



The article below is from our colleagues in the US, namely Fixed Ops Magazine. Once again it reflects the growing problem of carbon build-up and deposits in the intake system which is causing performance problems.

Gasoline Direct Injection (GDI), also known as Petrol Direct Injection or Direct Petrol Injection or Spark Ignited Direct Injection (SIDI) or Fuel Stratified Injection (FSI), is a variant of fuel injection employed in modern four stroke.

GDI systems allows a combustion engine to run an ultra-lean condition, therefore this will improve fuel consumption, decreased combustion temperature, and improve emissions. Unfortunately there are side effects caused by the lack of fuel that once washed down the cylinder walls and cleaned a lot of the carbon away. While technology has taken enormous steps in improving combustion burning and fuel efficiencies, it has not been able to combat the side effects that are left over after combustion. It seems the more that technology improves combustion burning the greater is the problem we the technicians are seeing from this left over carbon that affects the driveability of our customers cars.

Most of us know the value of a bore-scopes and no doubt this article demonstrates another great use for this tool to inspect and back-up your carbon build-up suspicions in the intake system. This is also a great way to show your customer that their vehicle is in need of a carbon clean treatment.

DIGGING FOR ANSWERS

GDI ENGINE COMPLAINTS OFTEN MYSTERIOUS, HARD TO RESOLVE

Many modern vehicles powered by Gasoline Direct Injection (GDI) engines are showing up in Service Departments with mysterious complaints: high oil consumption, misfires and performance loss. These problems can put the diagnostic skills of even the best Technicians to the test.

Diagnosing and remedying these engines' issues early is important. Problems can affect engine performance in as little as 3,000 miles. Neglected treatment may require a costly upper end teardown or vigorous mechanical cleaning to restore vitality.

A dealer (and OEM) can only hope that the repairs will restore the vehicle owner's brand trust.

Shawn Crow, Service Manager for Bob Robinson Chevrolet-Buick-Cadillac-GMC near Wheeling, West Virginia, told me his shop sees GDI engine issues every day. "It involves '07 models forward," he said. "It's even more a problem in turbo versus naturally aspirated GDI engines because the intake gases in turbo engines are even hotter."

Pat Goss, Motorweek's resident master Technician and Owner/Operator of Goss's Garage near Washington, D.C., for the last 43 years, has told me that part of the diagnostic challenge is that many Technicians have not been educated about issues associated with GDI engines.

OEMs developed GDI engines to meet 2016 CAFE fuel economy standards and they've been increasing in use since 2000. The technology, however, has been around since WW II. Mercedes-Benz used it in the early '50s for its 300SL Gullwing, which won at LeMans in 1952.

One reason GDI problem diagnosis is often elusive is that some of the diagnostic skills to identify it are long out-of-practice. For instance, the industry's heavy reliance on sensor codes and scan diagnostics have eroded many Techs' ability to diagnose based on observation, knowledge and instinct.

Also disconcerting, Goss said, is that many techs and motorists still check a vehicle's tailpipe for bluish exhaust. That diagnosis for cylinder oil burning was valid in the days before cars had to use catalytic converters. These devices burn away all gases entering them, leaving zero telltale oil smoke at the tailpipe.



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