



OBD II Code Diagnosis Part III

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In the first part of this OBD II Code Diagnosis series I stated that we would discuss the principles of OBD II codes and breakdown each character that defines them. For a generic discussion of OBD I'll refer you to TB-80016 and 80017. We archive all of our bulletins and they can be found on our website at www.magnaflow.com. Look for Tech Bulletins under Tech Support. For this series I would like to stay on a more specific path.

In our first two parts we took a very common Ford EGR code and broke down the diagnosis. I chose this code not only for its commonality but also because this EGR system uses several components, each one playing a major role in the vehicles ability to reduce NOx. Although the PCM has the ability to set several different and distinct codes for each component (9 generic and 10 specific) the interrelation of the components cannot be ignored. As we saw in our example, one of the possible causes for the P0401 code was mechanical and had nothing to do with the malfunction of any one component.

Another common issue in Code Diagnostics sometimes overlooked is that of retrieving codes in both OBD II Generic and Enhanced or Manufacture Specific mode. Depending on the tool being used, the enhanced option may not be available (i.e. Code Reader only).

Using generic mode requires less input therefore is faster and in most cases will get the technician to where he wants to be. The downside is that it is a generic code and therefore in many cases the repair information will not be specific to that vehicle.

The obvious upside then to using Enhanced Mode, is that the diagnostic information will be specific to that vehicle or at least that manufacturer. The description and operation will give you a better idea of what the PCM is looking for and the subsequent testing should lead you to the proper diagnosis the first time.

Example: 2005 Altima, 2.5L with an illuminated MIL. The OBD II code was P0140, O2 Circuit B1S2 *No Activity Detected*. A quick glance at the data stream showed that under the proper test conditions the sensor displayed activity. At this point we might determine that it is an intermittent problem, clear the code and send the customer on their way. However a look at Enhanced codes revealed a P1147, O2 B1S2 *Maximum Voltage not Obtained*. A closer look at data stream showed that the sensor was not reaching a specific maximum voltage of .78v. This specific information was not available when processing the P0140 code.

The key to any diagnostic situation is to always follow a pattern for each problem we face and code diagnostics is no different. Yes... each manufacture has common problems and knowing where to find that information is valuable but sometimes even the "silver bullet" can be a dud! Whether it is a no start, misfire, won't idle, MIL illuminated or any number of issues, having a plan is by far the best plan. "Shot Gun" diagnosis will on occasion allow us to hit the illusive homerun but more often than not we spend a whole day repairing a component only to go home with that empty feeling in our stomachs, knowing the same problem will reoccur in the morning.

Diagnostics is an art and getting good at it can be a great confidence booster, however these vehicles are changing constantly and there is no time to rest. As I say when closing all my classes:

THE RULES ARE ALWAYS CHANGING
TECHNOLOGY KEEPS MOVING FORWARD
EDUCATION IS A CONTINUAL PROCESS

Cleaning up the environment...one converter at a time

Gary

