

SECTION 01-11 Glass, Frames and Mechanisms

SUBJECT	PAGE	SUBJECT	PAGE	
ADJUSTMENTS		REMOVAL AND INSTALLATION (Cont'd.)		
Door Glass, Front	01-11-27	Relay / Timer	01-11-26	
Door Glass, Rear	01-11-28	Switch	01-11-23	
DESCRIPTION AND OPERATION		Window	01-11-26	
Defroster, Rear	01-11-2	Window Motor	01-11-24	
Window Switches	01-11-1	Window Regulator, Front	01-11-13	
LUBRICATION		01-11-6	Window Regulator, Rear	01-11-15
MAJOR SERVICE OPERATIONS		Window Switch Connector Wire	01-11-23	
Grid Wire Service	01-11-26	Window, Rear	01-11-19	
Terminal Service	01-11-27	Windshield/Rear Window Glass—Urethane Seal	01-11-16	
REMOVAL AND INSTALLATION		SPECIAL SERVICE TOOLS	01-11-29	
Defroster, Rear	01-11-25	SPECIFICATIONS	01-11-29	
Door Glass Run Assembly, Front	01-11-11	TESTING		
Door Glass Run Assembly, Rear	01-11-12	Defroster, Rear	01-11-9	
Door Glass Stabilizer Assembly, Front	01-11-11	Grid Wire Test	01-11-9	
Door Glass, Front	01-11-10	Switch Test	01-11-9	
Door Glass, Rear	01-11-10	Switch Tests	01-11-7	
Glass and Channel Assembly, Rear Door	01-11-15	Window Down Module, One Touch	01-11-8	
Liftgate Glass	01-11-24	Window Motor	01-11-6	
Mouldings	01-11-16	VEHICLE APPLICATION	01-11-1	
Quarter Window	01-11-20			

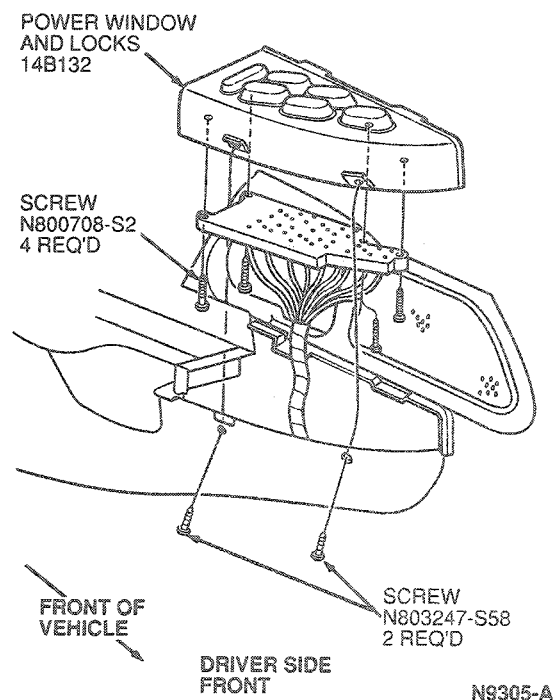
VEHICLE APPLICATION

Taurus/Sable.

DESCRIPTION AND OPERATION

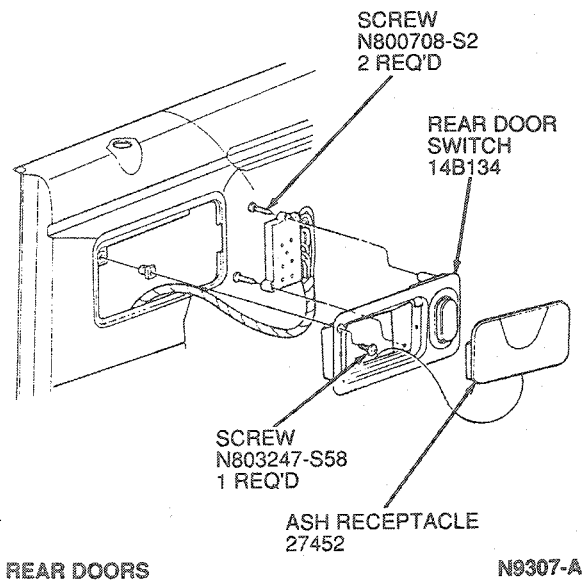
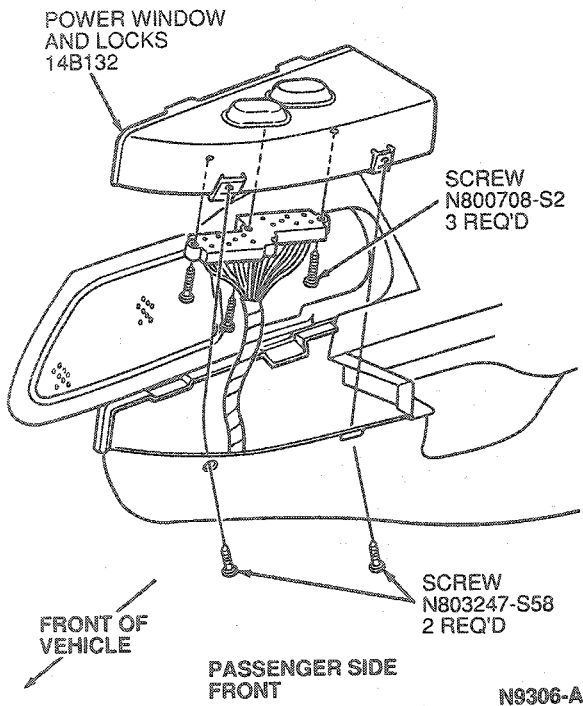
Window Switches

The power window switches are located on the front door trim panels. The master control switch is located on the driver's armrest and can be used to activate any or all of the power windows from one location.



DESCRIPTION AND OPERATION (Continued)

A single power window switch is located on the front passenger's armrest and on the rear passengers' door trim panels. This switch allows activation of the power window for the individual doors only.



Defroster, Rear

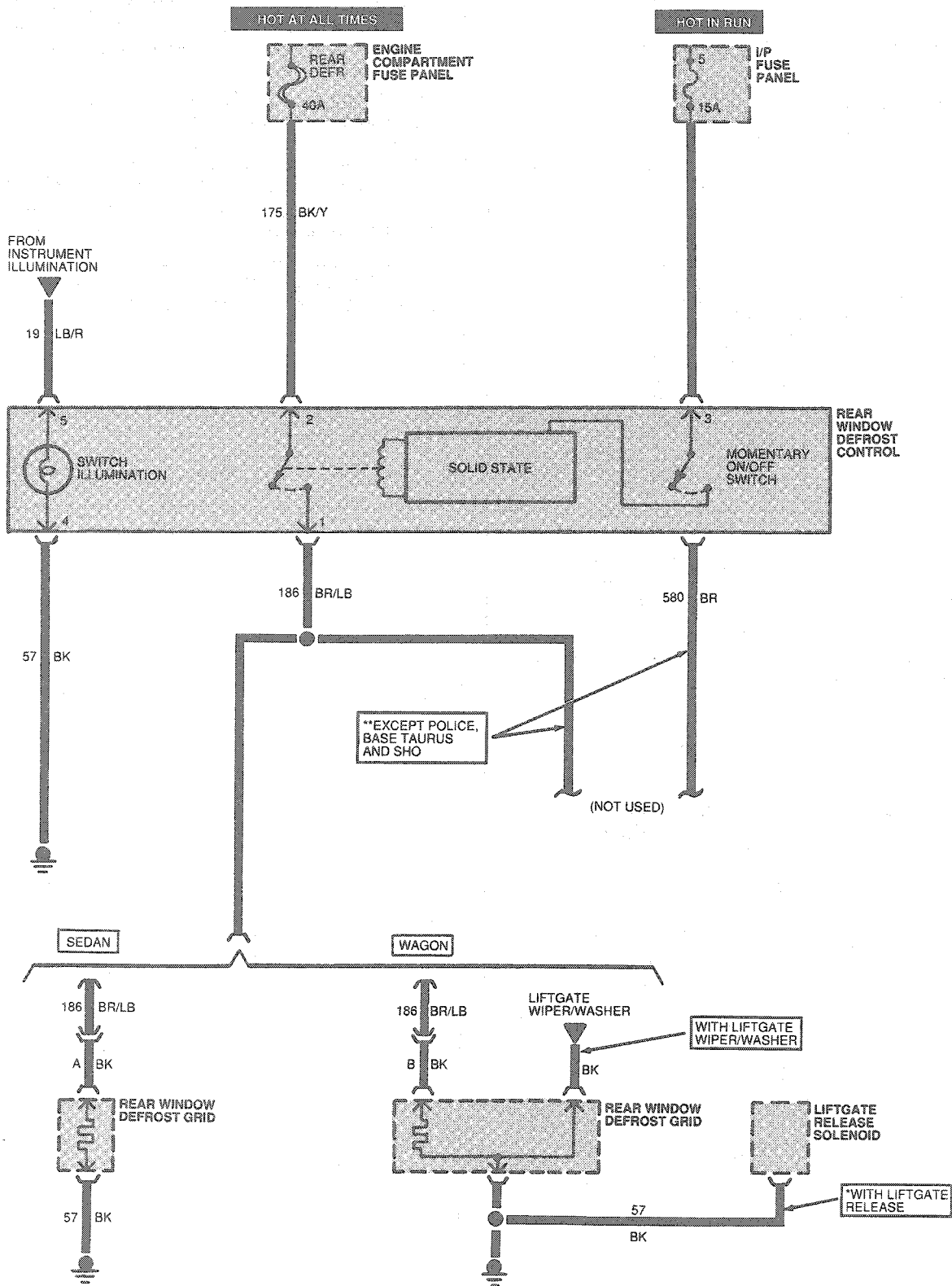
When the control switch is activated by the push button, current is directed to the grid wires on the rear window. The heated grid wires keep the rear window clear of fog or ice.

The integral timer for Taurus and remote timer for Sable automatically turn off the heating grid after approximately 10 minutes of operation. If more than 10 minutes of use is needed, the grid can be reactivated for another 10 minutes by pushing the push button to the ON position. This operation can be repeated as required.

Power for the control timer and relay coil comes from the RUN terminal of the ignition switch and from a wire containing a fuse link connected to the starter relay.

DESCRIPTION AND OPERATION (Continued)

Taurus



N4996-A

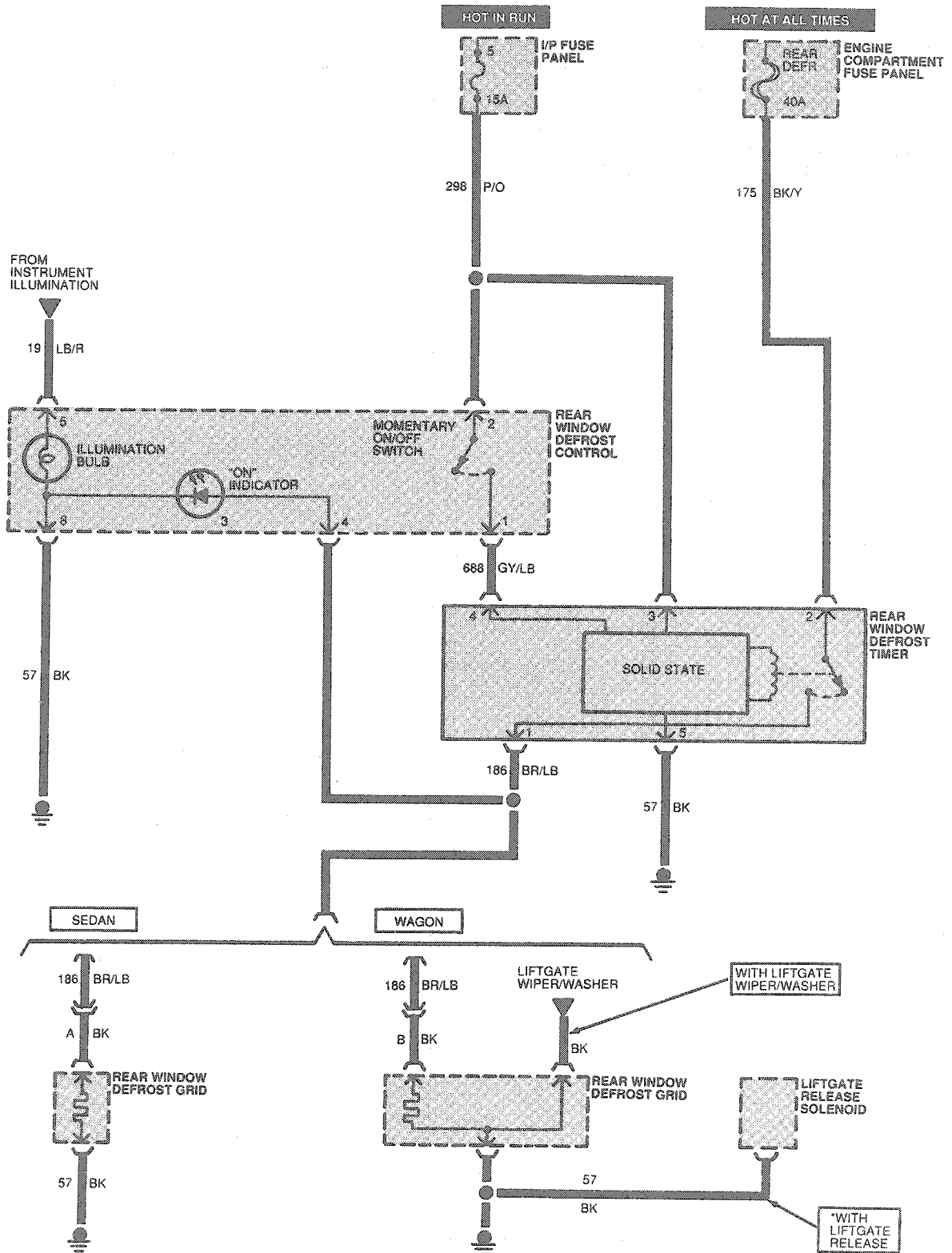
DESCRIPTION AND OPERATION (Continued)**Sable**

The rear window defrost grid is fed through the relay contacts from the fuse link wire. The input to the rear defrost control assembly for Taurus or timer / relay module for Sable from the ignition switch determines if the relay contacts will stay closed when activated by the ON-OFF button. When the ignition switch is in RUN position, moving the button to ON closes the relay contacts and also activates the timing circuit. The relay contacts will remain closed until they are opened by the timing circuit, the button is depressed to the OFF position, or the ignition is turned to the OFF position.

The circuit is protected by a fuse located in the fuse panel and a fuse link.

The operating button is spring-loaded to return from ON or OFF to its center (normal) position.

DESCRIPTION AND OPERATION (Continued)



N4999-A

DESCRIPTION AND OPERATION (Continued)

As soon as the switch is depressed to the ON position, it electrically connects power to energize the timer relay coil, causing the normally open relay load contacts to close and provide power to the indicator and the rear window grid wires. The grid wires will continue to receive power for approximately 10 minutes.

The control can be deactivated before automatic time out by momentarily depressing it to the OFF position or when the ignition switch is turned to the OFF position.

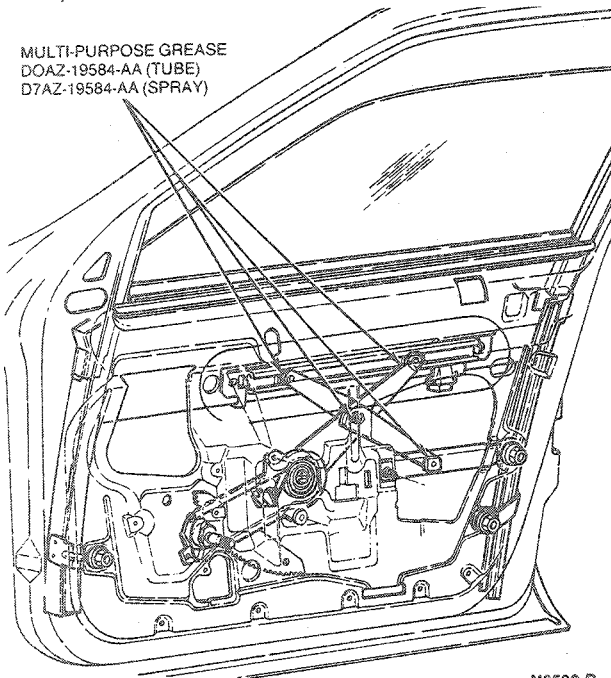
For individual wiring harness applications, refer to Section 18-01.

LUBRICATION

Lubricate entire outer surface prior to assembly with Multi-Purpose Grease (Spray) D7AZ-19584-AA (ESB-M1C106-B and ESR-M1C159-A) or equivalent. Use a generous amount of Multi-Purpose Grease (Tube) DOAZ-19584-AA (ESB-M1C93-A and ESR-M1C159-A) or equivalent on tube run for smooth operation.

Door, Front

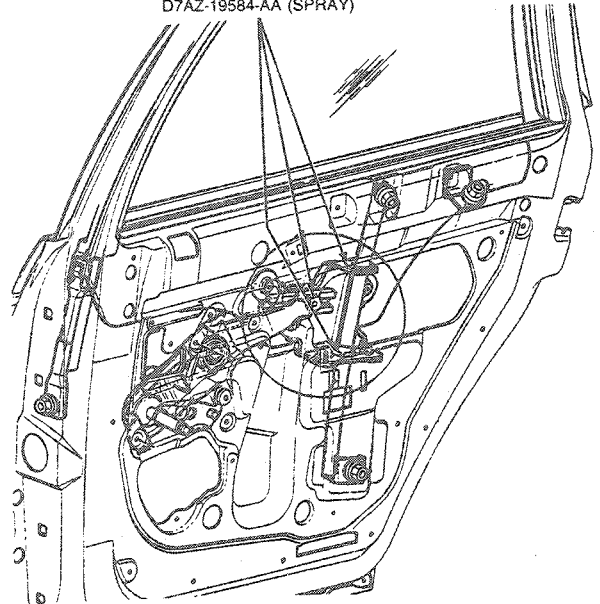
MULTI-PURPOSE GREASE
DOAZ-19584-AA (TUBE)
D7AZ-19584-AA (SPRAY)



N6590-B

Door, Rear

MULTI-PURPOSE GREASE
DOAZ-19584-AA (TUBE)
D7AZ-19584-AA (SPRAY)



N6591-B

TESTING

Tools Required:

- Rotunda Digital Volt-Ohmmeter 007-00001

Window Motor

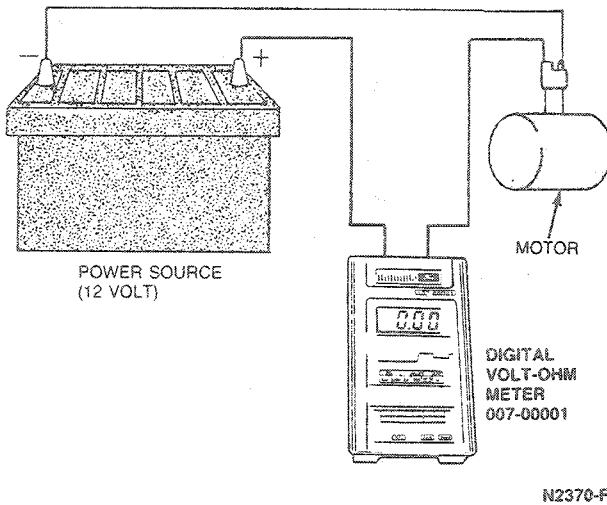
Permanent Magnet Type

To test the current draw of a power window motor, remove the motor and drive assembly from the vehicle as outlined.

1. Connect an external power source (power-pac or a fully charged battery) to motor with an ammeter, Rotunda Digital Volt-Ohmmeter 007-00001 or equivalent, in series as shown.

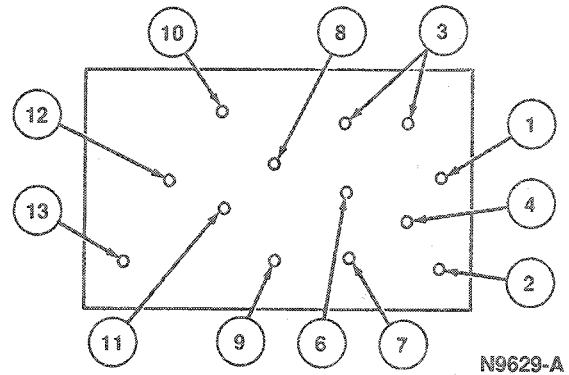
TESTING (Continued)

- Operate motor and observe current draw. The current draw for the no-load test should not exceed specification and should not fluctuate. Reversal of motor wire connections will reverse the direction of motor rotation. Replace the motor if the current draw exceeds 5 amps at 12.8 volts.



- With switch in lower RH rear position, there should be continuity between Terminals 11, 12 and 13.
- With switch in lower LH front position, there should be continuity between 1, 2, 4, 6, 8, 9, 10 and 11.
- With switch in lower LH rear position, there should be continuity between Terminals 10, 12 and 13.

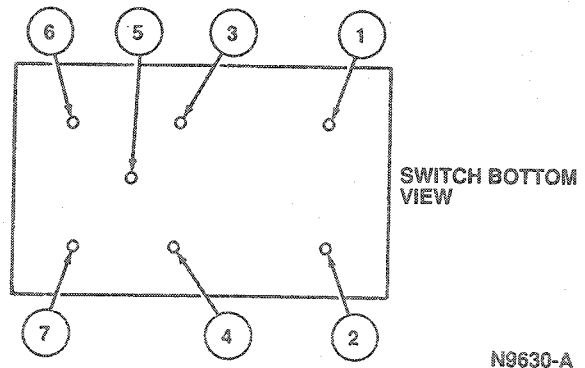
Master Switch (Bottom Switch)



Single Switch

- With the switch in the NEUTRAL position, there should be continuity between terminals 6 and 3 and terminals 7 and 4.
- With the raised portion of the switch rocker knobs pushed (to close the windows), there should be continuity between terminals 4 and 5 and terminals 3 and 6.
- With the depressed portion of the switch rocker knobs pushed (to open the windows), there should be continuity between terminals 5 and 6 and terminals 4 and 7.
- If the switch does not test as stated, replace the switch assembly.

Single Switch (Bottom View)



Switch Tests

Testing of the power window switches should be performed with the switches removed from the vehicle. Use a self-powered test lamp or Rotunda Digital Volt-Ohmmeter 007-00001 or equivalent.

Master Switch

- With switch in the NEUTRAL position, there should be continuity between terminals 1, 2, 3, 4, 6, 8, 9, 10 and 11, and Terminals 12 and 13.
- With the lock out switch button depressed into its detent position, there should be continuity between Terminals 1, 2, 3, 4, 6, 8, 9, 10 and 11.
- With switch in raise RH front position, there should be continuity between Terminals 1, 3, 4, 6, 8, 9, 10, and 11.
- With switch in raise RH rear position, there should be continuity between Terminals 1, 2, 3, 4, 6, 8, 10 and 11.
- With switch in raise LH front position, there should be continuity between Terminals 1, 12 and 13.
- With switch in raise LH rear position there should be continuity between Terminals 1, 2, 3, 4, 6, 9 and 10.
- With switch in lower RH front position, there should be continuity between Terminals 4, 12 and 13.

TESTING (Continued)

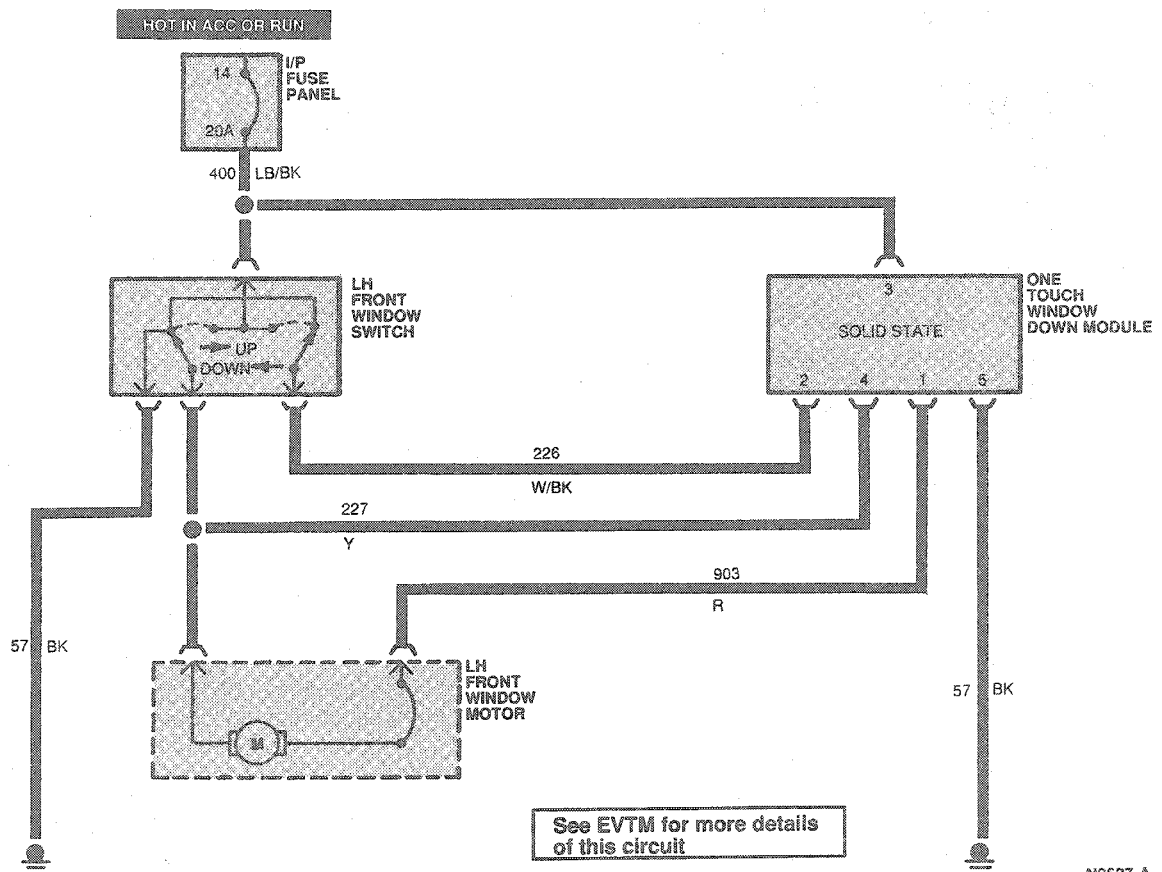
Window Down Module, One Touch

Functional Tests

1. With the ignition switch in the accessory position, depress the driver's side window switch in the down position for less than 0.4 second.
 - The window will continue downward until the window is fully lowered.
 - If the window stops beforehand then possible binding within the window mechanism could exist.
2. Raise the window to full up position.
3. Depress the driver's side window switch in the down position. Momentarily depress the switch again in either the up or down position.
4. Raise the window to full up position.
5. Depress the driver's side window for more than 0.5 second.
 - The window will move downward until the switch is released.

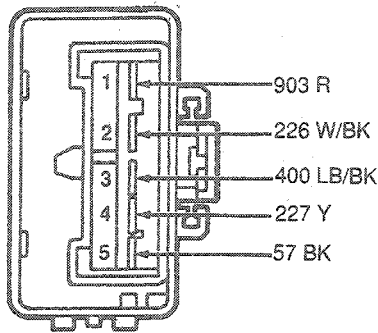
Electrical Tests

1. Use a 12 volt test lamp to test the one touch control module.
2. With the ignition switch in the accessory position, connect a test lamp between pin 5, circuit 57 (BK), and pin 3, circuit 400 (LB/BK). The lamp should light.
3. With the test lamp connected to pin 3, circuit 400 (LB/BK), connect the other end of the test light to:
 - Pin 1, circuit 903 (R). The lamp should light.
 - Pin 2, circuit 226 (W/BK). The lamp should light.
 - Pin 4, circuit 227 (Y). The lamp should light.
4. With the one touch control module removed from the vehicle, check continuity between pins 1, circuit 903 (R) and 2, circuit 226 (W/BK). The lamp should light.
5. Check continuity between pins 1, circuit 903 (R) and 3, circuit 400 (LB/BK). The lamp should not light.



N9627-A

TESTING (Continued)



N9291-A

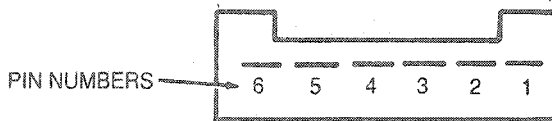
Defroster, Rear

Control Assembly Test

Timer/Relay

Taurus

1. Ground Pin 4 and connect a jumper wire between Pins 3 and 2.
2. Apply power to Pin 2. The indicator should not light.
3. Momentarily actuate control to the ON position. The indicator should come on and stay on after the control returns to the normal position.
4. The indicator should go off under the following conditions:
 - a. If control is depressed to OFF.
 - b. If power to ignition switch accessory terminal is removed or approximately 10 minutes have elapsed.
5. Apply 12 volts power to Pin 5. The ISO bulb should light.



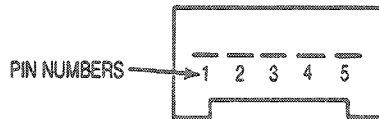
CONTROL ASSY

K16733-A

Sable

1. Ground Pin 5 and connect a jumper wire between Pins 2 and 3. Connect a 12 volt test lamp between Pin 1 and ground.
2. Supply power to Pin 2. The test lamp should not light.
3. Momentarily connect Pin 4 to 2. The test lamp should come on.

4. The test lamp should go off under the following conditions:
 - a. Terminal 4 is momentarily connected to Pin 2.
 - b. Jumper wire between Pins 2 and 3 is removed.
 - c. Approximately 10 minutes have elapsed from the time the switch was turned on.



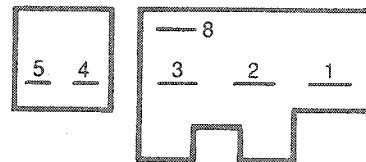
CONTROL ASSY

K14567-A

Switch Test

Sable

1. Check switch continuity between Pins 1 and 2 while holding button in.
2. Check ON indicator by applying 12 volts to Pin 4 while grounding Pin 8.
3. Check graphics lighting by applying 12 volts to Pin 5 while grounding Pin 8.



K16735-A

Grid Wire Test

1. Using a strong light inside vehicle, visually inspect wire grid from outside. A broken grid wire will appear as a brown spot.
2. Run engine at idle. Set control switch to ON. The indicator lamp should come on.
3. Working inside vehicle with a 12 volt DC voltmeter such as Rotunda Digital Volt-Ohmmeter 007-00001 or an equivalent, contact broad red-brown strips on sides of rear window. The meter should read 10-13 volts. A lower voltage reading indicates a loose ground wire (pigtail) connection at grounded side of glass.
4. Contact a good ground point with negative lead of meter. The voltage reading should not change.

TESTING (Continued)

5. With negative lead of the meter grounded, touch each grid line of heated rear window at its midpoint with positive lead. A reading of approximately 6 volts indicates that the line is good. A reading of zero volts indicates that the line is broken between midpoint and the positive side of the grid line. A reading of 12 volts indicates that the circuit is broken between midpoint of grid line and ground.

REMOVAL AND INSTALLATION

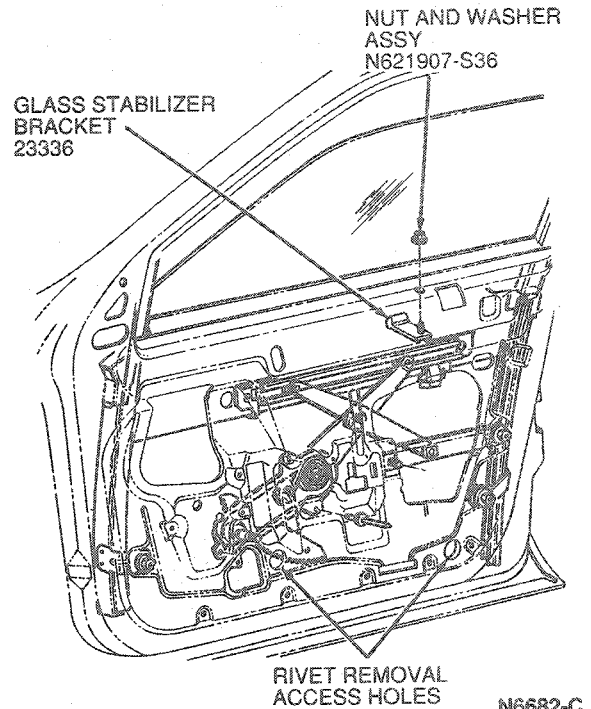
Door Glass, Front

Removal

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Remove inside door belt weatherstrip assembly.
3. Lower glass to access holes in door inner panel. Remove two nuts retaining glass to glass bracket.
4. Loosen nut and washer retaining door glass stabilizer.
5. Remove glass by tipping it forward then removing from between door belt opening to outboard side of door.

Installation

1. Install glass into door at belt. Ensure that glass is set within front and rear glass run retainers.
2. Position glass to glass bracket. Install two nuts to secure glass to glass bracket. Tighten to 4-7 N-m (3-5 lb-ft).
3. Install inside door belt weatherstrip assembly.
4. Raise glass to within 75mm (3 inches) of full-up position and adjust glass as outlined. Adjust and tighten door glass stabilizer as outlined.
5. Install door trim panel and watershield. Refer to Section 01-05.



Door Glass, Rear

Removal

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Remove inner door belt weatherstrip by gently pulling weatherstrip from door flange.
CAUTION: Prior to removing rivet center pins, a suitable block support should be inserted between the door outer panel and glass to stabilize the glass during rivet pin removal. Use a 1/4-inch diameter drill to drill out remainder of rivet, using care not to enlarge sheet metal holes and damage the plastic retainer and spacer.
3. Remove the glass-to-glass bracket attaching rivets.
4. Remove glass stabilizer bracket retaining screw and washer and bracket.
5. Lift the glass up between the door belt opening and remove from the door.

Installation

Tools Required:

- Heavy Duty riveter D80L-23200-A

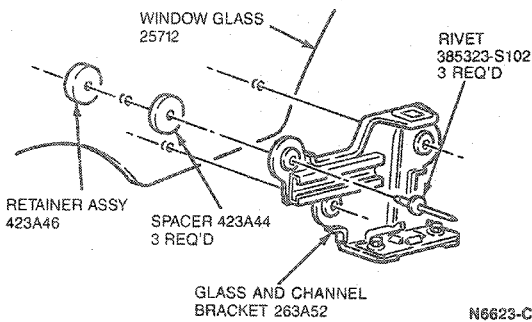
1. Install plastic spacer and retainers into main glass. Install main glass into door.

NOTE: Two 1/4-20 x 1-inch bolts and two 1/4-20 nut and washer assemblies may be used as alternates for glass retention. However, torque must not exceed 4-7 N-m (36-61 lb-in).

REMOVAL AND INSTALLATION (Continued)

NOTE: Equivalent metric retainers may be used.

2. Secure glass-to-glass bracket using Heavy Duty Riveter D80L-23200-A or equivalent to install two rivets.
3. Install inner door belt weatherstrip, using hand pressure to push weatherstrip onto door flange.
4. Install glass stabilizer bracket and retaining screw and washer. Tighten to 7-11 N·m (5-8 lb-ft).
5. Cycle glass to ensure smooth operation.
6. Install watershield and door trim panel. Refer to Section 01-05.



Door Glass Stabilizer Assembly, Front

Refer to the illustration under Glass Adjustment and Glass Run, Removal and Installation.

Removal

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Remove nut and washer assembly attaching stabilizer to door inner panel at belt.
3. Remove stabilizer.

Installation

1. With glass in full-up position, install stabilizer assembly into locator hole in door inner panel.
2. Set stabilizer pad to slightly touch door glass. Tighten retaining nut and washer to 7-11 N·m (5-8 lb-ft).
3. Install door trim panel and watershield. Refer to Section 01-05.

Door Glass Run Assembly, Front

Removal

CAUTION: Removal of the front door glass run is recommended only if damage occurs to the run assembly. Due to the fragile make-up of the component, unnecessary removal may cause damage and/or breaks in the aluminum or the light gauge steel carrier insert within the rubber seal of the run assembly.

1. Remove the following window glass components as outlined:
 - Inside and outside door belt weatherstrips
 - Front glass run retainer screw
 - Front door glass

CAUTION: The front door glass run requires very CRITICAL AND SPECIAL-TYPE HANDLING. The glass run must be handled by the center section only—NEVER FROM FRONT OR REAR LEGS. The glass runs must be handled in a manner that prevents damage to the A- and B-pillar corners.

The glass run must be handled with special care even when installing into the door window glass opening. The front leg of the glass run with the front run retainer attached is eased into the door at the door belt opening.

2. To remove glass run assembly, carefully pull run assembly off window opening pinch weld and remove through window opening.

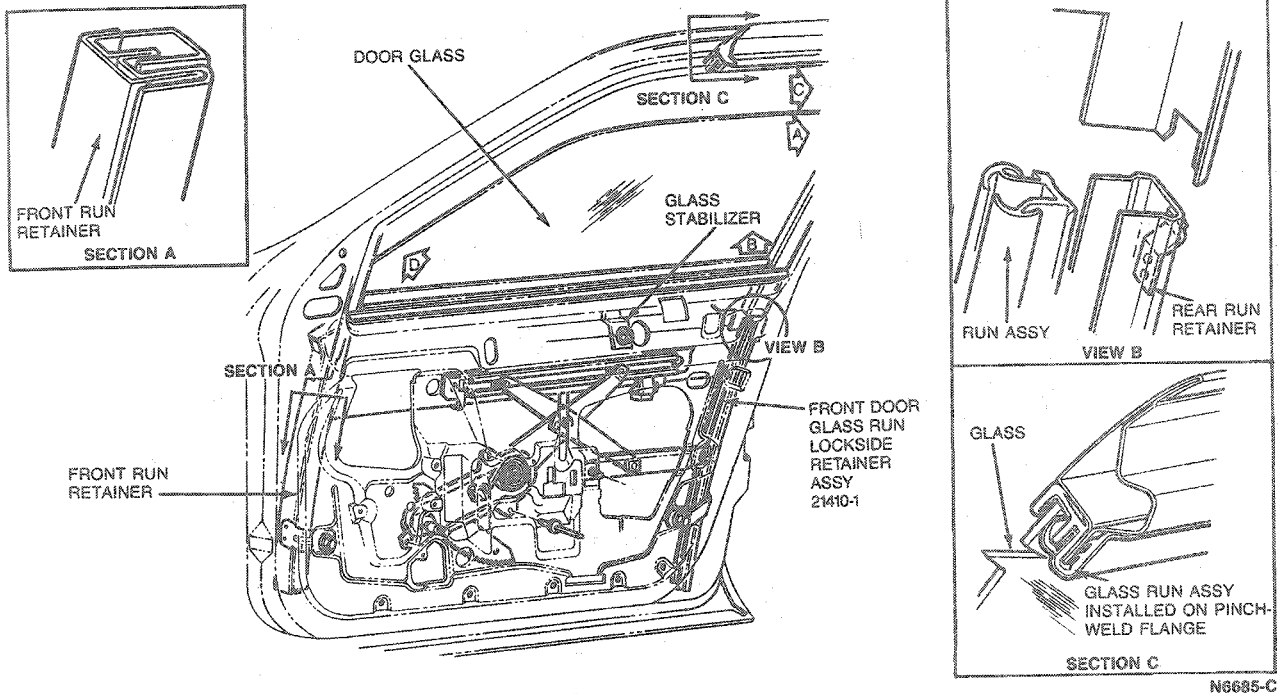
Installation

NOTE: This procedure requires two people, one inserting the front leg and another person holding the remainder of glass run at center section to prevent bending. After the front (A-pillar section) and the rear (B-pillar section) of the glass run assembly is inserted into the door, the glass run is installed per the following procedure:

1. Locate moulded B-pillar corner of glass run from pinch weld flange to upper corner of door frame (arrow A).
2. Apply hand pressure to glass run from belt line area of B-pillar and push run upward (vertically) into corner. Ensure run is fully flush with sheet metal.
3. While applying upward pressure along B-pillar (arrow B), install run onto door frame pinch weld along B-pillar starting from top and moving downward. Use hand pressure to ensure glass run is flush with outer door panel sheet metal.
4. Use hand pressure from center of upper door frame area (arrow C), and push glass run rearward along pinch weld flange into B-pillar upper corner. Ensure glass run is flush with outer door panel sheet metal at corner.
5. While applying hand pressure rearward, install glass run onto door frame pinch weld along upper door frame starting from B-pillar and going to A-pillar.

REMOVAL AND INSTALLATION (Continued)

6. Use hand pressure from lower A-pillar leg of glass run and push run upward (vertically) into corner (arrow D). Ensure run is fully flush with outside sheet metal.
7. While applying upward hand pressure along A-pillar, install glass run onto door frame pinch weld. Use hand pressure to fully seat run. Ensure glass run leg is fully seated.
8. Install front retainer to door inner panel with nut and washer assembly. Tighten to 9-14 N·m (7-10 lb-ft).
9. Insert glass run leg at B-pillar into rear retainer and install retainer by telescoping upper end into door reinforcement and retaining nut and washer assembly. Tighten to 9-14 N·m (7-10 lb-ft).



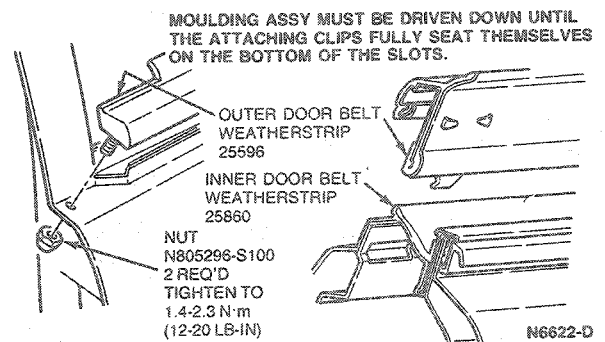
Door Glass Run Assembly, Rear

CAUTION: Removal of the rear door glass run is recommended only if damage to the run assembly occurs. Due to the fragile make-up of the component, unnecessary removal may cause damage and/or breaks in the light gauge metallic carrier insert within the rubber seal of the run assembly.

Removal

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Remove two outer door belt moulding retention nuts, and remove moulding by disengaging clips.
3. Remove inner door belt weatherstrip by gently pulling weatherstrip from door flange.
4. Remove glass stabilizer retaining screw, washer and stabilizer.
5. Remove door glass as outlined.
6. Remove regulator assembly, if necessary, as outlined.

7. Remove glass run from door by gently pulling run from pinch weld in door.

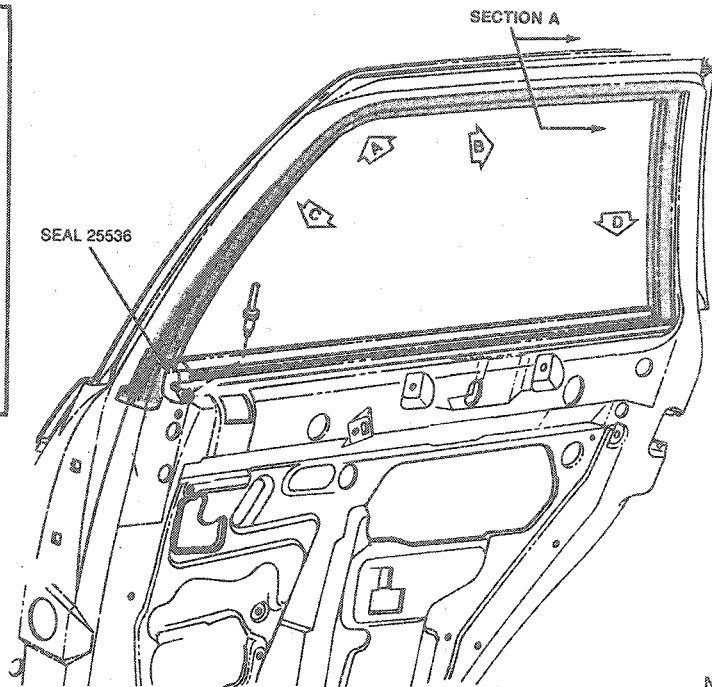
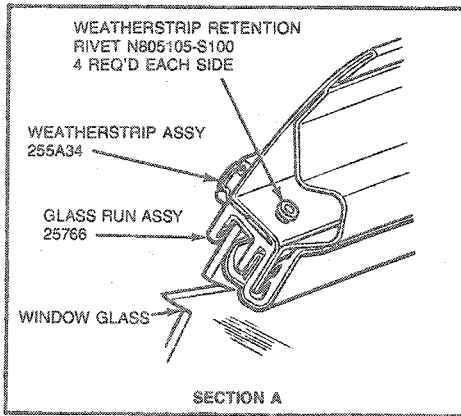


Installation

CAUTION: Special care should be taken when handling glass run. The glass run must be handled by the center section only. The moulded corner for the B- and C-pillars must be handled with special care when installing the corners to avoid damage to the metallic insert.

REMOVAL AND INSTALLATION (Continued)

1. Feed glass run ends through window opening and into weatherstrip belt opening.
2. Position moulded B-pillar corner to upper corner of door frame (arrow A).
3. Working from B-pillar corner to rear, use hand pressure to push run into upper frame until flush with upper frame (arrow B).
4. Working from top to bottom of B-pillar, use hand pressure to push run assembly into B-pillar (arrow C).
5. Working from top to bottom of C-pillar (arrow D), use hand pressure to push run assembly into C-pillar.
6. Install regulator assembly, if removed, as outlined.
7. Install door glass as outlined.
8. Install inner door belt weatherstrip using hand pressure to push weatherstrip onto door flange.
9. Install exterior door belt weatherstrip by engaging retention clips and installing two retaining nuts. Tighten nuts to 1.4-2.3 N·m (12-20 lb-in).
10. Install door trim panel and watershield. Refer to Section 01-05.



N6621-F

Window Regulator, Front

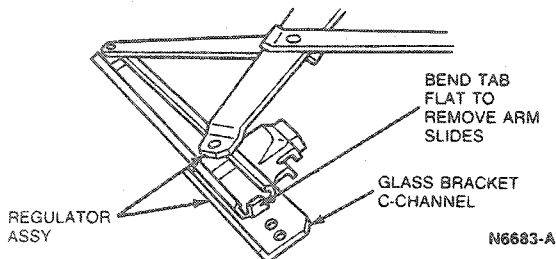
WARNING: IF THE REGULATOR COUNTERBALANCE SPRING MUST BE REMOVED OR REPLACED FOR ANY REASON, ENSURE THAT THE REGULATOR ARMS ARE IN A FIXED POSITION PRIOR TO REMOVAL TO PREVENT POSSIBLE INJURY DURING C-SPRING UNWIND.

Removal

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Remove inside door belt weatherstrip and glass stabilizer.
3. Remove door glass as outlined.
4. Remove two nut and washer assemblies attaching the equalizer bracket.
5. Remove three rivets (manual) or four rivets (power) attaching the regulator base plate to door inner panel.
6. Remove regulator and glass bracket assembly from vehicle.
7. Working on a bench, carefully bend tab flat to remove arm slides from glass bracket C-channel.

REMOVAL AND INSTALLATION (Continued)

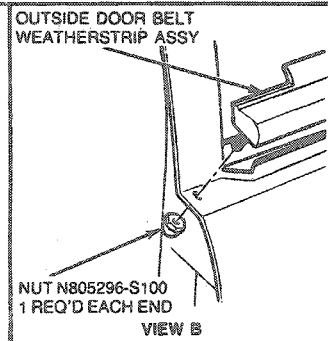
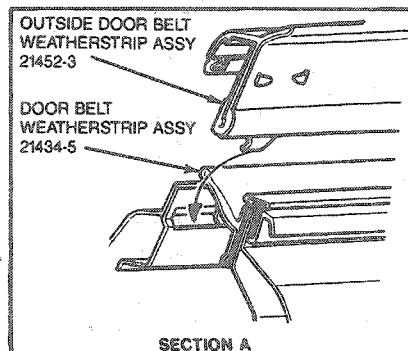
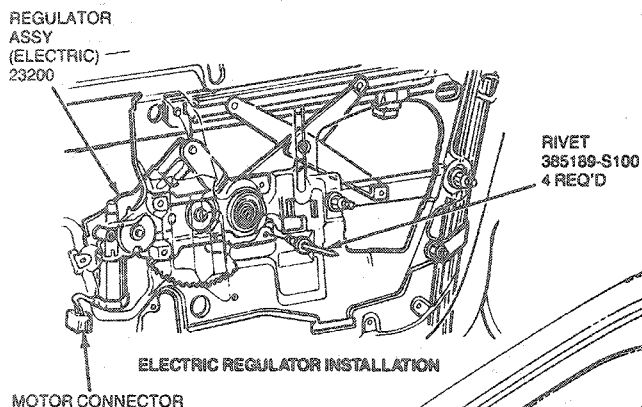
8. Install new regulator arm plastic guides into glass bracket C-channel and bend tab back to 90 degrees. (Use care not to break tab, if tab is cracked or broken, replace glass bracket assembly. Ensure rubber bumper is installed properly on new glass bracket, if replacement is made).



Installation

The glass bracket assembly and regulator assembly are installed into the vehicle as one assembly. The glass bracket assembly may be disassembled from the regulator as described in Steps 7 and 8 of Window Regulator, Removal.

1. Install regulator with preassembled glass bracket into vehicle. Set the regulator base plate to door inner panel using base plate locator tab as a guide.
NOTE: Two 1/4-20 x 1-inch bolts and two 1/4-20 nut and washer assemblies may be used as alternates for glass retention. However, torque must not exceed 4-7 N-m (3-5 lb-ft). Equivalent metric retainers may be used.
2. Install three (manual) or four (power) rivets (385189-S100) to attach regulator to door inner panel.
3. Install equalizer bracket.
4. Install inside door belt weatherstrip and glass stabilizer.
5. Lower regulator arms to access holes in door inner panel. Install door glass as outlined.
6. Adjust glass to ensure proper alignment with glass run. Cycle glass for smooth operation.
7. Install door trim panel and watershield. Refer to Section 01-05.



NUT AND WASHER N621906-S2 TIGHTEN TO 9-14 N-m (7-10 LB-FT)

RIVET 385189-S100 3 REQ'D MANUAL

MANUAL REGULATOR INSTALLATION

NUT AND WASHER N621906-S2 TIGHTEN TO 9-14 N-m (7-10 LB-FT)

NUT AND WASHER N621907-S36 2 REQ'D TIGHTEN TO 9-14 N-m (7-10 LB-FT)

N6684-D

REMOVAL AND INSTALLATION (Continued)**Window Regulator, Rear**

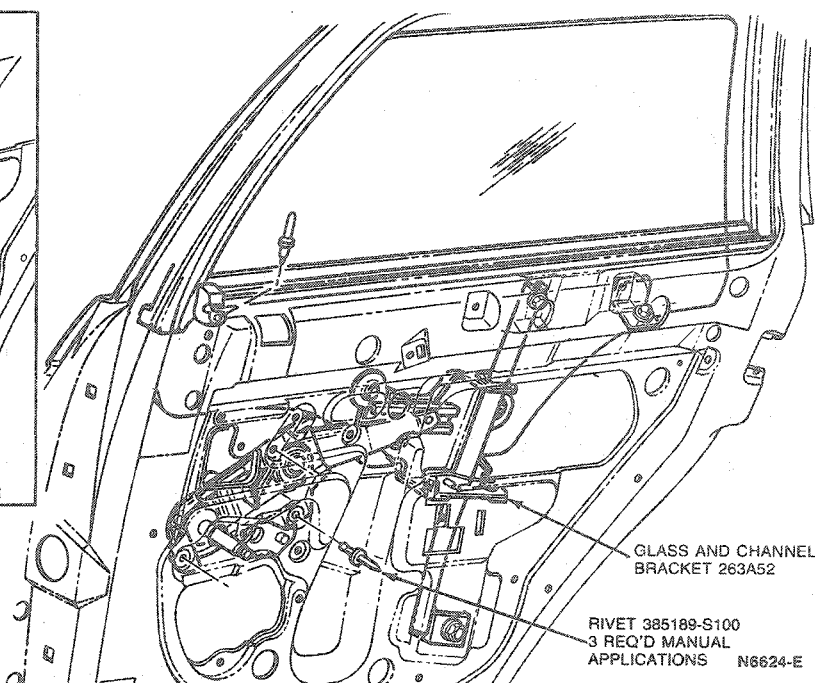
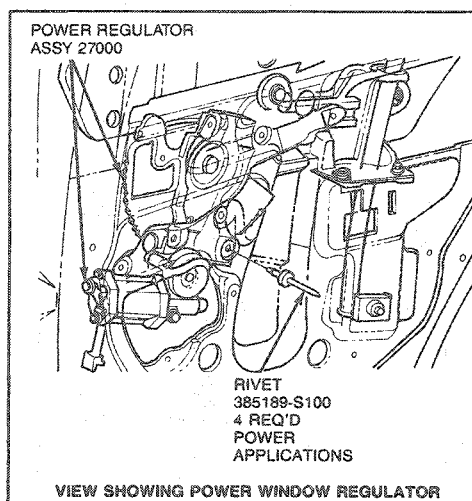
NOTE: Use access hole in door inner panel for removal and installation.

Removal

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Remove glass as outlined.
3. Remove three rivets (manual windows) or four rivets (power windows) attaching regulator mounting plate assembly to door inner panel.
4. Slide regulator arm plastic guides out of C-channel, and disconnect power wiring connector lift.
5. Remove window regulator from door.

Installation**Tools Required:**

- Heavy Duty Riveter D80L-23200-A
1. Install window regulator through the access hole in the rear door and slide regulator arm plastic guides into glass bracket C-channel.
NOTE: Equivalent metric retainers may be used.
 2. Install rivets (385189-S100) using Heavy Duty Riveter D80L-23200-A or equivalent, or 1/4-20 x 1/2-inch screw and washer assemblies and 1/4-20 nut and washer assemblies to secure regulator mounting plate to door inner panel.
 3. Cycle glass to check for smooth operation.
 4. Install watershield and door trim panel. Refer to Section 01-05.

**Glass and Channel Assembly, Rear Door****Removal**

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Prop glass in the full-up position and remove glass-to-glass bracket retaining rivets as outlined under Door Glass, Removal.
3. Remove screw and washer assembly attaching tube run at door belt.
4. Remove nut and washer attaching tube run bottom bracket to door inner panel.
5. Tilt run and bracket to remove C-channel from regulator arm plastic guide.

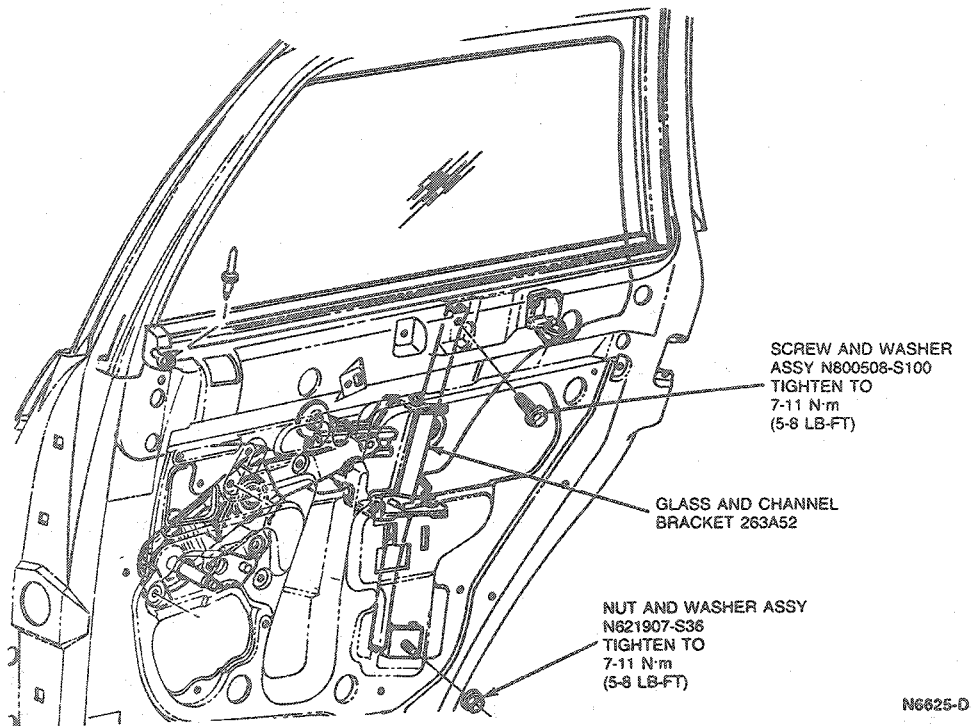
6. Remove glass and channel assembly from door.

Installation

1. Insert glass and channel assembly into door, and slide regulator arm plastic guide into C-channel.
2. Install nut and washer assembly attaching tube run bottom bracket to door inner panel and tighten to 7-11 N·m (5-8 lb-ft).
3. Install screw and washer attaching tube run to door belt panel and tighten to 7-11 N·m (5-8 lb-ft).
4. Install glass-to-glass bracket retaining rivets (or screws and nuts) as outlined.

REMOVAL AND INSTALLATION (Continued)

5. Install door trim panel and watershield. Refer to Section 01-05.



Mouldings

The windshield and rear window mouldings on most models are on the edge of glass. The moulding can be removed with the glass.

NOTE: Sable rear window does not have removable mouldings.

Windshield/Rear Window Glass—Urethane Seal

Removal

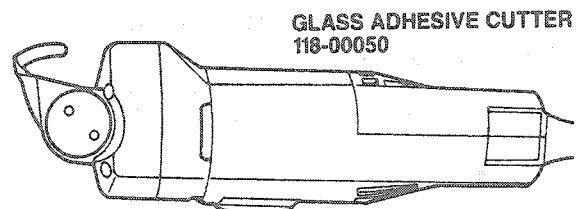
Tools Required:

- Glass Holding Tool D81T-33610-H
 - Rotunda Deluxe Glass Adhesive Cutter 163-00001
 - Rotunda Glass Adhesive Cutter 118-00050
1. Remove windshield wiper arms and blades, if rear window is being removed. Disconnect heated rear window on equipped models.
 2. Remove mouldings.
 3. Remove leaf screen. On rear window, remove finisher portion of moulding by zipping it out of moulding slot.

4. Remove windshield rear view mirror.
 - a. Loosen mirror mounting bracket setscrew.
 - b. Pull mirror assembly upward to remove from windshield retainer.
5. Use Rotunda Glass Adhesive Cutter 118-00050, or Rotunda Deluxe Glass Adhesive Cutter 163-00001 or equivalent to cut sealer. Refer to manufacturer's instructions when using tool.

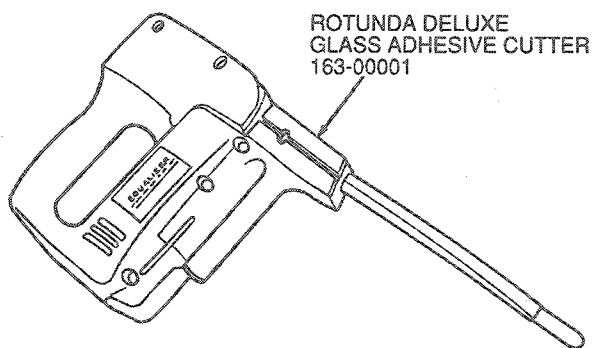
WARNING: SAFETY GLASSES AND GLOVES MUST BE WORN.

CAUTION: Use care to avoid damage to the instrument panel or rear package tray cover panel.



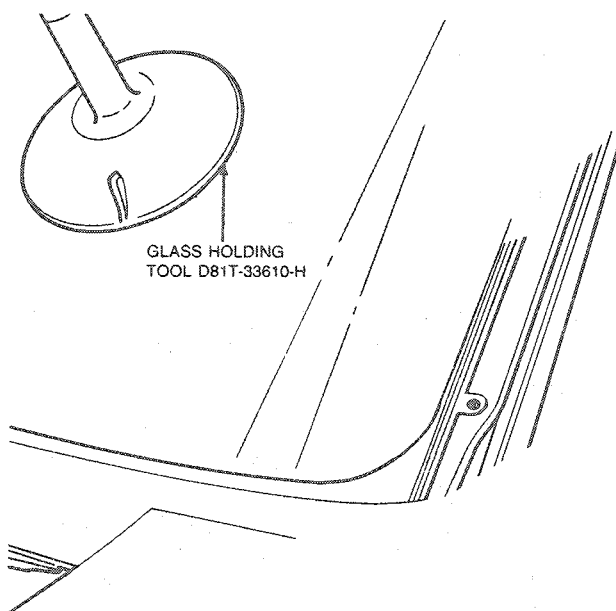
N6999-B

REMOVAL AND INSTALLATION (Continued)



N9628-A

6. Remove windshield / rear window and moulding assemblies from the vehicle using Glass Holding Tool D81T-33610-H or equivalent.



N6948-A

7. Remove any excess urethane, using care not to smear the urethane on component parts, crash pad and vinyl roof.
- NOTE: If the urethane has cured all the way through, it will not be necessary to remove the urethane which remains on the sheet metal.
8. Check flange sealing area for damaged sheet metal or foreign objects which may have caused, or may cause, glass breakage. Service metal, if necessary.

Installation

NOTE: Trim urethane left on the flange with a utility knife or razor blade until surface is smooth and free of cuts. If the urethane has cured it is not necessary to remove all the urethane which remains on the flange. However, at no point should the existing urethane material exceed 1.2mm (0.05 inch).

1. Using a clean brush, apply urethane metal primer WSB-M2G234-A or equivalent to any sheet metal that has been exposed along windshield / rear window opening flange. Apply Vinyl Foam Tape C6AZ-19627-A (ESB-M3G77-A) or equivalent along cowl and 100mm (4 inches) up the lower A-pillars.

NOTE: A minimum of 30 minutes is required for primer surface to dry.

2. Place windshield / rear window on a low stable work surface, inside up.
3. Clean windshield / rear window and install rear view mirror mounting bracket. Refer to Section 01-09.

NOTE: Wipe off immediately after application because it flash dries.

4. Using a lint-free cloth, wipe inside surface of glass around periphery in from edge with Urethane Glass Wipe WSB-M5B280-C as follows:
- Windshield—21.0mm (0.80 inch) along top and sides, 70.0mm (2.75 inch) along bottom.
 - Rear Window—21.0mm (0.80 inch) along top and sides, 30.0mm (1.20 inch) along bottom.

5. Install windshield / rear window moulding.
6. Properly align windshield / rear window glass to body.
- Place windshield / rear window glass on to the lower glass stops. Center it top and bottom, side-to-side. Adjust the lower glass stops if necessary.
 - Using masking tape or crayon, make alignment marks at points on four sides of both glass and window opening.

7. Remove windshield / rear window glass and moulding assemblies from vehicle and place it back on work table.
8. Thoroughly shake and stir urethane glass primer WSB-M2G314-C or equivalent to ensure uniform pigment mixing.
9. Using a clean brush, apply primer to inside glass edge 21mm (0.8 inch) wide along top and sides and 70mm (2.75 inch) wide along bottom windshield, and 30mm (1.20 inch) wide along bottom rear window.

NOTE: Apply a double bead of urethane along the cowl top and the bottom of windshield opening.

10. Apply an even bead of urethane WSB-M2G316-C around entire sheet metal flange using an air pressure cartridge gun. (Air line pressure should be around 40 psi.) The bead should be triangular in shape, 14mm (0.55 inch) high, and 8.0mm (0.33 inch) at base.

CAUTION: Allow all glass parts installed with urethane 24 hours to cure.

REMOVAL AND INSTALLATION (Continued)

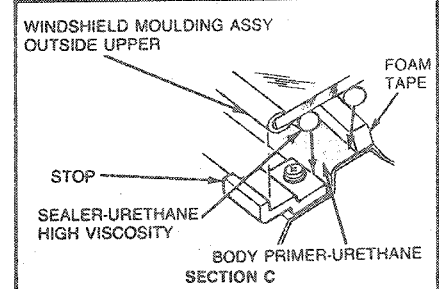
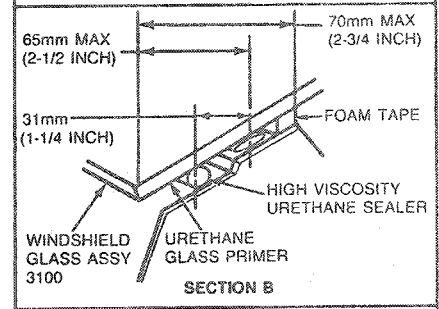
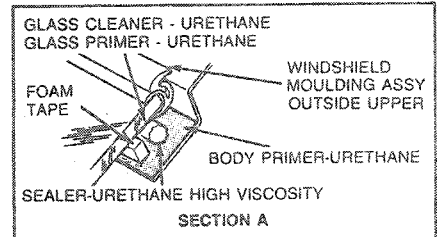
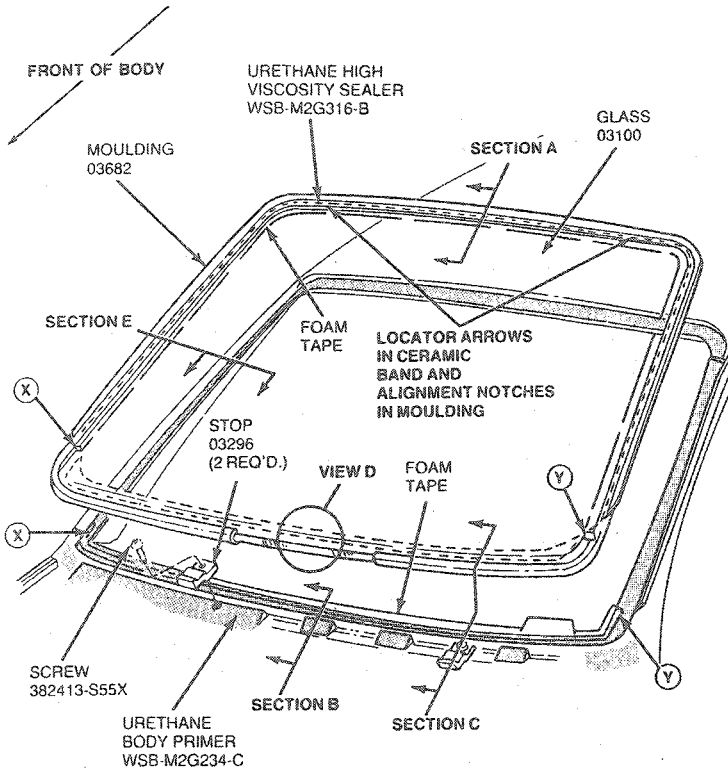
11. Install windshield / rear window assembly onto vehicle, taking care to align marks on glass to body. This must be done within 15 minutes of applying urethane.

12. Install windshield wiper arms, blades and leaf screen.

13. Install rear view mirror.

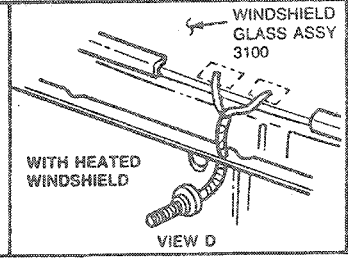
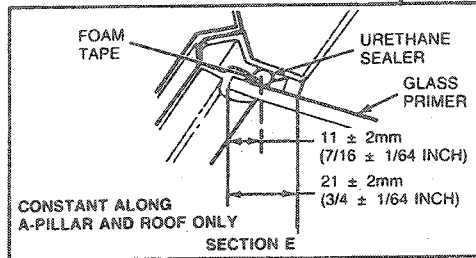
CAUTION: Use only urethane for service of air and water leaks in urethane seal.

Windshield



NOTE:

- WINDSHIELD-MOULDING ASSY TO BE INSTALLED AFTER GLASS IS CLEANED.
- USE ARROWS IN CERAMIC BAND AND NOTCHES IN MOULDING FOR MOULDING TO GLASS ALIGNMENT.
- MOULDING INSTALLATION TO BEGIN IN UPPER CORNERS, FULLY SEATING THRU RADIUS, THEN WORK MOULDING ONTO GLASS ALONG TOP, SIDES AND LOWER EDGES.
- FOAM TAPE TO BE APPLIED TO UNDERSIDE OF GLASS BETWEEN POINTS X AND Y AS SHOWN.
- FOAM TAPE IS TO BE APPLIED TO COWL TOP AS SHOWN.

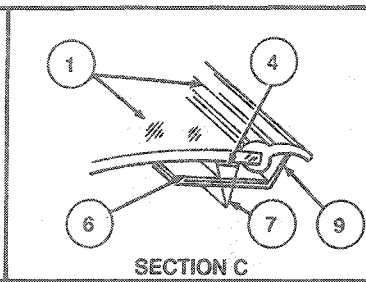
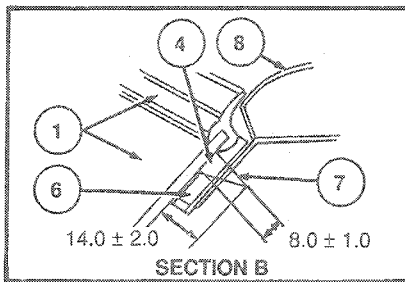
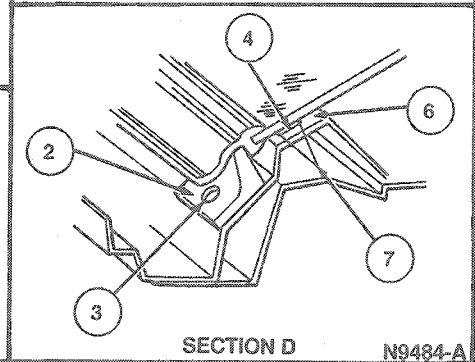
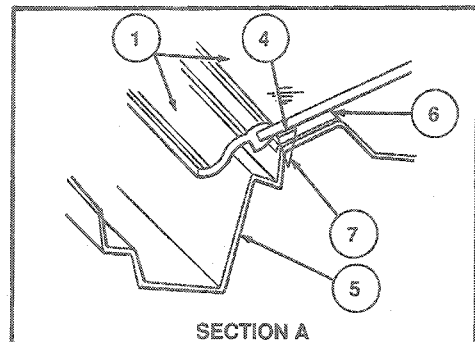
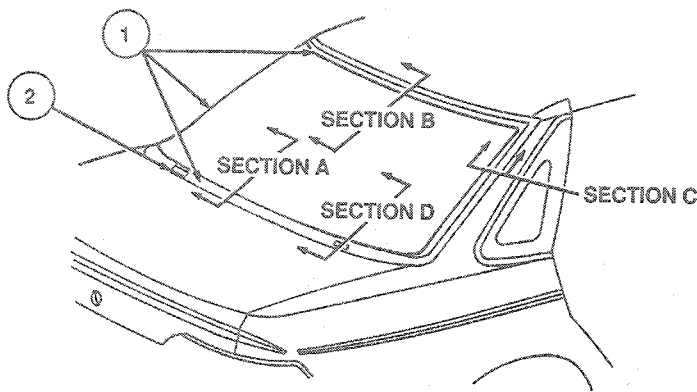


N6580-E

REMOVAL AND INSTALLATION (Continued)

Window, Rear

Taurus Sedan A



N9484-A

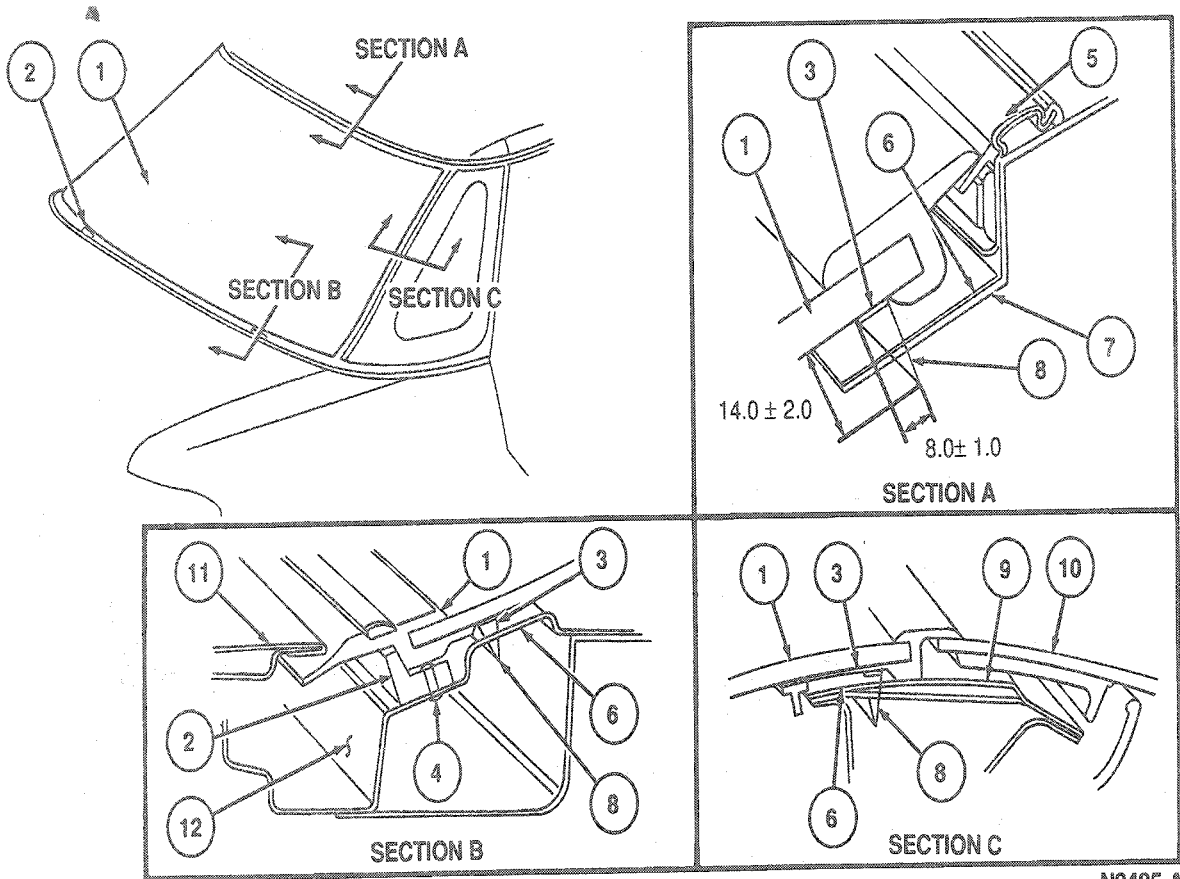
Item	Part Number	Description
1	422A12	Window Assy
2	42310	Back Window Lower Stop (2 Req'd)
3	372820-S36B	Rivet (2 Req'd)
4	WSB-M2G314-B (Black) WSB-M53280-C2 (Red)	Urethane Glass Primer Urethane Body Primer

Item	Part Number	Description
5	—	Package Tray Panel
6	WSB-M2G234-C	Urethane Body Primer (Black)
7	WSB-M2G316-B	High Viscosity Urethane Adhesive
8	—	Roof Panel
9	—	Quarter Panel

(Continued)

REMOVAL AND INSTALLATION (Continued)

Sable Sedan



N9485-A

Item	Part Number	Description
1	422A12	Window Assy
2	42310	Back Window Lower Stop (2 Req'd)
3	WSB-M5B280-C2 (Red)	Urethane Glass Primer
	WSB-M2G314-B (Black)	Urethane Glass Primer
4	372820-S36B	Rivet (2 Req'd)
5	—	Roof Moulding Assy

(Continued)

Item	Part Number	Description
6	WSB-M2G234-C	Urethane Body Primer (Black)
7	—	Roof Body Panel
8	WSB-M2G316-B	High Viscosity Urethane Adhesive
9	—	Quarter Panel
10	—	Quarter Window Assy
11	—	Luggage Compartment Deck Lid
12	—	Package Tray Panel

Quarter Window

Sedan

Removal and Installation

WARNING: SAFETY GLASSES AND GLOVES MUST BE WORN.

1. Remove roof side rear interior trim panel. Refer to Section 01-05.
2. Remove four nut and washer assemblies retaining quarter window.

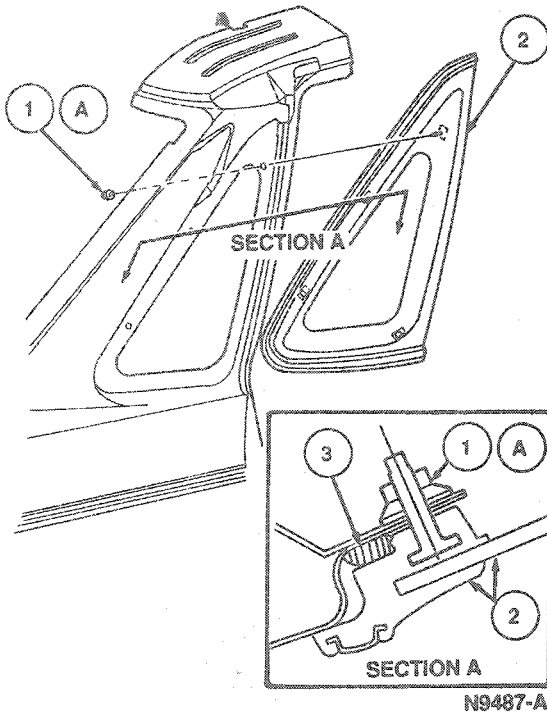
3. Remove quarter window.

NOTE: If the window seal has been damaged, replace with new seal assembly.

4. To install, reverse Removal procedure. Tighten nut and washer assemblies to 1-2 N·m (9-18 lb-ft).

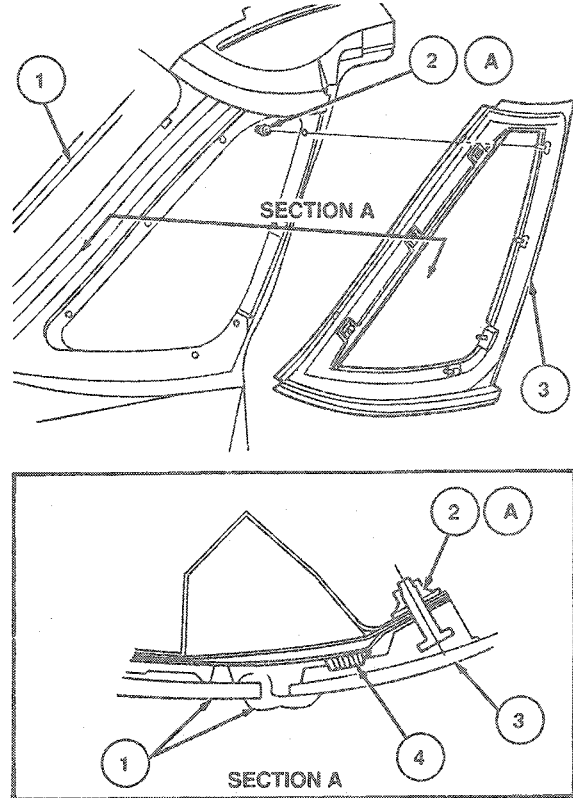
REMOVAL AND INSTALLATION (Continued)

Taurus



Item	Part Number	Description
1A	N620360-S36	Nut (4 Req'd Each Window)
2	29700	Window Assy
3	ESB-M4G299-A	Seal Assy
A		Tighten to 1-2 N·m (9-18 Lb·In)

Sable



Item	Part Number	Description
1	—	Rear Window Assy
2A	N620360-S36	Nut (7 Req'd Each Window)
3	29700	Window Assy
4	ESB-M4G29-A	Quarter Window Seal Assy
A		Tighten to 1-2 N·m (9-18 Lb·In)

Wagon

Tools Required:

- Rotunda Glass Adhesive Cutter 118-00050

Removal

1. Remove interior trim panels. Refer to Section 01-05.
2. From inside vehicle, use a screwdriver to remove spring retainers.
3. Using Rotunda Glass Adhesive Cutter 118-00050 or Rotunda Deluxe Glass Adhesive Cutter 163-00001, or equivalent, cut urethane seal around entire edge of quarter window.

NOTE: If glass is shattered, cutting urethane seal is also permissible.

4. Remove quarter glass.

REMOVAL AND INSTALLATION (Continued)

- Remove urethane from flange as close to sheet metal as possible, using a razor blade or utility knife.

Installation

NOTE: A minimum of 30 minutes is required for primer surface to dry.

- Using a clean brush, apply Urethane Metal (Body) Primer WSB-M2G234-C or equivalent to any sheet metal that has been exposed along the window opening flange.
- Using a lint-free cloth, wipe the 10mm (3/8 inch) wide glass track on inside surface of window module with Urethane Glass Cleaner WSB-M5B280-C or equivalent.

NOTE: Wipe off cleaner immediately after application, before it flash dries.

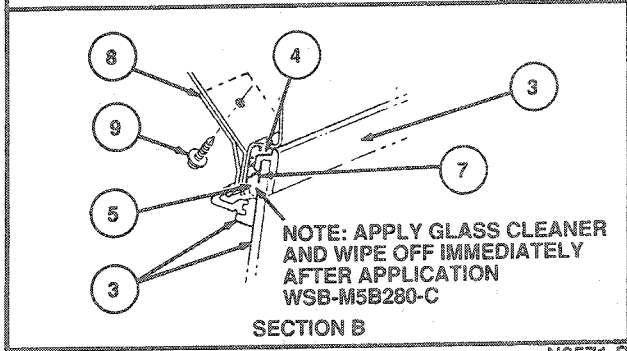
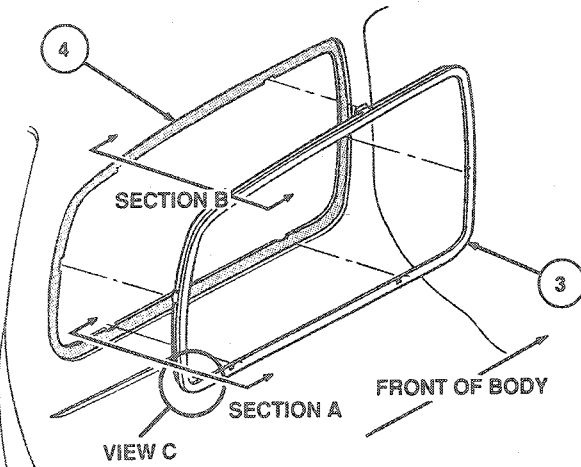
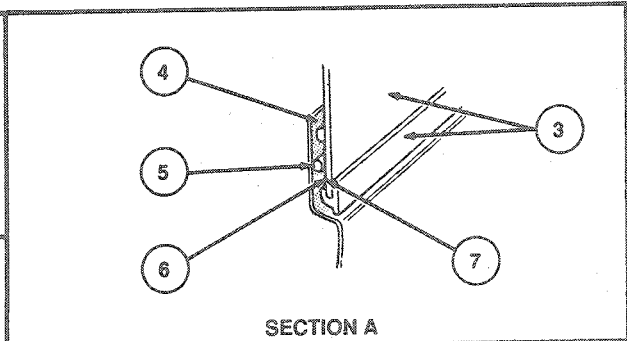
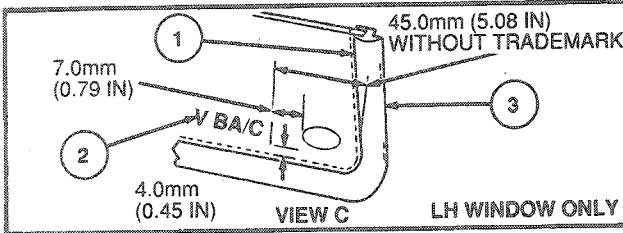
- Using a clean brush, apply Urethane Glass Primer WSB-M2G314-B or equivalent to the 10mm (3/8 inch) wide glass track on inside surface of the window module. Allow five minutes dry time for the primer.

NOTE: Thoroughly shake and stir Urethane Glass Primer WSB-M2G314-B to ensure uniform pigment mixing.

- Apply a bead of high viscosity Urethane Adhesive WSB-M2G316-B in the track of the pinch weld. The bead of adhesive should be triangular with a 8mm (0.32 inch) base and a 14mm (0.55 inch) height (bead size large enough for proper sealing with no objectionable expulsion).

CAUTION: Allow all glass parts installed with urethane ample time to cure.

- Position glass and moulding to flange and press retaining tabs into flange to engage.
- Install spring retainers.
- Install interior quarter trim panel. Refer to Section 01-05.



N6571-D

Item	Part Number	Description
1	—	Ceramic Dot Pattern
2	303K04	Decal
3	29700	Window Assy
4	WSB-M2G234-C	Urethane Body Primer (Black)

(Continued)

Item	Part Number	Description
5	WSB-M2G316-B	Urethane High Viscosity
6	WSB-M5B280-C	Glass Cleaner Urethane
7	WSB-M2G314-B	Glass Primer Urethane (Black)
8	30140	Retainer
9	82413-S55X	Screw

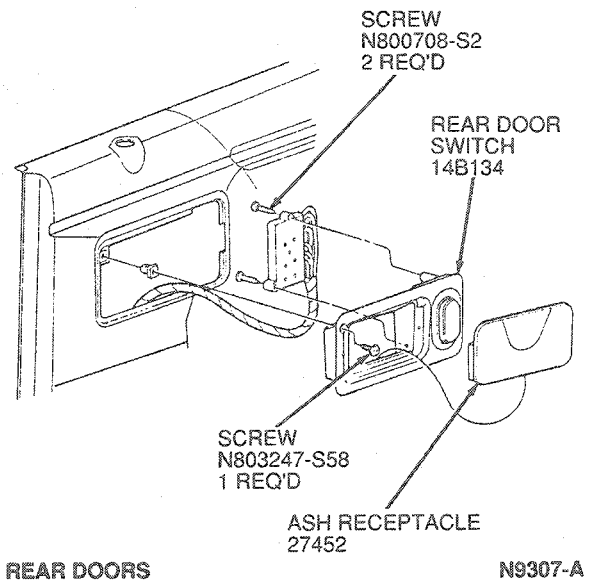
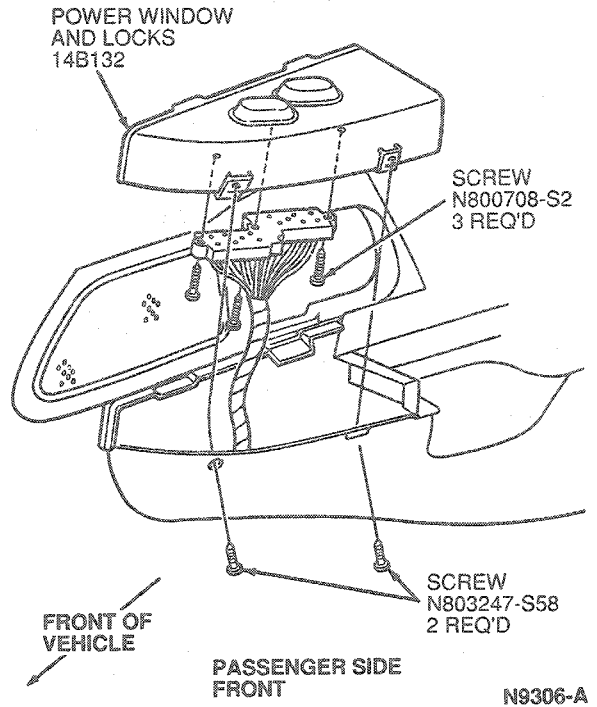
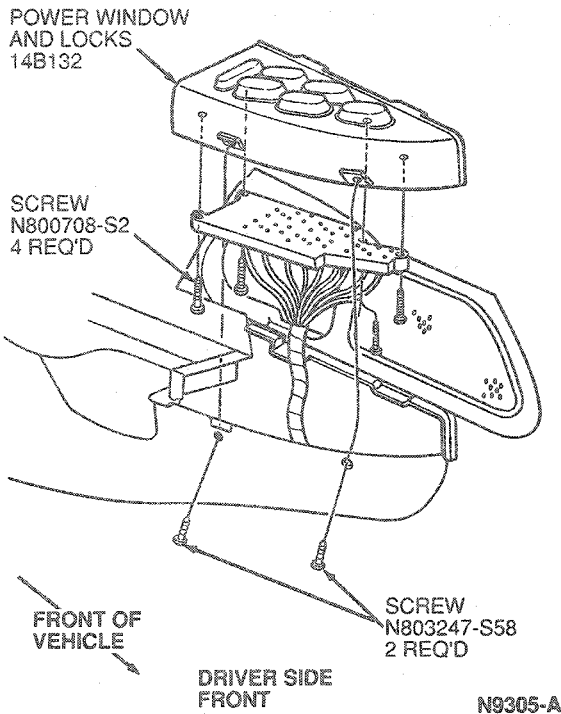
REMOVAL AND INSTALLATION (Continued)

Switch

Window Switch

Removal and Installation

1. Remove switch housing retaining screw and rotate housing up and out of armrest.
2. Remove two connector retaining screws from bottom of switch housing.
3. The switch is held in place by the electrical contact pins. Using a small screwdriver, carefully pry switch from connector.
4. To install, reverse Removal procedure.



Window Switch Connector Wire

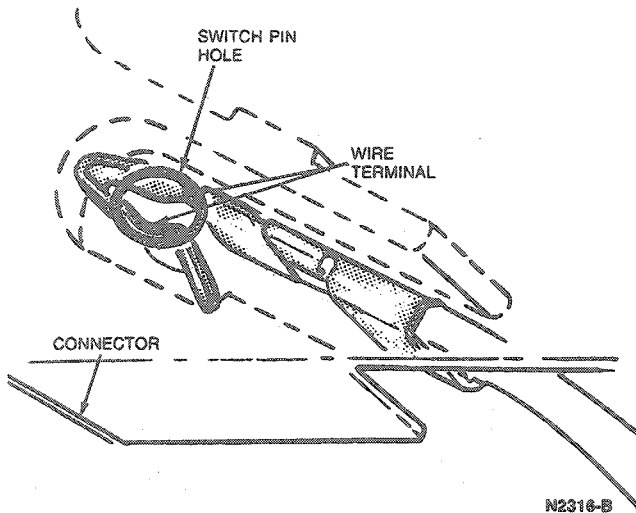
Removal and Installation

If replacement of the switch connector or a wire leading to the connector is necessary, the wire(s) can be removed from the connector without disassembling the connector.

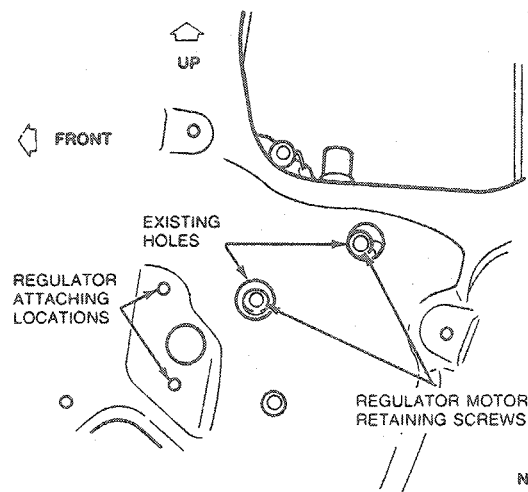
1. Insert needle-like tool into edge of terminal hole.
2. Bend terminal in.

REMOVAL AND INSTALLATION (Continued)

3. Pull wire and terminal from connector.
4. To install terminal in connector, open terminal and insert into wire hole.



2. Connect the motor wires at the connector and cycle the glass to ensure gear engagement. After the gears are engaged, tighten the three motor and drive retaining screws to 5.6-9.6 N-m (50-84 lb-in).
3. Install two regulator mounting plate rivets.
4. Connect battery ground cable.
5. Check power window for proper operation.
NOTE: Verify that all drain holes at bottom of doors are open to prevent water accumulation over motor.
6. Install door trim panel and watershield. Refer to Section 01-05.

**Window Motor****Removal**

1. Raise window to full-up position, if possible. If glass cannot be raised and is in a partially down or full-down position, it must be supported so that it will not fall into door well during motor removal.
2. Disconnect battery ground cable.
3. Remove door trim panel and watershield. Refer to Section 01-05. Disconnect window motor wiring leads.

4. Remove two forward regulator mounting plate attaching rivets.

CAUTION: Prior to motor drive assembly removal, ensure that the regulator arm is in a fixed position to prevent dangerous counterbalance spring unwind.

5. Remove three window motor mounting screws.
6. Push regulator mounting plate outboard sufficiently to remove power window motor.

Installation

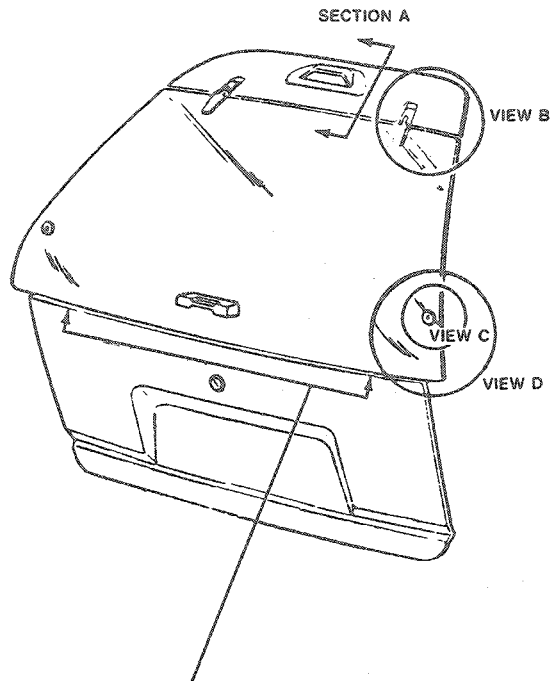
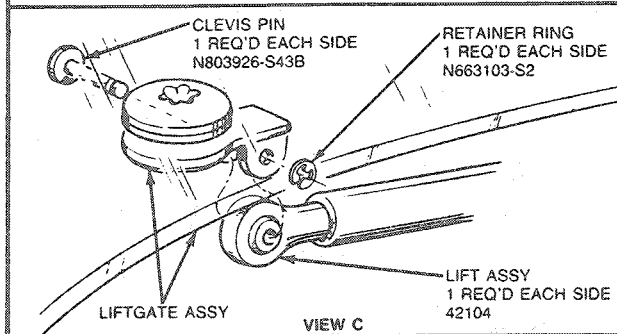
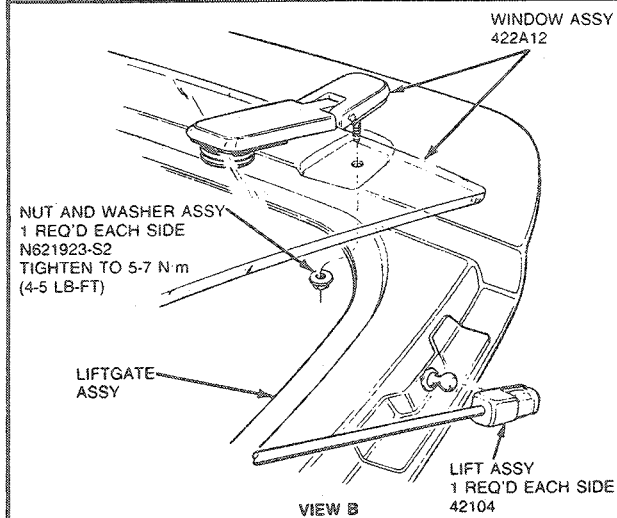
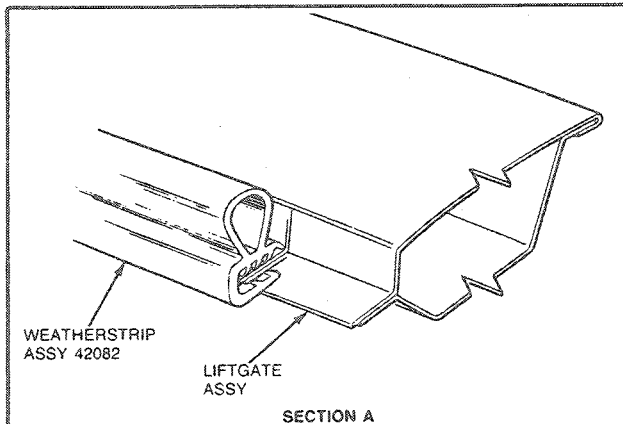
1. Position the motor and drive to the regulator and install the three screws snug— not tight.

Liftgate Glass

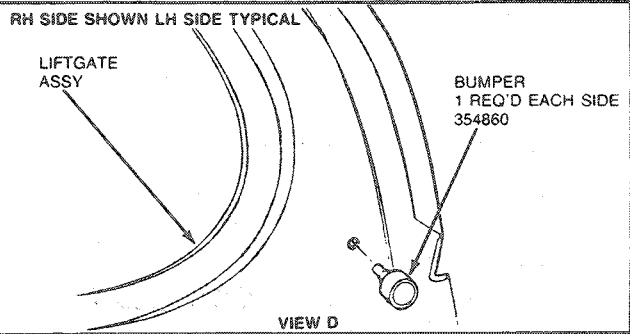
1. Remove RH and LH rear pillar mouldings to gain access to nut and washer assemblies retaining liftgate window hinges to liftgate assembly. Refer to Section 01-05.
2. Remove nut and washer assemblies retaining RH and LH liftgate window hinges to liftgate assembly.
3. Remove clevis pins from RH and LH liftgate assemblies.
4. Remove liftgate window.

REMOVAL AND INSTALLATION (Continued)

5. To install, reverse Removal procedure.



NOTE:
COMPRESS EXCESS LENGTH OF WEATHERSTRIP ALONG LOWER BELT AREA.



N6947-A

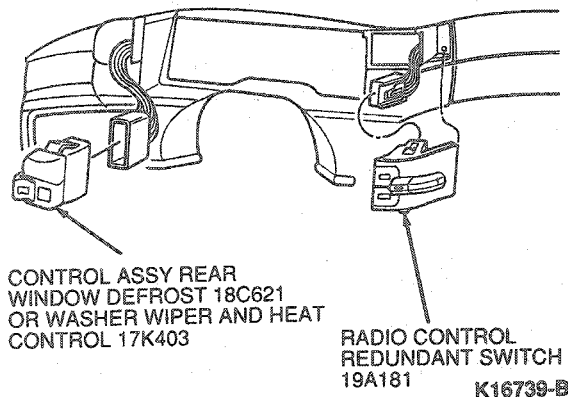
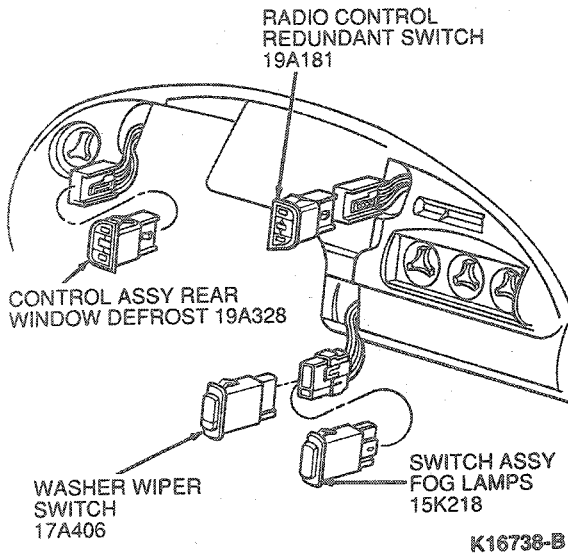
**Defroster, Rear
Control Assembly
Removal and Installation**

1. Remove cluster finish panel.

2. Disconnect electrical connector.
3. Depress spring locking tabs on switch and push out of finish panel.
4. To install, reverse Removal procedure.

REMOVAL AND INSTALLATION (Continued)

Taurus



Relay / Timer

Sable

Removal and Installation

1. Remove relay / timer assembly from under center side of instrument panel by depressing the mounting clip and pulling relay / timer from mounting bracket.
2. Disconnect electrical connector and remove assembly.
3. To install, reverse Removal procedure.

Window

Disconnect the wire leads at each end of the glass. Replace the window as outlined.

MAJOR SERVICE OPERATIONS

Grid Wire Service

Any break in the grid longer than 25mm (1 inch) cannot be serviced. The rear window must be replaced. For breaks less than 25mm (1 inch) long, use the following procedure:

Surface Preparation

1. The vehicle should be brought inside and permitted to come to room temperature of 16°C (60°F) or above.

CAUTION: Do not use scrapers, sharp instruments or abrasive cleaners on the interior surface of the rear window as this may cause damage to grid lines.

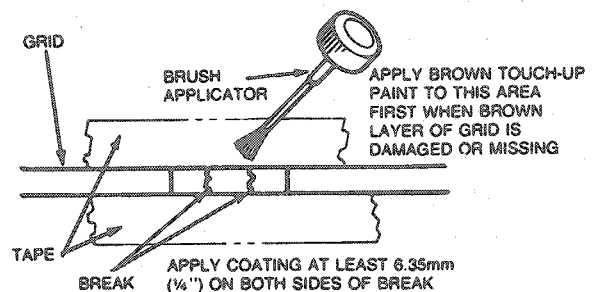
2. Clean entire grid line repair area with Ultra-Clear Spray Glass Cleaner E4AZ-19C507-AA (ESR-M14P5-A) or equivalent, to remove all dirt, wax, grease, oil or other foreign matter. It is important that repair area be clean and dry.

Mixing

The bottle of Rear Window Defroster Repair D8AZ-19562-AA (ESB-M4J58-A) or equivalent and touch-up paint must be at room temperature. Shake bottle for at least one minute for thorough mixing. Shake frequently during use.

Application

1. Mark location of break on outside of window.
2. Using cellulose tape, mask off area directly above and below grid break. The break area should be at the center of the mask and tape gap must be no wider than existing grid line.



USING CELLULOSE TAPE, MASK OFF THE AREA DIRECTLY ABOVE AND BELOW THE GRID BREAK. THE BREAK AREA SHOULD BE AT THE CENTER OF THE MASK AND THE GAP MUST BE NO WIDER THAN THE EXISTING GRID LINE.

K3787-0

MAJOR SERVICE OPERATIONS (Continued)

- Apply the repair coating in several smooth continuous strokes (allowing three to five minutes drying time between coats) across the break area using the brush applicator in the cap. Extend the service coating at least 6.35 mm (1/4 inch) on both sides of the break area.

If both brown and silver layers of grid are broken or missing, apply a coating of the brown touch-up paint across break area first. Two coats may be necessary to obtain proper color. Allow touch-up paint to dry, then apply three coats of grid repair compound, allowing three to five minutes drying time between coats. The coating of grid repair compound should extend at least 6.35mm (1/4 inch) on both sides of break area.

NOTE: If the brown layer of the grid is not broken or missing, apply only the grid repair compound to the break.

- Allow to dry for five minutes, then remove mask.
- After removing mask, check outside appearance of grid repair. If repair compound is visible above or below grid, this excess should be removed. This can be done by placing a single-edge razor blade on the glass parallel to grid and scrape gently toward grid.

CAUTION: Be careful not to damage the grid line with the razor blade.

Curing

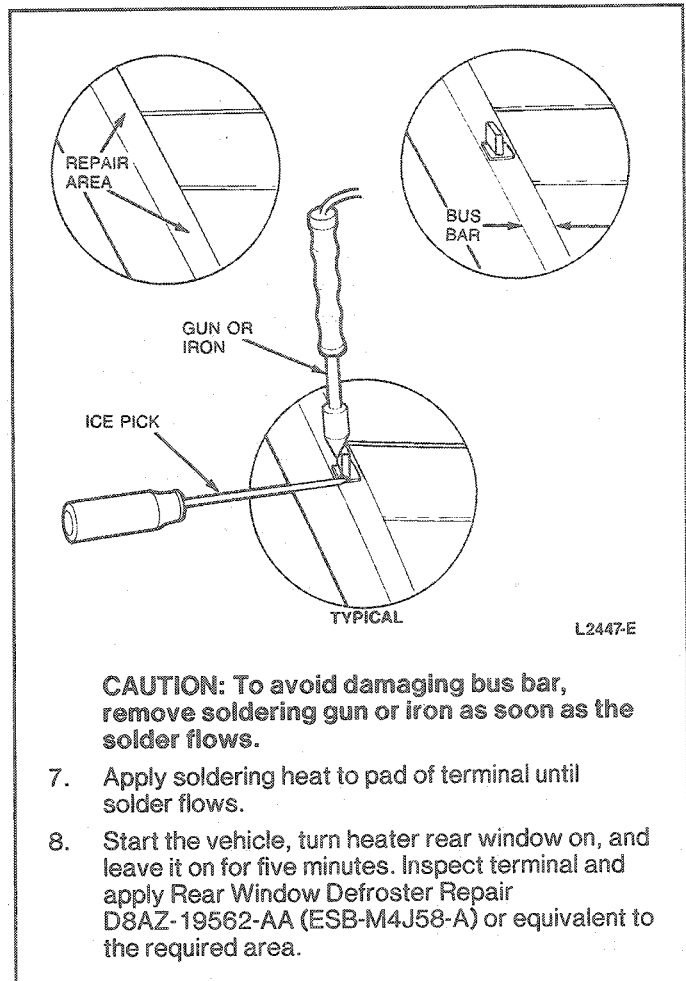
The repair coating will air dry in approximately one minute and can be energized within three to five minutes. Optimum hardness and adhesion occurs after approximately 24 hours. At that time, the repair area may be cleaned with a mild window cleaner.

Terminal Service

Tools Required:

- Rotunda Heat Gun 107-00300

- Allow rear window to warm up to room temperature for one-half hour to a hour.
- Clean bus bar in area to be repaired using fine steel wool (3/0 to 4/0 grade).
- Restore area where bus bar terminal was originally attached by applying three coats of Rear Window Defroster Repair D8AZ-19562-AA (ESB-M4J58-A) or equivalent. Allow approximately 10 minutes drying time between coats.
- Work as quickly as possible to avoid overheating glass. Tin bus bar with solder in area where terminal will be reattached.
- Using Rotunda Heat Gun 107-00300 or equivalent, preheat glass in the solder area to 67°-83°C (120°-150°F), just prior to soldering terminal on.
- Position terminal on bus bar in area that was tinned and hold it in place with an ice pick or screwdriver.



CAUTION: To avoid damaging bus bar, remove soldering gun or iron as soon as the solder flows.

- Apply soldering heat to pad of terminal until solder flows.
- Start the vehicle, turn heater rear window on, and leave it on for five minutes. Inspect terminal and apply Rear Window Defroster Repair D8AZ-19562-AA (ESB-M4J58-A) or equivalent to the required area.

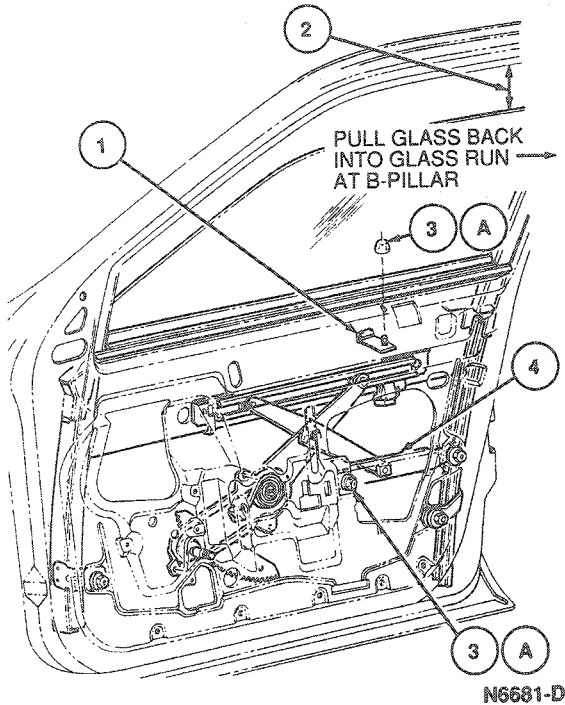
ADJUSTMENTS

Door Glass, Front

- Remove door trim panel and watershield. Refer to Section 01-05.
- Lower door glass approximately 75mm (3 inch) from full-up position.
- Loosen nut and washer assemblies retaining the equalizer bracket to door inner panel.
- Loosen nut and washer assembly retaining door glass stabilizer.
- With door open, place hands on each side of glass and pull glass fully into door glass run assembly at B-pillar.
- Tighten nut and washer retaining the front of the equalizer bracket. Apply a downward pressure on the equalizer bracket. If the hole is a vertical slotted hole, make sure that the nut and washer retaining the rear of the equalizer bracket is positioned at the bottom of the slot as you apply a downward pressure on the equalizer bracket. Then tighten nut and washer (B) to 7-11 N·m (5-8 lb-ft).
- Set door glass stabilizer so that it is slightly touching glass and tighten nut and washer assembly to 7-11 N·m (5-8 lb-ft).

ADJUSTMENTS (Continued)

8. Cycle door glass to ensure proper operation.



Item	Part Number	Description
1	23336	Glass Stabilizer Bracket
2	—	Approximately 75mm (3 inches)
3A	N621907-S36	Nut and Washer Assy
4	23230	Equalizer Bracket
A		Tighten to 7-11 N-m (5-8 Lb-Ft)

Door Glass, Rear

In-and-Out

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Loosen two screws retaining lower glass bracket.
3. Position glass in-or-out as required.
4. Tighten bracket retaining screws.
5. Install door trim panel and watershield. Refer to Section 01-05.

Fore-and-Aft

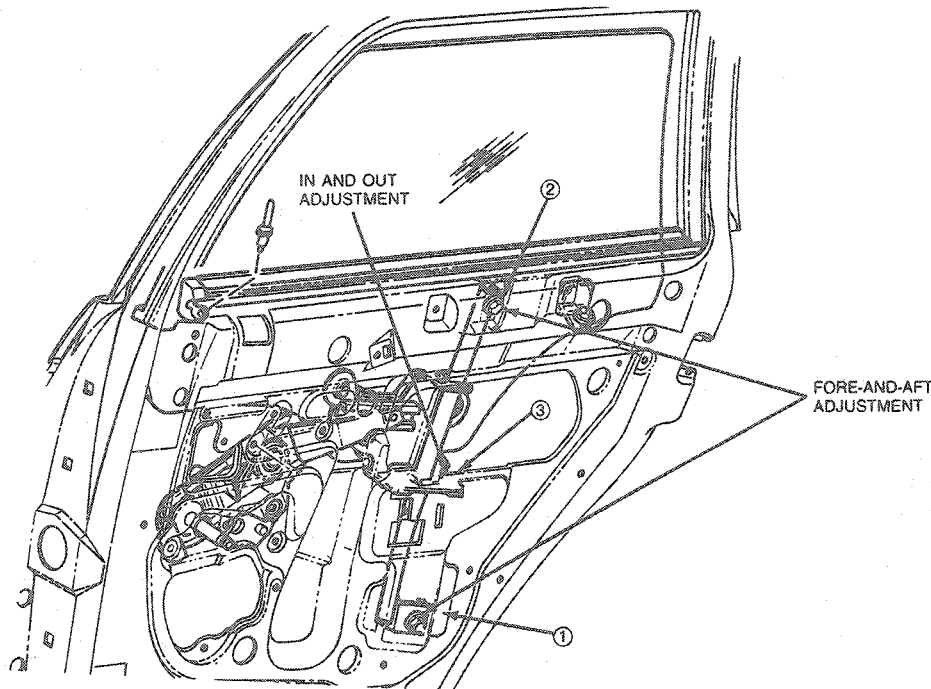
1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Loosen tube run upper retaining screw and washer assembly.
3. Loosen lower nut and washer assembly retaining rear door run and bracket assembly to inner door panel.
4. Adjust glass fore-or-aft as required.
5. Tighten lower nut and washer assembly.
6. Tighten screw and washer assembly.
7. Install door trim and watershield. Refer to Section 01-05.

Window Opening

1. Remove door trim panel and watershield. Refer to Section 01-05.
2. Lower glass approximately 50mm (2 inch) from full-up position.
3. With three retension points loosely installed, set the glass forward into B-pillar. Tighten lower run nut and washer No. 1, then No.'s 2 and 3.

ADJUSTMENTS (Continued)

4. Install door trim panel and watershield. Refer to Section 01-05.



N6620-B

SPECIFICATIONS

WINDOW MOTOR CURRENT DRAW

Description	Specification
No Load	5 amperes or less at 12.8 volts

TORQUE SPECIFICATIONS

Description	N-m	Lb-Ft
Run Retaining Screws	9-14	7-10
Stabilizer Retaining Nut	7-11	5-8
Regulator-to-Inner Panel	9-14	7-10
Guide-to-Glass Bracket	4-7	3-5 ¹
Equalizer Nut	7-11	5-8
Glass Stabilizer Bracket Retaining Screw	7-11	5-8
Glass Run Bracket Retaining Nut	7-11	5-8
Exterior Door Belt Weatherstrip Retaining Nuts	1.4-2.3	12-20 (Lb-In)
Run Bottom Bracket to Door Inner Panel	7-11	5-8
Tube Run to Door Belt Panel	7-11	5-8
Motor and Drive Screws	5.6-9.6	50-84 (Lb-In)

(Continued)

TORQUE SPECIFICATIONS (Cont'd)

Description	N-m	Lb-Ft
Glass to Glass Bracket	4-7	36-61 (Lb-In)
Lift Gate Nut	5-7	4-5
Quarter Window Nuts	1-2	9-18 (Lb-In)

SPECIAL SERVICE TOOLS

Tool Number	Description
D80L-23200-A	Heavy Duty Riveter
D81T-33610-H	Glass Holding Tool

ROTUNDA EQUIPMENT

Model	Description
118-00050	Glass Adhesive Cutter
007-00001	Digital Volt-Ohmmeter
107-00300	Heat Gun
163-00001	Deluxe Glass Adhesive Cutter

¹ *For all 3mm (0.12 inch) side door glass