

# POWER MIRROR SYSTEMS

## TABLE OF CONTENTS

	page		page
<b>GENERAL INFORMATION</b>		<b>DIAGNOSIS AND TESTING</b>	
INTRODUCTION . . . . .	1	POWER MIRROR SYSTEM. . . . .	2
POWER MIRROR SYSTEM. . . . .	1	<b>REMOVAL AND INSTALLATION</b>	
<b>DESCRIPTION AND OPERATION</b>		POWER MIRROR SWITCH. . . . .	3
POWER MIRROR . . . . .	1	DOOR MODULE . . . . .	3
POWER MIRROR SWITCH. . . . .	1	POWER MIRROR . . . . .	4
DOOR MODULE . . . . .	2		

## GENERAL INFORMATION

### INTRODUCTION

Power operated or power operated and heated outside rear view mirrors are available factory-installed options on this model. Refer to 8W-62 - Power Mirrors in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

**NOTE:** This group covers both Left-Hand Drive (LHD) and Right-Hand Drive (RHD) versions of this model. Whenever required and feasible, the RHD versions of affected vehicle components have been constructed as mirror-image of the LHD versions. While most of the illustrations used in this group represent only the LHD version, the diagnostic and service procedures outlined can generally be applied to either version. Exceptions to this rule have been clearly identified as LHD or RHD, if a special illustration or procedure is required.

### POWER MIRROR SYSTEM

The power operated or power operated and heated outside rear view mirrors allow the driver to adjust both outside mirrors electrically from the driver seat position by operating a switch on the driver side front door trim panel. The power mirrors receive battery current through a fuse in the junction block, and will only operate when the ignition switch is in the On or Accessory positions.

The heated mirror option includes an electric heating grid behind the mirror glass in each outside mirror, which can clear the mirror glass of ice, snow, or fog. The heating grid receives fused battery current through the rear window defogger relay only when the rear window defogger system is turned on. Refer to Group 8N - Electrically Heated Systems for more information on the rear window defogger system.

Following are general descriptions of the major components in the power mirror system. Refer to the owner's manual in the vehicle glove box for more information on the features, use and operation of the power mirror system.

## DESCRIPTION AND OPERATION

### POWER MIRROR

Each power mirror head contains two electric motors, two drive mechanisms, and the mirror glass. One motor and drive controls mirror up-and-down movement, and the other controls right-and-left movement.

The power mirrors in vehicles equipped with the available heated mirror option also include an electric heating grid located behind the mirror glass. This heating grid is energized by the rear window defogger relay whenever the rear window defogger system is turned on. Refer to Group 8N - Electrically Heated Systems for more information on the operation of the rear window defogger system.

The power mirror assembly cannot be repaired. Only the mirror glass is serviced separately. If any other component of the power mirror unit is faulty or damaged, the entire assembly must be replaced.

### POWER MIRROR SWITCH

Both the right and left power outside mirrors are controlled by a single multi-function switch unit located on the driver side front door trim panel. Two versions of this switch are offered. Models without power windows or power locks have a stand-alone switch mounted in the driver side front door trim panel. Models equipped with power windows and power locks have a power mirror switch that is integral to the Driver Door Module (DDM).

Both versions of the switch are operated in the same manner. A three position rocker-type mirror

## DESCRIPTION AND OPERATION (Continued)

selector switch is moved right (right mirror control), left (left mirror control), or center to turn the power mirrors off. Then one of four directional control buttons is depressed to control movement of the selected mirror up, down, right, or left. The directional control buttons of the DDM-mounted switch are illuminated when the ignition switch is in the On or Accessory positions. The stand-alone switch is not illuminated.

The stand-alone power mirror switch cannot be repaired and, if faulty or damaged, it must be replaced as a complete unit. If the DDM power mirror switch is faulty or damaged, the entire DDM unit must be replaced.

## DOOR MODULE

A Driver Door Module (DDM) and a Passenger Door Module (PDM) are used on all models equipped with power locks and power windows. Each door module houses both the front door power lock and power window switches. In addition to the switches for its own door, the DDM houses individual switches for each passenger door power window, a power window lockout switch, the power mirror switch, and circuitry to support the one-touch down feature of the driver side front door power window. The PDM also houses the control circuitry and the power lock and unlock relays for the power lock system.

The DDM and the PDM are mounted to their respective front door trim panels. The DDM and PDM are serviced individually and cannot be repaired. If the DDM or PDM, or any of the switches and circuitry that they contain are faulty or damaged, the complete DDM or PDM unit must be replaced.

## DIAGNOSIS AND TESTING

### POWER MIRROR SYSTEM

For circuit descriptions and diagrams, refer to 8W-62 - Power Mirrors in Group 8W - Wiring Diagrams.

(1) Check the fuse in the junction block. If OK, go to Step 2. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.

(2) Turn the ignition switch to the On position. Check for battery voltage at the fuse in the junction block. If OK, go to Step 3. If not OK, repair the open circuit to the ignition switch as required.

(3) If the problem being diagnosed is inoperative illumination of the power mirror switch directional buttons for the Driver Door Module (DDM)-type switch, proceed as follows. If not, go to Step 5. Check the power window circuit breaker in the junction block. If OK, go to Step 4. If not OK, replace the faulty circuit breaker.

(4) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Remove the driver side front door trim panel and unplug the DDM wire harness connectors. Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output circuit cavity of the 12-way DDM wire harness connector. If OK, replace the faulty DDM. If not OK, repair the open circuit to the power window circuit breaker in the junction block as required.

(5) If the problem being diagnosed is an inoperative power mirror electric heating grid, proceed as follows. If not, go to Step 8. Disconnect and isolate the battery negative cable. Remove the front door trim panel on the side of the vehicle with the inoperative mirror heating grid. Unplug the wire harness connector at the mirror. Check for continuity between the ground circuit cavity in the body half of the power mirror wire harness connector and a good ground. If OK, go to Step 6. If not OK, repair the open circuit to ground as required.

(6) Connect the battery negative cable. Turn the ignition switch to the On position. Turn on the rear window defogger system. Check for battery voltage at the rear window defogger relay output circuit cavity in the body half of the power mirror wire harness connector. If OK, go to Step 7. If not OK, repair the open circuit to the rear window defogger relay as required.

(7) Check for continuity between the ground circuit and the rear window defogger relay output circuit cavities in the mirror half of the power mirror wire harness connector. There should be continuity. If not OK, replace the faulty power mirror. If OK, check the resistance through the electric heating grid circuit. Correct resistance through the electric heating grid should be from 10 to 16 ohms when measured at an ambient temperature of 21° C (70° F). If not OK, replace the faulty power mirror.

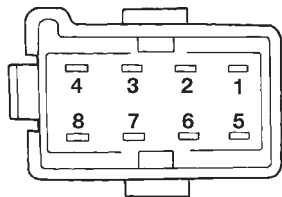
(8) Disconnect and isolate the battery negative cable. Remove the stand-alone power mirror switch from the driver side front door trim panel or, with a DDM-mounted switch, remove the driver side front door trim panel. Unplug the wire harness connector from the stand-alone switch or the 8-way wire harness connector from the DDM. Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output circuit cavity of the stand-alone switch wire harness connector or the 8-way DDM wire harness connector. If OK, go to Step 9. If not OK, repair the open circuit to the junction block as required.

(9) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable.

## DIAGNOSIS AND TESTING (Continued)

Check for continuity between the ground circuit cavity of the stand-alone switch wire harness connector or the 8-way DDM wire harness connector and a good ground. There should be continuity. If OK, go to Step 10. If not OK, repair the circuit to ground as required.

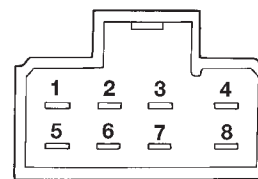
(10) Check the stand-alone power mirror switch or DDM-mounted power mirror switch continuity as shown in (Fig. 1) or (Fig. 2). If OK, go to Step 11. If not OK, replace the faulty stand-alone power mirror switch or the faulty DDM.



SELECT RIGHT MIRROR	
SWITCH POSITION	CONTINUITY BETWEEN
OFF	1 & 3, 1 & 4, 1 & 5, 1 & 6
UP	2 & 4, 1 & 3, 1 & 5, 1 & 6
DOWN	2 & 5, 1 & 3, 1 & 4, 1 & 6
RIGHT	2 & 6, 1 & 3, 1 & 4, 1 & 5
LEFT	2 & 3, 1 & 4, 1 & 5, 1 & 6

SELECT LEFT MIRROR	
SWITCH POSITION	CONTINUITY BETWEEN
OFF	1 & 5, 1 & 6, 1 & 7, 1 & 8
UP	2 & 8, 1 & 5, 1 & 6, 1 & 7
DOWN	2 & 5, 1 & 6, 1 & 7, 1 & 8
RIGHT	2 & 6, 1 & 5, 1 & 7, 1 & 8
LEFT	2 & 7, 1 & 5, 1 & 6, 1 & 8

80abfecb



CONNECTOR 1 (C-1)

SELECT RIGHT MIRROR	
SWITCH POSITION	CONTINUITY BETWEEN
UP	7 & 3, 2 & 5
DOWN	2 & 3, 7 & 5
RIGHT	4 & 3, 2 & 5
LEFT	2 & 3, 6 & 5

SELECT LEFT MIRROR	
SWITCH POSITION	CONTINUITY BETWEEN
UP	1 & 3, 2 & 5
DOWN	2 & 3, 1 & 5
RIGHT	6 & 3, 2 & 5
LEFT	2 & 3, 6 & 5

80abfecb

**Fig. 2 Driver Door Module Power Mirror Switch Continuity**

which is integral to the Driver Door Module (DDM). See Door Module in this group for the DDM-type power mirror switch service procedures.

(1) Disconnect and isolate the battery negative cable.

(2) Using a trim stick or another suitable wide flat-bladed tool, gently pry around the perimeter edge of the switch to release the snap clips that secure the switch to the trim panel (Fig. 4).

(3) Pull the power mirror switch away from the trim panel far enough to access the wire harness connector.

(4) Unplug the power mirror switch from the wire harness connector.

(5) Reverse the removal procedures to install.

## DOOR MODULE

(1) Disconnect and isolate the battery negative cable.

(2) Remove the screws that secure the front door trim panel to the inner door panel (Fig. 5).

(3) Using a trim stick or another suitable wide flat-bladed tool, gently pry the front door trim panel away from the door around the perimeter to release the trim panel retainers.

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

**Fig. 1 Stand-Alone Power Mirror Switch Continuity**

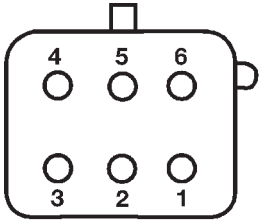
(11) Connect the battery negative cable. Use two jumper wires, one connected to a 12-volt battery feed, and the other connected to a good body ground. See the Power Mirror Test chart for the correct jumper wire connections at the mirror half of the power mirror wire harness connector (Fig. 3). If the mirror reactions are OK, repair the wire harness between the mirror and the stand-alone power mirror switch or the DDM as required. If the mirror reactions are not OK, replace the faulty power outside mirror assembly.

## REMOVAL AND INSTALLATION

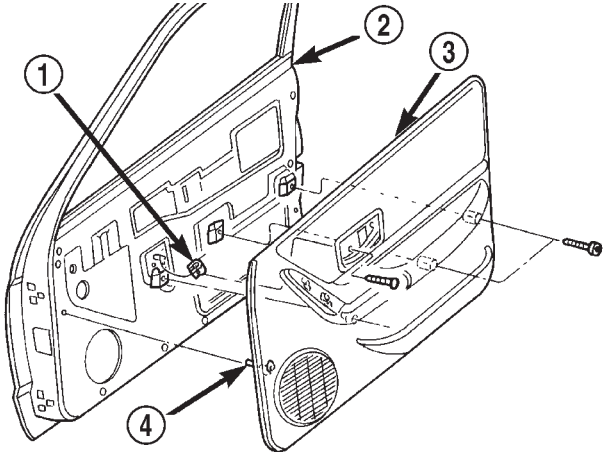
### POWER MIRROR SWITCH

This procedure covers removal of the stand-alone type power mirror switch. Vehicles with power windows and power locks have a power mirror switch

REMOVAL AND INSTALLATION (Continued)



POWER MIRROR TEST		
12 VOLTS	GROUND	MIRROR REACTION
PIN 1	PIN 4	UP
PIN 4	PIN 1	DOWN
PIN 2	PIN 3	LEFT
PIN 3	PIN 2	RIGHT
PIN 5	PIN 6	HEATER

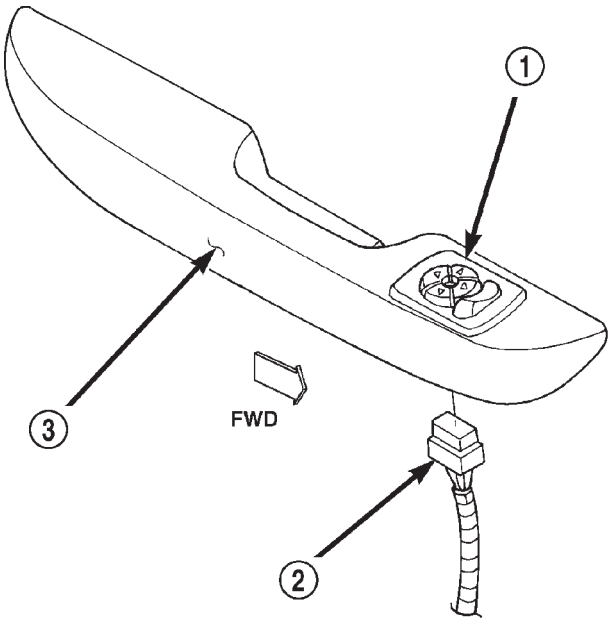


80aafb5e

Fig. 5 Front Door Trim Panel Remove/Install

- 1 – U-NUT
- 2 – DOOR
- 3 – TRIM PANEL
- 4 – PUSH-IN FASTENER

Fig. 3 Power Mirror Test



80ac2c55

80abfecd

Fig. 4 Stand-Alone Power Mirror Switch Remove/Install

- 1 – STAND-ALONE POWER MIRROR SWITCH
- 2 – CONNECTOR
- 3 – DOOR TRIM PANEL

(4) Lift the front door trim panel upwards and away from the inner door panel far enough to disen-

gage the top of the panel from the inner belt weatherstrip.

(5) Pull the front door trim panel away from the inner door panel far enough to access the inside door latch release and lock linkage rods near the back of the inside door remote controls.

(6) Unsnap the plastic retainer clips from the inside door remote control ends of the latch release and lock linkage rods, and remove the rod ends from the inside door remote controls.

(7) Unplug the wire harness connectors from the door module.

(8) Remove the trim panel from the front door.

(9) Remove the three screws that secure the door module to the front door trim panel (Fig. 6).

(10) Remove the door module from the front door trim panel.

(11) Reverse the removal procedures to install. Tighten the mounting screws to 2.2 N·m (20 in. lbs.).

POWER MIRROR

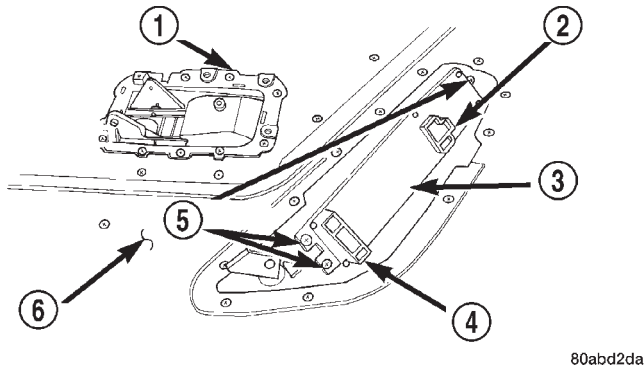
(1) Disconnect and isolate the battery negative cable.

(2) If the vehicle is so equipped, remove the manual window regulator crank handle with a removal tool (Fig. 7).

(3) Remove the screws that secure the front door trim panel to the inner door panel (Fig. 8) or (Fig. 9).

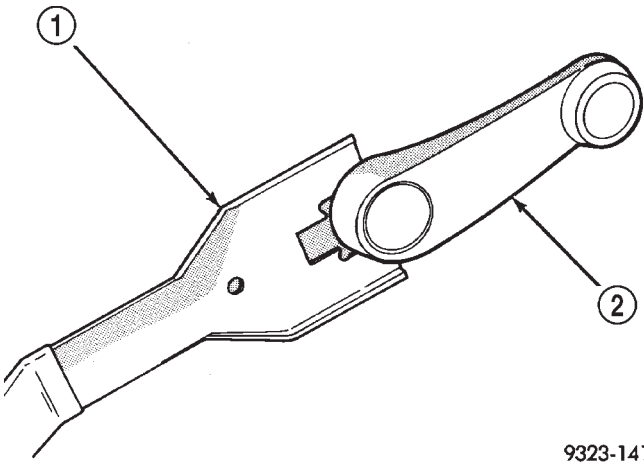
(4) Using a trim stick or another suitable wide flat-bladed tool, gently pry the front door trim panel away from the door around the perimeter to release the trim panel retainers.

# REMOVAL AND INSTALLATION (Continued)



**Fig. 6 Door Module Remove/Install**

- 1 - INSIDE DOOR LATCH AND LOCK REMOTE CONTROLS
- 2 - CONNECTOR 1 RECEPTACLE
- 3 - DOOR MODULE
- 4 - CONNECTOR 2 RECEPTACLE
- 5 - SCREWS
- 6 - DOOR TRIM PANEL



**Fig. 7 Window Regulator Crank Handle Remove - Typical**

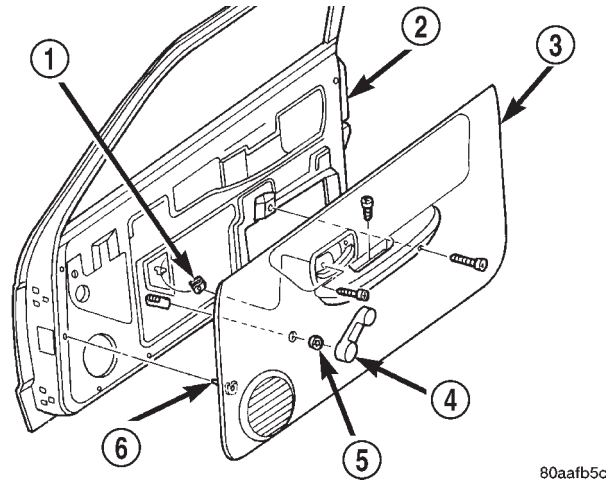
- 1 - DOOR HANDLE REMOVAL TOOL
- 2 - WINDOW CRANK

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

(5) Lift the front door trim panel upwards and away from the inner door panel far enough to disengage the top of the panel from the inner belt weatherstrip.

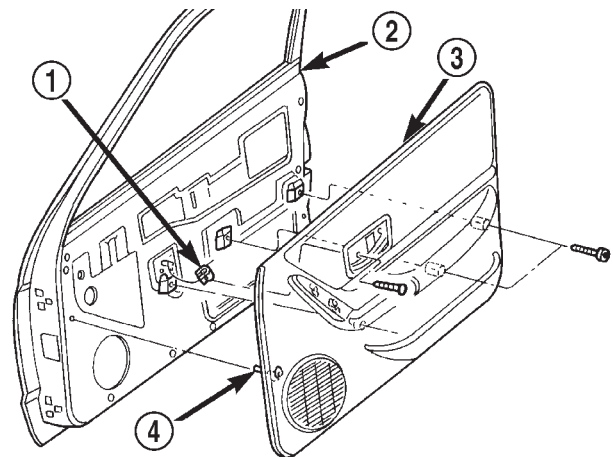
(6) Pull the front door trim panel away from the inner door far enough to access the inside door latch release and lock linkage rods near the back of the inside door remote controls.

(7) Unsnap the plastic retainer clips from the inside door remote control ends of the latch release and lock linkage rods, and remove the rod ends from the inside door remote controls.



**Fig. 8 Front Door Trim Panel Remove/Install - Manual Window**

- 1 - U-NUT
- 2 - DOOR
- 3 - TRIM PANEL
- 4 - WINDOW CRANK
- 5 - SPACER
- 6 - PUSH-IN FASTENER



**Fig. 9 Front Door Trim Panel Remove/Install - Power Window**

- 1 - U-NUT
- 2 - DOOR
- 3 - TRIM PANEL
- 4 - PUSH-IN FASTENER

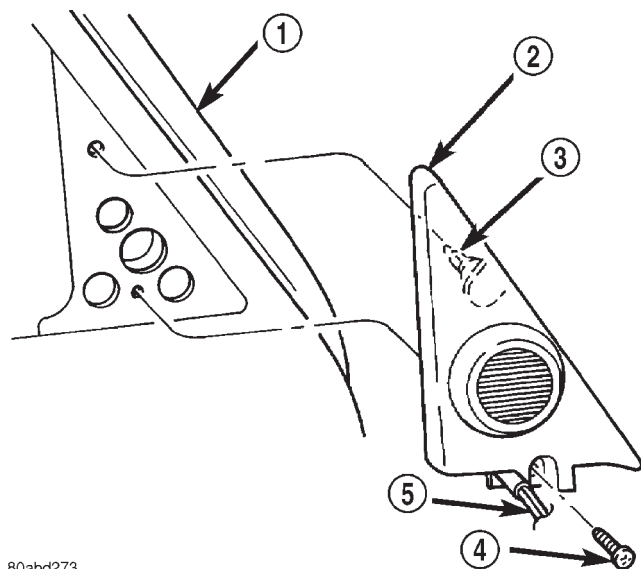
(8) Unplug the wire harness connectors from the door power switch module or, on the driver side only, the stand-alone power mirror switch.

(9) Set the front door trim panel aside.

(10) Remove the one screw that secures the front door flag trim to the inner door panel (Fig. 10).

(11) Using a trim stick or another suitable wide flat-bladed tool, gently pry the door flag trim away

## REMOVAL AND INSTALLATION (Continued)



80abd273

**Fig. 10 Front Door Flag Trim Panel Remove/Install**

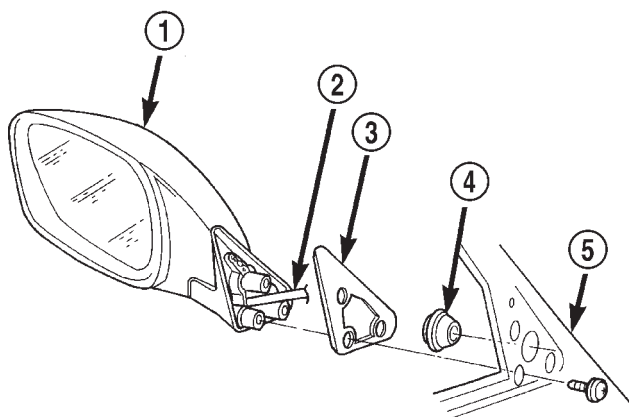
- 1 - FRONT DOOR
- 2 - DOOR FLAG TRIM PANEL
- 3 - RETAINER
- 4 - SCREW
- 5 - UPPER SPEAKER WIRE HARNESS

from the inner door to release the trim panel retainer.

(12) Unplug the power mirror wire harness connector.

(13) Remove the three screws that secure the power mirror to the inner door panel (Fig. 11).

(14) Unseat the power mirror wire harness grommet by pushing it out through the hole in the door flag from the inside.



80aafb5f

**Fig. 11 Power Mirror Remove/Install**

- 1 - SIDE VIEW MIRROR
- 2 - WIRE HARNESS
- 3 - SEAL
- 4 - GROMMET
- 5 - DOOR

(15) Pull the mirror and seal from the outside of the door while feeding the wire harness, grommet, and connector out through the hole from the inside of the door.

(16) Reverse the removal procedures to install. Tighten the mirror mounting screws to 4.3 N·m (38 in. lbs.). Tighten the door trim mounting screws to 2.2 N·m (20 in. lbs.).