05CUT–02

SYSTEM DESCRIPTION

1. GENERAL

The climate control seat system creates cold or warm air to increase the comfort of seats that have become hot or cold.

The air is heated or cooled by the Peltier element on the back of the seat cushion pad and seatback. The air is then sent to the seat cushion and seatback with the fan installed under the seat. The fan is operated by pressing the climate control seat switch.

The climate control seat switch has several modes that vary the quantity of air to be sent to the seat. There are 7 modes in total: 3 cooled air modes, 3 heated air modes and ventilation mode.

HINT:

When the highest level for cooled air operates for 15 minutes, the quantity of air falls 1 level.

2. FUNCTION OF MAIN COMPONENT

Component	Outline
Climate Control Switch	• Selects between modes: 3 cooled air modes, 3 heated air modes and ventilation mode. • During fail–safe control, climate control seat switch indicator light illuminates according to blinking pattern to inform of malfunction in system.
Seat Climate Controller (Thermistor)	Detects surface temperature of seatback and seat cushion.
Seat Climate Controller (TED)	Cools and heats through the function of the Peltier element.
Seat Climate Control Fan Motor	Provides airflow to seatback and seat cushion upon receiving instructions from ECU in accordance with climate control switch mode.
Climate Control ECU	• Controls system based on signals from temperature sensor and climate control switch • While system is activated, only driver side, rear LH and RH side climate control ECU output idle–up signals. • Monitors output amperage of climate control fan motor.
Rear Seat Heater	Fast acting seat heater warms seat in initial stage of heating mode.

3. SYSTEM OPERATION

Function	Outline	Front Driver Seat	Front Passenger Seat	Rear Seat
Normal control	This system operates the climate control fan motor located underneath the seat to provide airflow to the seat cushion and seatback. The airflow is warmed or cooled by the Peltier element in the climate controller. The air that flows to the seat surface is distributed by passing through the grooves that are provided on the seat pad surface. This air is then dissipated throughout the seat surface through the slab urethane foam and is discharged through the seat cover.	○	○	○
Power ON full–power control	This control outputs maximum voltage to the climate controller and the climate control fan motor for approximately 15 minutes only when the conditions listed below have been met. • The ignition switch is ON. • After the climate control switch is turned ON, the switch mode is subsequently turned to MAX WARM or MAX COOL within approximately 10 minutes. • The rear seat heater is not operating (for vehicles equipped with a rear seat heater).	○	○	○
Engine idle–up output control	The climate control seat ECU outputs the idle–up signal to the driver seat ECU while it controls the climate control seat system. The driver seat ECU sends the demand signal for the idle–up control to the ECM.	○	–	○

Function	Outline	Front Driver Seat	Front Passenger Seat	Rear Seat
Fail–safe Control	Fail–safe control effects the following six controls. • Overcurrent protection control • Overheating protection control • Transient voltage drop control • Switch input voltage detection control • Power source short detection control • Temperature sensor open / short detection control	○	○	○
Rear seat heater operation power-down control	This control prohibits full power control while the rear seat heater is being activated (for vehicles equipped with a rear seat heater).	○	○	–