

POWER WINDOWS

DESCRIPTION

A permanent magnet motor moves each power window. Each motor raises or lowers the glass when voltage is supplied to the motor. The direction the motor turns depends on the polarity of the supply voltage. The control switches control the supply voltage polarity.

With ignition in RUN, voltage from the #13 fuse, 60 amp, in the PDC is applied to the #26 circuit breaker, 30 amp, in the Fuse Panel. Power then goes to the master switch terminal 5 and to the passenger's window switches.

When the driver's window switch is moved UP, the contacts close a current path to:

- terminal 4
- the Left Hand front window motor
- terminal 3
- terminal 1 of the Left Hand front window switch to ground.

The motor then moves the glass up.

Current flows in a similar way when the UP contact in one of the passenger's window switches is closed. Current flow through the passenger's window motors must go through the driver's and the passenger's window switches before it reaches ground.

Each motor is protected by a built-in circuit breaker. If a window switch is held on too long with the window obstructed or after the window is fully up or down, the circuit breaker opens the circuit. The circuit breaker resets automatically as it cools. Do not allow frequent or consecutive resetting of the circuit breaker to continue.

DIAGNOSIS (Fig. 1)

For information concerning wiring or connectors, refer to Group 8W - Wiring Diagrams.

NO WINDOWS OPERATE

- Measure voltage at power window feed connector at fuse panel. Meter should read battery voltage. If not, replace 60 amp fuse in Power Distribution Center.
- Turn key to OFF and measure resistance from ground lug on driver's side kick panel to ground. Meter should read zero ohms. If not, repair open to ground.
- Remove Master Door Lock/Power Window Switch assembly (refer to service procedures). Measure resistance at BLK wire (terminal 1). Meter should read zero ohms. If not, repair open to ground.
- Turn key to ON and measure voltage at terminal 5 at LH switch. Meter should read battery voltage. If not, repair open circuit to breaker.
- Operate Window switch. If the windows move up and down go to Switch Testing.

- Perform Drivers Door Switch test. If switch passes test, replace defective motors.

ONE WINDOW OPERATES

Remove door panel of inoperative window, probe harness side of unplugged motor connector.

- Measure voltage at terminal 2 of connector, holding switch in the DOWN position. Meter should read battery voltage. If not, repair open back to Master Switch. If additional switch is in circuit (not LH motor), refer to Switch Testing.
- Measure resistance at terminal 1 of connector, holding switch in the DOWN position. Meter should read zero ohms. Caution, maintain DOWN position while meter lead is attached. If not, repair open back to Master Switch. If additional switch is in circuit (not LH motor), refer to Switch Testing. If both tests are OK, replace regulator.

WINDOW REGULATOR REPLACEMENT

FRONT DOOR REMOVAL

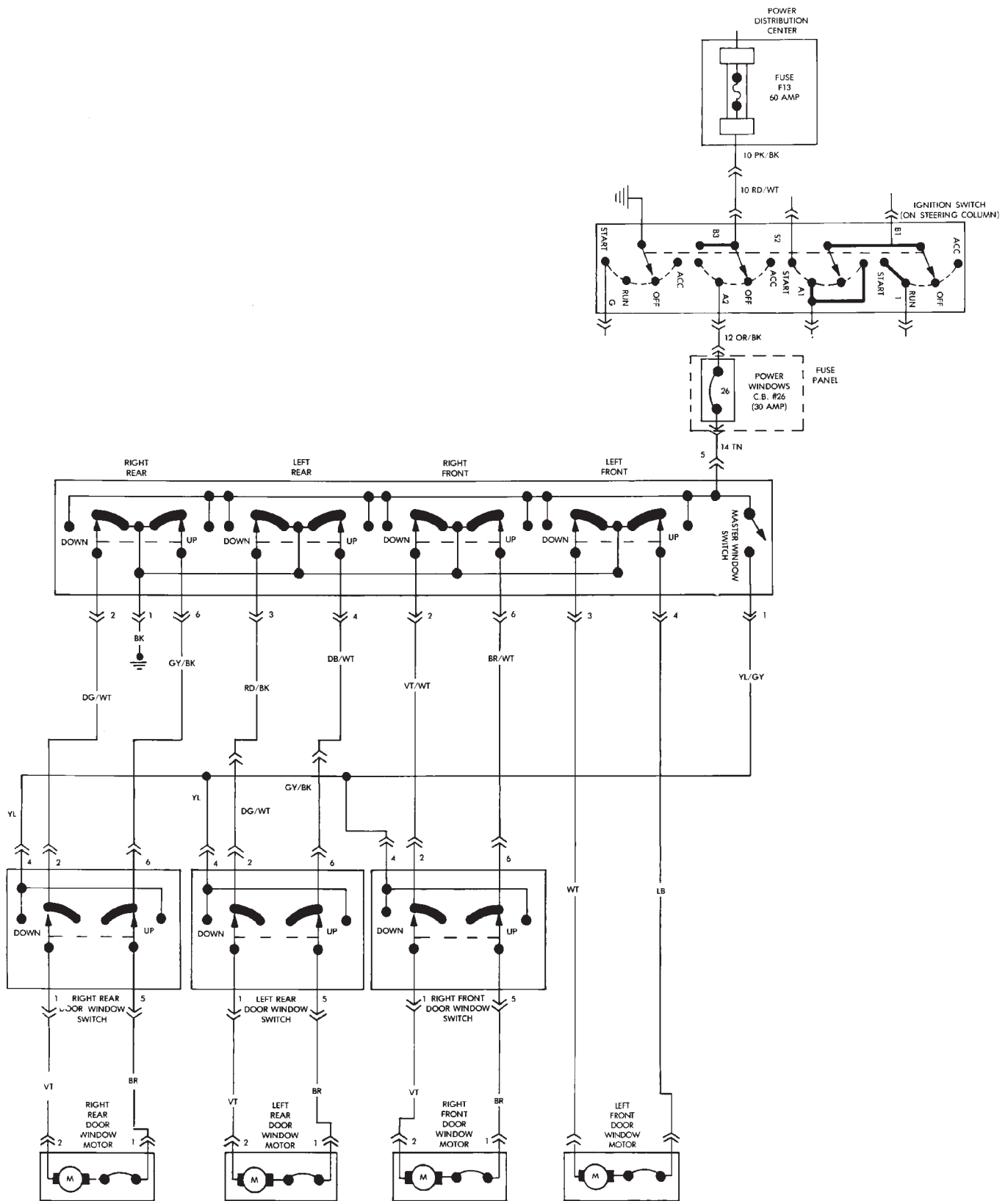
- (1) Lower window half way.
- (2) Remove screw at top of trim panel near mirror (Fig. 2).
- (3) Remove screw from demister opening.
- (4) Remove screw and door handle cover.
- (5) Remove screw from under armrest.
- (6) Remove screw from bottom of hand hold in armrest.

CAUTION: The wiring harness to the door switches is just long enough to allow installation. If trim panel is pulled off by hand the switch may be pulled apart. Use a door clip tool to prevent damaging the switches.

- (7) Remove the trim panel with a wide flat blade tool (Fig. 3).

To aid in removal of the trim panel, start at the bottom of the panel.

- (8) Unplug electrical connector from switches.
- (9) Loosen 2 nuts holding glass to window regulator (Fig. 4).
- (10) Slide glass rearward to remove from nuts.
- (11) Pull the glass to the full up position and tape the glass to the door.
- (12) Unplug the wire harness connector from the window regulator.
- (13) Remove 4 window regulator screws (Fig. 5).
- (14) Loosen the last 2 window track screws (Fig. 5).
- (15) Remove the window regulator.



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Fig. 1 Power Windows

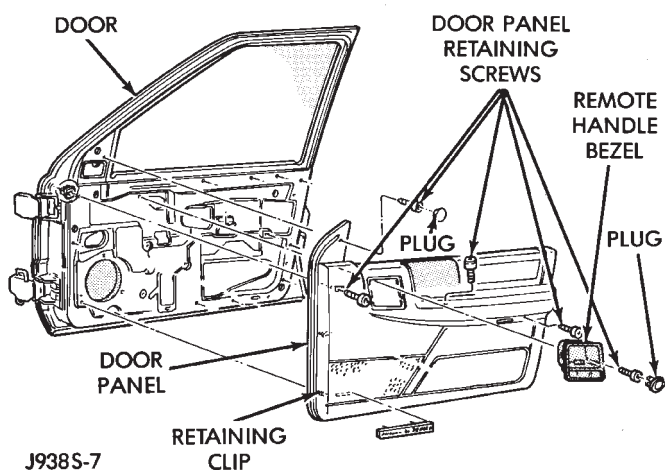


Fig. 2 Door Panel Removal

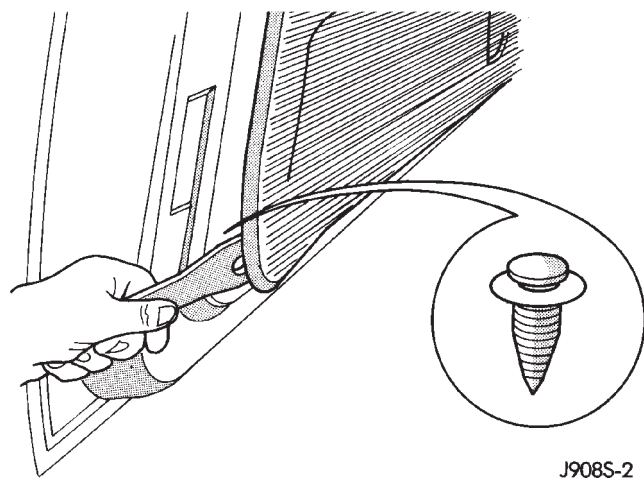


Fig. 3 Trim Panel Removal

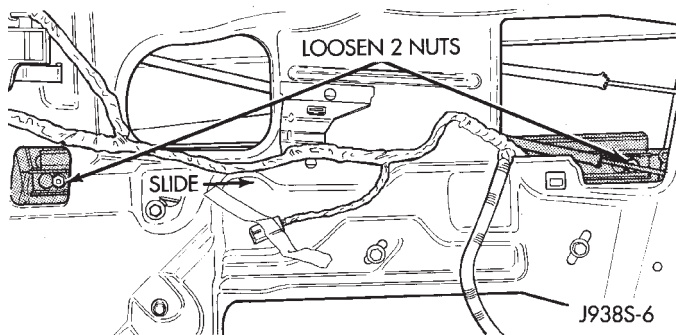


Fig. 4 Remove/Install Glass Attaching Nuts

INSTALLATION

- (1) Place the regulator inside the door by sliding 2 loose screws in slots in door.
- (2) Install the remaining 4 screws.
- (3) Tighten the 4 regulator screws to 12 N•m (105 in. lbs.) torque.
- (4) Move the glass as far rearward into the channel as possible and pushed down. Tighten the 2 window track screws to 12 N•m (105 in. lbs.) torque.

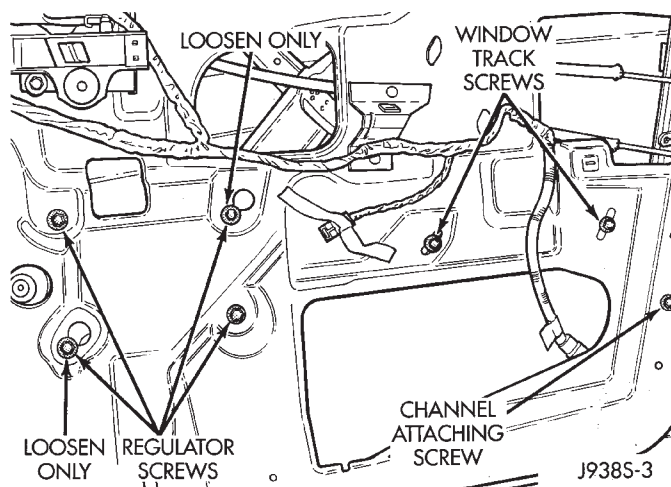


Fig. 5 Window Regulator Removal—Front Door

- (5) Attach the door glass by sliding the 2 nuts into the slots on the regulator (Fig. 4). Tighten the door glass nuts to 12 N•m (105 in. lbs.) torque.
- (6) Connect the wire harness connector to the regulator.
- (7) Using 3M 08044 or 3M 08041 adhesive/sealant, install the plastic water dam sheet.
- (8) Place the trim panel in the installation position and press in the nylon retainers.
- (9) Install the door panel attaching screws.

REAR DOOR REMOVAL

- (1) Remove screw and door handle cover (Fig. 6).
- (2) Remove screw from under armrest.
- (3) Remove screw from bottom of hand hold in armrest.

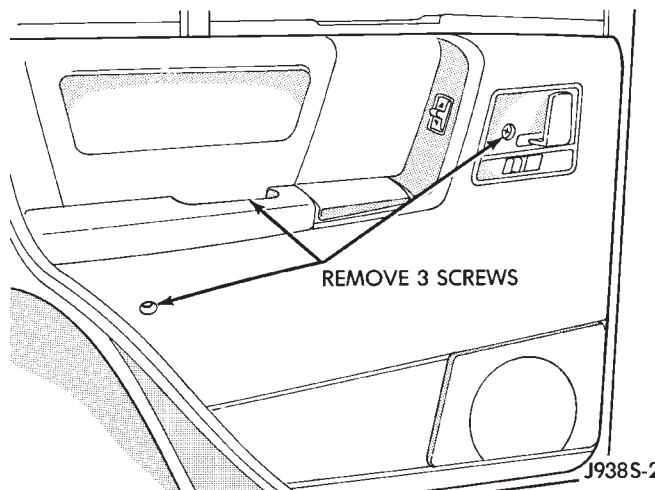


Fig. 6 Trim Panel Attachment

- (4) Remove the trim panel with a wide flat blade tool (Fig. 3).
- To aid in removal of the trim panel, start at the bottom of the panel.**
- (5) Lower window until the 2 nuts holding the glass to the regulator are visible (Fig. 7).

- (6) Unplug electrical connector from switch.
- (7) Remove screws holding speaker.
- (8) Pull speaker from door and unplug connector.
- (9) Loosen 2 nuts holding glass to window regulator (Fig. 7).

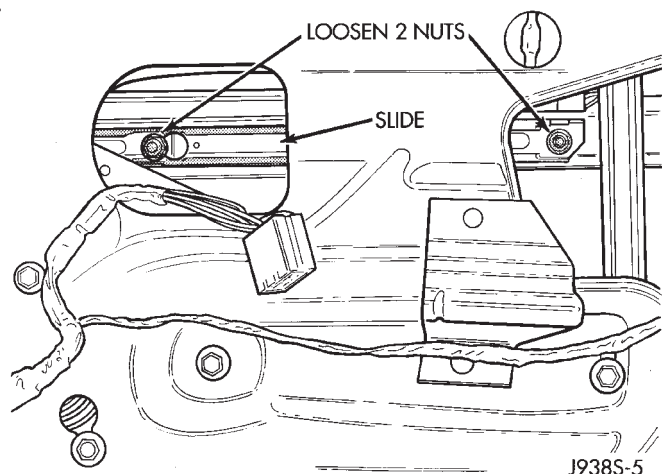


Fig. 7 Remove/Install Glass Attaching Screw

- (10) Slide glass forward to remove from nuts.
- (11) Pull the glass to the full up position and tape the glass to the door.
- (12) Unplug the wire harness connector from the window regulator.
- (13) Remove 4 window regulator screws (Fig. 8).
- (14) Loosen the last 2 window track screws (Fig. 8).
- (15) Remove the window regulator.

INSTALLATION

- (1) Place the regulator inside the door by sliding 2 loose screws in slots in door.

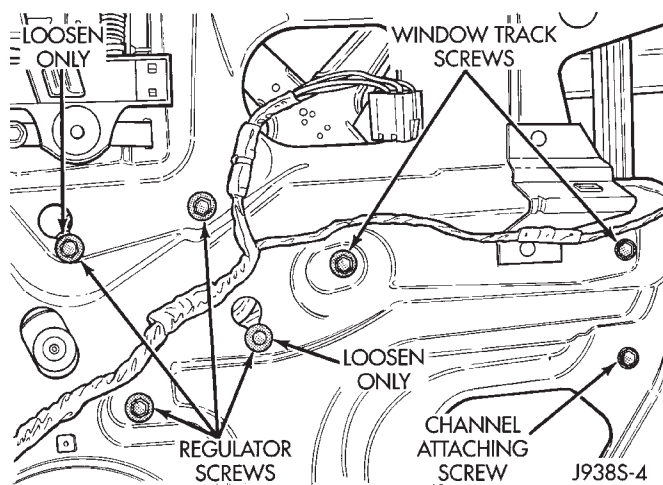


Fig. 8 Window Regulator Removal

- (2) Install the remaining 4 screws.
- (3) Tighten the 4 regulator screws to 12 N•m (105 in. lbs.) torque.
- (4) Move the glass as far rearward into the channel as possible and pushed down. Tighten the 2 window track screws to 12 N•m (105 in. lbs.) torque.
- (5) Attach the door glass by sliding the 2 nuts into the slots on the regulator (Fig. 7). Tighten the door glass nuts to 12 N•m (105 in. lbs.) torque.
- (6) Connect the wire harness connector to the regulator.
- (7) Install the speaker.
- (8) Using 3M 08044 or 3M 08041 adhesive/sealant, install the plastic water dam sheet.
- (9) Place the trim panel in the installation position and press in the nylon retainers.
- (10) Install the door panel attaching screws.