How the Circuit Works

The heater control panel controls the blower controls, air delivery, and A/C compressor controls automatically. With the ignition switch in ON (II), battery voltage is supplied through fuse 14. The control unit is grounded at G502.

Blower Controls

You can manually select the fan speed by turning the fan control dial clockwise, from the OFF position. Turning the dial further clockwise increases the fan's speed, which increases air flow.

Battery voltage is applied through fuse 14 to the blower motor relay contacts at all times. With the ignition switch ON (II), the blower motor relay in the under-hood fuse/relay box is energized which feeds battery voltage to the blower motor. The blower power transistor controls the blower motor in all speeds except HIGH. The blower power transistor is controlled by the heater control panel. When the control panel requests HIGH blower speed, the blower power transistor grounds the blower motor which connects it directly to ground, making the blower run at high speed.

Air Delivery

The heater control panel controls the blower motor and supplies a 5 VDC reference voltage to the air mixture control motor.

The air mix and mode control motors each receive inputs from the control unit. The air mix motor regulates the mixture of cold and hot air by varying the position of the heater-evaporator door. The mode control motor controls the direction and volume of outlet air. Use the mode control dial to select the vents the air flows from. Some air will flow from the dashboard corner vents in all modes. Both the air mix control motor and mode control motor are grounded by the control unit.

The recirculation control motor receives battery voltage through fuse 14 when the ignition switch is ON (II). It regulates the position of the fresh/recirc door, and is controlled by the heater control unit-panel when the recirculation button is pressed at the recirc-A/C rear defogger switch assembly.

A/C Compressor Controls

Voltage is provided at all times to the A/C compressor clutch relay contacts through fuse 1. With the ignition switch ON (II), voltage is supplied to the relay coil through fuse 14.

With the ignition switch ON (II), the heater control panel grounds the A/C ON input of the ECM/PCM through the A/C pressure switch and the multiplex control unit. The ECM/PCM then grounds the A/C compressor clutch relay coil. This energizes the coil, which closes the relay contacts and provides voltage through fuse 1 to the A/C compressor clutch. The clutch then engages and begins turning the compressor.

The A/C button at the recirc-A/C-rear defogger switch assembly must be pressed to activate the A/C system.

Evaporator Temperature Sensor

The evaporator temperature sensor is located on the evaporator housing. If the temperature at the evaporator gets too cold, the evaporator temperature sensor sends a signal to the heater control panel to turn off the A/C compressor clutch. This prevents condensation from freezing on the evaporator fins and blocking air delivery into the passenger compartment.

A/C Pressure Switch

The A/C pressure switch is located in the condenser outlet line where refrigerant is in a high temperature/high pressure liquid state. The switch will sense abnormally high or low pressure, and open the circuit. This removes ground from the ECM/PCM, and turns off the compressor.

Refer to the Service Manual (Section 21, HVAC) for specific tests or troubleshooting procedures.