

POWER SEAT SYSTEMS

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GENERAL INFORMATION

INTRODUCTION

A six-way driver side power seat is an available factory-installed option for this model, when it is also equipped with the split bench seat option. Extended cab (club cab and quad cab) versions equipped with the power seat option also have a driver side power lumbar support feature. Refer to 8W-63 - Power Seat in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

POWER SEAT SYSTEM

The power seat system option allows the driver to electrically adjust his seating position for optimum control and comfort using the power seat switches located on the outboard seat cushion side shield. The power seat system allows the seating position to be adjusted forward, rearward, front up, front down, rear up, or rear down. The power seat system receives battery current through a fuse in the Power Distribution Center and a circuit breaker in the junction block, regardless of the ignition switch position.

Extended cab (club cab and quad cab) models equipped with the power seat option also feature a power operated lumbar support in the driver side seat back. The power lumbar support allows the driver to inflate or deflate a bladder located in the lower seat back to achieve optimum comfort and support in the lower lumbar region of the spinal column. The power lumbar support shares the battery feed circuit of the power seat system.

The power seat system includes the power seat adjuster and motors unit, the power lumbar support bladder and electric pump (extended cab only), the power seat switch, and the circuit breaker. Following

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

DESCRIPTION AND OPERATION

POWER SEAT SWITCH

The power seat in standard cab models can be adjusted in six different ways using the power seat switch. The power seat switch for extended cab models (club cab and quad cab) has an additional switch knob for adjusting the power lumbar support. The switch is located on the lower outboard side of the driver side seat cushion on the seat cushion side shield on all models. Refer to the owner's manual in the vehicle glove box 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 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 independently of each other. When the center seat switch is pushed in the Up or Down direction, both the front and rear motors operate in unison. On standard cab models the entire seat is moved up or down, on

DESCRIPTION AND OPERATION (Continued)

extended cab models (club cab and quad cab) the seat cushion moves independently of the seat back in the up or down directions. The forward-rearward motor is operated by pushing the center seat switch in the Forward or Rearward direction, which moves the entire seat in the selected direction on all models.

When a power seat switch is actuated, a battery feed and a ground path are applied through the switch contacts to the motor(s). The motor(s) and drive unit(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 path 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 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 LUMBAR ADJUSTER AND MOTOR

There is a reversible motor that operates the power lumbar adjuster. The motor is connected to a pump that inflates or deflates the rubber lumbar adjuster bladder 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 pump in the selected direction until the switch is released, or until the inflation limit of the lumbar bladder is reached. When the switch is moved in the opposite direction, the battery feed and ground path to the motor are reversed through the switch contacts. This causes the motor to run in the opposite direction, and the pump deflates the bladder.

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 power lumbar adjuster and motor cannot be repaired, and are serviced only as a complete unit. If any component in this unit is damaged or is faulty, the entire power lumbar adjuster and motor unit 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 or damaged, 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 certain that the circuit breaker 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 ADJUSTER AND MOTORS

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 in each direction. The seat should move in each of the selected directions. If the power seat adjuster fails to operate in only one direction, move the adjuster a short distance in the opposite direction and test again to be certain that the adjuster is not at its travel limit. If the power seat adjuster still fails to operate in only one direction, see Power Seat Switch in the Diagnosis and Testing section of this group. If the power seat adjuster fails to operate in more than one direction, proceed as follows:

DIAGNOSIS AND TESTING (Continued)

(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 from the seat. Check for battery voltage at the fused B(+) circuit cavity of the power seat 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 power seat 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 power seat motor(s) between the power seat switch and the motor for shorts or opens. If the circuits check OK, replace the faulty power seat adjuster and motors assembly. If the circuits are not OK, repair the wire harness as required.

POWER LUMBAR ADJUSTER AND MOTOR

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

Operate the power seat switch to inflate and deflate the power lumbar support. The lumbar support should inflate and deflate as selected. If the power lumbar support fails to operate in only one direction, move the support a short distance in the opposite direction and test again to be certain that the support is not already fully inflated or deflated. If the power lumbar support still fails to operate in only one direction, see Power Seat Switch in the Diagnosis and Testing section of this group. If the power lumbar support fails to operate in more than one 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 from the seat. Check for battery voltage at the fused B(+) circuit cavity of the power seat 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 power seat 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 between the power seat switch and the power lumbar support motor for shorts or opens. If the circuits check OK, replace the faulty power lumbar support adjuster and motor assembly. If the circuits are not OK, repair the wire harness as required.

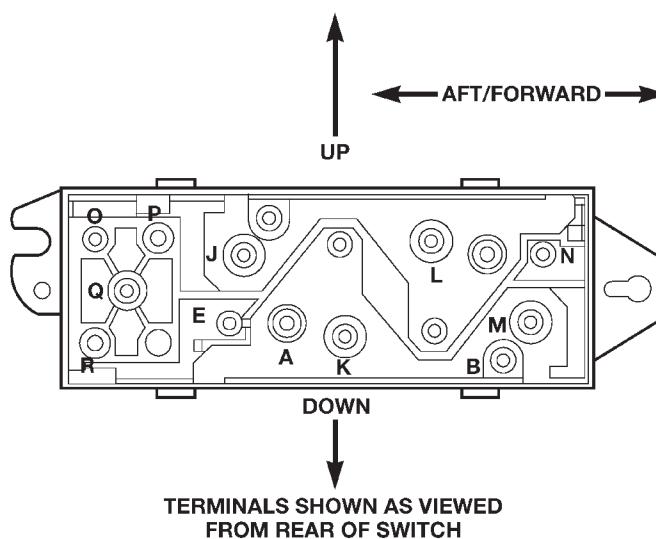
POWER SEAT SWITCH

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

(1) Disconnect and isolate the battery negative cable.

(2) Remove the power seat switch from the power seat.

(3) Use an ohmmeter to test the continuity of the power seat switches in each position. See the Power Seat Switch Continuity chart (Fig. 1). If OK, see Power Seat Adjuster and Motors or Power Lumbar Adjuster and Motor in the Diagnosis and Testing section of this group. If not OK, replace the faulty power seat switch module.



POWER SEAT SWITCH	
SWITCH POSITION	CONTINUITY BETWEEN
OFF	B-N, B-J, B-M, B-E, B-L, B-K
VERTICAL UP	A-E, A-M, B-N, B-J
VERTICAL DOWN	A-J, A-N, B-M, B-E
HORIZONTAL FORWARD	A-L, B-K
HORIZONTAL AFT	A-K, B-L
FRONT TILT UP	A-M, B-N
FRONT TILT DOWN	A-N, B-M
REAR TILT UP	A-E, B-J
REAR TILT DOWN	A-J, B-E
LUMBAR OFF	O-P, P-R
LUMBAR UP (INFLATE)	O-P, Q-R
LUMBAR DOWN (DEFLATE)	O-R, P-Q

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Fig. 1 Power Seat Switch Continuity

REMOVAL AND INSTALLATION

POWER SEAT SWITCH

STANDARD CAB

(1) Disconnect and isolate the battery negative cable.

(2) Remove the two screws that secure the power seat switch and bezel unit to the seat cushion frame (Fig. 2).

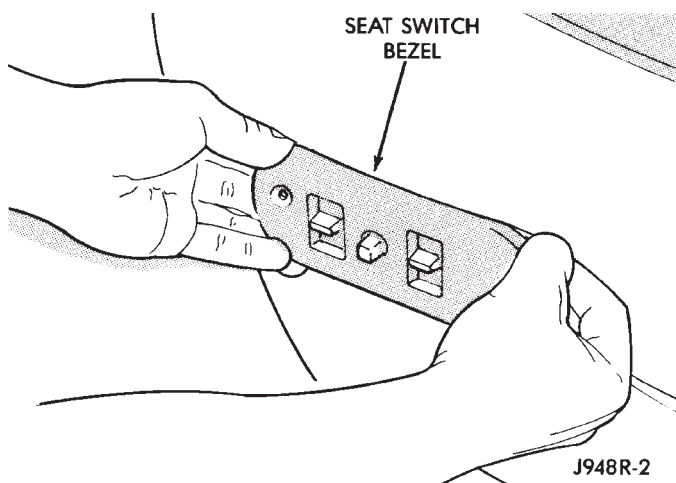


Fig. 2 Seat Switch and Bezel Remove/Install

(3) Pull the switch and bezel unit out from the seat far enough to access the switch wire harness connector. Gently pry the locking tabs of the switch away from the wire harness connector and carefully unplug the connector from the power seat switch module (Fig. 3).

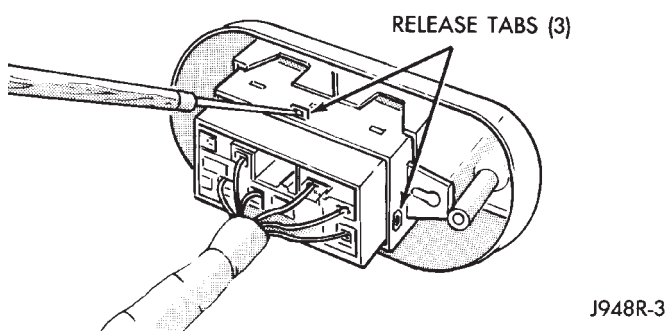


Fig. 3 Power Seat Switch Connector Remove

(4) Remove the two screws that secure the power seat switch module to the bezel and remove the bezel.

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

EXTENDED CAB

(1) Disconnect and isolate the battery negative cable.

(2) Remove the screw that secures the recliner lever to the recliner mechanism release shaft on the outboard side of the driver side front seat.

(3) Pull the recliner lever off of the recliner mechanism release shaft.

(4) Remove the three screws that secure the driver side seat cushion side shield to the outboard seat cushion frame.

(5) Pull the driver side seat cushion side shield away from the seat cushion frame far enough to access the power seat switch module wire harness connector.

(6) Gently pry the locking tabs of the switch away from the wire harness connector and carefully unplug the connector from the power seat switch module.

(7) Remove the seat cushion side shield and power seat switch module from the seat as a unit.

(8) Remove the two screws that secure the power seat switch to the inside of the seat cushion side shield (Fig. 4).

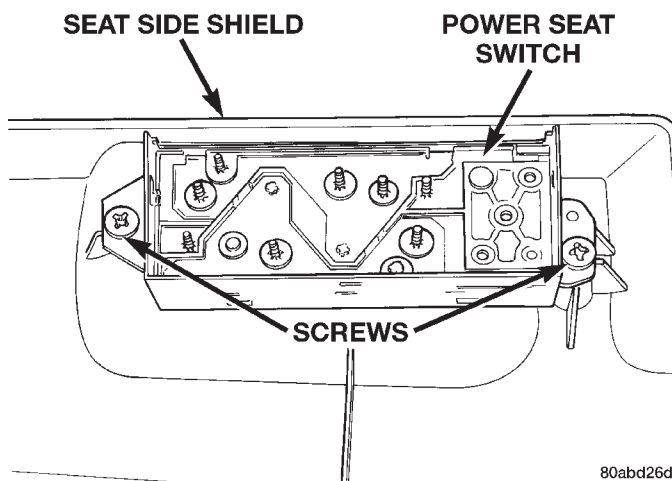


Fig. 4 Power Seat Switch Remove/Install - Typical

(9) Remove the power seat switch from the seat cushion side shield.

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

POWER SEAT ADJUSTER AND MOTORS

(1) Disconnect and isolate the battery negative cable.

(2) Remove the driver side seat, adjuster and motors assembly from the vehicle as a unit. Refer to Group 23 - Body for the procedures.

(3) Unplug the power seat wire harness connectors at each of the three power seat motors.

(4) Release the power seat wire harness retainers from the seat adjuster and motors assembly.

REMOVAL AND INSTALLATION (Continued)

(5) Remove the fasteners that secure the center seat cushion section to the brackets on the power seat adjuster.

(6) Remove the screws that secure the power seat adjuster and motors assembly to the seat cushion frame.

(7) Remove the power seat adjuster and motors assembly from the seat cushion frame.

(8) Reverse the removal procedures to install.

POWER LUMBAR ADJUSTER AND MOTOR

(1) Disconnect and isolate the battery negative cable.

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

(3) Unplug the wire harness connector at the power lumbar inflator motor.

(4) Unhook the power lumbar adjuster and motor assembly clips from the steel support rod welded to the seat back frame (Fig. 5).

(5) Remove the power lumbar adjuster and motor assembly from the seat back frame.

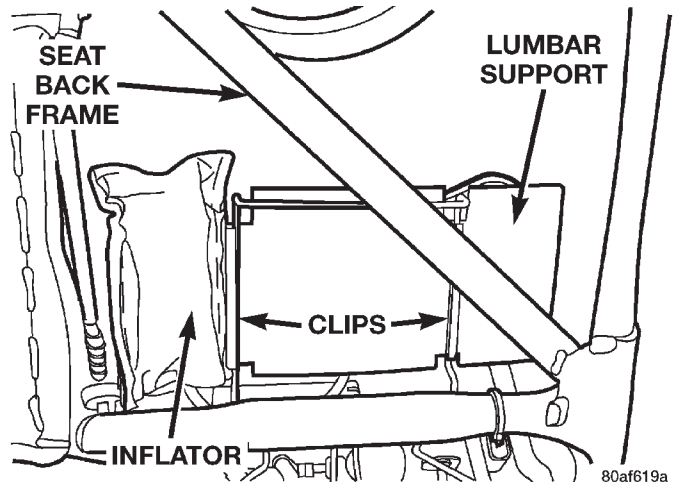


Fig. 5 Power Lumbar Adjuster and Motor Remove/Install

(6) Reverse the removal procedures to install.

