

On the Line

Throttle Body Cleaning It May Require Some Computer Learning

Throttle body cleaning may require some computer learning and possibly a little training for the service technician. Are you up to speed on throttle body cleaning and idle speed re-learn? If not, read on to have an understanding of a high idle condition that can occur following a throttle body cleaning on a vehicle equipped with a throttle-by-wire system. This unfortunate encounter can consume a lot of diagnostic time if you are not prepared. It is imperative that we understand the system, how it functions, and what action to take when a high or unstable idle condition occurs following a throttle body clean-up. Replacing the throttle body or computer is not the solution.

Throttle body cleaning has been a part of our maintenance procedure since the introduction of port fuel injection. Deposit formations accumulating around and behind the throttle plate restrict the air flow in the idle position, causing poor idle or stalling conditions, in addition to sticking throttle plate symptoms. Periodically, these deposits must be removed to restore the idle speed and freedom of throttle plate movement. The introduction of throttle-by-wire systems has posed some new challenges for those not familiar with the newer systems.

COMPUTERS CAN LEARN

The engine control module (ECM) learns the idle position of the throttle plate in order to maintain the correct idle speed. Learned airflow values are stored in the ECM. This learning process is necessary in order for the ECM to make adjustments in the idle speed due to variations in production, and to compensate for the formation of throttle body deposits that may restrict the airflow. This is a continual learning process that occurs over the life of the vehicle.

Cleaning a heavily contaminated throttle body on a vehicle equipped with throttle-by-wire can pose a challenge for a service technician unfamiliar with idle speed re-learn. The cleaning procedure can require more than swabbing out the residue in the throttle bore. Once the deposits are removed, it is sometimes necessary to perform an idle speed re-learn to re-establish the proper idle speed, as it can be too high.

Some claim that a new ECM is required to restore the idle speed. A new ECM may satisfy the high idle symp-

tom, as the idle values in the new ECM are set to zero. Performing an idle re-learn on the existing ECM places the idle values at zero and accomplishes the same. Do not replace the ECM or throttle body to correct the high idle condition.



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RESTORING THE IDLE SPEED

Once the deposits have been removed, the computer must reset all learned values back to zero. The majority of the time this is accomplished via a road test or just normal driving conditions. If that fails, the vehicle manufacturers post two methods by which the idle speed can be re-learned:

- 1) Idle speed re-learn via a Scan Tool.
- 2) Idle speed re-learn through a process known as drive cycles. This method can involve a 10–15 step procedure of operating the vehicle during different driving and idle modes of operation to allow the ECM to learn new idle cells.

Important: If the Check Engine light illuminates during the drive cycle and the diagnostic codes are idle speed related, the codes must be cleared for the ECM to continue to learn the idle speed.

The mentioned procedures vary from one vehicle manufacturer to another. Access to this information can be obtained through a factory service manual or a service information provider such as Alldata or Mitchell. While this is copyright information, many of these procedures are posted on the Internet by technicians or vehicle owners who have encountered the idle speed condition following a throttle body cleaning. They are quick to post the solution that cured the unwanted idle speed.

With the new technology come some interesting and challenging symptoms. Most throttle-by-wire systems can be cleaned with little or no adverse symptoms. The ECM quickly re-learns the idle speed and all is well. The exception seems to be with Nissan throttle-by-wire systems, as most of them require an idle speed re-learn procedure following a throttle body cleaning. For those systems that encounter a high idle condition, be prepared for the symptom and follow the vehicle manufacturer's recommended idle speed re-learn procedure.



AFTER FAILING TO REPAIR GRANNY MUFFET'S CAR,
WALTER TRIES TO EXPLAIN IDLE RE-LEARN,
BUT ALAS, TO NO AVAIL.