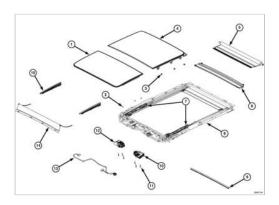
# **CHILTON**LIBRARY



## **Description & Operation**

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### **DESCRIPTION**



Dual Pane Sunroof Components	
1 – FRONT GLASS PANEL	10 – FRONT GLASS MOTOR
2 – FRONT GLASS FASTENERS (6) 4.5 N·m (40 in. lbs.)	11 – MOTOR SCREWS 4 N·m (35 in. lbs.)
3 - REAR GLASS FASTENERS (6) 4.5 N·m (40 in. lbs.)	12 – SUNSHADE MOTOR
4 – REAR GLASS PANEL	13 – WIRE HARNESS
5 – ROLLO SUNSHADE	14 – WIND DEFLECTOR
6 – DRAIN CHANNEL	15 – MECHANISM COVERS
7 – GLASS GUIDES	DRAIN HOSES
8 – SUNROOF ASSEMBLY	VELCRO STRIPS

Dual Pane Sunroof Components		
9 – SUNSHADE SEAL		

The power sunroof system consists of a front sliding glass panel and rear stationary glass panel which allows additional sun light and/or ventilation into the interior of the vehicle. The front sunroof glass panel tilts upward at the rear for the ventilation position or tilts down and slides rearward beneath the fixed glass panel for the open position. The system also includes a power sunshade which can be closed when additional sun light is not desired.

The power sunroof system allows the sunroof to be opened, closed or placed in the vent position electrically by actuating switches in the overhead console. The sunroof system receives battery feed through a fuse in the Power Distribution Center (PDC) and an ignition wire to determine vehicle ignition state. The sunroof will only operate when the ignition is set to ON/Run, Accessory or while the Accessory Delay system is active. The power sliding sunroof system does not communicate through Controller Area Network (CAN) Bus Circuit. Therefore, the power sunroof system cannot generate Diagnostic Trouble Codes (DTC's).

The power sunroof system features express operation (press & amp; release switch) convenience feature that will automatically open or close the sunroof or sunshade. In addition the power sunroof system also features an obstacle detection feature which automatically reverses the sunroof or sunshade when it encounters an obstacle within the roof opening during express close operation.

The power sunroof system glass panels interface with the body roof opening flange with rubber seals to prevent wind noise and minimize water intrusion when the sunroof is closed. The sunroof system features a water management system that collects any water that leaks passed the sunroof seals and drains it safely outside the vehicle through drain hoses connected at all four corners of the sunroof frame.

The power sunroof system features a wind deflector that automatically deploys when the sunroof is opened to help minimize wind buffeting and wind noise. Wind buffeting is a pressure pulse that may be heard when driving with sunroof open and side windows closed.

The main components of the power sunroof system are:

- Fixed Rear Glass Panel
- Sliding Front Glass Panel
- Frame and Mechanism
- Drain Channel
- Motor Assemblies
- Power Sunshade
- Overhead Switches

- Wind Deflector
- Drain Hoses

#### **OPERATION**

The power sunroof system can only be operated when the vehicle ignition is set to ON/Run, Accessory or the Accessory Delay system is active. If the sunroof is in operation when the vehicle ignition is switched to START the sunroof will stop all motion. The sunroof switch will need to be pressed again to continue sunroof operation after the engine has started. If the sunroof is in operation when the vehicle ignition is switched to OFF all sunroof motion will stop immediately.

The front sunroof glass panel tilts upward at the rear for the ventilation position, or tilts down and slides rearward beneath the fixed glass panel for the open position. The sunroof module has two modes of operation; manual and express. Manual mode is active when the sunroof switch is pressed and held for a time >0.8 seconds. When in manual mode the sunroof or sunshade operation will stop whenever the switch released. Express mode operation is a convenience feature that will automatically open or close the sunroof when the switch is pressed & provides an obstacle detection feature which automatically reverses the sunroof when it encounters an obstacle within the roof opening during express close operation.

A combination push-button and rocker switch module mounted in the overhead console controls sunroof operation. The sunroof switch is a rocker design with a push button in the center of the two halves of the rocker. Pressing the rocker towards the front of the car commands the sunroof closed. Pressing the rocker towards the rear of the car commands the sunroof open. Pressing the center push button commands the front sunroof glass panel up into the vent position. If sunroof glass and sunshade are closed and one of the sunroof open/vent push buttons are pressed, the system will automatically retract the sunshade to behind the front glass opening (mid-point) before opening or venting the sunroof glass pane. Therefore, the sunshade can never cover the movable glass pane opening unless the pane is in the fully closed position. For additional information (Refer to Electrical/Power Top/SWITCH, Sunroof/Description and Operation).

A rocker switch module mounted in the overhead console controls the power sunshade operation. Pressing the rocker towards the front of the car commands the sunshade closed. Pressing the rocker towards the rear of the car commands the sunshade open. When opening the sunshade it will automatically stop at midposition, the sunshade open switch must be pressed again to continue to full open position. When attempting to close the sunshade and the glass is in the vented or open position the sunshade will stop at the mid-position. Pressing the sunshade close switch again will automatically close the glass; once the glass has fully closed the sunshade will automatically cycle to the closed position.

The sunroof motor assemblies feature integrated electronics which provides the express open and close capabilities and also the obstacle detection system. The obstacle detection is active during express close operations. There are two methods of overriding the obstacle detection system:

1. Press and hold the sunroof or sunshade CLOSE switch. Obstacle detection is not active during manual (press & pold switch) operation of the sunroof or power sunshade.

2. If the sunroof or power sunshade auto-reverses three consecutive times during express (press & amp; release switch) close operation, the sunroof will enter override mode. All switch commands will be in manual mode (one-touch express operation will be disabled) while the obstacle detection feature is in override mode. Sunroof or power sunshade must be fully closed in manual mode (press & amp; hold switch) or vehicle ignition cycled off and back on to exit override mode.