OTC Repair Strategies:

Genisys™
SPX OTC
Service Solutions, a unit of SPX Corporation

Genisys 5-Gas Analyzer Plug-in Module

Diagnosing Emissions Failure Quickly and Accurately

Owning, operating and working the bays of your own shop can have its moments. For example, a customer brings in a vehicle that failed the emissions for high NOx. Right away, you are at a disadvantage, because it is a difficult job to diagnose quickly and correctly in order to make flat rate and be profitable.

It was late afternoon when Louis, my service advisor, wrote the repair order. As usual he was thorough and gained all the data & customer info at the front counter that a technician needs to diagnose an emissions failure/drivability complaint. The vehicle was a 1991 Ford Taurus with a 3.8. When I read the repair order I thought it best to base line and verify the complaint. The customer stated that the engine had a mild surge around 55 mph and the check engine light would come on intermittently and only remain on for a short period. The road test verified the surge and the check engine light. The next step was to baseline the vehicle emissions levels. Duplicating the problem on the road are what tools like my OTC Genisys scantool were made for. A quick switch from the lab scope module to the plug-in Performance Gas Module and my road test at 35MPH showed a NOx reading of 1633 PPM.

Step two– I decided to check for fault codes, since I knew as a result of my road test and the intermittent check engine light that my fault code was most likely EGR. My suspicions proved correct so I thought I'd take a short cut rather than follow the Ford "H" manual flow chart. I setup the OTC Genisys to perform the Diagnostic Code Self-Test KOER.

DAT (Digital Automotive Tester)

To perform the short cut I back probed the EGR solenoid using the OTC DAT (Digital Automotive Tester) and I installed a vacuum gauge in series between the EGR solenoid and the EGR valve. I performed the KOER and monitored the DAT and the vacuum gauge. As the PCM commanded the EGR to open I noticed the DAT showed varying voltage indicating the solenoid was functioning electrically and that the vacuum gauge read 3 inches of vacuum showing that vacuum was being applied to the EGR valve. While the vacuum was supplied there was no change in engine RPM. With no noticeable change in RPM my diagnosis was that I had almost no EGR flow as a result of either a bad EGR valve or restricted EGR passage.

It only took me 12 minutes to prove it using the OTC Genisys and DAT. With tools like that I can afford to take a coffee break! ***Thank You OTC!***

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As heard on the WOR Radio Network
As seen on DIY Television