

POWER SEATS

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POWER SEATS

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DESCRIPTION AND OPERATION

INTRODUCTION

Power seats can be adjusted in 8 different directions:

- Up or down
- Forward or back
- Tilt forward or rearward
- Recliner up or down

Two single armature permanent magnet reversible motors are coupled through cables to worm gear box assemblies. They are located in the seat tracks and upper supports. The two single gear motor assemblies attach to the seat tracks provide the various seat movements.

The electrical circuit is protected by a 20 amp circuit breaker located on the Junction Block and a 40 amp fuse in the Power Distribution Center.

POSITION SENSING POWER SEAT POTENTIOMETERS

A potentiometer is mounted to each seat motor to provide a sense voltage to the MHSMM that will indicate where the actual seat position is.

This sense voltage is derived from a 5-volt source provided by the module to the potentiometer. The MHSMM reads this sense voltage and stores it if required.

POWER SEAT SWITCH

The seat switch assembly is mounted outboard in the seat cushion side cover (Fig. 1). Activating any

seat switch will move the seat in the corresponding direction. The MHSMM will drive a maximum of two motors at a time in a given direction. If conflicting directions are requested, the priorities for responses are as follows:

- Seat Track Rearward
- Seat Front Down
- Seat Rear Down
- Seat Recliner Rearward
- Seat Track Forward
- Seat Front Up
- Seat Rear Up
- Seat Recliner Forward

DIAGNOSIS AND TESTING

POWER SEAT SWITCH DIAGNOSTIC TEST

The Power Seat Switch Diagnostic Test can be used to test whether the switch activations are being recognized by the MHSMM.

ACTIVATION

The Power Seat Switch Diagnostic Test can only be activated by sending the proper PCI bus command via the DRB III scan tool to enter diagnostic test number 2.

Upon activation of the test the operator has ten seconds to activate all switches, manual seat switches - all 8 directions, 3 memory switches, and both driver and passenger heat HI and LO requests, but not including the mirrors.

DIAGNOSIS AND TESTING (Continued)

At the conclusion on the ten-second period, the MHSMM can be requested to provide both Pass/Fail test information. A Pass condition occurs only if all the switches are activated. If any of the switches are not activated, Fail will be registered.

Should a Fail condition occur, the individual switch information could be accessed using the proper commands on the DRB III scan tool.

MEMORY SEATS

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GENERAL INFORMATION

INTRODUCTION

The Memory Heated Seat and Mirror Module (MHSMM) is located underneath the front of the driver seat. It is mounted unto the bottom of the seat by two screws. The connections to the system are through a seat wiring harness that interfaces with all of the components within the seat structure. The MHSMM system allows the driver to adjust the seat, both driver and passenger side mirrors, and the radio stations to his/her preference and store them in memory. There are two memory locations available for two driver positions to be stored. The module will also allow either of the two positions to be recalled upon request.

The MHSMM reads all seat switch inputs and operates the seat motors according to which switch is being actuated. The MHSMM monitors position sensing potentiometers (mounted on the motors) for seat track positioning.

The MHSMM uses solid state drivers (electronic switches) to control motor activation for both driver and passenger side mirrors. Each mirror has vertical and horizontal motors, that contain potentiometers used to located the actual mirror position for recall purposes. Normal electrical operation of the mirrors is accomplished by actuating the power mirror switch and doesn't require the use of the module.

The MHSMM monitors the memory switches and has the capability to store desired positions in memory in response to a valid input sequence. Refer to Memory Selector Switches (1, 2, and S) and Remote Keyless Entry (RKE). The memory heated seat and mirror module will activate the seat and mirror motors in response to a recall request from an individual memory switch. The positioning of the motors is determined by the potentiometer values stored in memory.

The module operates the seat motors through relays: four dedicated to track horizontal forward/

rearward, front vertical up/down, rear vertical up/down, and recliner forward/rearward. A fifth relay controls the direction of operation of these motors.

GLIDE FEATURE

The MHSMM shall incorporate a seat glide feature. This feature will allow easier entry and exit to the vehicle by moving the seat rearward a short distance when the operator leaves the vehicle and returning the seat to its original position when the vehicle operator returns and turns the ignition ON or extends their seat belt.

DESCRIPTION AND OPERATION

MEMORY SELECTOR SWITCH

The memory selector switches are mounted on the cushion cover side shield of the driver seat within easy reach of the driver (Fig. 1). They provide a means to set and recall either of the two positions of seat and recliner, and the side view mirror as chosen by the driver.

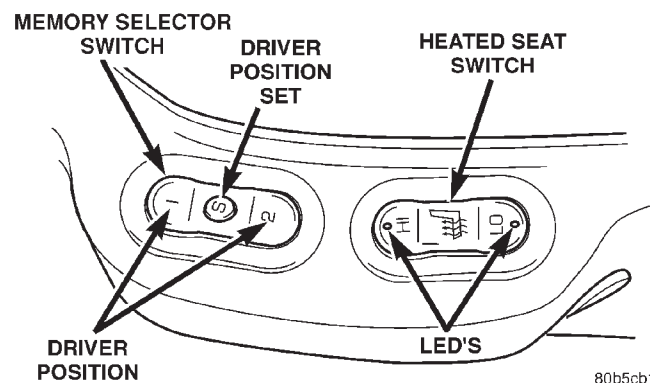
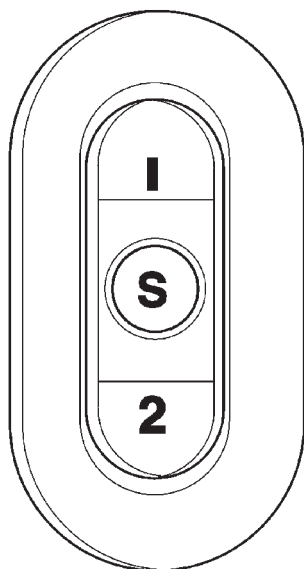


Fig. 1 Memory Selector Switch Location

The proper procedure of setting and recalling a memory position using the memory switches is as follows:

DESCRIPTION AND OPERATION (Continued)

- (1) Adjust the seat, recliner and side view mirrors to the desired position.
- (2) Press momentarily and release memory switch S.
- (3) Press momentarily and release memory switch 1 or 2.



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Fig. 2 Memory Selector Switch

- (4) To program the second driver's position, repeat the above procedure using the remaining memory switch.
- (5) To recall either of the programmed positions momentarily press and release either memory selector switch 1 or 2.

DIAGNOSIS AND TESTING

GLIDE FEATURE

If seat isn't sliding forward properly:

- (1) First use the DRB scan tool to check whether glide feature is enabled or not. Enable glide feature if disabled, and go to Step 2.
- (2) Turn the ignition ON and then back OFF. Remove the key. If seat glides rearward, reinsert key and turn to ON position. If seat doesn't glide forward, go to Step 3, otherwise the problem has been fixed. If Learn Guard Bands test has been run and problem persists, then replace MHSMM.
- (3) Now run Learn Guard Bands Diagnostic test as shown in this section, and go through Step 2 again.

SERVICE PROCEDURES

REMOTE KEYLESS ENTRY (RKE)

The MHSMM interfaces with the RKE via the PCI bus. The proper procedure of setting and recalling a memory position using the RKE is as follows:

- (1) Press memory switch 1 and release to recall memory position 1.
- (2) Adjust the seat, recliner and side view mirrors to the desired position.
- (3) Press momentarily and release memory switch S.
- (4) Press momentarily and release memory switch 1 or 2. Do NOT press any switch for 10 seconds.
- (5) Press momentarily and release the UNLOCK button on one of the RKE transmitters.
- (6) Set radio station presets.
- (7) To program the second driver's position, repeat the above procedure using memory switch 2. The second RKE transmitter can be programmed in the fashion.
- (8) To recall either of the programmed positions momentarily press and release either memory selector switch 1 or 2. If using RKE, just press and release the UNLOCK button on the proper transmitter for either position 1 or 2.
- (9) A recall is possible any time the vehicle transmission is in PARK. This condition is monitored by the Body Control Module (BCM).

NOTE: The module will abort a recall if the transmission is moved out of park or if any seat movement is activated whether manually or by memory recall.

REMOVAL AND INSTALLATION

MEMORY HEATED SEAT / MIRROR MODULE (MHSMM)**REMOVAL**

- (1) Open hood, disconnect and isolate the negative battery cable remote terminal from the remote battery post.
- (2) Remove two module attaching screws (Fig. 3).
- (3) Disconnect four module connectors.
- (4) Remove module from vehicle.

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

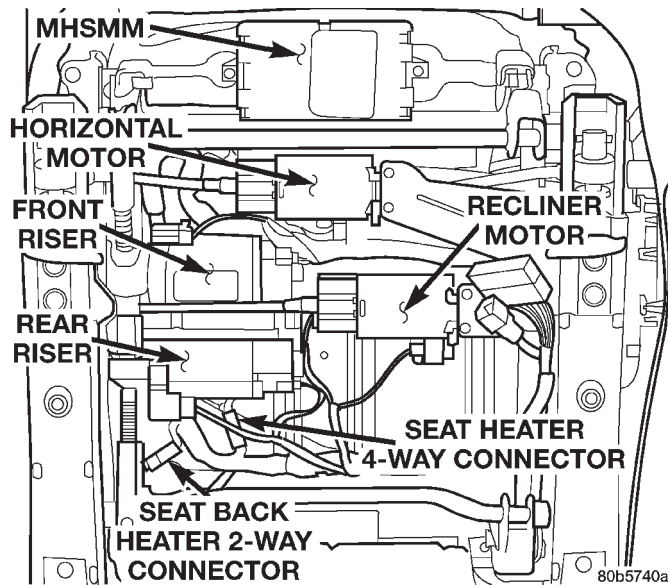


Fig. 3 Memory Heated Seat / Mirror Module Location

MEMORY SELECTOR SWITCH**REMOVAL**

(1) Disconnect and isolate the negative battery cable remote terminal from the remote battery post.

(2) Unscrew the side shield on the seat, either driver or passenger side (Fig. 4).

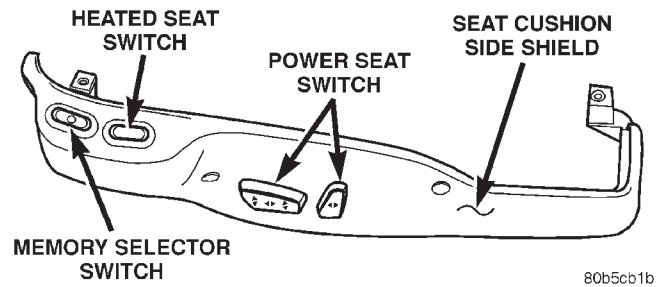


Fig. 4 Heated Seat Switch / Seat Cushion Side Shield Removal

(3) From the bottom, disengage the switch and gently rock through the opening.

INSTALLATION

For installation, reverse the above procedures.

