

POWER SEAT SYSTEMS

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GENERAL INFORMATION

INTRODUCTION

Six-way driver and passenger power front seats with power recliners and power lumbar supports are an available factory-installed option for this model. The power seat system receives battery feed through a fuse in the Power Distribution Center (PDC) and a circuit breaker in the junction block at all times.

Following are general descriptions of the major components in the power seat system. Refer to 8W-63 - Power Seat 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.

MEMORY SYSTEM

An electronic memory system is an available option on this model. The memory system is able to store and recall the driver side power seat positions (including power lumbar and recliner positions), and both outside power mirror positions for two drivers. For vehicles with a radio connected to the Chrysler Collision Detection (CCD) data bus network, the

memory system is also able to store and recall ten radio station presets (including last station tuned) for two drivers. The memory system will automatically return to all of these settings when the corresponding button (Driver 1 or 2) of the memory switch on the driver side front door trim panel is depressed, or when the doors are unlocked using the corresponding (Driver 1 or 2) Remote Keyless Entry (RKE) transmitter.

The Driver Door Module (DDM) receives hard-wired input from the memory set/select switch on the driver side front door trim panel. The DDM also receives messages on the CCD data bus from the RKE receiver in the Passenger Door Module (PDM) for the memory select function. The DDM processes these inputs and sends messages to the PDM, the Memory Seat Module (MSM), and the radio (if CCD data bus capable) on the CCD data bus for memory recall.

The CCD data bus network allows the sharing of sensor information. This helps to reduce wire harness complexity, reduce internal controller hardware, and reduce component sensor current loads. At the same time, this system provides increased reliability, enhanced diagnostics, and allows the addition of many new feature capabilities.

This group covers only the conventional diagnostic procedures for the power seat system components. For diagnosis of the memory system, use of a DRB scan tool and the proper Body Diagnostic Procedures manual are recommended. For additional information on the features and functions of the memory system, refer to the vehicle owner's manual.

DESCRIPTION AND OPERATION

MEMORY SEAT MODULE

A Memory Seat Module (MSM), mounted under the inboard side of the driver side front seat cushion, is used on this model to control all of the driver side power seat memory functions and features. The MSM contains a central processing unit and interfaces with other modules in the vehicle on the Chrysler Collision Detection (CCD) data bus network.

The MSM receives hard-wired inputs from the power seat switch, the power lumbar switch, and the potentiometers on each of the driver side power seat motors. The MSM receives messages on the CCD data bus from the Driver Door Module (DDM) (memory set/select switch status), the Powertrain Control Module (PCM) (vehicle speed status), and the Body Control Module (seat belt switch status). The programming in the MSM allows it to process the information from these inputs and send control outputs to each of the driver side power seat motors. The MSM will prevent the seat memory function from being initiated if the driver side seat belt is buckled, or if the vehicle is moving.

For diagnosis of the MSM or the CCD data bus, refer to the proper Body Diagnostic Procedures manual. The MSM cannot be repaired and, if faulty, it must be replaced.

POWER SEAT SWITCH

The power seat can be adjusted in eight different ways using the power seat switch. The switch is located at the lower outboard side of the seat cushion on the seat cushion side shield. Refer to the owner's manual for more information on the power seat switch functions and the seat adjusting procedures.

The individual switches in the power seat switch module cannot be repaired. If one switch is damaged or faulty, the entire power seat switch module must be replaced.

POWER LUMBAR SWITCH

The power lumbar adjuster on each front seat can be moved in or out electrically by operating the single two-way switch mounted near the front of the outboard seat cushion side shield.

The power lumbar switches cannot be repaired and, if faulty or damaged, they must be replaced.

POWER SEAT ADJUSTER AND MOTORS

There are three reversible motors that operate the power seat adjuster. The motors are connected to worm-drive gearboxes that move the seat adjuster through a combination of screw-type drive units.

The front and rear of a seat are operated by different motors. They can be raised or lowered indepen-

dently of each other. When the seat switch is pushed to the Up or Down position, both the front and rear motors operate in unison, moving the entire seat up or down. The forward-rearward motor is operated by pushing the seat switch to its forward or rearward position.

When a switch is actuated, a battery feed and a ground path are applied through the switch contacts to the motor(s). The motor(s) operate to move the seat in the selected direction until the switch is released, or until the travel limit of the power seat adjuster is reached. When the switch is moved in the opposite direction, the battery feed and ground paths to the motor(s) are reversed through the switch contacts. This causes the motor to run in the opposite direction.

Each motor contains a self-resetting circuit breaker to protect it from overload. Consecutive or frequent resetting of the circuit breakers must not be allowed to continue, or the motors may be damaged. Make the necessary repairs. The motors used on models with the optional memory system also have a position potentiometer included in the motor assembly.

The power seat adjuster and motors cannot be repaired, and are serviced only as a complete unit. If any component in this unit is faulty or damaged, the entire power seat adjuster and motors assembly must be replaced.

POWER RECLINER ADJUSTER AND MOTOR

The power recliner adjuster uses a reversible motor to operate the seat back recliner adjuster. The motor is connected to a gearbox that moves the recliner adjuster through a screw-type drive unit.

When the power recliner switch is actuated, a battery feed and a ground path are applied through the switch contacts to the motor. The motor operates to move the seat back in the selected direction until the switch is released, or until the travel limit of the power recliner adjuster is reached. When the switch is moved in the opposite direction, the battery feed and ground paths to the motor are reversed through the switch contacts. This causes the motor to run in the opposite direction.

The motor contains a self-resetting circuit breaker to protect it from overload. Consecutive or frequent resetting of the circuit breaker must not be allowed to continue, or the motor may be damaged. Make the necessary repairs. The motor used on models with the optional memory system also has a position potentiometer included in the motor assembly.

The power recliner adjuster and motor cannot be repaired, and is serviced only as a complete unit. If any component in this unit is faulty or damaged, the entire power recliner adjuster and motor assembly must be replaced.

DESCRIPTION AND OPERATION (Continued)

POWER LUMBAR ADJUSTER AND MOTOR

There is a reversible motor that operates the power lumbar adjuster. The motor is connected to a worm-drive gearbox that moves the lumbar adjuster mechanism through a cable and lever-type actuator unit.

When the power lumbar switch is actuated, a battery feed and a ground path are applied through the switch contacts to the motor. The motor operates to move the lumbar adjuster mechanism in the selected direction until the switch is released, or until the travel limit of the lumbar adjuster is reached. When the switch is moved in the opposite direction, the battery feed and ground paths to the motor are reversed through the switch contacts. This causes the motor to run in the opposite direction.

The motor contains a self-resetting circuit breaker to protect it from overload. Consecutive or frequent resetting of the circuit breaker must not be allowed to continue, or the motor may be damaged. Make the necessary repairs. The motor used on models with the optional memory system also has a position potentiometer included in the motor assembly.

The power lumbar adjuster and motor cannot be repaired, and are serviced only as a complete unit with the seat back frame. If any component in this unit is damaged or is faulty, the entire power lumbar seat back frame assembly must be replaced.

CIRCUIT BREAKER

An automatic resetting circuit breaker in the junction block is used to protect the power seat system circuit. The circuit breaker can protect the system from a short circuit, or from an overload condition caused by an obstructed or stuck seat adjuster.

The circuit breaker cannot be repaired and, if faulty, it must be replaced.

DIAGNOSIS AND TESTING**POWER SEAT SYSTEM**

Before any testing of the power seat system is attempted, the battery should be fully-charged and all wire harness connections and pins cleaned and tightened to ensure proper continuity and grounds. For circuit descriptions and diagrams, refer to 8W-63 - Power Seat in Group 8W - Wiring Diagrams.

With the dome lamp on, apply the power seat switch in the direction of the failure. If the dome lamp dims, the seat may be jamming. Check under and behind the seat for binding or obstructions. If the dome lamp does not dim, proceed with testing of the individual components and circuits.

CIRCUIT BREAKER

For circuit descriptions and diagrams, refer to 8W-63 - Power Seat in Group 8W - Wiring Diagrams.

(1) Locate the correct circuit breaker in the junction block. Pull out the circuit breaker slightly, but be sure that the terminals still contact the terminals in the junction block cavities.

(2) Connect the negative lead of a 12-volt DC voltmeter to a good ground.

(3) With the voltmeter positive lead, check both terminals of the circuit breaker for battery voltage.

If only one terminal has battery voltage, the circuit breaker is faulty and must be replaced. If neither terminal has battery voltage, repair the open circuit from the Power Distribution Center (PDC) as required.

POWER SEAT SWITCH

For circuit descriptions and diagrams, refer to 8W-63 - Power Seat in Group 8W - Wiring Diagrams.

(1) Remove the power seat switch as described in this group.

(2) Use an ohmmeter to test the continuity of the switches in each position. See the Power Seat Switch Continuity chart (Fig. 1). If OK, see the diagnosis for the Power Seat Adjuster and Motors or Power Recliner Adjuster and Motor, as required. If not OK, replace the faulty switch module.

POWER LUMBAR SWITCH

For circuit descriptions and diagrams, refer to 8W-63 - Power Seat in Group 8W - Wiring Diagrams.

(1) Remove the power lumbar switch as described in this group.

(2) Use an ohmmeter to test the continuity of the switch in each position. See the Power Lumbar Switch Continuity chart (Fig. 2). If OK, see the diagnosis for the Power Lumbar Adjuster and Motor. If not OK, replace the faulty switch.

POWER SEAT ADJUSTER AND MOTORS

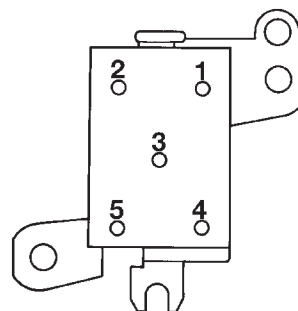
The tests below apply to a power seat system without the memory system option. For testing of the power seats with the memory system, refer to the proper Body Diagnostic Procedures manual. For circuit descriptions and diagrams, refer to 8W-63 - Power Seat in Group 8W - Wiring Diagrams.

Operate the power seat switch to move all three seat motors. The seat should move in each selected direction. If a motor fails to operate in only one direction, move the seat a short distance in the opposite direction and test again to be certain the adjuster is not at its travel limit. If one or more of the motors operate, see the diagnosis for the Power Seat Switch in this group. If no motors operate, proceed as follows:

(1) Test the circuit breaker in the junction block as described in this group. If OK, go to Step 2. If not OK, replace the faulty circuit breaker.

DIAGNOSIS AND TESTING (Continued)

SWITCH POSITION	CONTINUITY BETWEEN PINS	
	LEFT SEAT	RIGHT SEAT
OFF	PIN 1 to 2	PIN 1 to 2
	PIN 1 to 3	PIN 1 to 3
	PIN 1 to 4	PIN 1 to 4
	PIN 1 to 6	PIN 1 to 6
	PIN 1 to 7	PIN 1 to 7
	PIN 1 to 8	PIN 1 to 8
	PIN 1 to 9	PIN 1 to 9
	PIN 1 to 10	PIN 1 to 10
FRONT RISER UP	PIN 1 to 10 PIN 5 to 7	PIN 1 to 7 PIN 5 to 10
FRONT RISER DOWN	PIN 1 to 7 PIN 5 to 10	PIN 1 to 10 PIN 5 to 7
CENTER SWITCH FORWARD	PIN 1 to 3 PIN 5 to 6	PIN 1 to 3 PIN 5 to 6
CENTER SWITCH REARWARD	PIN 1 to 6 PIN 3 to 5	PIN 1 to 6 PIN 3 to 5
REAR RISER UP	PIN 1 to 9 PIN 5 to 8	PIN 1 to 8 PIN 5 to 9
REAR RISER DOWN	PIN 1 to 8 PIN 5 to 9	PIN 1 to 9 PIN 5 to 8
RECLINER UP	PIN 1 to 4 PIN 2 to 5	PIN 1 to 4 PIN 2 to 5
RECLINER DOWN	PIN 1 to 2 PIN 4 to 5	PIN 1 to 2 PIN 4 to 5



SWITCH POSITION	CONTINUITY BETWEEN
NEUTRAL	1 AND 4
NEUTRAL	2 AND 5
FORWARD	1 AND 4
FORWARD	3 AND 5
REARWARD	1 AND 3
REARWARD	2 AND 5

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Fig. 2 Power Lumbar Switch Continuity

assembly. If the circuits are not OK, repair the wire harness as required.

POWER RECLINER ADJUSTER AND MOTOR

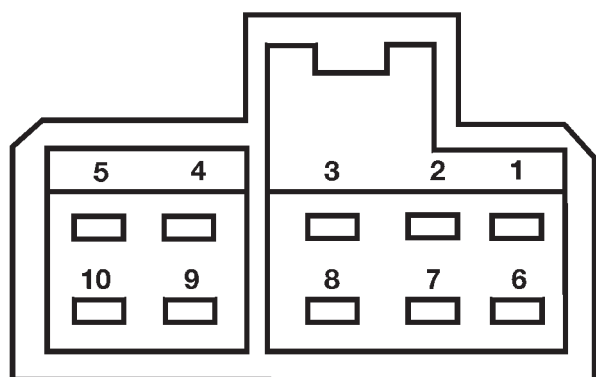
The tests below apply to a power seat system without the memory system option. For testing of the power seats with the memory system, refer to the proper Body Diagnostic Procedures manual. For circuit descriptions and diagrams, refer to 8W-63 - Power Seat in Group 8W - Wiring Diagrams.

Operate the power seat switch to move the power recliner in each direction. The recliner should move in both directions. If the power recliner fails to operate in only one direction, move the seat a short distance in the opposite direction and test again to be certain the adjuster is not at its travel limit. If the power recliner still fails to operate in only one direction, see the diagnosis for the Power Seat Switch in this group. If the power recliner fails to operate in either direction, proceed as follows:

(1) Test the circuit breaker in the junction block as described in this group. If OK, go to Step 2. If not OK, replace the faulty circuit breaker.

(2) Remove the power seat switch as described in this group. Check for battery voltage at the fused B(+) circuit cavity of the switch wire harness connector. If OK, go to Step 3. If not OK, repair the open circuit to the junction block as required.

(3) Check for continuity between the ground circuit cavity of the switch wire harness connector and a good ground. There should be continuity. If OK, go to Step 4. If not OK, repair the open circuit to ground as required.



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Fig. 1 Power Seat Switch Continuity

(2) Remove the power seat switch as described in this group. Check for battery voltage at the fused B(+) circuit cavity of the switch wire harness connector. If OK, go to Step 3. If not OK, repair the open circuit to the junction block as required.

(3) Check for continuity between the ground circuit cavity of the switch wire harness connector and a good ground. There should be continuity. If OK, go to Step 4. If not OK, repair the open circuit to ground as required.

(4) Test the power seat switch as described in this group. If the switch tests OK, check the wire harness for the inoperative motor between the switch and the motor for shorts or opens. If the circuits check OK, replace the faulty power seat adjuster and motors

DIAGNOSIS AND TESTING (Continued)

(4) Test the power seat switch as described in this group. If the switch tests OK, check the wire harness for the power recliner between the switch and the motor for shorts or opens. If the circuits check OK, replace the faulty power recliner adjuster and motor assembly. If the circuits are not OK, repair the wire harness as required.

POWER LUMBAR ADJUSTER AND MOTOR

The tests below apply to a power seat system without the memory system option. For testing of the power seats with the memory system, refer to the proper Body Diagnostic Procedures manual. For circuit descriptions and diagrams, refer to 8W-63 - Power Seat in Group 8W - Wiring Diagrams.

Operate the power lumbar switch to move the power lumbar adjuster in each direction. The lumbar adjuster should move in both directions. If the power lumbar adjuster fails to operate in only one direction, move the adjuster a short distance in the opposite direction and test again to be certain the adjuster is not at its travel limit. If the lumbar adjuster still fails to operate in only one direction, see the diagnosis for the Power Lumbar Switch in this group. If the power lumbar adjuster fails to operate in either direction, proceed as follows:

(1) Test the circuit breaker in the junction block as described in this group. If OK, go to Step 2. If not OK, replace the faulty circuit breaker.

(2) Remove the power lumbar switch as described in this group. Check for battery voltage at the fused B(+) circuit cavity of the switch wire harness connector. If OK, go to Step 3. If not OK, repair the open circuit to the junction block as required.

(3) Check for continuity between the ground circuit cavity of the switch wire harness connector and a good ground. There should be continuity. If OK, go to Step 4. If not OK, repair the open circuit to ground as required.

(4) Test the power lumbar switch as described in this group. If the switch tests OK, check the wire harness for the power lumbar adjuster between the switch and the motor for shorts or opens. If the circuits check OK, replace the faulty power lumbar adjuster and motor, which are serviced with the seat back frame assembly. If the circuits are not OK, repair the wire harness as required.

REMOVAL AND INSTALLATION**POWER SEAT SWITCH**

(1) Disconnect and isolate the battery negative cable.

(2) Using a trim stick or other suitable wide flat-bladed tool, gently pry the power seat and power recliner switch knobs off of the switch stems.

(3) Remove the three screws that secure the seat cushion side shield to the seat cushion frame.

(4) Pull the side shield away from the seat cushion far enough to unplug the switch wire harness connector.

(5) Remove the two screws that secure the switch to the inside of the side shield (Fig. 3).

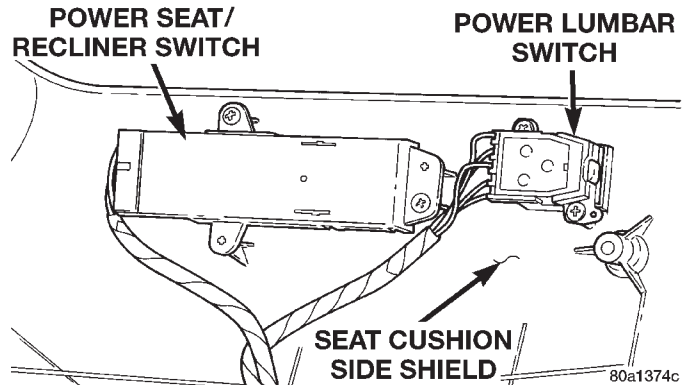


Fig. 3 Power Seat Switches Remove/Install

(6) Remove the switch from the side shield.

(7) Reverse the removal procedures to install.

POWER LUMBAR SWITCH

(1) Disconnect and isolate the battery negative cable.

(2) Remove the three screws that secure the seat cushion side shield to the seat cushion frame.

(3) Pull the side shield away from the seat cushion far enough to unplug the switch wire harness connector.

(4) Remove the two screws that secure the switch to the inside of the side shield.

(5) Remove the switch from the side shield.

(6) Reverse the removal procedures to install.

POWER SEAT ADJUSTER AND MOTORS

(1) Move the seat to the forward-most position, if possible.

(2) Remove the single screw that secures each of the two rear seat track covers to the rear of the seat tracks and remove the covers.

(3) Remove the single screw that secures the rear of each of the two seat tracks to the floor pan.

(4) Move the seat to the rearward-most position, if possible.

(5) Disconnect and isolate the battery negative cable.

(6) Remove the single screw that secures the front of each of the two seat tracks to the floor pan (Fig. 4).

(7) Tilt the seat rearward and unplug the power seat wire harness connector located under the seat cushion.

(8) Remove the seat assembly from the vehicle.

REMOVAL AND INSTALLATION (Continued)



Fig. 4 Power Seat Remove/Install - Typical

(9) Remove the three screws that secure the outboard seat cushion side shield to the seat cushion frame and pull the shield away from the seat cushion.

(10) Remove the four nuts that secure the upper seat adjuster mounting rails to the seat cushion frame.

(11) Unplug the wire harness connectors as required, depending upon how the vehicle is equipped, to separate the power seat motors and adjuster from the seat cushion frame.

(12) Reverse the removal procedures to install. Tighten the seat mounting hardware as follows:

- Seat cushion frame to adjuster nuts - 20 N·m (15 ft. lbs.)
- Seat adjuster to floor pan bolts - 29 N·m (20 ft. lbs.).

POWER RECLINER ADJUSTER AND MOTOR

(1) Move the power seat adjuster to the most raised and forward stop positions, if possible.

(2) Remove the three screws that secure the outboard seat cushion side shield to the seat cushion frame and pull the shield away from the seat so that the power recliner adjuster lower bracket can be seen.

(3) If possible, adjust the seat back with the power recliner switch far enough so that both of the two bolts in the power recliner adjuster lower bracket can be accessed.

(4) Disconnect and isolate the battery negative cable.

(5) Remove the two bolts that secure the power recliner adjuster lower bracket to the seat cushion frame (Fig. 5).

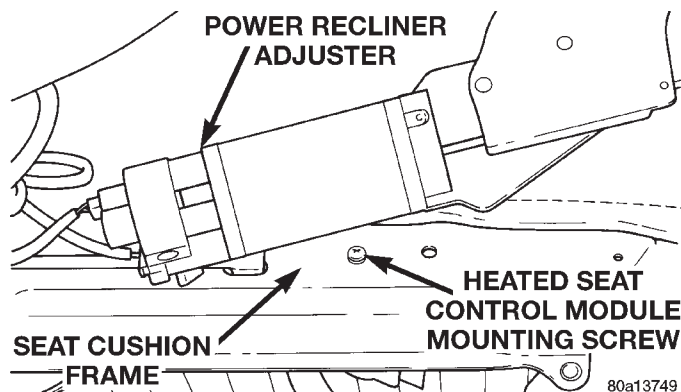


Fig. 5 Power Recliner Lower Bracket Remove/Install

(6) Remove the inboard seat back pivot bolt.

(7) Unplug the wire harness connectors, depending upon how the vehicle is equipped, as required to remove the seat back from the seat cushion.

(8) Remove the seat back cover far enough to access the two bolts that secure the power recliner adjuster upper bracket to the seat back frame (Fig. 6). Refer to Group 23 - Body for the seat back cover removal procedures.

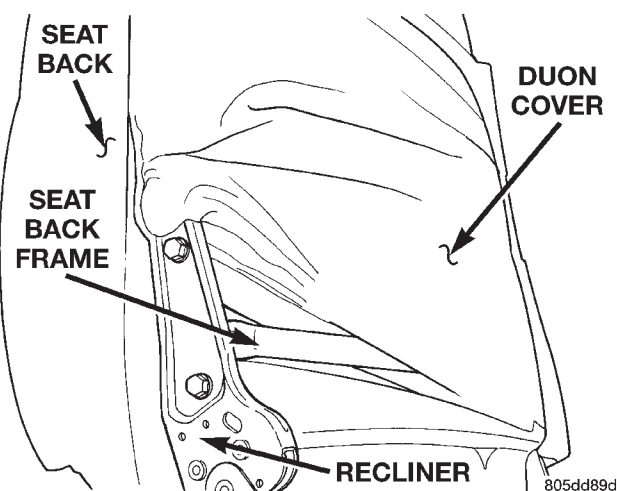


Fig. 6 Power Recliner Upper Bracket Remove/Install

(9) Remove the power recliner adjuster and motor unit from the seat back frame.

(10) Reverse the removal procedures to install. Tighten the hardware as follows:

- Inboard pivot bolt - 40 N·m (29 ft. lbs.)
- Recliner bracket bolts - 28 N·m (20 ft. lbs.).

POWER LUMBAR ADJUSTER AND MOTOR

(1) Remove the power recliner adjuster and motor from the seat back frame as described in this group.

(2) Remove all of the seat back trim from the seat back. Refer to Group 23 - Body for the procedures.

REMOVAL AND INSTALLATION (Continued)

(3) Replace the seat back frame assembly, which includes the lumbar adjuster and motor (Fig. 7).

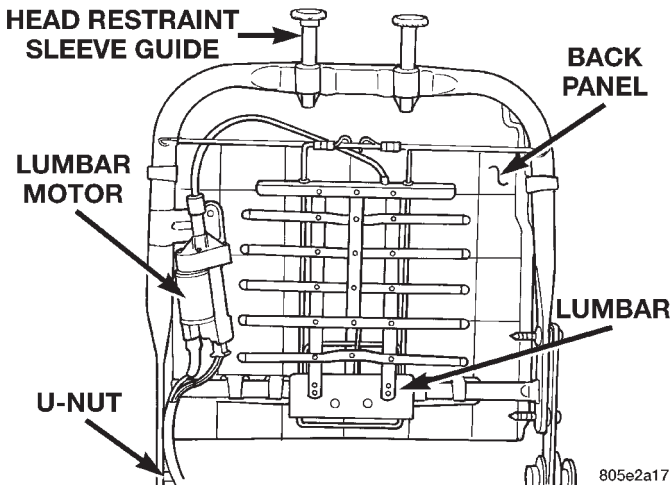


Fig. 7 Power Lumbar Adjuster and Motor

(4) Reverse the removal procedures to install.

MEMORY SEAT MODULE

(1) Move the driver side power seat adjuster to the most raised and forward stop positions, if possible.

(2) Remove the single screw that secures each of the two rear seat track covers to the rear of the seat tracks and remove the covers.

(3) Remove the single screw that secures the rear of each of the two seat tracks to the floor pan.

(4) Move the driver side power seat adjuster to the most rearward stop position, if possible.

(5) Remove the single screw that secures the front of each of the two seat tracks to the floor pan.

(6) Disconnect and isolate the battery negative cable.

(7) Carefully tilt the seat back towards the outboard side of the vehicle.

(8) Release the two retainers that secure the memory seat module wire harness to the inboard seat adjuster top rail (Fig. 8).

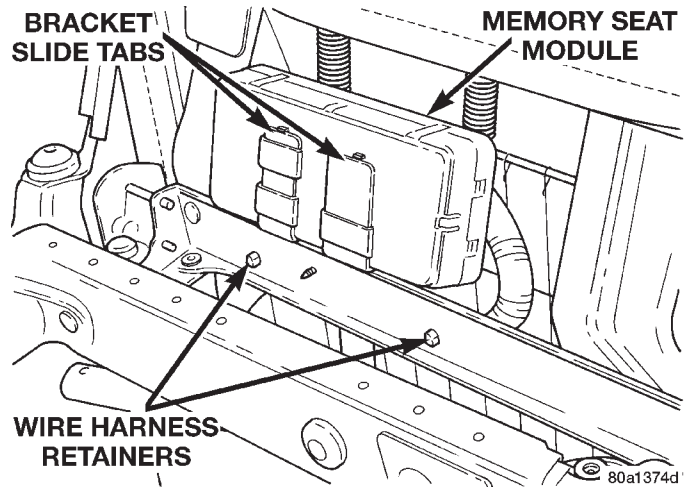


Fig. 8 Memory Seat Module Remove/Install

(9) Slide the memory seat module off of the mounting bracket slide tabs far enough to unplug the wire harness connectors.

(10) Remove the module from under the seat cushion.

(11) Reverse the removal procedures to install.

NOTE: Following the installation it will be necessary to initialize the memory seat module. This is done by moving each of the power seat adjuster motors (including the power recliner and power lumbar motors) through its full range of motion using the power seat switches. It is necessary for the memory seat module to learn the motor sensor values in each of the adjuster hard stop positions, so that the module can function properly.

