 69" Styles

Removal and Installation

1. Remove front door trim assembly and inner panel water deflector.

2. With window in full-up position, remove rear guide upper attaching bolts ("4", Figure 6-46)

and lower adjusting stud nut ("5", Figure 6-46).

3. Pull guide down and forward to disengage from window roller, remove from door through large access hole.

4. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW FRONT GUIDE—"E" Styles

Removal and Installation

1. Raise door window. Remove trim pad and detach inner panel water deflector.

2. Remove front door window assembly.

3. Remove front guide lower adjusting stud nut and upper two attaching bolts, remove guide assembly ("4 and 9" Figure 6-52).

4. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW REAR GUIDE—"E" Styles

Removal and Installation

1. Raise door window. Remove trim pad and detach inner panel water deflector.

2. Remove front door window assembly.

3. Remove rear guide lower adjusting stud nut and upper two attaching bolts, remove guide assembly ("10 and 11", Figure 6-52).

4. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW FRONT GUIDE—"F" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

2. With window in half-down position, remove front guide upper and lower attaching bolts ("11, and 12", Figure 6-54).

3. Disengage guide from window roller and remove through large access hole.

4. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW REAR GUIDE—"F" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

2. Remove rear guide upper and lower attaching bolts ("2 and 4", Figure 6-54).

3. Pull guide down and forward to disengage from window roller and remove guide from door.

4. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW REAR GLASS RUN CHANNEL—"Z" Styles

Removal and Installation

1. Lower door window and remove door trim pad and inner panel water deflector.

2. Remove glass run channel upper attaching bolt and lower adjusting stud nut ("9 and 11", Figure 6-58).

3. Disengage run channel from rear edge of glass and remove run channel through large access hole.

4. To install, reverse removal procedure. For adjustment, refer to door window adjustments.

FRONT DOOR WINDOW GLASS RUN CHANNEL—"A and X" Closed Styles

Removal and Installation

1. Remove front door window as previously described.

2. Starting at the upper front corner of the door upper frame, press (Finger pressure) sides of run channel together and pull channel from frame.

3. To install, reverse removal procedure.

FRONT DOOR WINDOW GLASS RUN CHANNEL—"B" Closed Styles

Removal and Installation

1. Remove door window as previously described.

2. On "B-11" styles, remove front and rear glass run channel attaching bolts (Figure 6-101). On "B-36, 46 and 69" styles, remove glass run channel rear bolt (Figure 6-101).

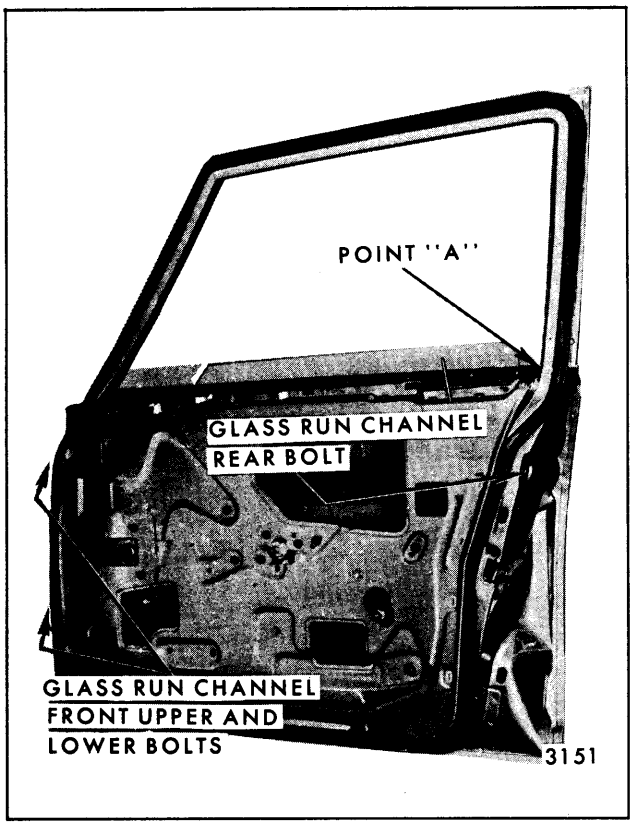

Fig. 6-101—Glass Run Channel Installation "B" Closed Styles

NOTE: "B-36, 46 and 69" styles utilize a two piece upper and lower glass run channel at the front. For removal of front lower glass run channel, remove glass run channel front upper and lower bolts. Remove through access hole, Figure 6-101.

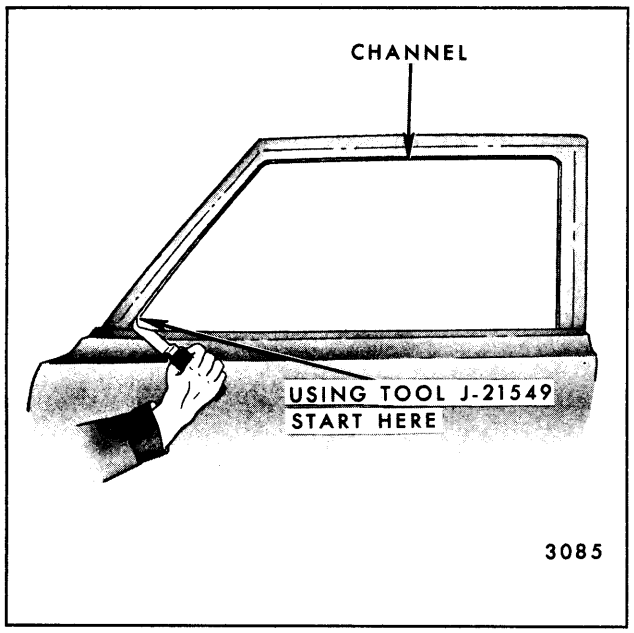

Fig. 6-102—Door Window Glass Run Channel Removal

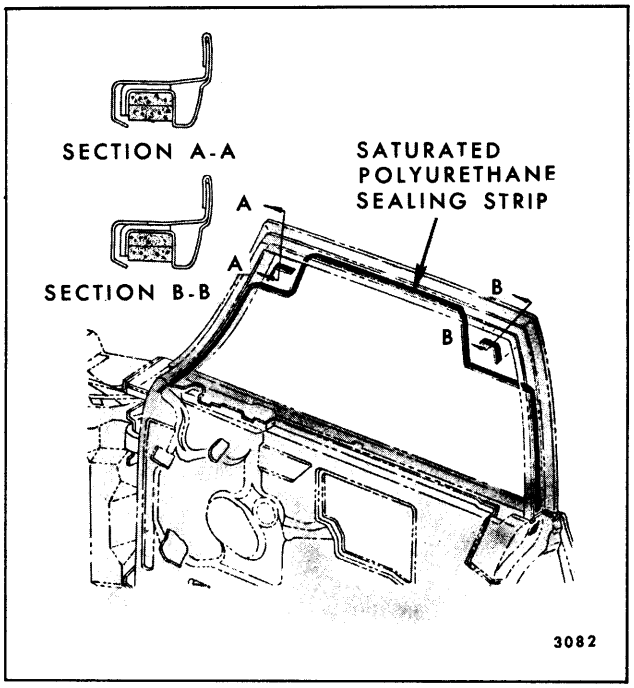

Fig. 6-103—Front Door Window Glass Run Channel Sealing - "B" Closed Styles

3. From outside door, insert a sharp pointed right angle tool (reveal molding clip disengaging tool J-21549 or equivalent) between outer edge of glass run channel and door upper frame as shown in Figure 6-102. Slide the tool rearward until a clip is contacted, then engage point of tool under clip and carefully pry inboard to release clip tangs from door frame.

4. Repeat Step 3 at each clip location until run channel is completely disengaged from door frame.

5. Remove glass run channel from door through window opening at beltline.

6. To install, reverse removal procedure. Begin installation by installing glass run channel rear attaching bolt (Figure 6-101). Starting at Point "A", Figure 6-101, engage run channel attaching clips into door upper frame making certain that run channel is fully seated, particularly at upper corners.

   NOTE: Prior to installation, inspect run channel clips and saturated polyurethane foam sealing strips in door upper frame (Figure 6-103). Reform distorted clips to insure adequate retention.

Replace damaged sealing strips with service part which is available in five foot lengths (Part #4480378 or equivalent).

DOOR WEDGE PLATES—"67" Styles

Door wedge plates are used on convertible styles to give additional support to the door when it is in the closed position. One plate is installed to the body lock pillar and the other to the door lock pillar (Figure 6-104). The plates should contact each other to the extent of a 1/32" interference when the door is closed. Body side wedge plate shims are available as a service part so that this interference can be obtained.

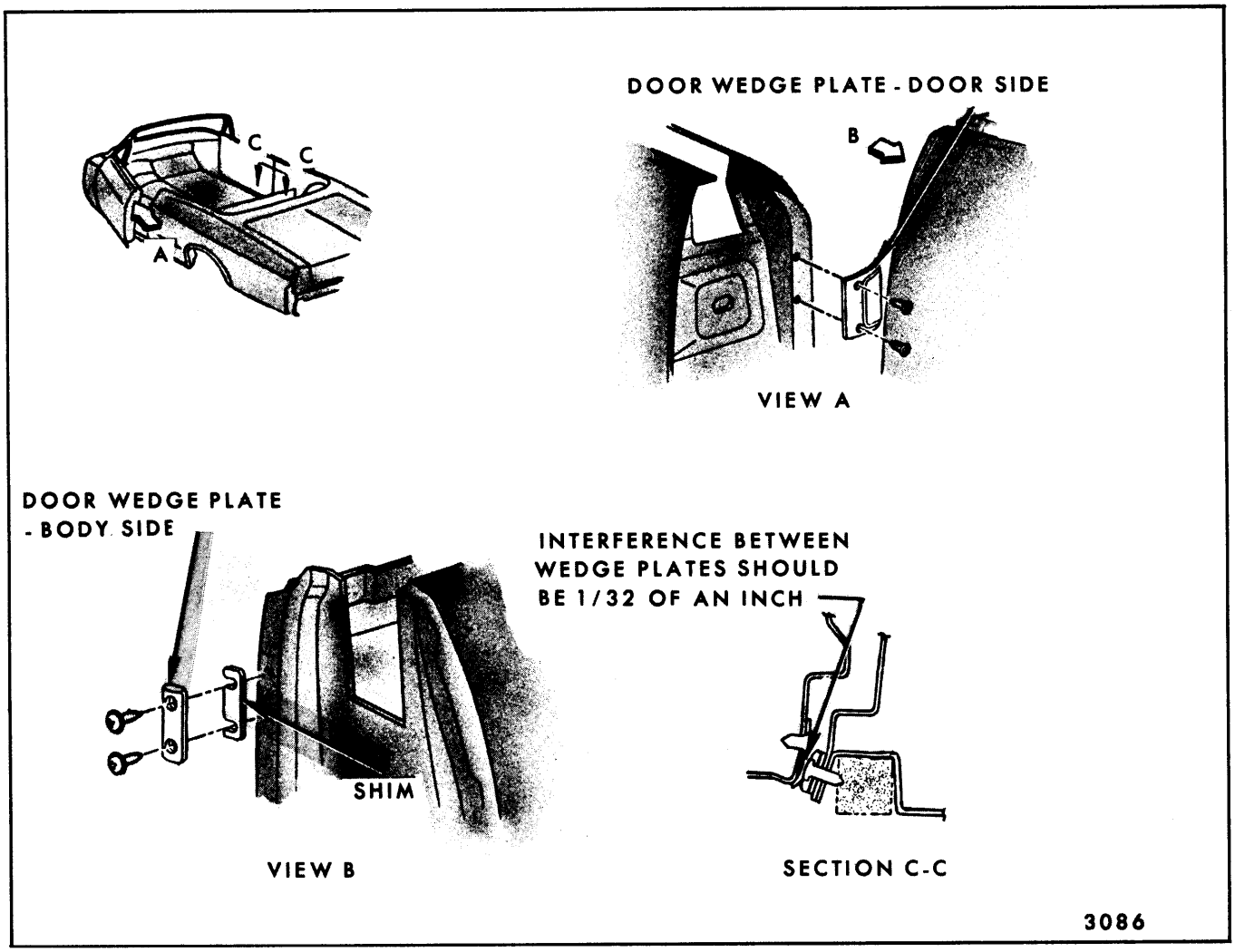

Fig. 6-104—Door Wedge Plates "67" Styles

REAR DOORS

DESCRIPTION

Information in this section concerns operations applicable to rear doors only. Procedures for removal of water deflectors, door handles and weatherstrips are outlined in the "Front and Rear Door" section of this manual - see index. Door trim assemblies are covered in Section 14 - see index

Illustrations 6-105 through 6-114 are typical of rear doors with the trim assembly and inner panel water deflector removed. These figures identify the component parts of the rear door assembly (by style), their relationship and various attaching points.

REAR DOOR HINGES—All Styles

All rear door hinges are constructed of steel or a combination of steel and malleable iron. A one stage hold-open feature is incorporated in all lower hinges, except on a "A" styles which have a two stage hold-open feature and "X" styles which do not have a hold-open feature.

Doors can be removed by either removing the door

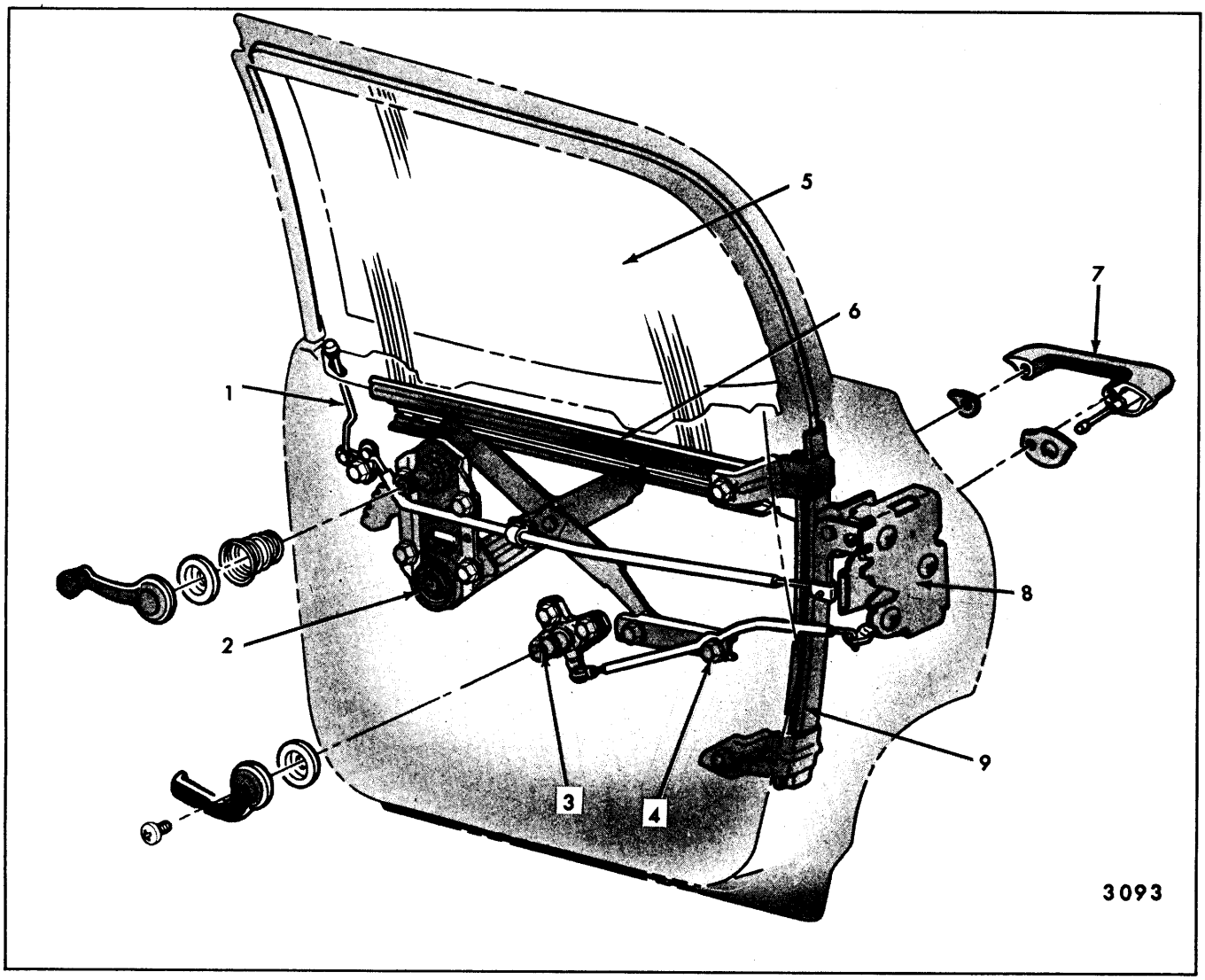

Fig. 6-105—Rear Door Hardware - "A" Closed Styles

1. Inside Locking Rod
2. Window Regulator - Manual
3. Door Lock Remote Control
4. Inner Panel Cam
5. Rear Door Window
6. Lower Sash Channel Cam
7. Door Outside Handle
8. Door Lock
9. Glass Run Channel

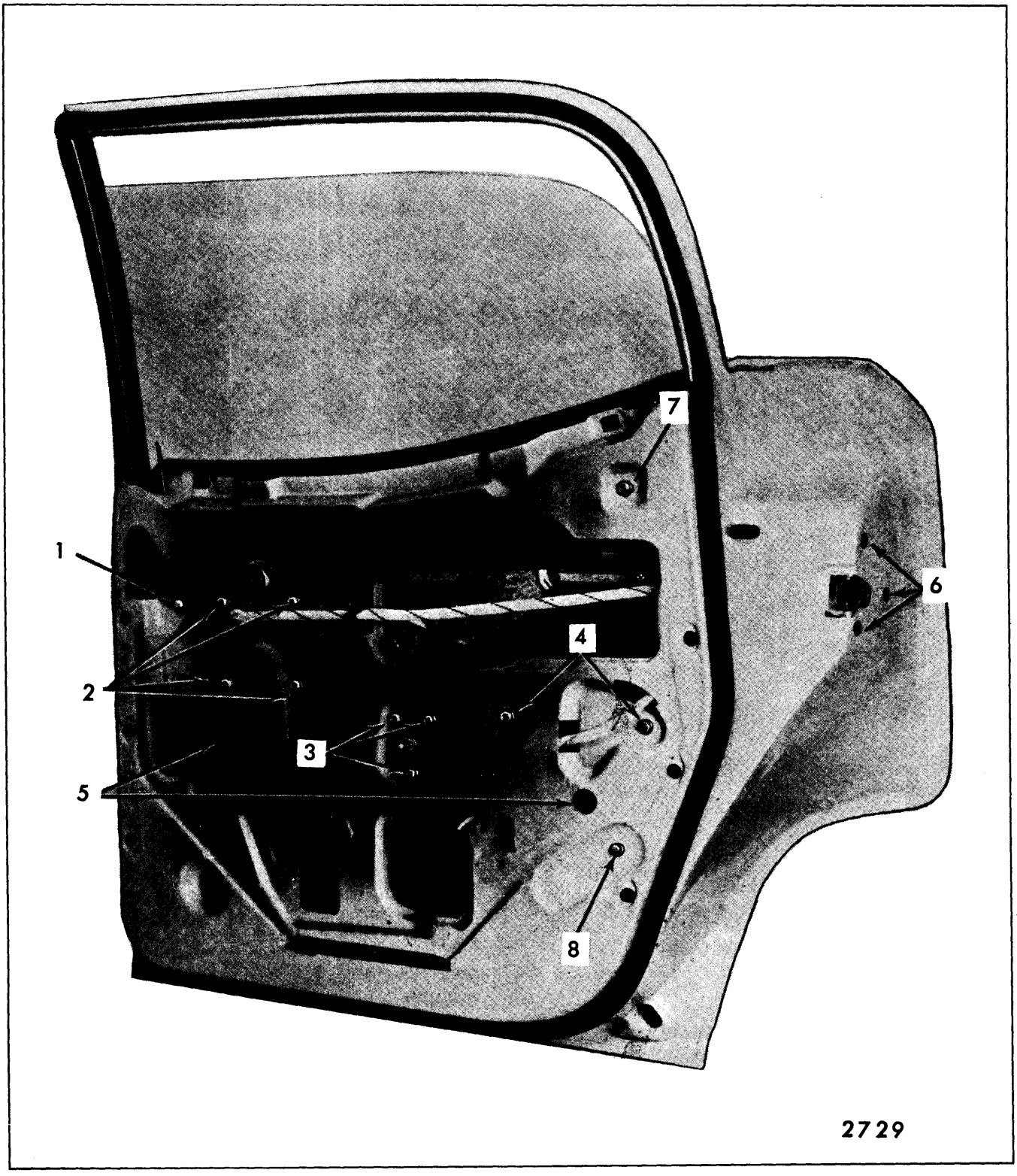

Fig. 6-106—Rear Door Hardware - "A" Closed Styles

1. Inside Locking Rod to Lock Connecting Link Attaching Bolt
2. Window Regulator Attaching Bolts
3. Door Lock Remote Control Attaching Bolts
4. Inner Panel Cam Attaching Bolts
5. Lower Sash Channel Cam Attaching Screws Access Holes
6. Door Lock Attaching Screws
7. Glass Run Channel Upper Attaching Bolt
8. Glass Run Channel Lower Attaching Bolt

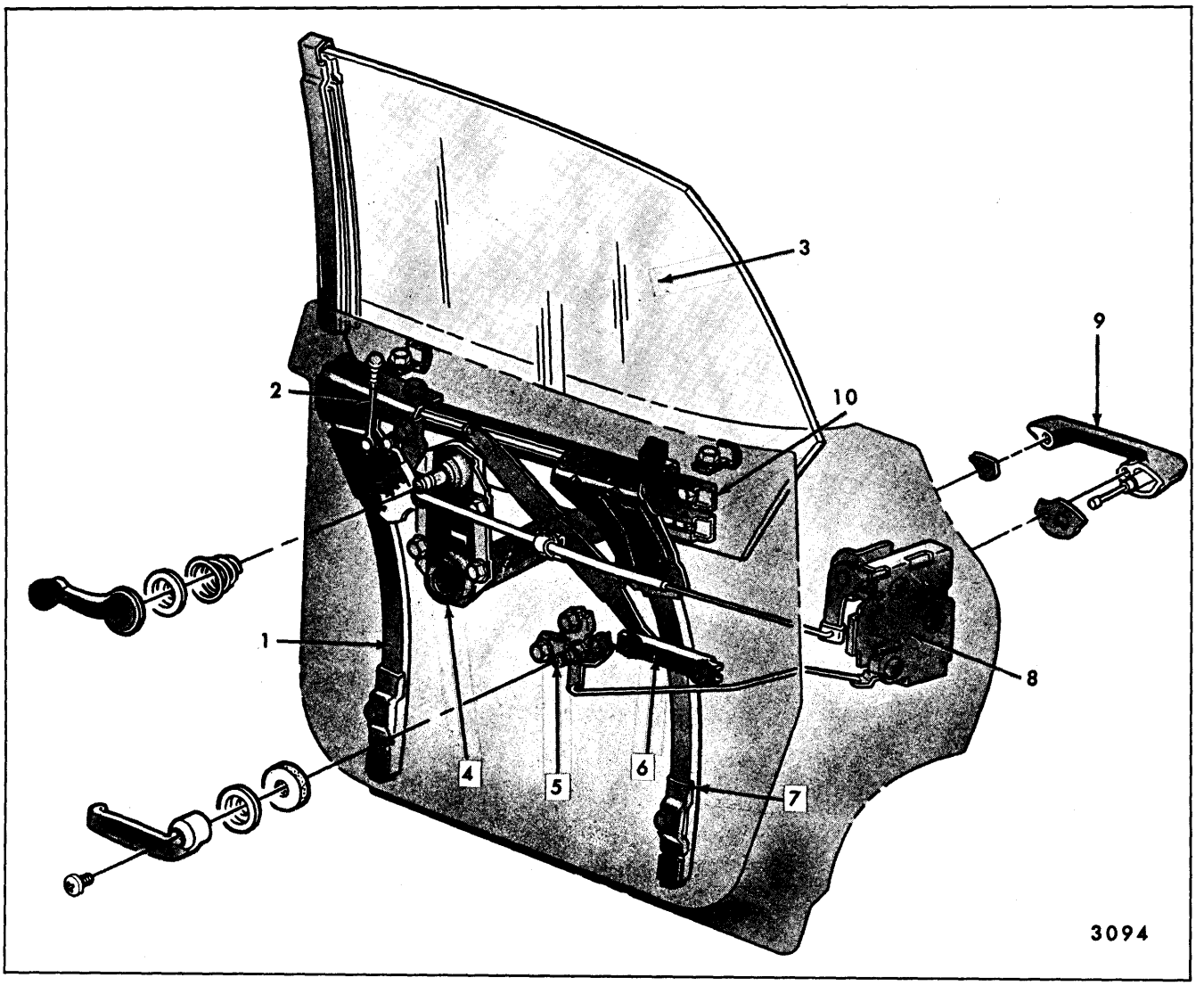

Fig. 6-107—Rear Door Hardware - "A-39" Styles

1. Front Guide
2. Inside Locking Rod
3. Rear Door Window
4. Window Regulator - Manual
5. Door Lock Remote Control
6. Inner Panel Cam
7. Rear Guide
8. Door Lock
9. Door Outside Handle
10. Lower Sash Channel Cam

from the hinges or by removing the door and hinges as an assembly from the center pillar.

Removal

1. With a pencil, mark location of hinges on door or center pillar, depending on removal method being used.

2. On styles equipped with electric window regulators or power operated locks, proceed as follows:

   a. Remove door trim assembly and inner panel water deflector.

   b. Disconnect wire harness connector from regulator motor, vacuum hoses from lock actuator and/or wire harness connector from electric lock solenoid.

   c. Remove electric conduit from door, then remove wire harness and/or vacuum hoses from door through conduit access hole.

3. With door properly supported, loosen upper and lower hinge attaching screws or bolts from door or center pillar and remove door from body. Figure 6-115 is typical of rear door hinge attachment.

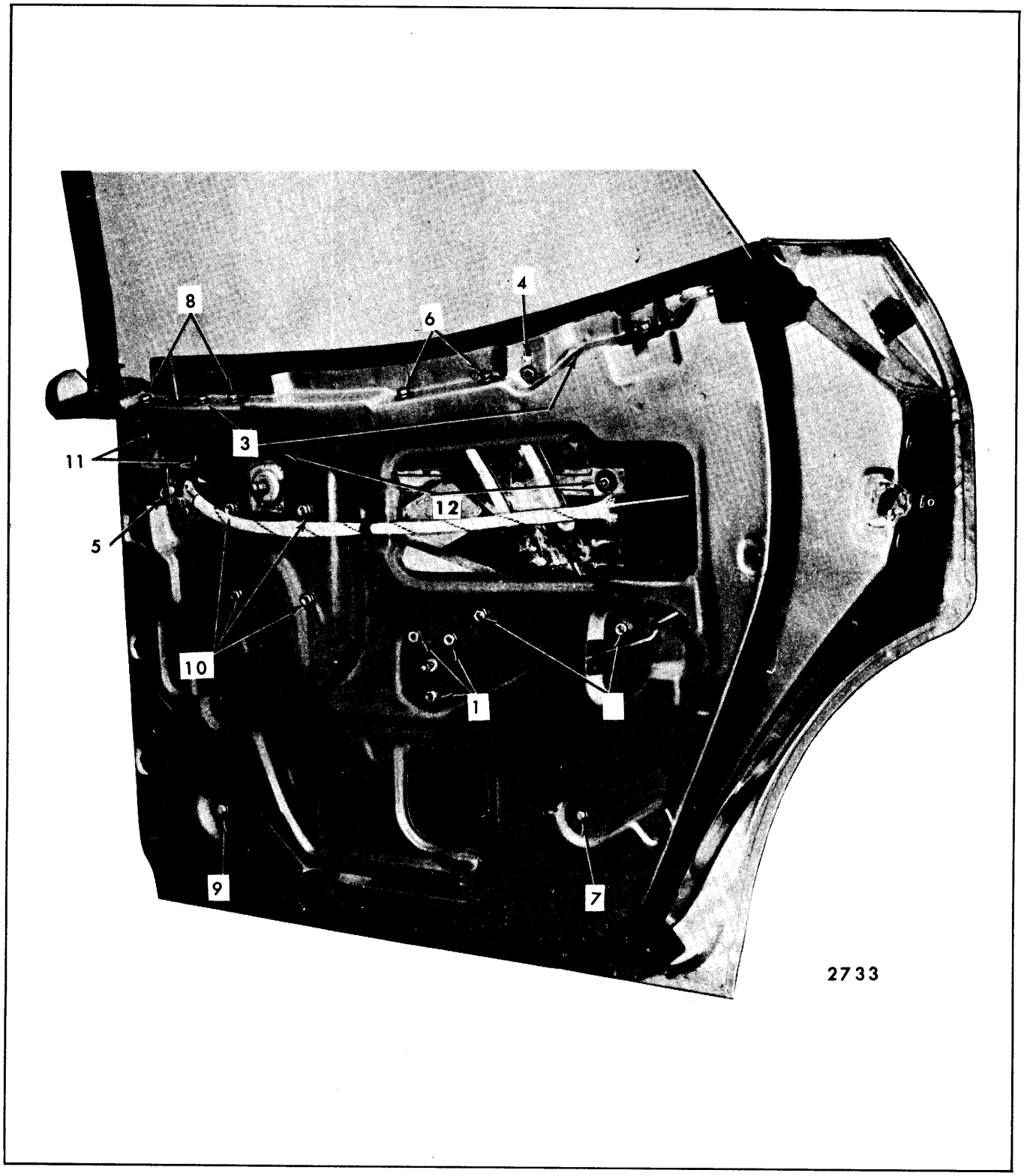

Fig. 6-108—Rear Door Hardware - "A-39" Styles

1. Door Lock Remote Control Attaching Bolts
2. Inner Panel Cam Attaching Bolts
3. Window Stabilizer Strip
4. Window Rear Up-Travel Stop
5. Window Front Up-Travel Stop
6. Rear Guide Upper Attaching Bolts
7. Rear Guide Lower Attaching Bolts
8. Front Guide Upper Support Attaching Bolts
9. Front Guide Lower Attaching Bolt
10. Window Regulator Attaching Bolts
11. Front Guide to Upper Support Attaching Bolts
12. Window Lower Sash Channel Cam Stud Nuts

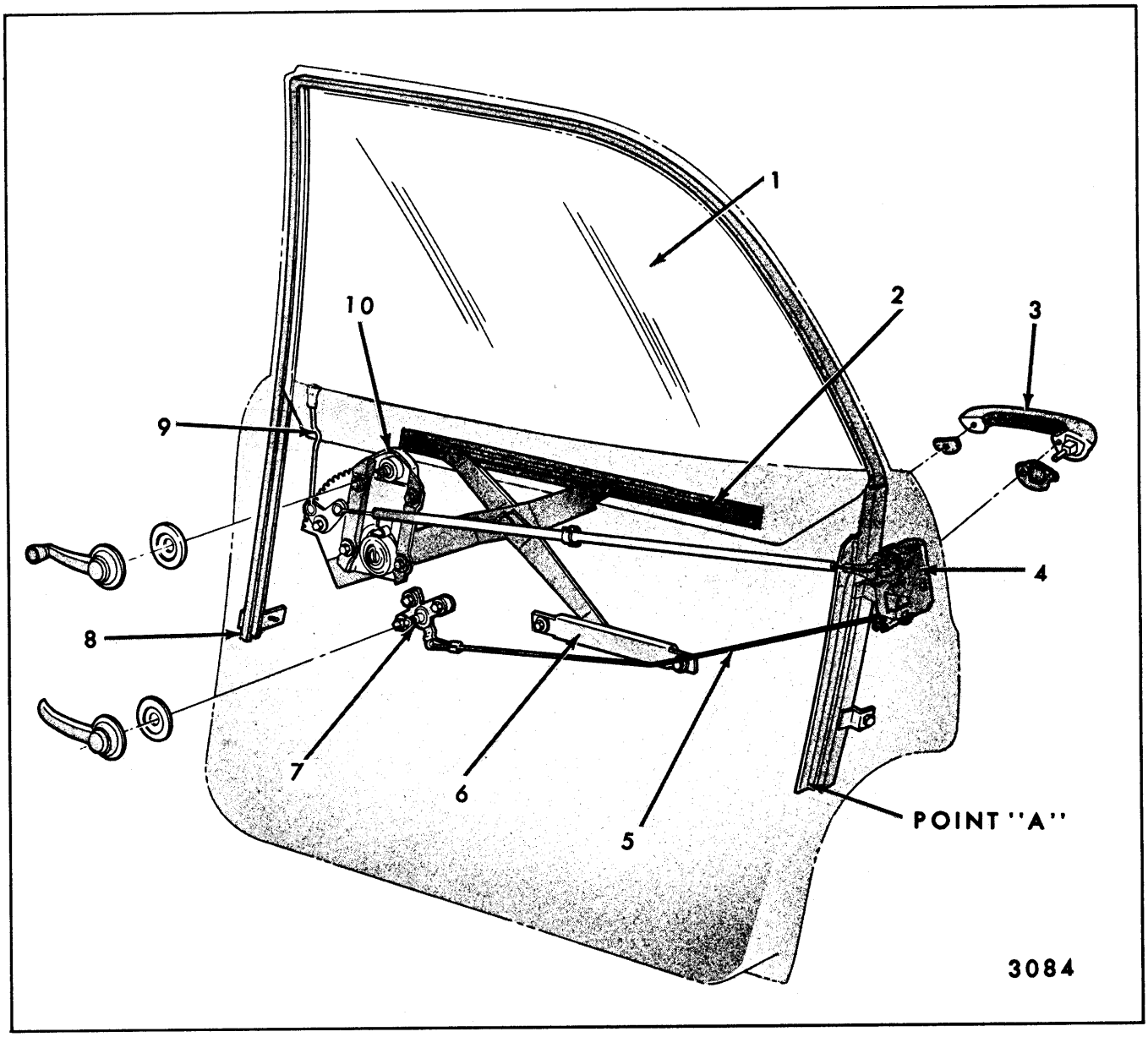

Fig. 6-109—Rear Door Hardware - "B" Closed Styles

1. Window Assembly
2. Lower Sash Channel Cam
3. Outside Handle and Sealing Gaskets
4. Door Lock
5. Remote Control Connecting Rod
6. Inner Panel Cam
7. Remote Control
8. Glass Run Channel (Extends Completely Around Window to Point "A")
9. Inside Locking Rod
10. Window Regulator

Installation

1. Clean off old sealer at hinge attaching areas.

2. Apply a coat of heavy-bodied sealer to surface of hinge that mates with door or center pillar to prevent corrosion.

3. With aid of a helper, lift door into position and loosely install hinge screws. Align hinges within pencil marks previously made and tighten hinge screws.

4. Install all previously removed parts and check door for proper alignment.

NOTE: When replacing or adjusting door hinges, torque bolts to 14 to 18 foot pounds.

Adjustments

In-or-out and up-or-down adjustment is available at the door side hinge attaching screws. Fore-or-aft and a slight up-or-down adjustment is available at the body side (center pillar) hinge attaching screws.

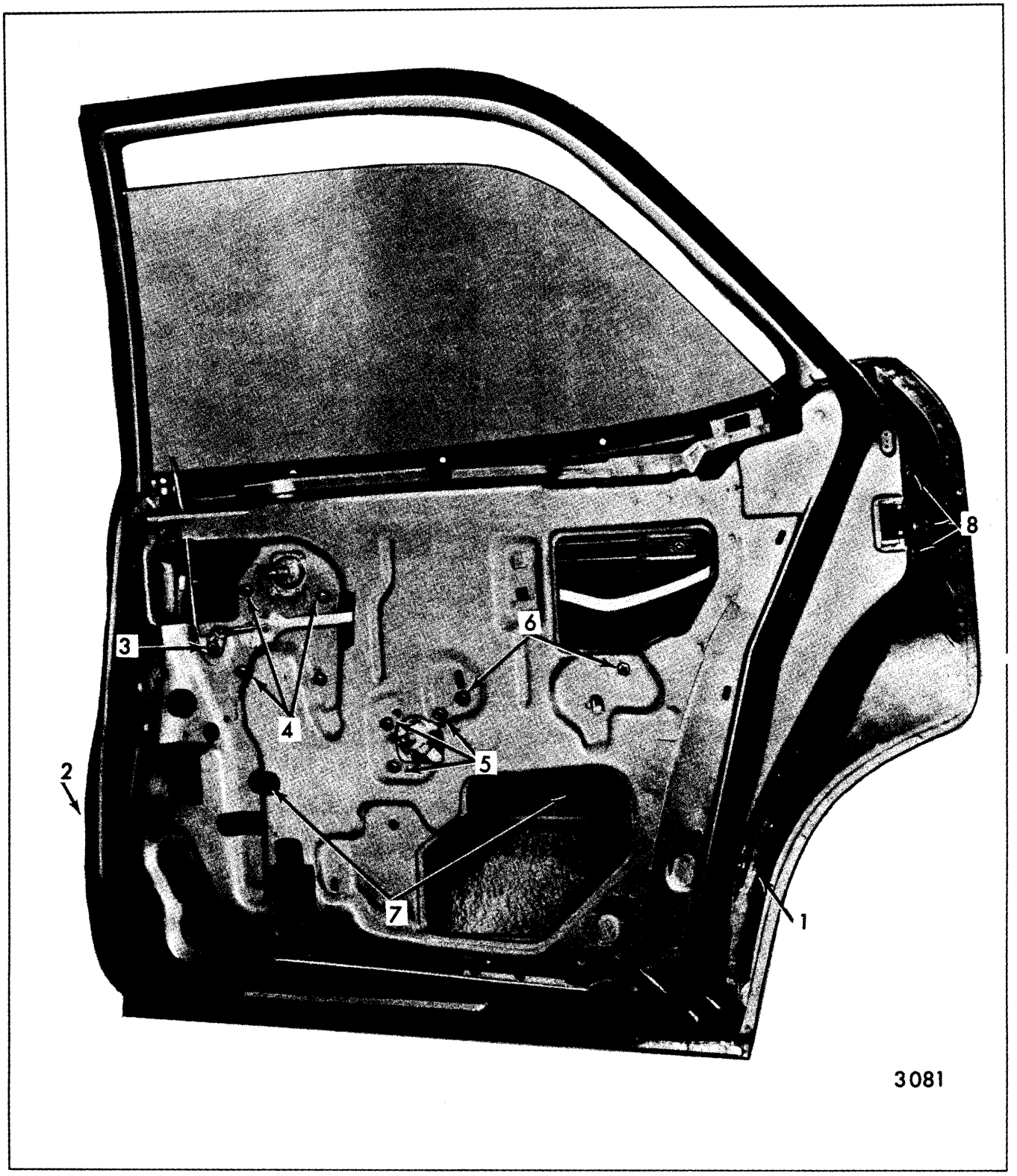

Fig. 6-110—Rear Door Hardware - "B" Closed Styles

1. Glass Run Channel Rear Attaching Bolt
2. Glass Run Channel Front Attaching Bolt
3. Inside Locking Rod Connecting Link Bolt
4. Window Regulator Attaching Bolts
5. Door Lock Remote Control Attaching Bolts
6. Inner Panel Cam Attaching Bolts
7. Window Lower Sash Channel Cam Stud Nuts Access Holes
8. Door Lock Attaching Screws

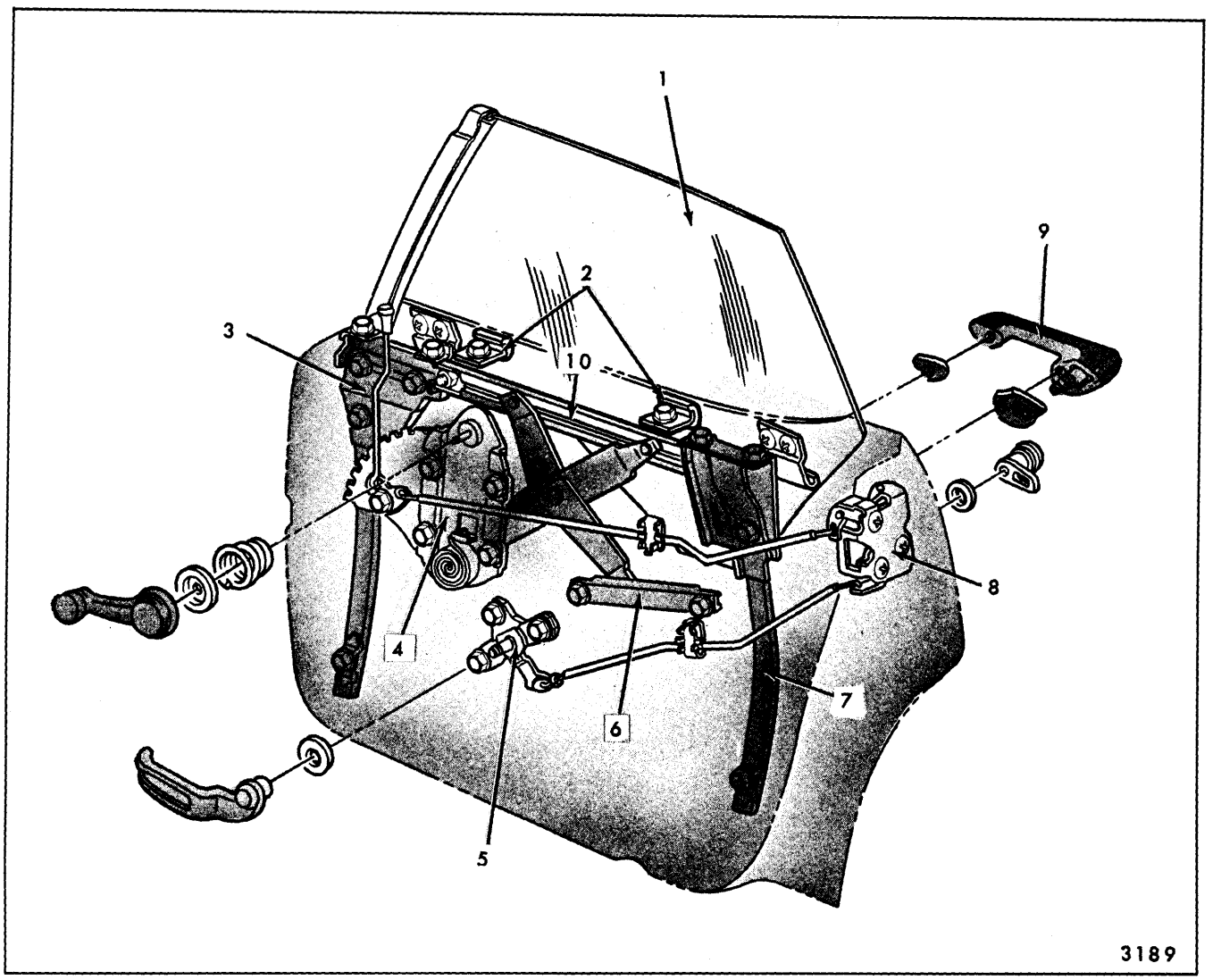

Fig. 6-111—Rear Door Hardware - "B-39" and "C-39, 49 and 69" Styles

1. Rear Door Window
2. Stabilizer Strips
3. Front Guide
4. Window Regulator - Manual
5. Door Lock Remote Control
6. Inner Panel Cam
7. Rear Guide
8. Door Lock
9. Door Outside Handle
10. Lower Sash Channel Cam

REAR DOOR LOCK REMOTE CONTROL

There are two basic types of door lock remote controls; the "spindle" type which rotates upward when actuated and the "inward" acting type. Both type remote controls are secured to the door inner panel by three attaching bolts. On some styles it is mounted on the inboard surface of the door inner panel, and on others, on the outboard surface. Figure 6-106 illustrates the spindle type door lock remote control installation. The inward acting type is similar.

Removal and Installation

1. Remove rear door trim assembly and inner panel water deflector.
2. Remove remote control attaching bolts ("3", Figure 6-106).
3. Pivot remote to disengage it from remote control to lock connecting rod and remove remote control from door.
4. To install, reverse removal procedure. Make certain anti-rattle clip on lock connecting rod is properly positioned.

REAR DOOR LOCK ASSEMBLY—All Styles

All styles use the fork bolt lock design which includes a safety interlock feature. Where necessary, striker spacers should be used to insure

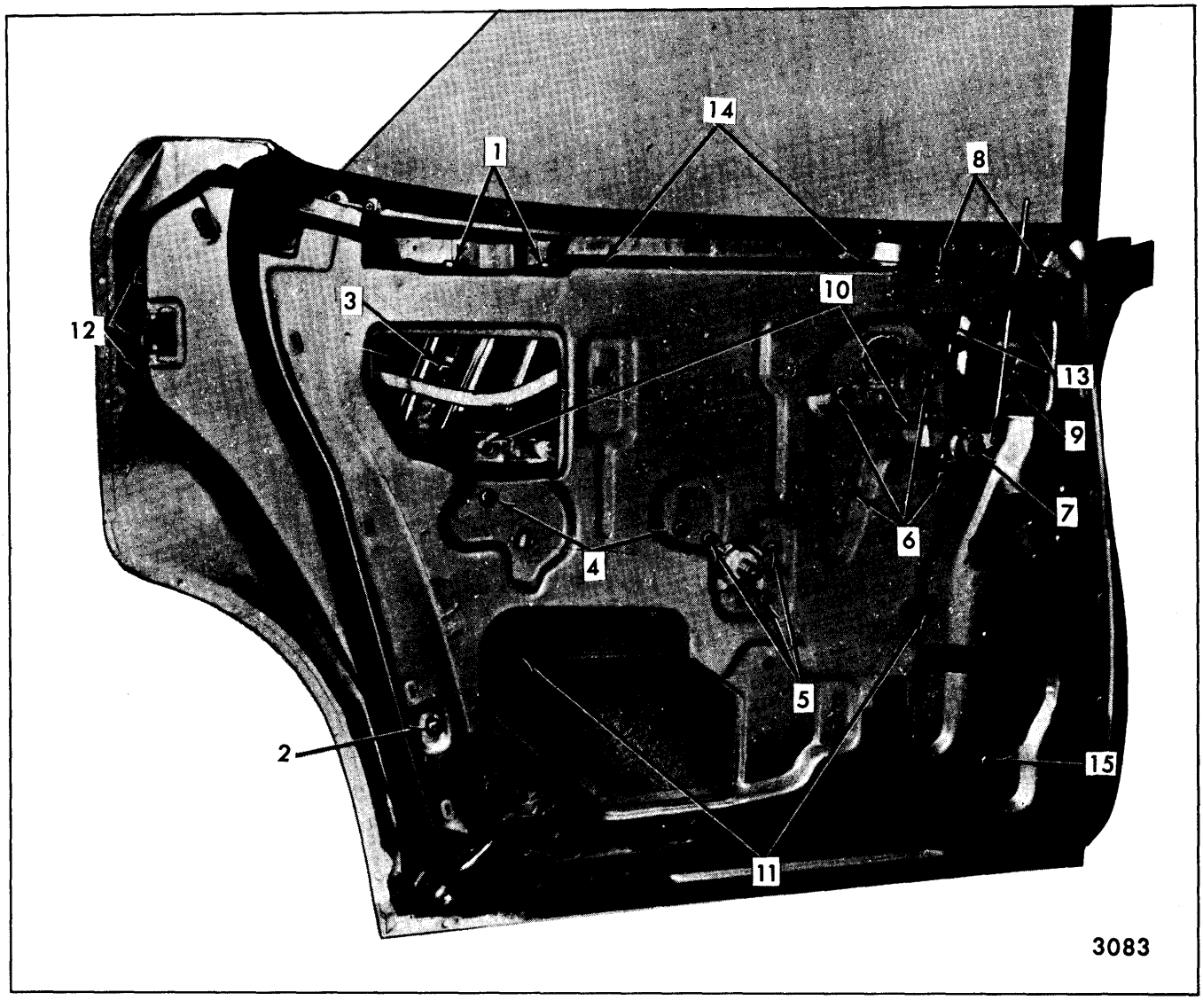

Fig. 6-112—Rear Door Hardware - "B-39" and "C-39, 49 and 69" Styles

1. Rear Guide Upper Attaching Bolts
2. Rear Guide Lower Attaching Bolt
3. Window Rear Up-Travel Stop Attaching Bolt
4. Inner Panel Cam Attaching Bolts
5. Door Lock Remote Control Attaching Bolts
6. Window Regulator Attaching Bolts
7. Inside Locking Rod to Lock Connecting Link Attaching Bolt
8. Front Guide Support Bracket Attaching Bolts
9. Window Front Up-Travel Stop
10. Window Lower Sash Channel Cam Stud Nuts Access Holes (with Electric Window Regulator)
11. Window Lower Sash Channel Cam Stud Nuts Access Holes (with Manual Window Regulator)
12. Door Lock Attaching Screws
13. Front Guide to Upper Support Bracket Attaching Bolts
14. Window Stabilizer Strips
15. Front Guide Lower Attaching Bolt

satisfactory lock striker engagement. Refer to "Front and Rear Door" section for spacer usage.

NOTE: Figure 6-116 depicts a typical front door lock assembly which can be used for identifying locking problems. DO NOT ALTER OR REPAIR LOCK ASSEMBLIES. Replace a defective lock with a new lock assembly.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. Operate glass to full-up position.
3. Working through access hole, disengage lock connecting rods from spring clips on door lock (for clip disengagement refer to "Door Lock Spring Clips" in Front and Rear Door Section).
4. Remove door lock attaching screws ("6", Figure 6-106) and remove lock from door.
5. To install, reverse removal procedure.

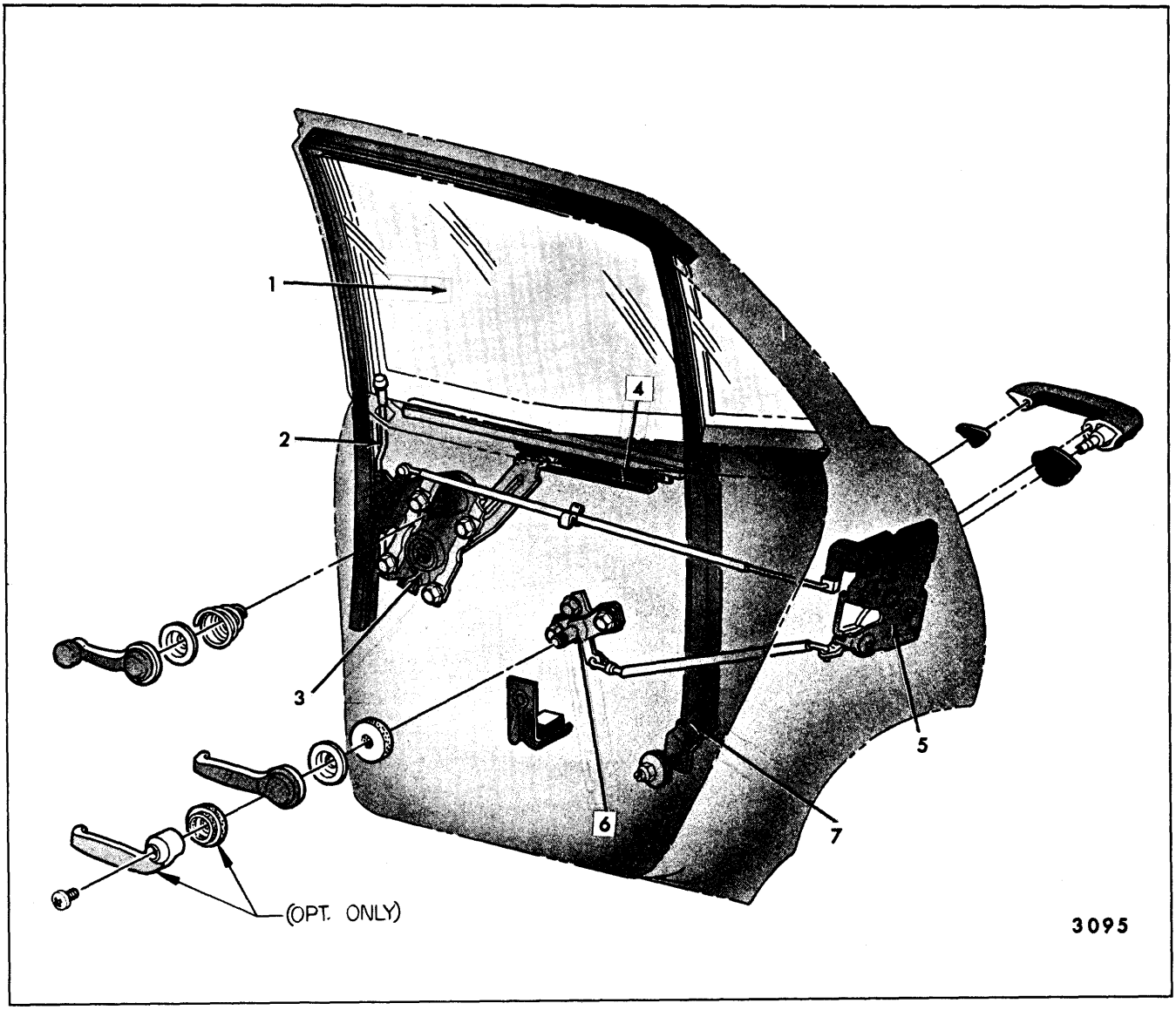

Fig. 6-113—Rear Door Hardware - "X" Style

1. Rear Door Window
2. Inside Locking Rod
3. Window Regulator
4. Lower Sash Channel Cam
5. Door Lock
6. Door Lock Remote Control
7. Ventilator Division Channel

REAR DOOR INNER PANEL CAM— All Except "A & X-69" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. Remove inner panel cam attaching bolts ("4", Figure 6-106). Disengage cam from regulator balance arm roller and remove cam from door.
3. To install, reverse removal procedure. Adjust front end of cam for proper window operation. Correct adjustment of cam will prevent a rotated (cocked) door window.

REAR DOOR WINDOW ASSEMBLY— "A" Closed Styles

The rear door window assembly consists of a frameless solid tempered safety plate glass window and a pressed-on lower sash channel assembly. When handling window, make certain glass does not develop edge chips or deep scratches which could cause glass to shatter.

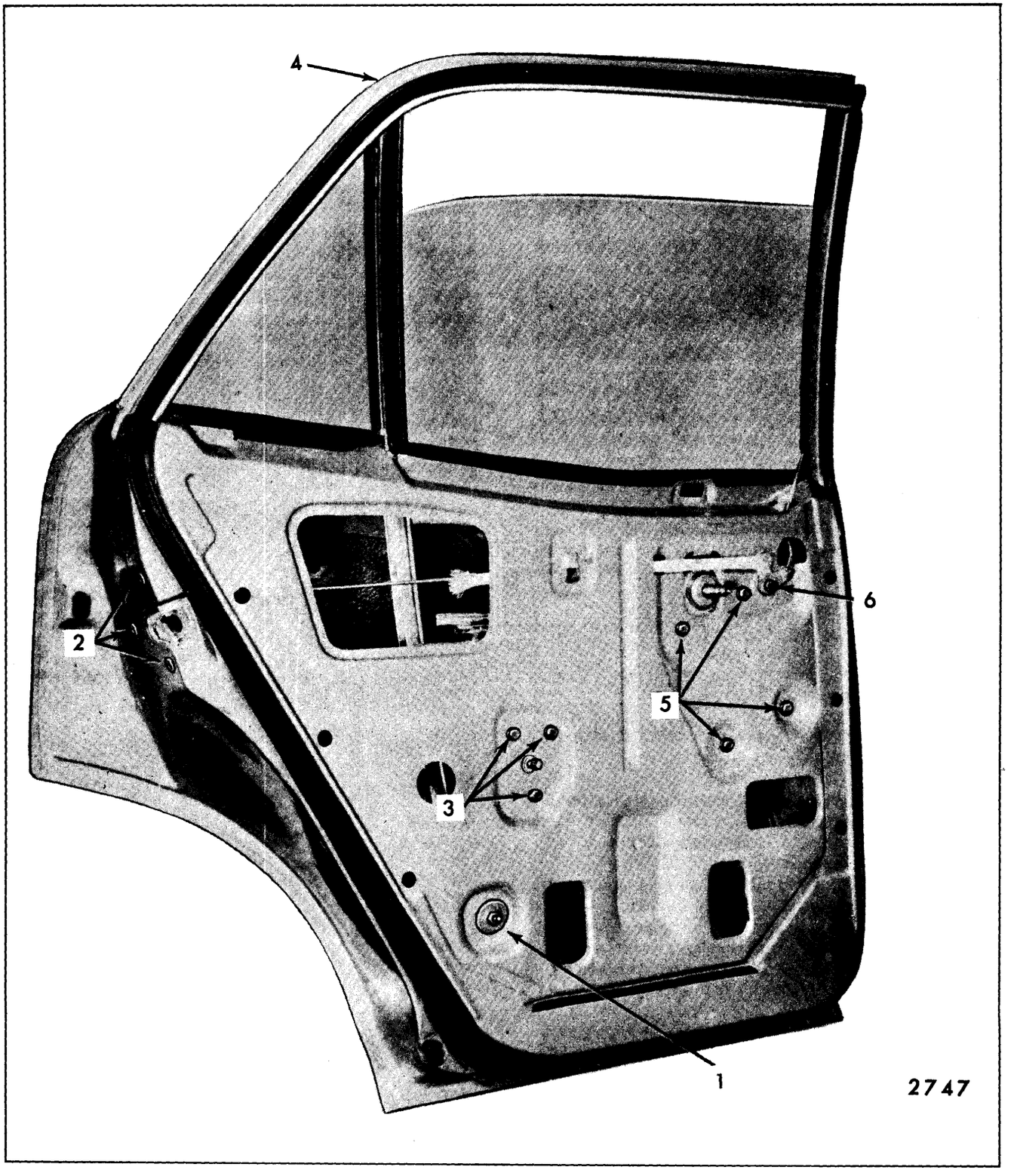

Fig. 6-114—Rear Door Hardware - "X" Style

1. Ventilator Division Channel Lower Adjusting Stud
2. Door Lock Attaching Screws
3. Door Lock Remote Control Attaching Bolts
4. Ventilator Division Channel Upper Attaching Screw
5. Window Regulator Attaching Bolts
6. Inside Locking Rod to Lock Connecting Link Attaching Bolt

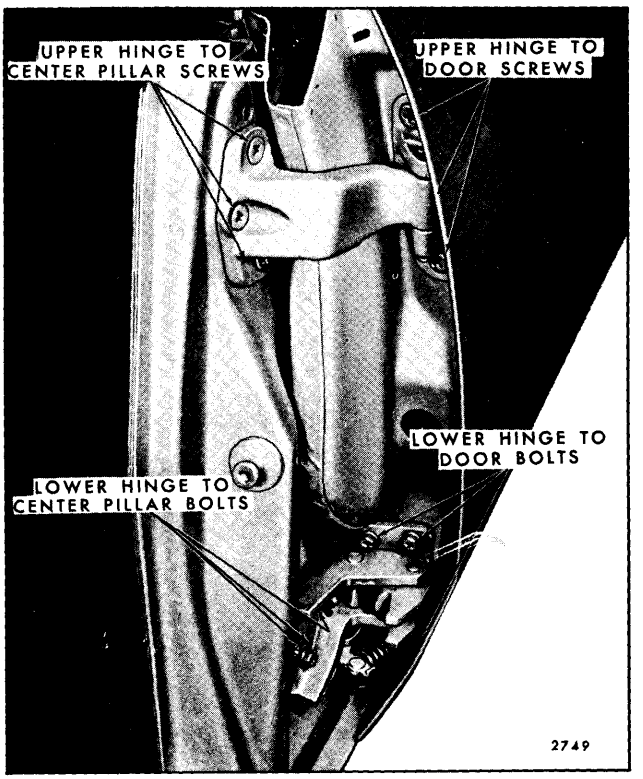

Fig. 6-115—Typical Rear Door Hinge Installation

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. With window in a three-quarter lowered position, remove window lower sash channel cam attaching screws ("1", Figure 6-117).
3. Loosen rear glass run channel upper and lower attaching screws ("2", Figure 6-117).
4. Rotate rear edge of glass downward and remove window by lifting front edge of glass upward outboard of door upper frame.
5. To install, reverse removal procedure. Adjust window for proper operation and alignment as described in the following adjustment procedure.

Adjustments

Adjustments have been provided to relieve a binding door glass due to misalignment of the glass run channel ("2", Figure 6-117). In addition, the door window inner panel cam ("3", Figure 6-117) is adjustable which can correct a rotated (cocked) front door window.

REAR DOOR WINDOW ASSEMBLY— "A-39"

The rear door window assembly consists of a solid tempered safety plate glass window and an individually bolted-on roller at the front and window roller cam assembly at the rear. The lower sash channel cam is bolted to the glass, but is removed in the process of removing the window.

Figure 6-118 is an exploded view of the window assembly and identifies the various components and their assembly sequence.

Removal and Installation

1. Remove door trim pad and inner panel water deflector.
2. Remove window front up-stop from guide ("1", Figure 6-119) and rear up-stop from door inner panel ("2", Figure 6-119).
3. Loosen front and rear window stabilizer strip assembly bolts ("3", Figure 6-119) and remove stabilizer strips.
4. With window in full-up position, remove lower sash channel cam to glass attaching stud nuts ("4", Figure 6-119).
5. Disengage front roller from front guide, then rear roller from rear guide.
6. Remove window from door by aligning rollers with notches provided in inner panel. Remove rear end of window first, then front end.
7. To install, reverse removal procedure. Adjust window for proper alignment and operation as described in the following adjustment procedure.

Adjustments

1. In-and-out adjustment of the glass is controlled by the in-and-out adjustment available at the top of the front and rear guides ("5" and "6", Figure 6-119) and the in-and-out position of the glass stabilizer strip assemblies ("3", Figure 6-119).
2. Fore-and-aft adjustment of the window assembly is controlled by the position of the front guide. The upper attaching locations in the front guide upper support ("7", Figure 6-119) are slotted to permit fore-and-aft adjustment of the guide. Because of the free floating roller in the window rear sash channel cam (Figure 6-118) the rear guide does not have to be adjusted during fore-or-aft window alignment.

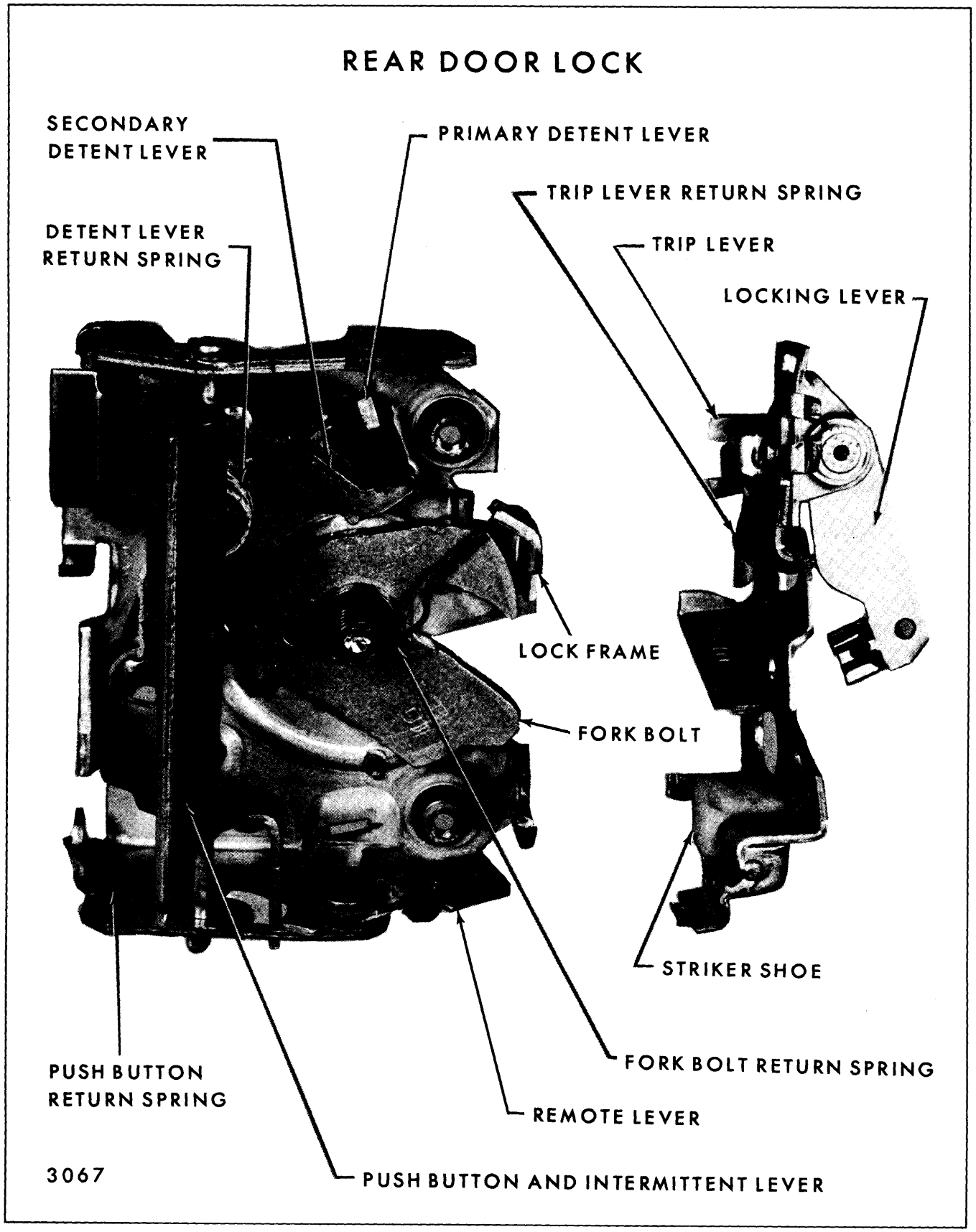

Fig. 6-116—Rear Door Lock Assembly - All Styles

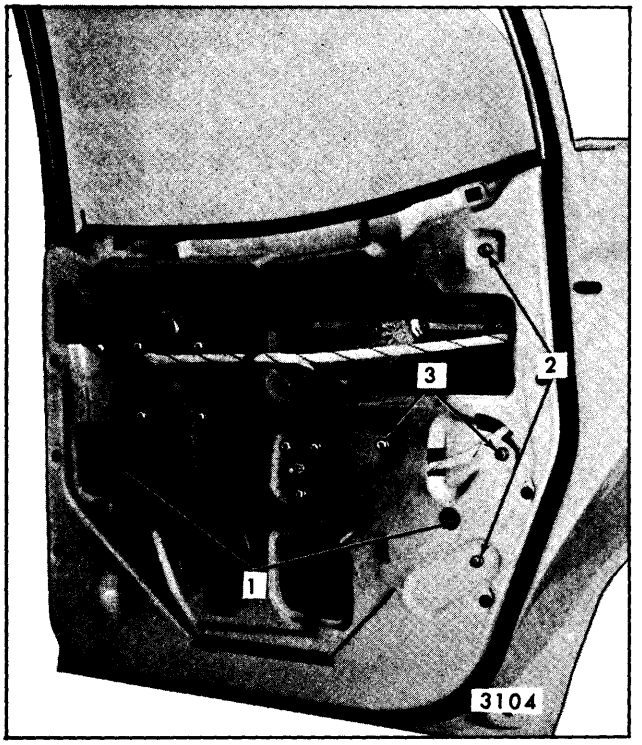

Fig. 6-117—Rear Door Window Removal and Adjustments - "A" Closed Styles

1. Lower Sash Channel Cam Attaching Screw Access Holes
2. Rear Glass Run Channel Upper and Lower Attaching Bolts
3. Inner Panel Cam Attaching Bolts

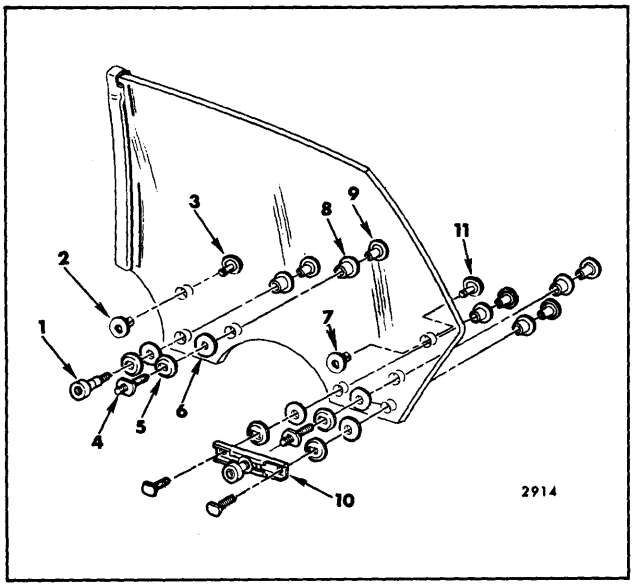

Fig. 6-118—Rear Door Window Assembly - "A-39" Styles

1. Roller Assembly
2. Glass Bearing Fastener Cap
3. Glass Bearing Fastener
4. Stud Inner Panel Cam
5. Washer (Metal)
6. Washer
7. Glass Bearing Fastener Cap
8. Bushing
9. Nut
10. Rear Guide Cam Assembly
11. Glass Bearing Fastener

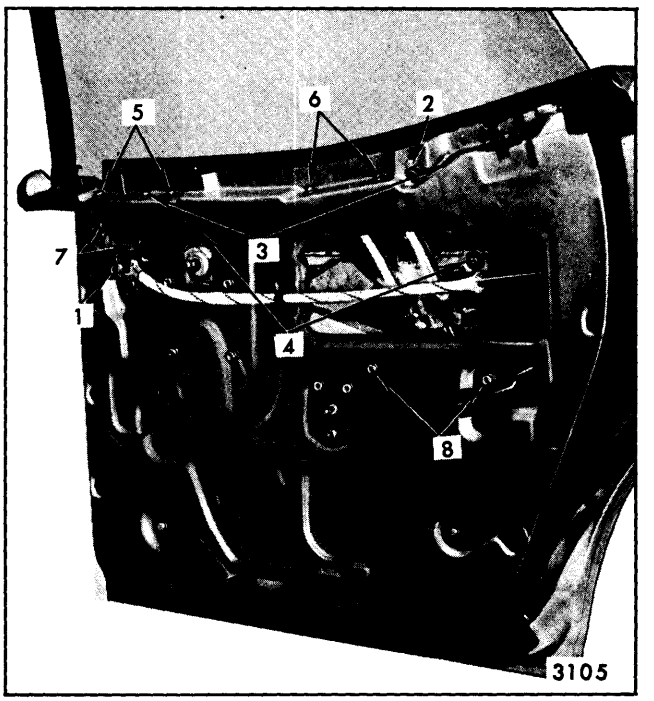

Fig. 6-119—Rear Door Window Removal and Adjustments - "A-39" Styles

1. Window Front Up-Travel Stop
2. Window Rear Up-Travel Stop
3. Window Front and Rear Stabilizer Strips
4. Window Lower Sash Channel Cam Stud Nuts
5. Front Guide Upper Support Attaching Bolts
6. Rear Guide Upper Attaching Bolts
7. Front Guide to Upper Support Bracket Attaching Bolts
8. Inner Panel Cam Attaching Bolts

3. Ease of window operation and window stability depend to a great extent on the adjustment of the window stabilizer strip assemblies at the beltline ("3", Figure 6-119).

   The stabilizing strips should contact the glass throughout the full cycle of the window. Due to slight variations in glass contour, however, in some cases the strip may lose contact with the glass half-way through the cycle. This is permissible provided it does not result in loose glass. Contact should be sufficient to stabilize glass, but not restrict ease of window operation.

4. A window that is rotated (cocked) in the window opening may be the result of an improperly adjusted inner panel cam ("8", Figure 6-119) or poorly adjusted up-travel stops ("1" or "2", Figure 6-119).

5. The up-travel of the window is determined by the adjustment of the front and rear up-stop ("1" or "2", Figure 6-119). To adjust window up-travel, loosen front and rear up-stops and

operate window to desired position to establish proper glass to side roof rail weatherstrip contact (Figure 6-120). Tighten up-stop attaching bolts.

REAR DOOR WINDOW ASSEMBLY "B" Closed Styles

The rear door window assembly consists of a frameless solid tempered safety plate glass window and a bolt-on lower sash channel cam. When handling window, make certain glass does not develop edge chips or deep scratches which could cause glass to shatter.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. Remove glass run channel attaching bolts (Arrows "A" & "B" Figure 6-122).
3. Partially lower rear door window, remove lower sash channel cam to glass attaching stud nuts ("2", Figure 6-121). Press lower sash channel cam inboard to disengage from attaching studs and lower window regulator to full-down position.
4. Tilt front edge of glass downward and remove outboard of door upper frame, rear edge first, then front edge.

NOTE: Apply protective tape on door upper frame along front and rear edges to protect painted surface when removing glass.

5. To install, reverse removal procedure. Adjust window for proper operation as described in the following procedure.

Adjustments

Adjustments have been provided to relieve a binding door glass due to misalignment of the glass run channel (Arrow "A" and "B", Figure 6-122). In addition, the door window inner panel cam is adjustable which can correct a rotated (cocked) front door window ("3", Figure 6-121).

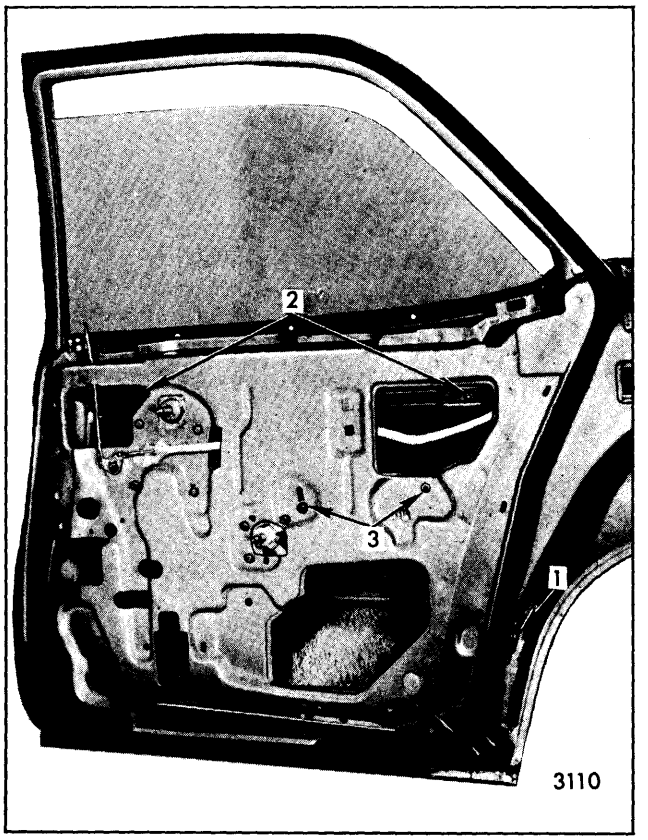

Fig. 6-121—Rear Door Window Removal and Adjustments - "B" Closed Styles

1. Glass Run Channel Rear Attaching Bolt
2. Window Lower Sash Channel Cam Stud Nuts Access Holes
3. Inner Panel Cam Bolts

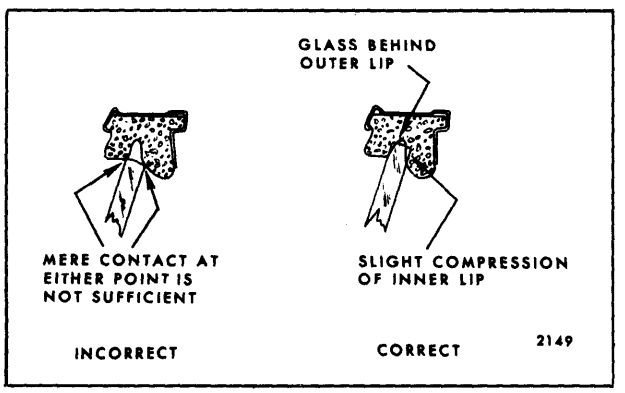

Fig. 6-120—Window to Side Roof Rail Weatherstrip Alignment

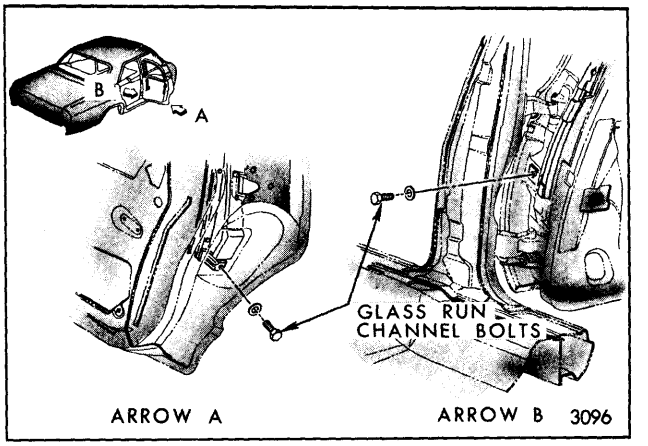

Fig. 6-122—Glass Run Channel Retention "B" Closed Styles

REAR DOOR WINDOW ASSEMBLY— "B-39" and "C-39, 49 and 69" Styles

The rear door window assembly consists of a solid tempered safety plate glass window and an individually bolted-on roller at the front and roller assembly (bell-crank) at the rear. The lower sash channel cam is bolted to the glass, but is removed in the process of removing the window.

Figure 6-123 is an exploded view of the window assembly and identifies the various components and their assembly sequence.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.

2. Remove front and rear window stabilizer strips ("1", Figure 6-124).

3. Remove front and rear window up-travel stops ("2", and "3", Figure 6-124).

4. With window in a three-quarter-down position, remove lower sash channel cam to glass attaching stud nuts ("4", Figure 6-124). Lift window upward and remove from door.

5. To install, reverse removal procedure. Adjust for proper window alignment and operation as described below.

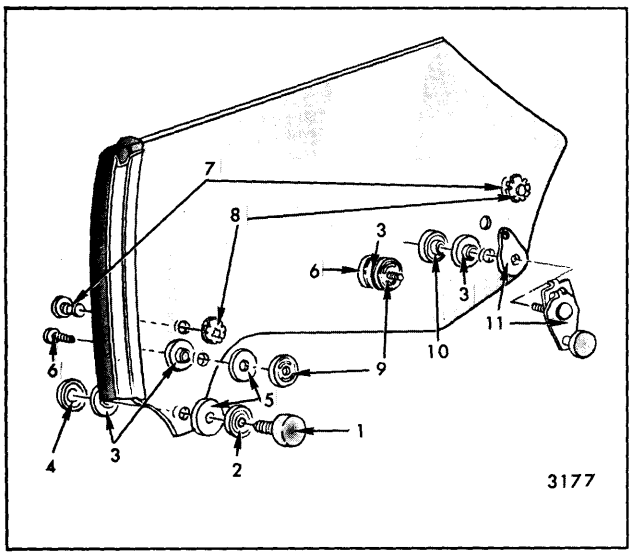

Fig. 6-123—Rear Door Window Assembly - "B-39" and "C-39, 49 and 69" Styles

1. Roller Assembly
2. Spacer
3. Bushing
4. Nut, Roller Assembly
5. Washer
6. Bolt, Inner Panel Cam
7. Fastener, Glass Bearing
8. Cap, Glass Bearing Fastener
9. Nut, Inner Panel Cam
10. Nut, Roller Assembly
11. Roller Assembly (Bellcrank)

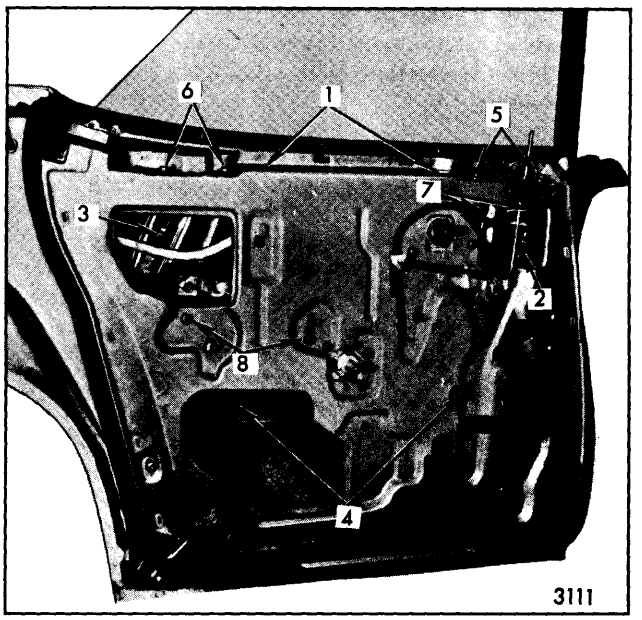

Fig. 6-124—Rear Door Removal and Adjustments - "B-39" and "C-39, 49, and 69" Styles

1. Window Stabilizer Strip Bolts
2. Window Front Up-Travel Stop Bolt
3. Window Rear Up-Travel Stop Bolt
4. Window Lower Sash Channel Cam Stud Nuts Access Holes
5. Front Guide Upper Support Bracket Bolts
6. Rear Guide Upper Bolts
7. Front Guide to Upper Support Bracket Bolts
8. Inner Panel Cam Bolts

Adjustments

1. In-and-out adjustment of the glass is controlled by the in-and-out adjustment available at the top of the front and rear guides ("5" and "6", Figure 6-123) and the in-and-out position of the glass stabilizer strips ("1", Figure 6-123).

2. Fore-and-aft adjustment of the window assembly is controlled by the position of the front guide. The upper attaching locations in the front guide upper support ("7", Figure 6-124) are slotted to permit fore-and-aft adjustment of the guide. Because the roller assembly (bell-crank, Figure 6-123) which attaches to the glass at the rear pivots, the rear guide does not have to be adjusted during fore-or-aft window alignment.

3. Ease of window operation and window stability depends to a great extent on the adjustment of the window stabilizer strip assemblies ("1", Figure 6-124).

   The stabilizer strips should contact the glass throughout the full cycle of the window. Due to slight variations in glass contour, however, in some cases the strip may lose contact with the glass half-way through the cycle. This

is permissible provided it does not result in loose glass. Contact should be sufficient to stabilize glass, but not restrict ease of window operation.

4. A window that is rotated (cocked) in the window opening may be the result of an improperly adjusted inner panel cam ("8", Figure 6-124) or poorly adjusted up-travel stops ("2" or "3", Figure 6-124).

5. The up-travel of the window is determined by the adjustment of the front and rear up-stops "2" and "3", Figure 6-124). To adjust window up-travel, loosen front and rear up-stops and operate window to desired position to establish proper glass to side roof rail weatherstrip contact (Figure 6-125). Tighten up-stop attaching bolts.

REAR DOOR WINDOW STATIONARY VENTILATOR DIVISION CHANNEL— "X-69" Style

The stationary ventilator division channel is held into place by one division channel to door upper frame attaching screw and one lower adjusting stud and nut. This assembly acts as a rear door window rear glass run channel and also holds the stationary ventilator window in proper position.

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector sufficiently to gain access to the lower adjusting stud and nut ("1", Figure 6-126).

2. Remove door window lower stop (rubber bumper) from down stop support bracket on door inner panel.

3. Remove ventilator division channel lower adjusting stud and nut ("1", Figure 6-126).

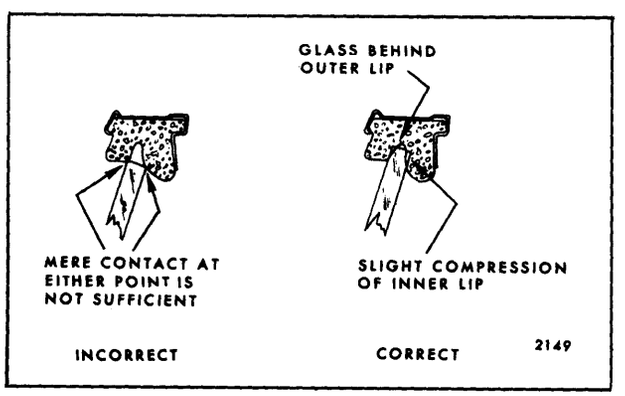

Fig. 6-125—Window to Side Roof Rail Weatherstrip Alignment

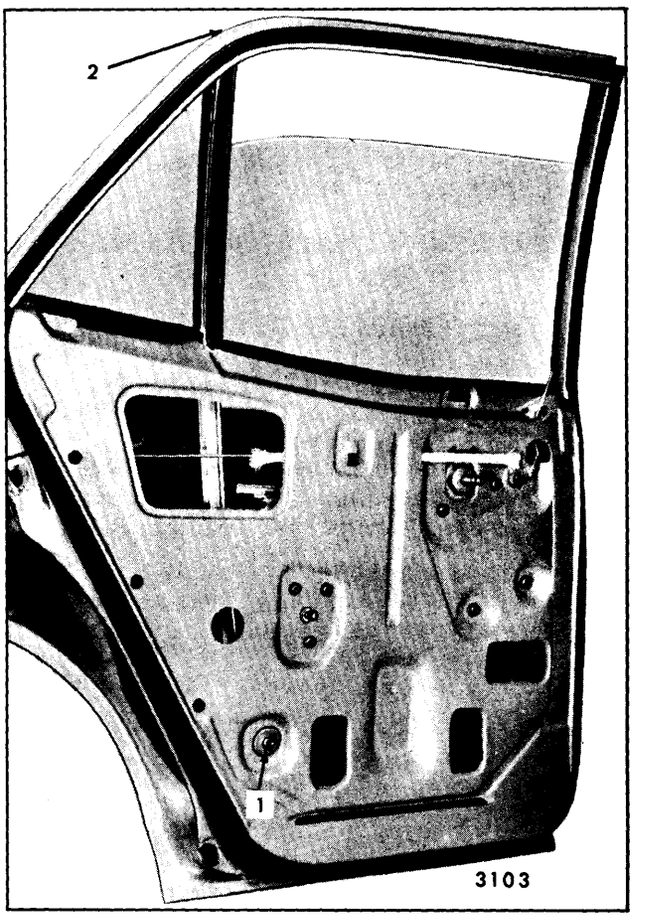

Fig. 6-126—Rear Door Window Removal and Adjustments - "X-69" Styles

1. Ventilator Division Channel Lower Adjusting Stud
2. Ventilator Division Channel Upper Attaching Screw

4. Carefully lower door window and remove division channel to door upper frame attaching screw ("2", Figure 6-126).

5. Rotate upper section of division channel forward and inboard and remove assembly from door.

6. To install, reverse removal procedure. In-or-out and fore-or-aft adjustment of this part is available at the lower adjusting stud and nut only.

REAR DOOR WINDOW STATIONARY VENTILATOR ASSEMBLY— "X-69" Style

The rear door stationary ventilator assembly is set within a rubber channel and held into place by pressure of the ventilator division channel.

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. Remove stationary ventilator division channel as previously described.
3. Pull stationary ventilator window forward and remove from door.
4. To install, reverse removal procedure.

REAR DOOR WINDOW ASSEMBLY "X-69" Style

The rear door window assembly consists of a frameless solid tempered safety plate glass window and a pressed-on lower sash channel assembly.

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. Remove rear door window stationary ventilator assembly as previously described.
3. Slide window regulator lift arm roller out of window lower sash channel cam and remove glass inboard of door upper frame.
4. To install, reverse removal procedure. Adjust window for proper operation as described in the following procedure.

Adjustments

Adjustment has been provided to relieve a binding door glass due to misalignment of the ventilator division channel ("1", Figure 6-126).

REAR DOOR WINDOW REGULATOR—Manual—All "A" Styles

Removal and Installation—Refer to Figure 6-106 for "Closed" Styles and Figure 6-108 for "A-39" Styles

1. Remove door trim assembly and inner panel water deflector.
2. Lower window and remove lower glass sash channel cam attaching screws. While supporting glass, disengage cam from rollers on regulator lift and balance arms and remove cam.

NOTE: On Closed styles, raise window to a full-up position and secure in place with pieces of cloth-backed body tape applied over door frame. On Hardtop styles, prop the window in a full-up position.

3. Remove inner panel cam attaching bolts.
4. Loosen window regulator attaching bolts and remove window regulator through large access hole.
5. To install, reverse removal procedure.

REAR DOOR WINDOW REGULATOR—Electric—All "A, B and C" Styles

Removal and Installation—Refer to Fig. 6-108

1. Remove door window as previously described.
2. Remove inner panel cam attaching bolts.
3. Disconnect body wire harness from window regulator at regulator motor.
4. On "A-39" styles, remove the window rear guide as subsequently described.
5. Remove window regulator attaching bolts and remove regulator through large access hole.
6. To install, reverse removal procedure.

REAR DOOR WINDOW REGULATOR—Manual—"B and C" Styles

Removal and Installation—Refer to Figure 6-110 for "B" Closed Styles and Figure 6-112 for "B and C" Hardtop Styles

1. Remove door trim assembly and inner panel water deflector.
2. Lower window to a three-quarter-down position, remove lower sash channel cam to glass attaching stud nuts. While supporting glass, disengage cam from rollers on regulator lift and balance arms and remove cam.

NOTE: On closed styles, raise window to full-up position and secure in place with pieces of cloth-backed body type applied over door upper frame. On Hardtop Styles, prop the window in a full-up position.

3. Remove inner panel cam attaching bolts.
4. Loosen window regulator attaching bolts and remove window regulator through access hole.
5. To install, reverse removal procedure.

REAR DOOR WINDOW REGULATOR ELECTRIC MOTOR REMOVAL—All Styles

If it is necessary to remove the electric motor

from the regulator, refer to "Front & Rear Door" section for the proper procedure. The tension on the lift arm assist spring can cause serious injury if the motor is removed without use of the cautionary measures described in the procedure.

REAR DOOR WINDOW REGULATOR—"X-69" Style

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. Remove inside locking rod to lock connecting link bolt ("6", Figure 6-114) and disconnect locking rod at lock.
3. Operate window to full-up position and secure in place with pieces of cloth-backed body tape applied over door frame.
4. Remove regulator attaching bolts ("5", Figure 6-114). Slide regulator lift arm roller out of lower sash channel cam and remove regulator through large access hole.
5. To install, reverse removal procedure.

REAR DOOR WINDOW FRONT GUIDE AND BRACKET ASSEMBLY—"A-39" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. Remove window front up-travel stop from guide ("5", Figure 6-108).
3. Remove inside locking rod to lock connecting link bolt ("15", Figure 6-100). Pull locking rod assembly downward through guide bracket.
4. With window in full-up position, loosen front guide upper and lower attaching bolts ("8" and "9", Figure 6-108), remove guide through access hole.
5. To install, reverse removal procedure. Adjust guide for proper window operation as described in door window adjustment procedure.

REAR DOOR WINDOW REAR GUIDE "A-39" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. With window in full-up position, remove rear guide upper and lower attaching bolts ("6" and "7", Figure 6-108). Remove guide through access hole.
3. To install, reverse removal procedure. Adjust guide for proper window operation as described in door window adjustment procedure.

REAR DOOR WINDOW FRONT GUIDE—"B-39" and "C-39, 49 and 69" Styles

Removal and Installation

1. Remove door trim assembly and inner panel water deflector.
2. With window in full-up position, remove front up-stop ("9", Figure 6-112) from guide.
3. Remove front guide upper and lower attaching bolts ("8" and "15", Figure 6-112).
4. Pull guide down and rearward to disengage from window roller assembly; remove guide through access hole.
5. To install, reverse removal procedure. Adjust guide for proper window operation as described in door window adjustment procedure.

REAR DOOR WINDOW REAR GUIDE—"B-39" and "C-39, 49 and 69" Styles

Removal and Installation

1. Removal door trim assembly and inner panel water deflector.
2. With window in full-up position, remove rear up-stop ("3", Figure 6-112) from guide.
3. Remove rear guide upper and lower attaching bolts ("1" and "2", Figure 6-112).
4. Pull guide down and forward to disengage from window roller, remove guide through access hole.
5. To install, reverse removal procedure. Adjust guide for proper window operation as described in door window adjustments.

REAR DOOR WINDOW GLASS RUN CHANNEL—All "A&X" Closed Styles

Removal and Installation

1. Remove door window as previously described.
2. With finger pressure, squeeze run channel together and gently pull run channel out of rear door upper frame.

3. To install, reverse removal procedure.

REAR DOOR WINDOW GLASS RUN CHANNEL—All "B" Closed Styles

Removal and Installation

1. Remove rear door window assembly as previously described.
2. Pull run channel into window opening to disengage run channel clips from door upper frame and remove run channel from door.
3. To install, reverse removal procedure. Prior to installation, apply a continuous bead of caulking compound to door upper frame from beltline to beltline to effect a weathertight seal between door frame and run channel. If preferred, sealer can be applied to run channel rather than door upper frame.