POWER SEAT SYSTEMS

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POWER SEAT SYSTEM

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DESCRIPTION AND OPERATION

POWER SEAT SYSTEM

DESCRIPTION

Driver and passenger power front seats are an available factory-installed option for this vehicle. The power seat system option allows the driver and front seat passenger to electrically adjust their seating positions for optimum control and comfort using the power seat switches located on the outboard seat cushion side shield of each front seat. The power seat system receives battery current through a fuse in the Power Distribution Center (PDC) and a circuit breaker in the junction block so that the power seats remain operational, regardless of the ignition switch position.

Two power seat options are offered on this vehicle, depending upon the model. They are as follows:

- **Six-way power seat** - This power seat is an available option on Laredo models equipped with cloth-trimmed seats and includes a six-way adjustable seat cushion track with manual seat back recliners.
- **Ten-way power seat** - This power seat option is standard on Limited models and optional on Laredo models with leather-trimmed seats. This option includes a six-way adjustable seat cushion track with power seat back recliners and power lumbar supports.

The ten-way power seat is also available with the heated seat system option on both Laredo and Limited models; and, on Limited models only, there is a standard equipment memory system that automatically positions the power seat for two different drivers. Refer to **Heated Seat System** in the Heated Seat System section of Group 8N - Electrically Heated Systems for more information on the heated seat option. Refer to **Memory System** in the Memory System section of this group for more information on the memory system.

The power seat system includes the following components:

- Power lumbar adjuster (ten-way power seat only)
- Power lumbar switch (ten-way power seat only)
- Power seat recliner (ten-way power seat only)
- Power seat switch
- Power seat track.

Refer to **Power Seat** in the Contents of Group 8W - Wiring Diagrams for complete circuit diagrams. Following are general descriptions of the major components in the power seat system.

DESCRIPTION AND OPERATION (Continued)

OPERATION

The power seat system allows the driver and/or front passenger seating positions to be adjusted electrically and independently using the separate power seat switches found on the outboard seat cushion side shield of each front seat. See the owner's manual in the vehicle glove box for more information on the features, use and operation of the power seat system.

POWER LUMBAR ADJUSTER

DESCRIPTION

The ten-way power seat option includes an electrically operated lumbar support mechanism. The only visible evidence of this option is the separate power lumbar switch control paddle that is located on the outboard seat cushion side shield, just forward of the other power seat switch control knobs. The power lumbar adjuster and motor are concealed beneath the seat back trim cover and padding, where they are secured to a molded plastic back panel and to the seat back frame (Fig. 1).

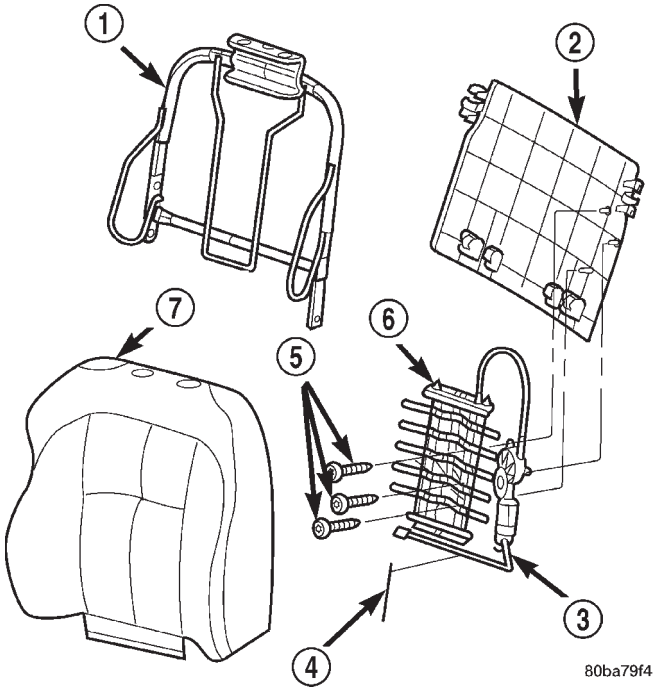


Fig. 1 Power Lumbar Adjuster

1 – SEAT BACK FRAME
2 – SEAT BACK PANEL
3 – SEAT WIRE HARNESS
4 – TIE WRAP
5 – SCREW (3)
6 – POWER LUMBAR ADJUSTER
7 – SEAT BACK TRIM COVER AND PADDING

The power lumbar adjuster cannot be repaired, and is serviced only as a unit with the seat back frame. If the power lumbar adjuster or the seat back frame are damaged or faulty, the entire seat back frame unit must be replaced. Refer to **Bucket Seat Back** in the Removal and Installation section of Group 23 - Body for the seat back frame service procedures.

OPERATION

The power lumbar adjuster mechanism includes a reversible electric motor that is secured to the inboard side of the seat back panel and is connected to a worm-drive gearbox. The motor and gearbox operate the lumbar adjuster mechanism in the center of the seat back by extending and retracting a cable that actuates a lever. The action of this lever compresses or relaxes a grid of flexible slats. The more this grid is compressed, the more the slats bow outward against the center of the seat back padding, providing additional lumbar support.

POWER LUMBAR SWITCH

DESCRIPTION

The ten-way power seat option includes an electrically operated lumbar support mechanism. A single two-way momentary power lumbar switch is located on the outboard seat cushion side shield of each front seat, just forward of the other power seat switches. The power lumbar switch is secured to the back of the seat cushion side shield with two screws, and the switch paddle protrudes through a hole to the outside of the shield. The switch paddle is located in a shallow depression molded into the outer surface of the seat cushion side shield that helps to shroud it from unintentional actuation when entering or leaving the vehicle.

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

OPERATION

When the power lumbar switch paddle is actuated, a battery feed and a ground path are applied through the switch contacts to the power lumbar adjuster motor. The motor operates to move the lumbar adjuster through its drive unit in the selected direction until the switch is released, or until the travel limit of the adjuster 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.

The power lumbar switch should not be held applied in either direction after the adjuster has reached its travel limit. The power lumbar adjuster motor contains a self-resetting circuit breaker to protect it from overload. However, consecutive or frequent resetting of the circuit breaker must not be allowed to continue, or the motor may be damaged.

DESCRIPTION AND OPERATION (Continued)

POWER SEAT RECLINER

DESCRIPTION

The ten-way power seat option includes an electrically operated seat back recliner mechanism. The only visible evidence of this option is the separate power seat recliner switch control knob that is located on the outboard seat cushion side shield, just behind the other power seat switch control knob. The power seat recliner switch is integral to the ten-way power seat switch unit, but is actuated with a separate switch knob.

The power seat recliner unit is mounted in the place of a seat hinge on the outboard side of the seat (Fig. 2). The upper hinge plate of the power seat recliner mechanism is secured with two screws to the seat back frame and is concealed beneath the seat back trim cover and padding. The lower hinge plate and the motor and drive unit of the power seat recliner mechanism is secured with two screws to the seat cushion frame, and is concealed by the outboard seat cushion side shield.

The power seat recliner cannot be repaired. If the unit is faulty or damaged, it must be replaced. Refer to **Bucket Seat Recliner** in the Removal and Installation section of Group 23 - Body for the service procedures.

OPERATION

The power seat recliner includes a reversible electric motor that is secured to the lower hinge plate of the recliner unit. The motor is connected to a gearbox that moves the upper hinge plate of the power seat recliner through a screw-type drive unit. The driver side power seat recliner motor used on models equipped with the optional memory system also has a position potentiometer integral to the motor assembly, which electronically monitors the motor position.

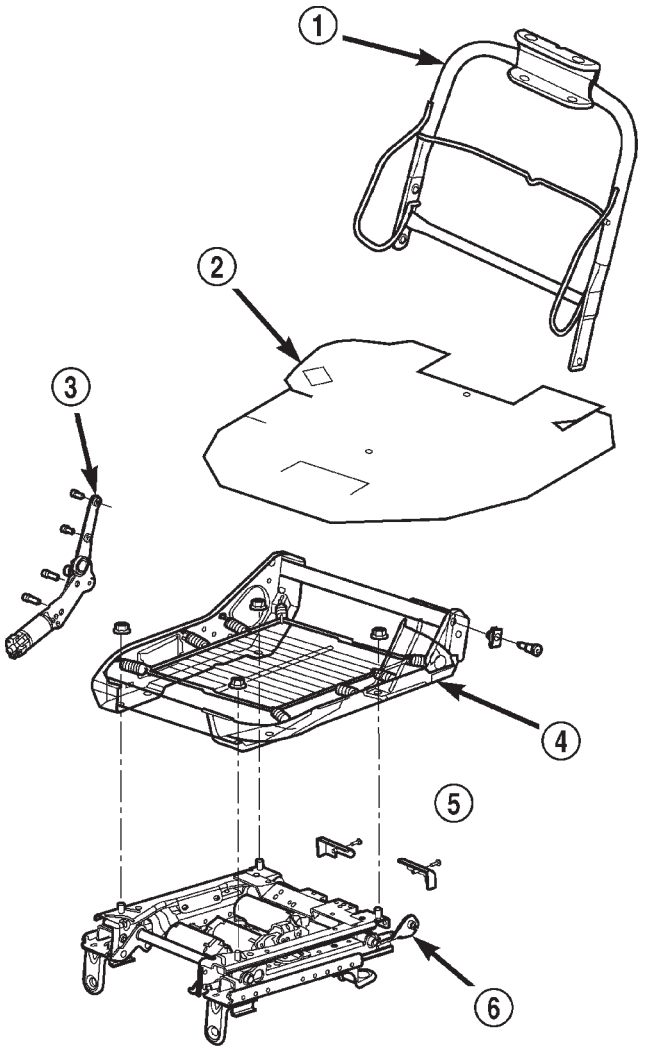


Fig. 2 Power Seat Recliner and Track

1 – SEAT BACK FRAME
2 – SEAT CUSHION PAD
3 – POWER RECLINER
4 – SEAT CUSHION FRAME
5 – SHIELD
6 – POWER SEAT TRACK ADJUSTER

POWER SEAT SWITCH

DESCRIPTION

Two different power seat switches are used on this vehicle, depending upon the optional power seat system installed in the vehicle. The six-way power seats are each equipped with a switch featuring three switch control knobs ganged together on the outboard seat cushion side shield (Fig. 3). The ten-way power seats are each equipped with a switch featuring two knobs ganged together on the outboard seat cushion side shield (Fig. 4).

The switch units for both power seat types are secured to the back of the seat cushion side shield with two screws. However, the control knobs for the six-way power seat switch unit remain installed during switch unit removal and installation, while both knobs for the ten-way power seat switch unit must be removed.

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

OPERATION

The power seat tracks of both the six-way and the ten-way power seat systems can be adjusted in six different ways using the power seat switches. The ten-way system has the additional power seat recliner switch integral to the power seat switch and also has a separate, stand-alone switch to control the power lumbar adjuster. See the owner's manual in

DESCRIPTION AND OPERATION (Continued)

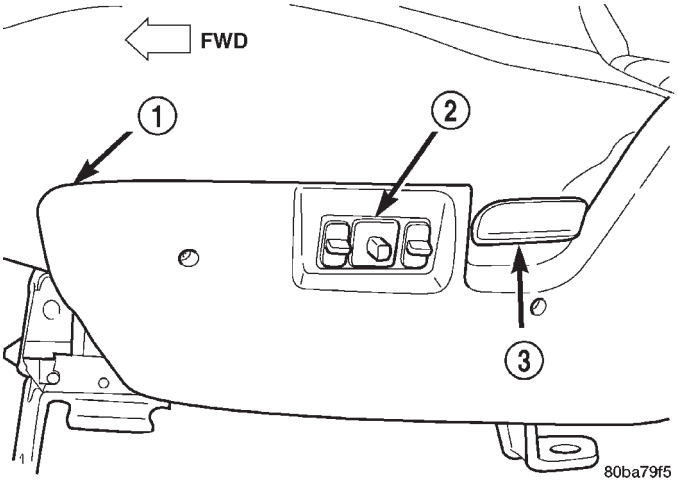


Fig. 3 Six-Way Power Seat Switches

1 – OUTBOARD SEAT CUSHION SIDE SHIELD
2 – POWER SEAT TRACK SWITCHES
3 – MECHANICAL SEAT BACK RECLINER LEVER

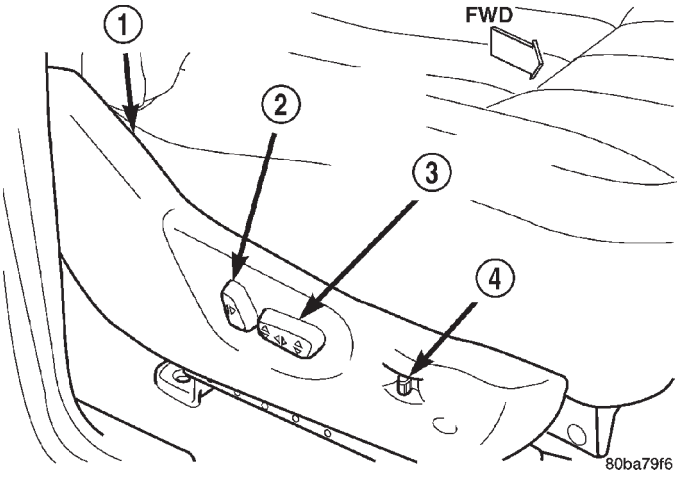


Fig. 4 Ten-Way Power Seat Switches

1 – OUTBOARD CUSHION SIDE SHIELD
2 – POWER SEAT RECLINER SWITCH
3 – POWER SEAT TRACK SWITCH
4 – POWER LUMBAR SWITCH

the vehicle glove box for more information on the power seat switch functions and the seat adjusting procedures.

When a power switch control knob or knobs are actuated, a battery feed and a ground path are applied through the switch contacts to the power seat track or recliner adjuster motor. The selected adjuster motor operates to move the seat track or recliner through its drive unit in the selected direction until the switch is released, or until the travel limit of the adjuster 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 adjuster motor to run in the opposite direction.

No power seat switch should be held applied in any direction after the adjuster has reached its travel limit. The power seat adjuster motors each contain a self-resetting circuit breaker to protect them from overload. However, consecutive or frequent resetting of the circuit breaker must not be allowed to continue, or the motor may be damaged.

POWER SEAT TRACK

DESCRIPTION

Both the six-way and the ten-way power seat options include a single electrically operated power seat track unit located under each front bucket seat. The power seat track unit replaces the standard equipment manual seat tracks. The lower half of the power seat track is secured at the front with two screws to the floor panel seat cross member, and at the rear with two screws to the floor panel. Four nuts secure the bottom of the seat cushion frame to four studs on the upper half of the power seat track unit.

The power seat track unit cannot be repaired, and is serviced only as a complete unit. If any component in this unit is faulty or damaged, the entire power seat track unit must be replaced. Refer to **Bucket Seat Track Adjuster** in the Removal and Installation section of Group 23 - Body for the service procedures.

OPERATION

The power seat track unit includes three reversible electric motors that are secured to the upper half of the track unit (Fig. 5). Each motor moves the seat adjuster through a combination of worm-drive gearboxes and screw-type drive units. Each of the three driver side power seat track motors used on models equipped with the optional memory system also has a position potentiometer integral to the motor assembly, which electronically monitors the motor position.

The front and rear of the seat are operated by two separate vertical adjustment motors. These motors can be operated independently of each other, tilting the entire seat assembly forward or rearward; or, they can be operated in unison by selecting the proper power seat switch functions, which will raise or lower the entire seat assembly. The third motor is the horizontal adjustment motor, which moves the seat track in the forward and rearward directions.

DESCRIPTION AND OPERATION (Continued)

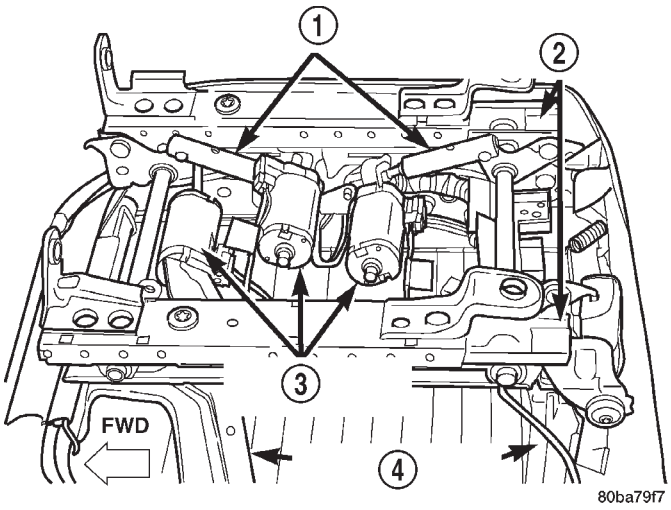


Fig. 5 Power Seat Track - Typical

1 – DRIVE UNITS
2 – LOWER SEAT TRACKS
3 – POWER SEAT MOTORS
4 – SEAT CUSHION FRAME

DIAGNOSIS AND TESTING

POWER SEAT SYSTEM

Following are tests that will help to diagnose the hard wired components and circuits of the power seat system. However, if the vehicle is also equipped with the optional memory system, these tests may not prove conclusive in the diagnosis of the driver side power seat. In order to obtain conclusive testing of the driver side power seat with the memory system option, the Programmable Communications Interface (PCI) data bus network and all of the electronic modules that provide inputs to, or receive outputs from the memory system components must be checked.

The most reliable, efficient, and accurate means to diagnose the driver side power seat with the memory system option requires the use of a DRB scan tool and the proper Diagnostic Procedures manual. The DRB scan tool can provide confirmation that the PCI data bus is functional, that all of the electronic modules are sending and receiving the proper messages on the PCI data bus, and that the memory system is receiving the proper hard wired inputs and relaying the proper hard wired outputs to perform its driver side power seat functions.

Before any testing of the power seat system is attempted, the battery should be fully-charged and all of the power seat system wire harness connections and pins cleaned and tightened to ensure proper circuit continuity and ground paths. For complete circuit diagrams, refer to **Power Seat** in the Contents of 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.

POWER LUMBAR ADJUSTER

Actuate the power lumbar switch to move the power lumbar adjuster in each direction. The power lumbar adjuster should move in both directions. It should be noted that the power lumber adjuster normally operates very quietly and exhibits little visible movement. 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 that the adjuster is not at its travel limit. If the power lumbar adjuster still fails to operate in only one direction, refer to **Power Lumbar Switch** in the Diagnosis and Testing section of this group. If the power lumbar adjuster fails to operate in either direction, perform the following tests. For complete circuit diagrams, refer to **Power Seat** in the Contents of Group 8W - Wiring Diagrams.

(1) Check the power seat circuit breaker in the junction block. If OK, go to Step 2. If not OK, replace the faulty power seat circuit breaker.

(2) Check for battery voltage at the power seat circuit breaker in the junction block. If OK, go to Step 3. If not OK, repair the open fused B(+) circuit to the fuse in the Power Distribution Center as required.

(3) Remove the outboard seat cushion side shield from the seat. Disconnect the seat wire harness connector from the power lumbar switch connector receptacle. Check for battery voltage at the fused B(+) circuit cavity of the power seat wire harness connector for the power lumbar switch. If OK, go to Step 4. If not OK, repair the open fused B(+) circuit to the power seat circuit breaker in the junction block as required.

(4) Check for continuity between the ground circuit cavity of the power seat wire harness connector for the power lumbar switch and a good ground. There should be continuity. If OK, go to Step 5. If not OK, repair the open ground circuit to ground as required.

(5) Test the power lumbar switch. Refer to **Power Lumbar Switch** in the Diagnosis and Testing section of this group. If the switch tests OK, test the circuits of the power seat wire harness between the power lumbar adjuster motor and the power lumbar switch for shorts or opens. If the circuits check OK, replace the faulty seat back frame assembly. If the circuits are not OK, repair the power seat wire harness as required.

DIAGNOSIS AND TESTING (Continued)

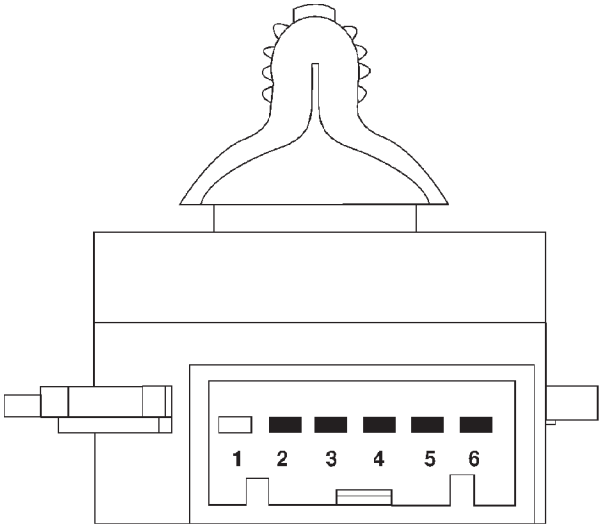
POWER LUMBAR SWITCH

For complete circuit diagrams, refer to **Power Seat** in the Contents of Group 8W - Wiring Diagrams.

(1) Disconnect and isolate the battery negative cable.

(2) Remove the power lumbar switch from the outboard seat cushion side shield. Refer to **Power Lumbar Switch** in the Removal and Installation section of this group for the procedures.

(3) Use an ohmmeter to test the continuity of the power lumbar switch in each switch position. See the Power Lumbar Switch Continuity chart (Fig. 6). If OK, refer to **Power Lumbar Adjuster** in the Diagnosis and Testing section of this group. If not OK, replace the faulty power lumbar switch.



POWER LUMBAR SWITCH		
LEFT SWITCH POSITION	RIGHT SWITCH POSITION	CONTINUITY BETWEEN
Off	Off	2-4, 3-5
Forward	Rearward	3-5, 4-6
Rearward	Forward	2-4, 3-6

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Fig. 6 Power Lumbar Switch Continuity

POWER SEAT RECLINER

Following are tests that will help to diagnose the hard wired components and circuits of the power seat system. However, if the vehicle is also equipped with the optional memory system, these tests may not prove conclusive in the diagnosis of the driver side power seat. In order to obtain conclusive testing of the driver side power seat with the memory system option, the Programmable Communications Interface (PCI) data bus network and all of the electronic modules that provide inputs to, or receive outputs from the memory system components must be checked.

The most reliable, efficient, and accurate means to diagnose the driver side power seat with the memory system option requires the use of a DRB scan tool and the proper Diagnostic Procedures manual. The DRB scan tool can provide confirmation that the PCI data bus is functional, that all of the electronic modules are sending and receiving the proper messages on the PCI data bus, and that the memory system is receiving the proper hard wired inputs and relaying the proper hard wired outputs to perform its driver side power seat functions.

Actuate the power seat recliner switch to move the power seat recliner adjuster in each direction. The power seat recliner adjuster should move in both directions. If the power seat recliner 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 recliner adjuster still fails to operate in only one direction, refer to **Power Seat Switch** in the Diagnosis and Testing section of this group. If the power recliner adjuster fails to operate in either direction, perform the following tests. For complete circuit diagrams, refer to **Power Seat** in the Contents of Group 8W - Wiring Diagrams.

(1) Check the power seat circuit breaker in the junction block. If OK, go to Step 2. If not OK, replace the faulty power seat circuit breaker.

(2) Check for battery voltage at the power seat circuit breaker in the junction block. If OK, go to Step 3. If not OK, repair the open fused B(+) circuit to the fuse in the Power Distribution Center as required.

(3) Remove the outboard seat cushion side shield from the seat. Disconnect the seat wire harness connector from the power seat switch connector receptacle. Check for battery voltage at the fused B(+) circuit cavity of the power seat wire harness connector for the power seat switch. If OK, go to Step 4. If not OK, repair the open fused B(+) circuit to the power seat circuit breaker in the junction block as required.

(4) Check for continuity between the ground circuit cavity of the power seat wire harness connector for the power seat switch and a good ground. There should be continuity. If OK, go to Step 5. If not OK, repair the open ground circuit to ground as required.

(5) Test the power seat switch. Refer to **Power Seat Switch** in the Diagnosis and Testing section of this group. If the switch tests OK, test the circuits of the power seat wire harness between the power seat recliner adjuster motor and the power seat switch for

DIAGNOSIS AND TESTING (Continued)

shorts or opens. If the circuits check OK, replace the faulty power seat recliner unit. If the circuits are not OK, repair the power seat wire harness as required.

POWER SEAT SWITCH

Following are tests that will help to diagnose the hard wired components and circuits of the power seat system. However, if the vehicle is also equipped with the optional memory system, these tests may not prove conclusive in the diagnosis of the driver side power seat. In order to obtain conclusive testing of the driver side power seat with the memory system option, the Programmable Communications Interface (PCI) data bus network and all of the electronic modules that provide inputs to, or receive outputs from the memory system components must be checked.

The most reliable, efficient, and accurate means to diagnose the driver side power seat with the memory system option requires the use of a DRB scan tool and the proper Diagnostic Procedures manual. The DRB scan tool can provide confirmation that the PCI data bus is functional, that all of the electronic modules are sending and receiving the proper messages on the PCI data bus, and that the memory system is receiving the proper hard wired inputs and relaying the proper hard wired outputs to perform its driver side power seat functions.

For complete circuit diagrams, refer to **Power Seat** in the Contents of Group 8W - Wiring Diagrams.

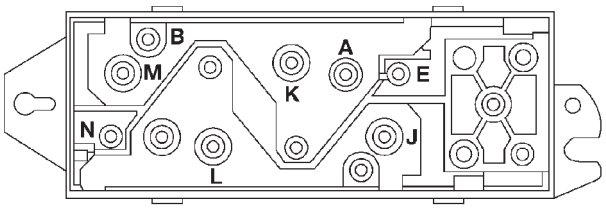
(1) Disconnect and isolate the battery negative cable.

(2) Remove the power seat switch from the outboard seat cushion side shield. Refer to **Power Seat Switch** in the Removal and Installation section of this group for the procedures.

(3) Use an ohmmeter to test the continuity of the power seat switch in each switch position. See the Power Seat Switch Continuity chart (Fig. 7) or (Fig. 8). If OK, refer to **Power Seat Track** or **Power Seat Recliner** in the Diagnosis and Testing section of this group. If not OK, replace the faulty power seat switch unit.

POWER SEAT TRACK

Following are tests that will help to diagnose the hard wired components and circuits of the power seat system. However, if the vehicle is also equipped with the optional memory system, these tests may not prove conclusive in the diagnosis of the driver side power seat. In order to obtain conclusive testing of the driver side power seat with the memory system option, the Programmable Communications Interface (PCI) data bus network and all of the electronic modules that provide inputs to, or receive outputs from the memory system components must be checked.



LEFT SIDE SHOWN
(ROTATE 180° FOR RIGHT SIDE)

POWER SEAT SWITCH		
LEFT SWITCH POSITION	RIGHT SWITCH POSITION	CONTINUITY BETWEEN
OFF	OFF	B-N, B-J, B-M, B-E, B-L, B-K
VERTICAL UP	VERTICAL DOWN	A-J, A-N, B-M, B-E
VERTICAL DOWN	VERTICAL UP	A-E, A-M, B-N, B-J
HORIZONTAL FORWARD	HORIZONTAL REARWARD	A-K, B-L
FRONT TILT UP	FRONT TILT DOWN	A-J, B-E
FRONT TILT DOWN	FRONT TILT UP	A-E, B-J
REAR TILT UP	REAR TILT DOWN	A-N, B-M
REAR TILT DOWN	REAR TILT UP	A-M, B-N

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Fig. 7 Six-Way Power Seat Switch Continuity

The most reliable, efficient, and accurate means to diagnose the driver side power seat with the memory system option requires the use of a DRB scan tool and the proper Diagnostic Procedures manual. The DRB scan tool can provide confirmation that the PCI data bus is functional, that all of the electronic modules are sending and receiving the proper messages on the PCI data bus, and that the memory system is receiving the proper hard wired inputs and relaying the proper hard wired outputs to perform its driver side power seat functions.

Actuate the power seat switch to move all three power seat track adjusters in each direction. The power seat track adjusters should move in each of the selected directions. If a power seat track 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 track adjuster still fails to operate in only one direction, refer to **Power Seat Switch** in the Diagnosis and Testing section of this group. If the power seat track adjuster fails to operate in more than one direction, perform the following tests. For complete circuit diagrams,

DIAGNOSIS AND TESTING (Continued)

SWITCH POSITION	CONTINUITY BETWEEN PINS	
	LEFT SEAT	RIGHT SEAT
OFF	PIN 1 to 2 PIN 1 to 3 PIN 1 to 4 PIN 1 to 6 PIN 1 to 7 PIN 1 to 8 PIN 1 to 9 PIN 1 to 10	PIN 1 to 2 PIN 1 to 3 PIN 1 to 4 PIN 1 to 6 PIN 1 to 7 PIN 1 to 8 PIN 1 to 9 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

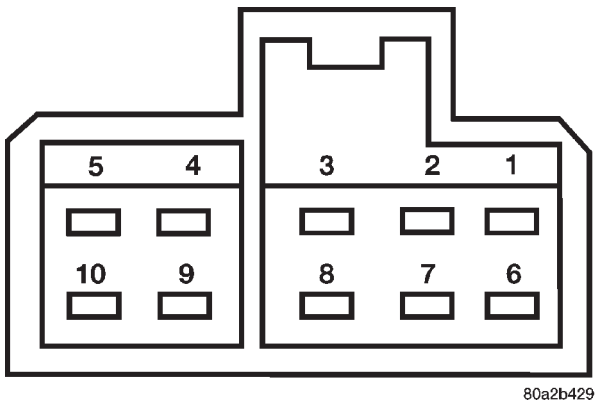


Fig. 8 Ten-Way Power Seat Switch Continuity

refer to **Power Seat** in the Contents of Group 8W - Wiring Diagrams.

(1) Check the power seat circuit breaker in the junction block. If OK, go to Step 2. If not OK, replace the faulty power seat circuit breaker.

(2) Check for battery voltage at the power seat circuit breaker in the junction block. If OK, go to Step 3. If not OK, repair the open fused B(+) circuit to the fuse in the Power Distribution Center as required.

(3) Remove the outboard seat cushion side shield from the seat. Disconnect the seat wire harness connector from the power seat switch connector receptacle. Check for battery voltage at the fused B(+) circuit cavity of the power seat wire harness connector for the power seat switch. If OK, go to Step 4. If not OK, repair the open fused B(+) circuit to the power seat circuit breaker in the junction block as required.

(4) Check for continuity between the ground circuit cavity of the power seat wire harness connector for the power seat switch and a good ground. There should be continuity. If OK, go to Step 5. If not OK, repair the open ground circuit to ground as required.

(5) Test the power seat switch. Refer to **Power Seat Switch** in the Diagnosis and Testing section of this group. If the switch tests OK, test the circuits of the power seat wire harness between the inoperative power seat track adjuster motor and the power seat switch for shorts or opens. If the circuits check OK, replace the faulty power seat track unit. If the circuits are not OK, repair the power seat wire harness as required.

REMOVAL AND INSTALLATION

POWER LUMBAR SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable.

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

(3) Pull the outboard seat cushion side shield away from the seat cushion frame far enough to access the power lumbar switch wire harness connector.

(4) Disconnect the power seat wire harness connector from the power lumbar switch connector receptacle (Fig. 9).

(5) Remove the two screws that secure the power lumbar switch to the inside of the outboard seat cushion side shield.

(6) Remove the power lumbar switch from the outboard seat cushion side shield.

REMOVAL AND INSTALLATION (Continued)

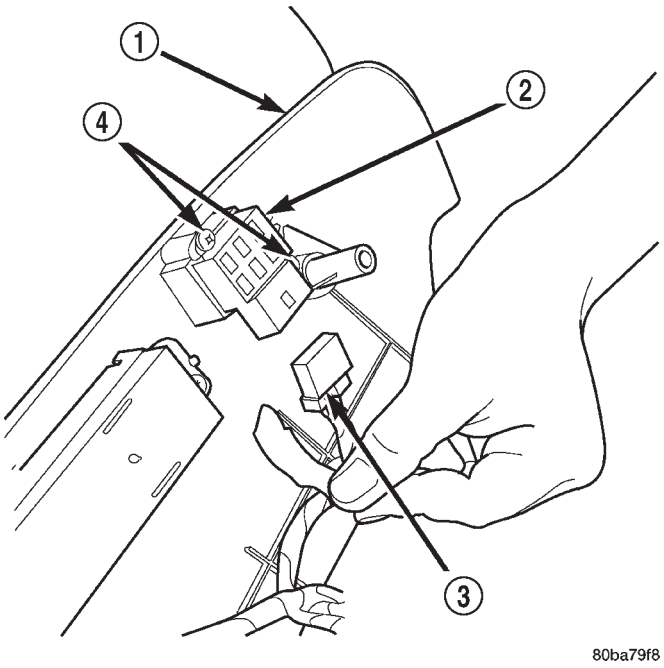


Fig. 9 Power Lumbar Switch Remove/Install

1 – OUTBOARD SEAT CUSHION SIDE SHIELD
2 – POWER LUMBAR SWITCH
3 – WIRE HARNESS CONNECTOR
4 – SCREWS (2)

INSTALLATION

(1) Position the power lumbar switch onto the outboard seat cushion side shield.

(2) Install and tighten the two screws that secure the power lumbar switch to the inside of the outboard seat cushion side shield. Tighten the screws to 1.5 N·m (14 in. lbs.).

(3) Reconnect the power seat wire harness connector to the power lumbar switch connector receptacle.

(4) Position the outboard seat cushion side shield onto the seat cushion frame.

(5) Install and tighten the three screws that secure the outboard seat cushion side shield to the seat cushion frame. Tighten the screws to 1.5 N·m (14 in. lbs.).

(6) Reconnect the battery negative cable.

POWER SEAT SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable.

(2) On models with the ten-way power seat system only, using a trim stick or another 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 outboard seat cushion side shield to the seat cushion frame.

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

(5) Disconnect the power seat wire harness connector from the power seat switch connector receptacle.

(6) Remove the two screws that secure the power seat switch to the inside of the outboard seat cushion side shield (Fig. 10) or (Fig. 11).

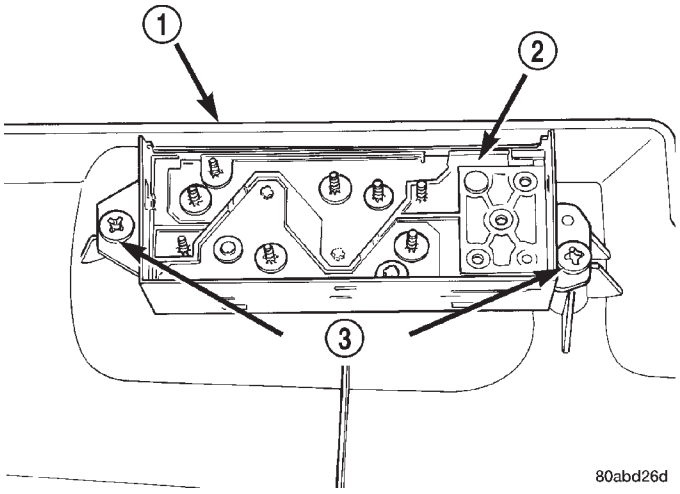


Fig. 10 Six-Way Power Seat Switches Remove/Install

1 – SEAT SIDE SHIELD
2 – POWER SEAT SWITCH
3 – SCREWS

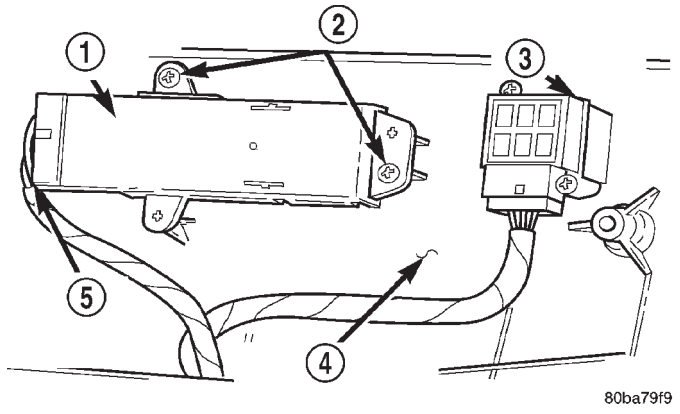


Fig. 11 Ten-Way Power Seat Switches Remove/Install

1 – POWER SEAT SWITCH
2 – SCREWS (2)
3 – POWER LUMBAR SWITCH
4 – SEAT CUSHION SIDE SHIELD
5 – WIRE HARNESS CONNECTOR

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

REMOVAL AND INSTALLATION (Continued)

INSTALLATION

(1) Position the power seat switch onto the outboard seat cushion side shield.

(2) Install and tighten the two screws that secure the power seat switch to the inside of the outboard seat cushion side shield. Tighten the screws to 1.5 N·m (14 in. lbs.).

(3) Reconnect the power seat wire harness connector to the power seat switch connector receptacle.

(4) Position the outboard seat cushion side shield onto the seat cushion frame.

(5) Install and tighten the three screws that secure the outboard seat cushion side shield to the seat cushion frame. Tighten the screws to 1.5 N·m (14 in. lbs.).

(6) On models with the ten-way power seat system only, position the power seat and power recliner switch knobs onto the switch stems and push on them firmly and evenly until they snap into place.

(7) Reconnect the battery negative cable.

MEMORY SYSTEM

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DESCRIPTION AND OPERATION

MEMORY SYSTEM

DESCRIPTION

An electronic memory system is standard equipment on the Limited model. The memory system is able to store and recall the driver side power seat positions (including the power recliner position), and both outside power mirror positions for two drivers. For vehicles with a radio connected to the Programmable Communications Interface (PCI) data bus network, the memory system is also able to store and recall up to twenty - ten AM and ten FM - radio station presets for two drivers. The memory system also will store and recall the last station listened to for each driver, even if it is not one of the twenty preset stations.

The memory system will automatically return to all of these settings when the corresponding numbered and color-coded button (Driver 1 - Black, or Driver 2 - Gray) of the memory switch on the driver side front door trim panel is depressed, or when the doors are unlocked using the corresponding numbered and color-coded (Driver 1 - Black, or Driver 2 - Gray) Remote Keyless Entry (RKE) transmitter. A customer programmable feature of the memory system allows the RKE recall of memory features to be disabled in cases where there are more than two drivers of the vehicle.

The memory system also has a customer programmable easy exit feature that will move the driver seat rearward 55 millimeters (two inches) or to the end of its travel, whichever occurs first, when the key is removed from the ignition switch lock cylinder.

A Memory Seat Module (MSM) or Memory Heated Seat Module (MHSM) are used on this model to control and integrate the many electronic functions and features included in the memory system. On vehicles equipped with the heated seat system option, the MHSM also controls the functions and features of that system.

The memory system includes the following components:

- Memory seat module (or memory heated seat module)
- Memory switch
- Position potentiometers on both outside power mirrors
- Position potentiometers on the driver side power seat track and power seat recliner motors.
- Radio receiver (if PCI data bus capable).

Certain functions and features of the memory system rely upon resources shared with other electronic modules in the vehicle over the Programmable Communications Interface (PCI) data bus network. The PCI data bus network allows the sharing of sensor information. This helps to reduce wire harness complexity, internal controller hardware, and component sensor current loads. At the same time, this system provides increased reliability, enhanced diagnostics, and allows the addition of many new feature capabilities. For diagnosis of these electronic modules or of the PCI data bus network, the use of a DRB scan tool and the proper Diagnostic Procedures manual are recommended.

The other electronic modules that may affect memory system operation are as follows:

- **Body Control Module (BCM)** - Refer to **Body Control Module** in the Description and Operation section of Group 8E - Instrument Panel Systems for more information.
- **Driver Door Module (DDM)** - Refer to **Door Module** in the Power Lock System section of Group 8P - Power Lock Systems for more information.
- **Electronic Vehicle Information Center (EVIC)** - Refer to **Electronic Vehicle Information Center** in the Description and Operation section of Group 8V - Overhead Console Systems for more information.
- **Passenger Door Module (PDM)** - Refer to **Door Module** in the Power Lock System section of Group 8P - Power Lock Systems for more information.

DESCRIPTION AND OPERATION (Continued)

- **Powertrain Control Module (PCM)** - Refer to **Powertrain Control Module** in the Description and Operation section of Group 14 - Fuel System for more information.
- **Radio Receiver** - Refer to **Radio Receiver** in the Description and Operation section of Group 8F - Audio Systems for more information.

Refer to **Heated Seat System** in the Heated Seat System section of Group 8N - Electrically Heated Systems for more information on this system. Refer to **Remote Keyless Entry System** in Group 8P - Power Lock Systems for more information on the RKE system. Refer to **Power Mirror** in the Outside Power Mirrors section of Group 8T - Power Mirror Systems for more information on the mirror position potentiometers. Refer to **Power Seat Track** and **Power Seat Recliner** in the Power Seat System section of this group for more information on the driver side power seat position potentiometers.

Refer to **Power Seat** in the Contents of Group 8W - Wiring Diagrams for complete circuit diagrams. Following are general descriptions of the remaining major components in the factory-installed memory system.

OPERATION

See the owner's manual in the vehicle glove box for more information on the features, use and operation of the memory system. For diagnosis of the MSM, the PCI data bus, or the other electronic modules on the PCI data bus that provide inputs and outputs for the memory system, the use of a DRB scan tool and the proper Diagnostic Procedures manual are recommended.

DRIVER AND PASSENGER DOOR MODULES

The Driver Door Module (DDM) monitors the memory switch through a hard wired circuit. It also monitors the unlock messages from the Remote Keyless Entry (RKE) receiver in the Passenger Door Module (PDM) sent over the Programmable Communications Interface (PCI) data bus. The DDM is programmed to send memory recall messages and memory system status messages over the PCI data bus to the other electronic modules when it detects a memory recall request.

Refer to **Door Module** in the Power Lock System section of Group 8P - Power Lock Systems for more information on the DDM and PDM.

ELECTRONIC VEHICLE INFORMATION CENTER

The Electronic Vehicle Information Center (EVIC) serves as the user interface for the memory system. It displays memory system status messages and provides the user with the means for enabling and disabling the many customer programmable features available on the vehicle, including those for the memory system.

See the owner's manual in the vehicle glove box for more information on the features, use and operation of the EVIC. Refer to **Electronic Vehicle Information Center** in the Description and Operation section of Group 8V - Overhead Console Systems for more information on the EVIC.

MEMORY SEAT MODULE

DESCRIPTION

All Limited models are equipped with a standard memory system. However, there are two versions of the Memory Seat Module (MSM). The standard version of the MSM is used on vehicles that are not equipped with the optional heated seat system. A Memory Heated Seat Module (MHSM) is used on vehicles that are equipped with the heated seat system option. A third module, the Heated Seat Module (HSM), does not have any memory system capabilities and is only available on Laredo models that are equipped with an optional heated seat system. Refer to **Heated Seat System** in the Heated Seat System section of Group 8N - Electrically Heated Systems for more information on the heated seat system option.

All three modules are packaged in an identical molded plastic housing which is mounted on a bracket that is located between the power seat track and the seat cushion frame under the forward edge of the driver side front seat cushion. The MSM or MHSM is used to control all of the driver side power seat memory functions and features. The MSM or MHSM contains a central processing unit and interfaces with other electronic modules in the vehicle on the Programmable Communications Interface (PCI) data bus network.

For diagnosis of the MSM, MHSM or the PCI data bus, a DRB scan tool and the proper Diagnostic Procedures manual are recommended. The MSM or MHSM cannot be adjusted or repaired and, if faulty or damaged, it must be replaced.

OPERATION

The MSM receives hard wired inputs from the power seat switch and the potentiometers on each of the driver side power seat motors. The MSM receives messages over the PCI data bus from the Driver Door Module (DDM) (memory 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 recall function from being initiated if the driver side

DESCRIPTION AND OPERATION (Continued)

seat belt is buckled, if the transmission gear selector lever is not in the Park or Neutral positions, or if the vehicle is moving.

MEMORY SWITCH

DESCRIPTION

Vehicles equipped with the memory system have a memory switch mounted to the driver side front door trim panel. This switch is used to set and recall all of the memory system settings for up to two drivers. The memory switch is a resistor multiplexed unit that is hard wired to the Driver Door Module (DDM), which is also located on the driver side front door trim panel. The DDM sends out the memory system set and recall requests to the other electronic modules over the Programmable Communications Interface (PCI) data bus.

The memory switch cannot be adjusted or repaired and, if faulty or damaged, it must be replaced. For complete circuit diagrams, refer to **Power Mirror** in the Contents of Group 8W - Wiring Diagrams.

OPERATION

The memory switch has three momentary switch buttons labeled Set, 1 and 2. The Driver 1 and Driver 2 buttons are back-lit with Light-Emitting Diodes (LED) for visibility, and are also color-coded to coincide with the color-coded Driver 1 and Driver 2 Remote Keyless Entry (RKE) transmitters. The Driver 1 memory switch button and RKE transmitter are black, and the Driver 2 memory switch button and RKE transmitter are gray. The memory switch Set button also has an LED that will illuminate and flash to indicate that the memory system is in the set mode. This LED will automatically be extinguished when a set request has been successfully completed.

See the owner's manual in the vehicle glove box for more information on the features, use and operation of the memory switch. For diagnosis of the memory switch, the DDM or the PCI data bus, the use of a DRB scan tool and the proper Diagnostic Procedures manual are recommended.

DIAGNOSIS AND TESTING

MEMORY SYSTEM

Following are tests that will help to diagnose the components and circuits that provide hard wired inputs to the memory system. However, these tests may not prove conclusive in the diagnosis of this system. In order to obtain conclusive testing of the memory system, the Programmable Communications Interface (PCI) data bus network and all of the electronic modules that provide inputs to, or receive outputs from the memory system components must be checked.

The most reliable, efficient, and accurate means to diagnose the memory system requires the use of a DRB scan tool and the proper Diagnostic Procedures manual. The DRB scan tool can provide confirmation that the PCI data bus is functional, that all of the electronic modules are sending and receiving the proper messages on the PCI data bus, and that the memory system is receiving the proper hard wired inputs and relaying the proper hard wired outputs to perform its functions.

MEMORY SWITCH

For complete circuit diagrams, refer to **Power Mirrors** in the Contents of Group 8W - Wiring Diagrams.

(1) Disconnect and isolate the battery negative cable.

(2) Remove the driver side front door trim panel. Refer to **Front Door Trim Panel** in the Removal and Installation section of this group for the procedures.

(3) Disconnect the memory switch wire harness connector from the driver door module connector receptacle.

(4) Use an ohmmeter to test the resistances of the memory switch in each switch position. See the Memory Switch Test chart (Fig. 1). If OK, refer to **Memory System** in the Diagnosis and Testing section of this group. If not OK, replace the faulty memory switch.

MEMORY SWITCH		
SWITCH POSITION	RESISTANCE BETWEEN	RESISTANCE RANGE (OHMS)
NEUTRAL	A & D	14000 ± 1%
MEMORY 1 (BLACK)	A & B	4600 ± 1%
MEMORY 2 (GRAY)	A & B	1700 ± 1%
SET	A & B	300 ± 1%

Fig. 1 Memory Switch Test

REMOVAL AND INSTALLATION

MEMORY SEAT MODULE

REMOVAL

(1) Disconnect and isolate the battery negative cable.

(2) Remove the driver side front bucket seat from the power seat track unit. Refer to **Bucket Seat**

REMOVAL AND INSTALLATION (Continued)

Track Adjuster in the Removal and Installation section of Group 23 - Body for the procedures.

(3) Lift the memory seat module and its mounting bracket off of the two forward studs on the upper mounting rails of the power seat track and move the unit away from the seat far enough to access the power seat wire harness connectors (Fig. 2).

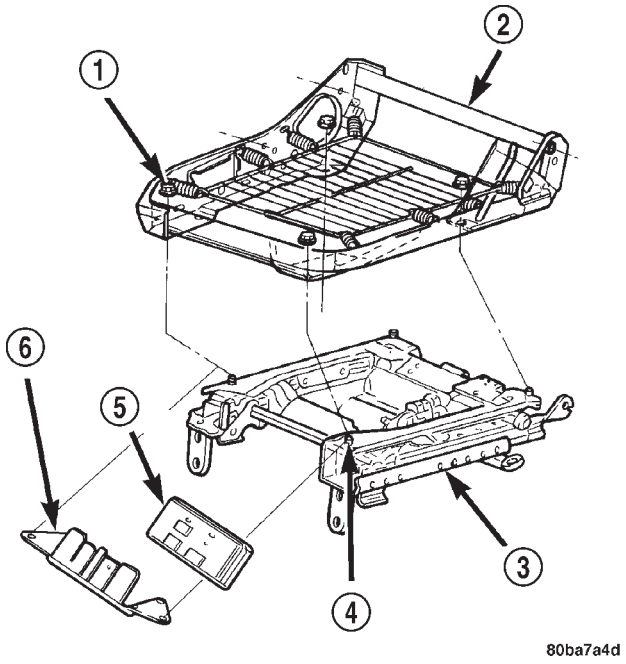


Fig. 2 Memory Seat Module Remove/Install

1 – NUT (4)
2 – SEAT CUSHION FRAME
3 – POWER SEAT TRACK
4 – STUD (4)
5 – MODULE
6 – BRACKET

(4) Disconnect the two power seat wire harness connectors from the memory seat module connector receptacles.

(5) There are two snap clips that are molded into the lower side of the memory seat module which help to secure the module to the riser portion of the stepped mounting bracket. Using a trim stick or another suitable wide flat-bladed tool, gently pry each of the two snap clips while pulling the module away from the mounting bracket.

(6) Slide the memory seat module off of the two mounting bracket slide tabs.

INSTALLATION

(1) Slide the memory seat module onto the two mounting bracket slide tabs. Be certain that the two snap clips that are molded into the lower side of the memory seat module are fully engaged in the holes in riser portion of the stepped mounting bracket.

(2) Position the memory seat module and mounting bracket unit to the front of the power seat track unit.

(3) Reconnect the two power seat wire harness connectors to the memory seat module connector receptacles.

(4) Position the memory seat module mounting bracket over the two forward studs on the upper mounting rails of the power seat track.

(5) Install the driver side front bucket seat onto the power seat track unit. Refer to **Bucket Seat Track Adjuster** in the Removal and Installation section of Group 23 - Body for the procedures.

(6) Reconnect the battery negative cable.

NOTE: Following installation, it will be necessary to initialize the Memory Seat Module (MSM) or Memory Heated Seat Module (MHSM). In order to function properly, the MSM or MHSM must "learn" the sensor values of each of the power seat motor position transducers in each of the adjuster hard stop positions. This is done by performing the "Reset Guard Band" procedure using a DRB scan tool and the proper Diagnostic Procedures manual.

WARNING: THE "RESET GUARD BAND" PROCEDURE WILL CAUSE THE DRIVER SIDE FRONT SEAT TO AUTOMATICALLY ADJUST TO EACH OF ITS TRAVEL LIMITS. BE CERTAIN THAT NO ONE IS SEATED IN THE VEHICLE AND THAT THERE IS NOTHING IN THE VEHICLE THAT WILL OBSTRUCT SEAT MOVEMENT. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN PERSONAL INJURIES AND/OR VEHICLE DAMAGE.

MEMORY SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable.

(2) Remove the trim panel from the driver side front door. Refer to **Front Door Trim Panel** in the Removal and Installation section of Group 23 - Body for the procedures.

(3) Disconnect the memory switch wire harness connector from the driver door module connector receptacle.

(4) Remove the two screws that secure the memory switch to the back of the driver side front door trim panel.

(5) Remove the memory switch from the back of the driver side front door trim panel.

REMOVAL AND INSTALLATION (Continued)

INSTALLATION

(1) Position the memory switch onto the back of the driver side front door trim panel.

(2) Install and tighten the two screws that secure the memory switch to the back of the driver side front door trim panel. Tighten the screws to 2.2 N·m (20 in. lbs.).

(3) Reconnect the memory switch wire harness connector to the driver door module connector receptacle.

(4) Install the trim panel onto the driver side front door. Refer to **Front Door Trim Panel** in the Removal and Installation section of Group 23 - Body for the procedures.

(5) Reconnect the battery negative cable.