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2006 JEEP Wrangler Unlimited OEM Service and Repair Workshop Manual

[Go to manual page](#)

4.	Door Control Module (DCM)
5.	Power Mirror Switch

The power operated exterior rear view mirror system is an available factory-installed option on this vehicle. This system allows the driver to adjust both the driver and passenger side exterior rear view mirrors electrically from the driver seat by operating switches on the arm rest of the driver side front door inside trim panel. These switches allow the vehicle operator a convenient means of adjusting the mirrors to optimize peripheral vision to include the areas at the sides and rear corners of the vehicle, those blind spot areas that are generally blocked from the view of the vehicle operator by the vehicle structure.

OPERATION

The power operated exterior rear view mirrors operate on non-switched battery current received through a fuse in the Power Distribution Center (PDC) so that the mirrors remain operational, regardless of the ignition position. Each mirror head contains electric motors, drive mechanisms, an electric heating element and the mirror glass. First, a mirror selector switch button is depressed in the DSM to determine whether the mirror adjuster switch will have control over the right or left mirror. The driver door DSM sends power mirror switch status messages over the Local Interface Network (LIN) data bus to the Driver Door Module (DDM). The DDM then controls the high current outputs to the driver door mirror motors or sends electronic request messages over the Controller Area Network (CAN) Interior High Speed (IHS) data bus to the Passenger Door Module (PDM) to control high current outputs to the passenger door mirror motors.

Auto Dimming Feature - The BCM is responsible for enabling and disabling the EC mirror auto dim feature via a LIN signal to the CRVMM. When the CRVMM receives the enable request from the BCM via the LIN, the CRVMM enables the feature and reports its reflective value back to the BCM over LIN.

Once the EC mirror receives the enable signal from the BCM, the EC mirror reads the internal signal for the sensor value and determines the ratio between the forward and backward light intensity along with the enable signal coming from the BCM to determine the reflecting mode. The reflecting mode is a pulse width modulated process that is sent back to the BCM over LIN. This light ratio is used by the BCM to determine the outside mirror dimming pulse width modulating signal. The BCM will then send the PWM signal over the CAN-IHS to both the passenger and driver front door modules. When the DDM/PDM receives the PWM signal from the BCM, they each apply a DC voltage to their respective outside mirror through a hardwire connector. The PWM signal value for the outside mirrors is the same value for the internal mirror thus the reflectance level of all the mirrors will be the same.

The following is a chart explaining the operation values.

Duty Cycle	Signal BODY_CNTRL3.OEC_PWM Value (CAN bus to DDM/PDM)	DC Voltage Output Level (DDM/PDM to Outside Mirrors)
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- CAN-IHS output from the DDM to the PDM for passenger door mirror operation

Heating, Ventilation, and Air Conditioning (HVAC) Module

[Component Index](#)

The HVAC module controls the EBL system. The HVAC module sends a bus message to the DCMs to enable the heated mirror power feed for the purpose of defrosting the mirror glass.

Heated mirrors are enabled when the DEFROST system has been enabled. When activated, either DCM receives an EBL request from the HVAC module. The DCM activates a mirror heat feed output to defrost the mirror glass. The length of time that the EBL system is active is determined and controlled by the HVAC module. The EBL system will function when the battery voltage is between 9 volts and 16 volts.

Outputs

- EBL enable/disable defrost request

Power Exterior Rearview Mirror Motors

[Component Index](#)

One motor in each mirror controls horizontal (left and right) movement while a second motor controls vertical (up and down) movement.

On vehicle equipped with power folding mirrors, a third motor is responsible for the folding and unfolding of the mirrors. In order this feature to operate, the vehicle **MUST BE EXITED AND DOORS LOCKED** to activate the auto fold function. This requires the door latch being detected as opened and then closed before the feature will function.

When battery current and ground are output from the DCM to the two motor terminals, the motor rotates in one direction. When the switch output polarity to the motor connections are reversed, the motor rotates in the opposite direction.

Power Mirror Switch

[Component Index](#)

The DSM contains the Mirror Select Switches (MSM). The DSM also contains the Mirror Adjustment Switch (MAS). The DSM has a battery level feed and ground feed to power up the DSM switches. The DSM also contains the LIN transceiver to communicate with the DSM switches and the DCMs.

The MSM switch has two select switches; one from the Driver mirror and one for the Passenger mirror. When either MSM switch is pressed, the DSM transmits a continuous LIN bus message to the DDM to actuate the appropriate electronic mirror motors. The LIN request ends when the MSM switch is no longer pressed.

of the mirror glass to give the vehicle operator an indication that an object has been detected by the BSM system ([Refer to Electrical/8B - Driver Assistance/Standard Driver Assistance System/Description and Operation](#)).

The power outside rear view mirror unit cannot be repaired. Only the LED turn signal modules and the mirror glass and glass case are serviced separately. If any other component of the power mirror unit is ineffective or damaged, the entire power mirror unit must be replaced.

Body Control Module (BCM)

[Component Index](#)

The BCM is used in the exterior power mirror system to provide vehicle configuration data and commanded ignition input to the DCMs.

Inputs

- Command Ignition State
- Vehicle configuration data
- Feature request configuration from the Radio
- Configuration status (ON/OFF) requests from the Radio
- Transmission PRND and reverse gear status position from the Transmission Control Module (TCM)
- CRVMM EC mirror Status
- Operational status and reflectance value of the EC sensors from the CRVMM
- CRVMM error report signal

Outputs

- Vehicle configuration information
- EC mirror Auto Dim enable/disable to the CRVMM
- EC mirror status
- Commanded ignition status
- PRND status to the CRVMM
- Controller Area Network-Interior High Speed (CAN-IHS) Pulse-Width Modulated (PWM) outside mirror dimming signal to the DCR
- Mirror enable request to the CRVMM

Combined Rear View Mirror Module (CRVMM) or Digital Rear View Mirror (DRVM)

[Component Index](#)

The DRVM is powered by a fused ignition RUN/ACC circuit in the interior PDC and ground is continuously supplied by a ground circuit connected to an eyelet secured to the instrument panel carrier, to the left of the Passenger AirBag (PAB). The DRVM communicates with the BCM via a LIN data bus to communicate any faults that arise with the DRVM. The BCM will report any DRVM faults when connected to a diagnostic scan tool. When a communication or internal fault is present, the DRVM will display a message on the screen stating a fault is present.

If a DRVM button is stuck for more than 30 seconds, a message will be displayed in the Instrument Panel Cluster (IPC) and a fault will be set in the BCM. If the fault is no longer present, the DRVM will resume normal operation for the Mode selected prior to the fault detection.

The DRVM will learn a new camera when the camera is replaced. However a reset needs to be done when the camera mount has changed. If the camera mounting is changed (i.e. The CHMSL was replaced but the vehicle is reusing the existing camera), the following step must be done to calibrate the camera to the new mounting:

1. ***Press and hold the plus and minus (right and left menu adjust) buttons for 15 seconds $\pm$ 5 seconds.***

Door Control Module (DCM)

[Component Index](#)

The DCMs on this vehicle are the Driver Door Module (DDM) and the Passenger Door Module (PDM). These modules are responsible for dimming the exterior mirrors by using a PWM generated signal. The command to change the exterior mirror reflectance is received over the CAN-IHS bus from the BCM.

The DCMs are responsible for discharging the exterior mirror when the EC function is turned off and the PWM duty cycle falls below a calibrated level.

Inputs

- Outside mirror CAN-IHS auto dim request message from the BCM
- Command Ignition State

Outputs

- PWM signal to the exterior EC mirror

Display Screen Module (DSM)

[Component Index](#)

The Radio contains the soft switch for enabling and disabling the EC mirrors Auto Dim feature.

Outputs

- Auto Dim enable/Disable signal to the BCM

YOUR CURRENT VEHICLE

Day/Night Rearview Mirror

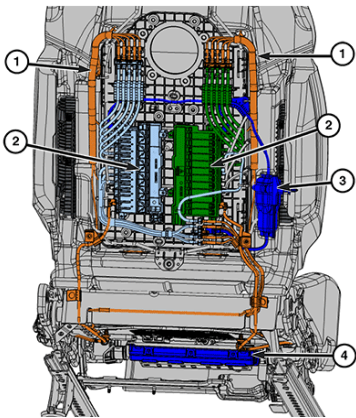
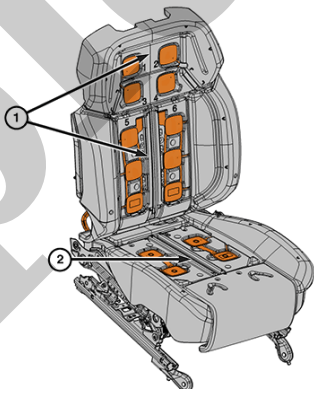
DAY/NIGHT REARVIEW MIRROR

For removal and installation of the rearview mirror [\(Refer to Body/Interior/MIRROR, Rearview/Removal and Installation\)](#).

Massaging Seats System

MASSAGING SEATS SYSTEM

The massaging seat system can consist of the following components:

 0825196869	 0825196867
1 – Massage Air Cells – Seat Back and Cushion 2 – Seat Massage Module Seat Massage Module Driver (SMMD) and Seat Massage Module Passenger (SMMP) 3 – Pneumatic Air Pump Motor 4 – Memory Module	1 – Seat Back Massage Air Cells 2 – Seat Cushion Massage Air Cells

The seat massage feature can be turned on/off through the massage button located on the door panel near the handle, or through the Controls menu on the radio screen.

4.	Power Seat Motors
5.	Radio Frequency Hub (RF-Hub)
6.	Power Lumbar Motor
7.	Power Lumbar Switch
8.	Power Seat Switch - Driver and Passenger. Driver switch shown.
9.	Memory Seat Switch
10.	Instrument Panel Cluster (IPC)
-	Remote Keyless Entry (RKE) Transmitter
-	Seat Massage Module Driver (SMMD) and Seat Massage Module Passenger (SMMP)

The memory seat system is a sub-component of the memory system. For further information on the memory system (Refer to 08 - Electrical/8E - Electronic Control Modules/MODULE, Memory, Seat/Description and Operation).

An electronic memory seat system is available on certain models. The memory seat system is able to store and recall all power seat positions, power rear view mirror position, adjustable pedal and the power steering column position, when equipped. The system can be set for two different drivers.

The memory system will automatically recall these settings when a button of the memory switch is pressed, or when the doors are unlocked using a RKE transmitter if enabled.

The memory system also has a customer programmable easy exit feature. When the ignition switch is turned OFF, the seat will move rearward 60 mm (2 in) or to the end of its travel, whichever occurs first with a minimum allowed movement of 15 mm (0.5 in.).

OPERATION

The MSM receives battery current through a fuse located in the Power Distribution Center (PDC) and remains operational, regardless if the vehicle is running or not. When a memory seat switch button is actuated, a resistance signal is sent to the Driver Door Module (DDM) or Passenger Door Module (PDM), which will communicate with the MSMD or MSMP over the Controller Area Network-Interior High Speed (CAN-IHS) bus. The MSMD/MSMP is responsible for the 12 volt DC current and ground path to the appropriate power seat adjuster motors. The adjuster motors operate to move the power seat to the correct preset location.

A memory setting is recalled by pressing either the memory "1" or "2" button, or by pressing the unlock button on a "linked" RKE transmitter. For safety reasons, the memory settings cannot be recalled when the vehicle

- Rearward
- Neutral

Power Seat Motors

[Component Index](#)

Each power seat movement motor incorporates PTC protection.

- Seat Horizontal Motor
- Seat Recliner Motor
- Seat Front Vertical Motor
- Seat Rear Vertical Motor

Power Lumbar Switch

[Component Index](#)

The power lumbar switch has the following switch positions:

- Forward/Inflate (horizontal) lumbar movement
- Rearward/Deflate (horizontal) lumbar movement
- Up (vertical) lumbar movement
- Down (vertical) lumbar movement
- Neutral (no movement)

Power Lumbar Motor

[Component Index](#)

Each power seat movement motor incorporates Positive Temperature Coefficient (PTC) protection.

There are two lumbar motors per seat:

- Lumbar Horizontal Motor
- Lumbar Vertical Motor

Radio Frequency Hub (RF-Hub)

[Component Index](#)

The RF-Hub receives a memory trigger input from the RKE transmitter or the PE door handle. In either event, the RF-Hub validates the RKE transmitter, and if valid, sends the request over the CAN bus to the BCM for gating to the MSMD/MSMP.

Power lumbar adjustment is only possible with ignition ON and for approximately 30 minutes after turning it to STOP.

Power Seat Switch

[Component Index](#)

The power seat switch is capable of the following switch positions:

- Forward (horizontal) movement
- Rearward (horizontal) movement
- Cushion front up (vertical) movement
- Cushion front down (vertical) movement
- Cushion rear up (vertical) movement
- Cushion rear down (vertical) movement
- Neutral (no movement)

The switch is fed with a battery circuit and a ground circuit. When the switch is pressed in any direction, the switch will apply battery level voltage and ground to the appropriate seat motor.

The power seat recliner switch has 3 positions:

- Forward
- Rearward
- Neutral

This recliner switch operates the recliner motor terminals in the same fashion that the power seat switch operates the power seat motors.

Power Seat Motors

[Component Index](#)

Each power seat movement motor incorporates PTC protection.

- Seat Horizontal Motor
- Seat Recliner Motor
- Seat Front Vertical Motor
- Seat Rear Vertical Motor