

Wheels: Several readers have noticed that their vehicle will surge slightly when sitting at a traffic light with the transmission in drive and their foot on the brake. Some readers have reported that their vehicle felt as if it were accelerating by itself and that additional force had to be applied to the brake pedal to keep the vehicle from moving forward. Service technicians report that everything checks out OK and that there are never any diagnostic trouble codes set. Do you have any ideas as to what could be causing the problem?

Halderman: I too have felt the surge at idle. I notice it most when waiting at a traffic light with the gear selector in drive and the air conditioning (or defroster) turned on. Most air-conditioning systems today use a cycling clutch-type compressor that operates only when needed. This method of operation helps save gasoline. However, this can cause the surge that is often felt as the air-conditioning compressor engages. The surge that you feel is the vehicle computer increasing the idle speed at the same time the air-conditioning compressor clutch is activated. The air-conditioning compressor requires power from the engine to operate. When the compressor is turned on, the engine is loaded which decreases the engine speed (revolutions per minute or RPM). It is the purpose and function of the idle control to compensate for this drop in RPM and to increase the engine speed back to the normal speed.

Wheels: What can the driver do when this surge at idle when stopped is experienced?

Halderman: The driver should realize that this short duration surge is normal and should keep a steady force on the brake pedal to keep the vehicle from moving forward.

Wheels: What are these idle control devices and can they be adjusted?

Halderman: There are two commonly used idle speed control devices. One uses an electric stepper motor that is controlled by the computer that actually moves the throttle linkage to increase or decrease engine speed. These units are commonly called idle speed control (ISC) and include a nose switch that signals the computer that the throttle is closed indicating that the driver has allowed the engine to idle. The vehicle computer then controls the movement of the throttle to maintain the correct idle speed.

NOTE: A fault with the nose switch can cause the computer to not control the idle speed, which can cause the engine to stall at idle or idle roughly.

The other type of idle air speed control and the most commonly used is called the idle air control or simply the IAC. The idle control device is used on most fuel-injected engines. The IAC controls the amount of air entering the engine to control the idle speed. The IAC does not have a nose switch nor is it adjustable. The air passages can become partially clogged with carbon, which can be cleaned by a service technician to correct a rough or unstable idle condition.

