

Wheels: Roy of Fairborn has a 1990 Oldsmobile Cutlass Ciera with 160,000 miles that has a stalling and engine idle speed problem. After more than \$500 worth of repairs, the stalling problem is fixed but now the engine speed doesn't decrease when slowing to a stop. What is your opinion?

Halderman: Incorrect idle speed is, in my opinion, one of the most common fuel injection related customer complaints. The "minimum air" adjustment may have been incorrectly adjusted during a previous repair. This can cause the engine to not idle at the correct speed. The idle speed on fuel-injected vehicles is computer controlled so the driver cannot depress the accelerator to reduce the idle speed as was commonly done with vehicles equipped with a carburetor. There are several different engines available on 1990 Oldsmobile Cutlass Cieras but all use an idle air control (abbreviated IAC) to control the idle speed. The engine computer, usually called the powertrain control module or PCM, monitors engine speed [revolutions per minute (RPM)], and increases or decreases engine speed to match the desired speed. Engine speed is increased if the air conditioning or defroster setting is selected because the air conditioning compressor creates a load on the engine. When the engine is cold, the computer commands the idle speed be higher than normal to allow the engine to operate smoothly when cold.

Wheels: Now that we know how the system is supposed to work, how could Roy or a service technician determine why the engine is not operating at the correct speed?

Halderman: The best way to diagnose this problem involves connecting a scan tool to the vehicle computer connector under the dash near the steering column. The service technician can then observe the commanded position of the IAC. It should be about 15 to 25 steps or counts at idle. If the idle speed is too high and the IAC counts are low, this indicates to me that the engine has a vacuum leak. The most likely cause of a vacuum leak is at the intake manifold gasket or a hole in one of the vacuum hoses.

If, however, the idle speed is too high and the IAC is being commanded to this higher position, then there is a possible problem with the power steering switch or a fault in the air conditioning system. The computer may "think" that the air conditioning is on and increase the engine speed, yet the air-conditioning system may not be working. As a result, the idle speed will be higher than normal until the air conditioning or defrost is turned off.



| Engine Data 1 | |
|----------------------|---------|
| CMP Retard | -6 ° |
| Engine Speed | 626 RPM |
| Desired Idle Speed | 625 RPM |
| IAC Position | 59 Co |
| Desired IAC Position | 58 Co |
| ECT Sensor | 154 °F |
| IAT Sensor | 64 °F |
| MAF Sensor | 5.52 g |
| Desired IAC Airflow | 5.69 g |
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Wheels: All of this information sounds as if it could be expensive. Is there a possibility Roy's problem is something simple and easy to correct?

Halderman: Yes. The throttle shaft could be worn or the passages around the idle air control could be coated with deposits. These deposits can be easily cleaned. Another simple possible problem could be in the wiring to the engine coolant temperature (ECT) sensor located near the thermostat housing. If the engine computer "thinks" the engine is cold, the idle speed will be commanded higher than normal. Again, a scan tool should be used to display the temperature that the sensor is sending to the computer.