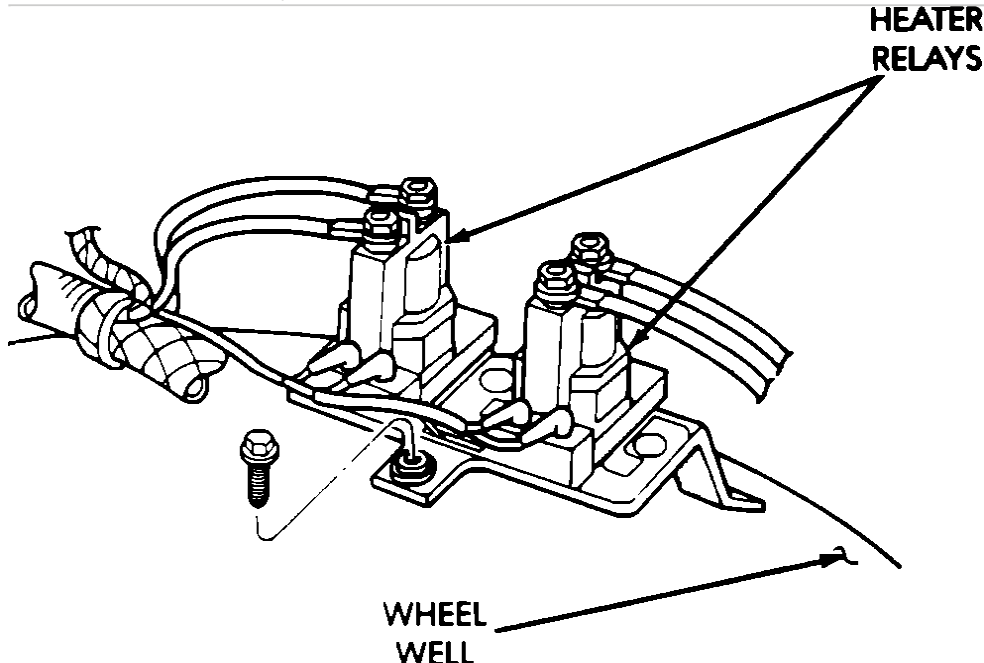


1993 Dodge or Ram Truck D 250 Pickup L6-359 5.9L DSL

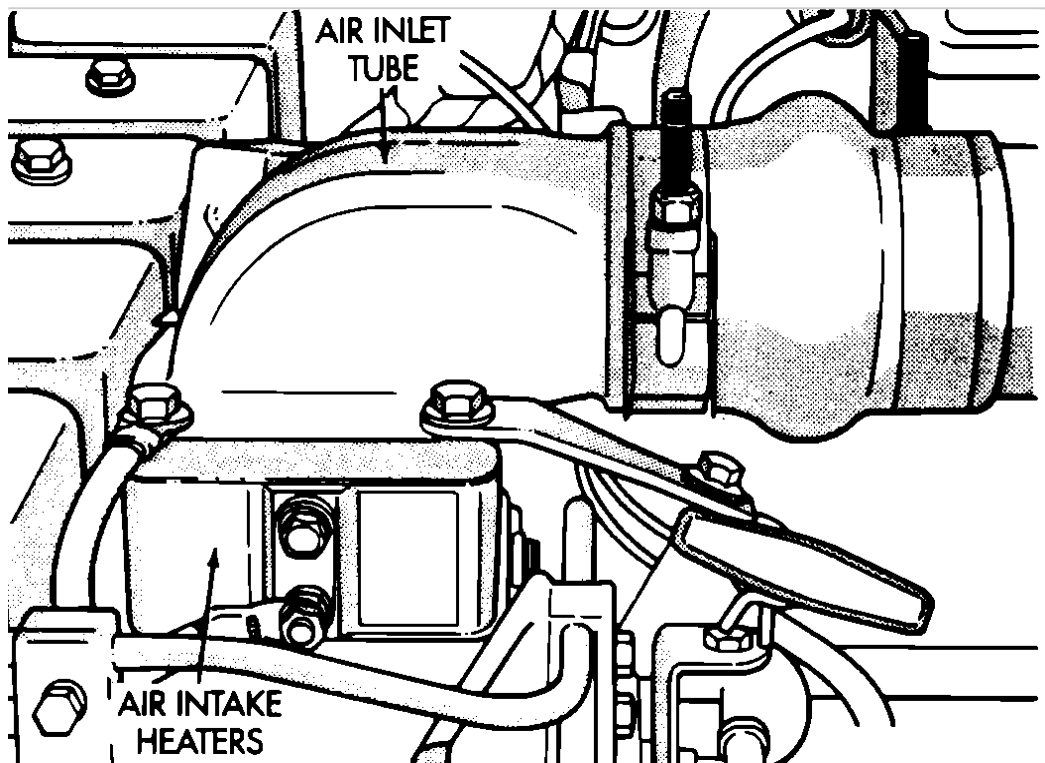
Vehicle > Powertrain Management > Fuel Delivery and Air Induction > Intake Air Heater > Description and Operation > Components

AIR INTAKE HEATER SYSTEM OPERATION

Air Intake Heater Relays



Air Intake Heaters



The air intake heater system uses relays and heaters, controlled by the PCM (Power Train Control Module), to preheat

the air before it enters the combustion chamber. The relays purpose is to ENERGIZE the air intake heaters so that they can warm the incoming air as it enters the intake manifold. The air intake heaters can be ENERGIZED before and/or after engine cranking, depending upon the intake manifold air temperature. The PCM receives a signal from the charge air temperature sensor that indicates the air intake temperature. If the air intake temperature is at or below 59°F (15°C) the PCM will start the air intake preheat or post-heat cycle.

PREHEAT CYCLE

The air intake preheat cycle will start if the following conditions exist:

- ^ The ignition switch is in the ON position.
- ^ The PCM has not received a crank signal.
- ^ The air intake temperature is at or below 59°F (15°C).

If the preheat cycle is started, the PCM will illuminate the Wait-To-Start lamp. Once the preheat cycle has finished, the Wait-To-Start lamp will go out, and the engine can be started.

If the PCM receives an engine crank signal while the preheat cycle is running, the air intake relays will be DE-ENERGIZED causing the preheat cycle to be aborted.

POST-HEAT CYCLE

The air intake post-heat cycle will begin if the following conditions exist:

- ^ The engine has been started and is running.
- ^ The air intake temperature is at or below 59°F (15°C) when the ignition switch was turned ON.

The intake air heaters have two different modes of operation depending upon the intake manifold air temperature, either both heaters are ENERGIZED or they are cycled ON and OFF individually (while one is ENERGIZED the other is not and vice versa). The amount of time that the air intake heaters remain ENERGIZED depends upon the intake manifold air temperature.