

High specification vehicles are fitted with climatic seats, which are able to deliver heating and cooling to the front seat occupants. Vehicles fitted with climatic seats feature 2 additional rotary controllers mounted in the instrument panel switch pack, adjacent to the clock. The rotary controllers are used to select cooling. Three levels of cooling and heating are available, dependant on the degree of switch rotation. The center of the switch is pressed once to ventilate both the seat back and cushion (both indicators on the switch will illuminate). A second press of the switch will ventilate the seat back rest only (the cushion indicator will extinguish).

- NOTE: If climatic seats are fitted, heated seat switches are not featured on the ATC module control panel.
- NOTE: The ATC module does not control any aspect of climatic seat operation.

The controlling software for the climatic seats is contained within a control module mounted below the driver's seat. When a temperature selection is made through either of the rotary controllers, the instrument panel switch pack provides a Pulse Width Modulation (PWM) signal to the control module. The control module interprets the PWM signal as a temperature value and attempts to heat or cool the seat accordingly.

Both climatic front seats contain two Peltier cells; one in the cushion, one in the backrest. The Peltier cells are able to deliver heating and cooling based on a voltage provided by the control module. Each seat also contains a fan, which blows air over the Peltier cells to distribute heating or cooling throughout the seat. The Peltier effect occurs when an electrical current is passed through a junction formed by two dissimilar conductors, creating a heat pump. A heat pump absorbs heat from one side of the system, causing it to cool, and then transfers the heat to the other side, causing it to warm. The cell is capable of cooling the incoming air by approximately 8°C (12.4°F), which means that temperature output will depend on the ambient temperature inside the vehicle.

The climatic seat control module monitors seat heating through a NTC temperature sensor. The temperature sensor is only used to monitor seat heating. Seat cooling is open loop, with no temperature signal provided back to the control module. When a temperature selection is made through either of the rotary controllers, the instrument panel switch pack provides a PWM signal to the climatic seat control module, which interprets the PWM signal as a temperature value and attempts to heat or cool the seat accordingly.

Although the switch LED's will illuminate if a selection is made when the ignition is switched on, the Peltier cells will not operate until the engine is running. After the ignition is switched off, the climatic seat control module will retain the current temperature settings for approximately 15 minutes. After this period, the seats will be set to 'off' when the ignition is switched back on.

For additional information, refer to: [Control Components](#) (412-04 Control Components, Description and Operation).

Rear Seats

