

POWER WINDOWS

CONTENTS

	page		page
GENERAL INFORMATION		WINDOW MOTOR	2
INTRODUCTION	1	WINDOW SWITCH	2
WINDOW DROP RELAY ASSEMBLY	1	REMOVAL AND INSTALLATION	
DIAGNOSIS AND TESTING		WINDOW DROP RELAY ASSEMBLY	2
VOLTAGE	1	WINDOW MOTOR	3
WINDOW DROP RELAY ASSEMBLY		WINDOW SWITCH AND BEZEL	3
CONDITIONS	1		

GENERAL INFORMATION

INTRODUCTION

Front and rear door window lift motors are of the permanent magnet type. A battery positive and negative connection to either of the two motor terminals will cause the motor to rotate in one direction. Reversing current through these same two connections will cause the motor to rotate in the opposite direction.

Each individual motor is grounded through the master switch.

WINDOW DROP RELAY ASSEMBLY

The Window Drop Relay Assembly allows the windows to be automatically lowered when the convertible top is raised or lowered. The window timer module will lower the windows for 280 to 380 milliseconds when the top switch is pressed up or down. This will lower the windows approximately 1 to 3 inches so that the windows are clear of the top while raising or lowering.

DIAGNOSIS AND TESTING

VOLTAGE

The following circuit test sequence determines whether or not voltage is continuous through the body harness to switch.

(1) Remove the driver door trim panel. Refer to Group 23, Body for proper procedures.

(2) Carefully separate wiring harness connector from switch body. Refer to Group 8W, Wiring Diagrams.

(3) Using a voltmeter, connect the ground lead to the Pin 10 of the wiring harness connector.

(4) Using the positive lead, check Pin 1 of the harness connector for battery voltage. If OK, go to Window Switch Test below. If not OK, check 20 amp circuit breaker in the Junction Block, if the circuit

breaker is OK, repair wire as necessary. For wiring, specific connector type and location, refer to Group 8W, Wiring Diagrams.

WINDOW DROP RELAY ASSEMBLY CONDITIONS

When testing for a voltage signal, use a digital voltmeter, because the signal will last only 280 to 380 milliseconds. Place the ignition switch in the run position with out engine running. Refer to Group 8W, Wiring Diagrams circuit and pin locations (Fig. 1).

When pressing the top switch all windows do not lower

(1) Check for battery voltage at Pin 1 and 2 of the window timer module wire connector. If OK, go to Step 2. If not OK, check circuit breaker top switch. Repair as necessary.

(2) Using a ohmmeter, check Pin 9 of the window timer module wire connector for ground. If OK, go to Step 3. If not OK, repair as necessary.

(3) Using a digital voltmeter, check Pin 7 of the window timer module wire connector for voltage signal for 280 to 380 milliseconds while pressing the top switch. If not OK, replace the window timer module. If OK, check power window circuit connections.

When pressing the top switch the front window(s) do not lower

(1) Using a digital voltmeter, check Pin 4 of both window motor relay wire connectors for voltage signal while pressing the top switch. If there is a momentary voltage, go to Step 2. If not OK, window timer relay.

(2) Using a ohmmeter, check Pin 6 of the both window motor relays wire connector for ground. If OK, go to Step 3. If not OK, repair ground as necessary.

(3) Using a ohmmeter, check Pin 85 to Pin 86 of window motor relay with connector disconnected for open circuit. If OK, check power window circuit connections. If open circuit replace window motor relay.

DIAGNOSIS AND TESTING (Continued)

When pressing the top switch the rear window(s) do not lower

(1) Using a digital voltmeter, check Pin 4 and Pin 6 of the window timer module wire connector for battery voltage while pressing the top switch. If no voltage replace the window timer module. If voltage, check power window circuit connections.

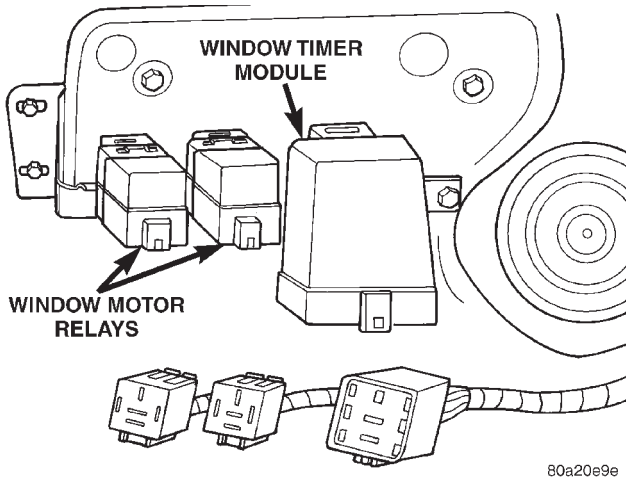


Fig. 1 Power Drop Relay Assembly

WINDOW MOTOR

- (1) Remove door trim panel, refer to Group 23 Body for removal procedures.
- (2) Connect positive (+) lead from a test battery to either of the two motor terminals.
- (3) Connect negative (-) lead from test battery to remaining motor terminal.
- (4) The motor should now rotate in one direction to either move window up or down.
 - (a) If window happens to already be in full UP position and motor is connected so as to move it in UP direction no movement will be observed.
 - (b) Likewise, motor connected to move window in DOWN direction no movement will be observed if window is already in full DOWN position.
 - (c) Reverse battery leads in Step 1 and Step 2 and window should now move. If window does not move, remove motor. See below for motor removal from vehicle.
- (5) If window moved completely up or down, the test leads should be reversed one more time to complete a full window travel inspection.
- (6) If window does not move, check to make sure that it is free.
- (7) It is necessary that the window be free to slide up and down in the glass channels. If the window is not free to move up and down, the window lift motor will not be able to move the glass.
- (8) To determine if the glass is free is to disconnect the regulator from the glass lift plate. Remove the

two attaching screws, and slide the window up and down by hand.

WINDOW SWITCH

For switch testing, remove the switch from its mounting, refer to Switch Removal. Using an ohmmeter, refer to Window Switch Continuity Charts to determine if continuity is correct (Fig. 2) and (Fig. 3). If the results are not obtained, replace the switch.

The master window switch has an Auto-Down feature. Actuation of the master switch to the second down position will move the drivers side window completely down. The electronic switch will automatically disconnect the motor approximately 1 second after the window bottoms out. Failure of the electronic switch to detect stall current, will cause the switch to disconnect after approximately 13 seconds. The auto down function can be canceled by any movement of the switch.

SWITCH POSITION		CONTINUITY BETWEEN TERMINALS
OFF		PIN 10 to 2
		PIN 10 to 3
		PIN 10 to 4
		PIN 10 to 7
		PIN 10 to 8
		PIN 10 to 9
		PIN 10 to 11
		PIN 10 to 12
UP	DRIVER'S	PIN 1 to 7
		PIN 8 to 10
UP	RIGHT FRONT	PIN 1 to 12
		PIN 10 to 11
UP	LEFT	PIN 3 to 10
	REAR	PIN 1 to 2
UP	RIGHT REAR	PIN 1 to 4
		PIN 9 to 10
DOWN	DRIVER'S	PIN 1 to 8
		PIN 7 to 10
DOWN	RIGHT FRONT	PIN 1 to 11
		PIN 10 to 12
DOWN	LEFT	PIN 3 to 1
	REAR	PIN 2 to 10
DOWN	RIGHT REAR	PIN 1 to 9
		PIN 4 to 10

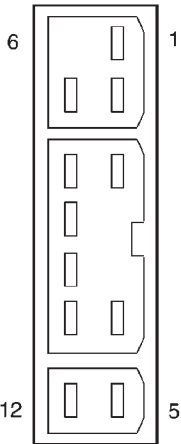


Fig. 2 Master Window Switch

REMOVAL AND INSTALLATION

WINDOW DROP RELAY ASSEMBLY

REMOVAL

- (1) Remove door trim panel, refer to Group 23, Body for removal procedures.
- (2) Disconnect the wire connectors (Fig. 1).
- (3) Remove the attaching screws.
- (4) Remove relay assembly.

REMOVAL AND INSTALLATION (Continued)

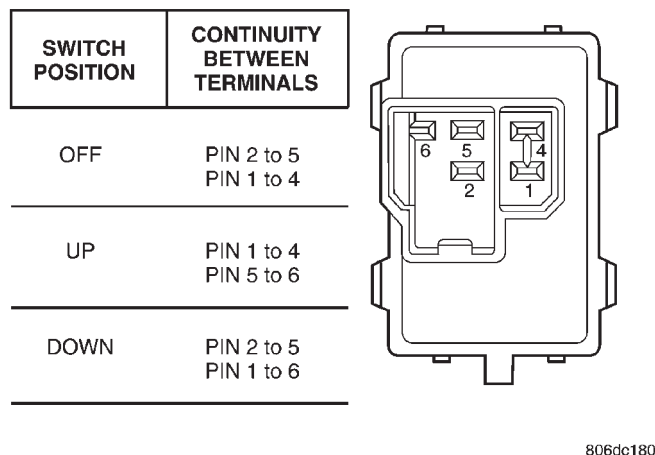


Fig. 3 Passenger Window Switch

INSTALLATION

For installation, reverse the above procedures.

WINDOW MOTOR

WARNING: DO NOT HAVE ANY HANDS OR FINGERS IN SECTOR GEAR AREA WHERE THEY CAN BE PINCHED BY SMALL MOVEMENTS OF REGULATOR LINKAGE.

REMOVAL

(1) Move the window to the 3/4 down position, if possible.

(2) Remove door trim panel and window regulator, refer to Group 23 Body for removal procedures.

WARNING: FAILURE TO CLAMP THE SECTOR GEAR TO THE MOUNTING PLATE WHEN REMOVING THE MOTOR CAN RESULT IN INJURY.

- (3) Disconnect wiring connector from motor.
- (4) Secure the sector gear and mounting plate with a C clamp or similar clamping tool. This will prevent a sudden and forceful movement of the regulator when the motor is removed.
- (5) Remove three mounting screws that hold motor gearbox to regulator (Fig. 4).
- (6) Remove motor from regulator.

INSTALLATION

(1) Install new motor on regulator by positioning motor gearbox so that it engages regulator sector teeth.

(2) A slight rotational or rocking movement may be necessary to bring three motor gearbox screw holes into proper position.

(3) Install three gearbox screws and one tie down bracket screw, if applicable. Tighten to 8.4 to 13 N·m (74 to 115 in. lbs.) torque.

(4) Install regulator, using the switch, test operation of motor.

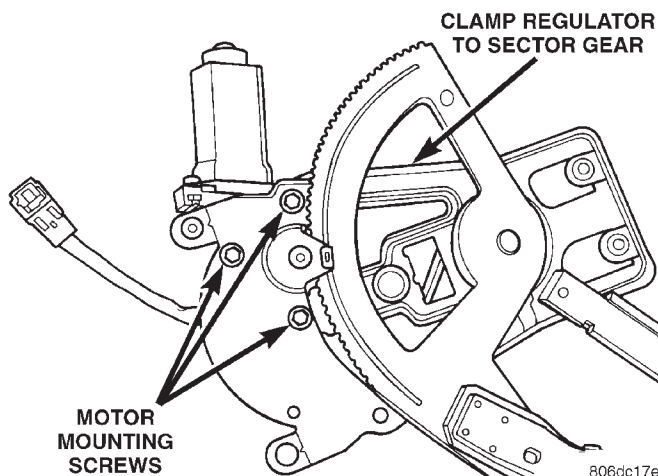


Fig. 4 Motor Removal

REMOVAL AND INSTALLATION (Continued)

WINDOW SWITCH AND BEZEL

REMOVAL

(1) Start at the rear center of the bezel. Using your fingers or a trim stick, lift the bezel upwards and slightly inboard to disconnect the two rear clips (Fig. 5). Use care not to mar the door trim.

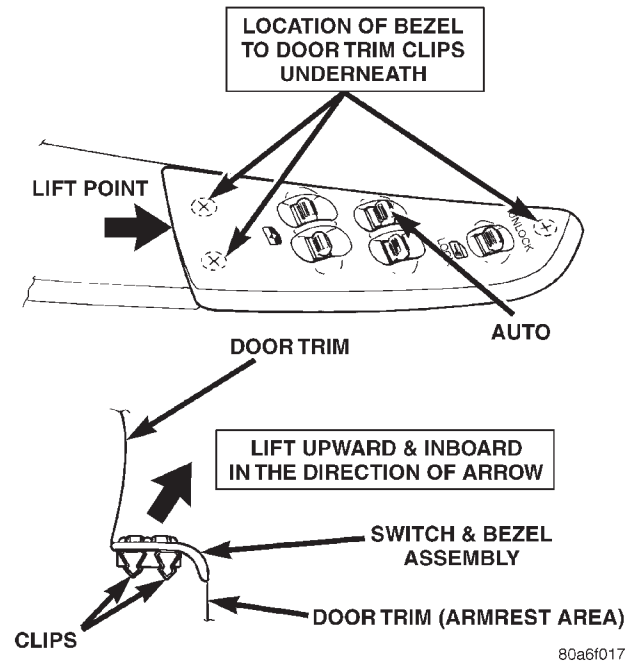
(2) With the rear of the bezel raised, pull the forward end up to release the third clip.

(3) Disconnect the power window switches and door lock switch wire connectors.

(4) Remove attaching screws and remove window switch.

INSTALLATION

For installation, reverse the above procedures.



80a6f017

Fig. 5 Window Switch Bezel