

BG Platinum™ Fuel System Service Removes Carbon Deposits from Fuel Systems

Overview

Carbon deposits are a problem that petroleum chemists, automotive engineers and technicians know all too well. That's because when you combine heat, pressure, and oxygen with petroleum, the formation of carbon deposits is inevitable. Carbon deposits are especially problematic for vehicles, because over time they can significantly impair an engine's performance and efficiency.

There is no way to entirely keep carbon deposits from forming – the best protection is regular maintenance. Since Gasoline Direct Injection (GDI) engines became popular nearly a decade ago, the aftermarket and even original equipment manufacturers (OEMs) have attempted to develop service solutions that are not only effective, but also easy-to-perform and economical.

Traditional Treatments Fall Short

While traditional service solutions that target carbon deposits can have an impact, improper atomization can cause pooling and result in hydrolocking the engine. Chemistries, equipment solutions and even re-engineering have tried to address this issue, but unfortunately, intake deposits remain steadfast.

How do carbon deposits form? In GDI systems, the injector lies within the combustion chamber. With each ignition cycle, air is sucked in through a complex air intake system. This air then feeds into each cylinder at an air to fuel ratio of up to 30:1. Because the injector is inside the combustion chamber, there is no fuel spray to clean the intake ports and valves, so fuel and oil deposits from the exhaust gas or positive crankcase ventilation (PCV) can quickly form in the intake. The droplets of fuel left over in the injector tip after the engine is shut down are exposed to the injector's residual heat, and that heat essentially "cooks" the fuel, causing it to polymerize and react with oxygen to form carbon deposits.

Potential Problems Caused by Carbon Deposits

More important than how carbon deposits form is how troublesome they can be to vehicle engine operation.

Poor Fuel Economy

Even the smallest buildup of deposits can reduce fuel efficiency, and if the air intake system becomes coated in carbon deposits, it will start to choke. Deposits interrupt proper air flow, thus creating an environment for unpredictable and incomplete combustion. When less air reaches the combustion chamber, the ratio of air to gasoline is impacted. Proper air flow into the cylinder of a GDI engine is vital to maintain optimum performance.

Irregular Performance

Stuck piston rings and inconsistent compression allow high combustion pressures to push gases into the crankcase. When ring performance is diminished, those combustion gases don't all remain in the combustion chamber. Some escape into the crankcase, raising temperatures and pressures. Then, the oil begins to evaporate at a faster rate. Oil vapors escape through the PCV and are cooled by intake air, coating the intake system components. Now you have oil-based deposits in the intake system. This type of deposit can't be removed by most intake system cleaners, which are designed to remove only fuel-based deposits.

Low Power

Deposits can only build so many layers before they begin to break under the pressure. Large pieces of carbon separate from valves and fall into the combustion chamber. Damage to the cylinder walls causes a change in compression and power drops across all the cylinders.

BG Introduces the BG Platinum™ Fuel System Service

Years of market research, formula development, and on-vehicle testing on the part of BG Products – an industry leader in perfecting automotive maintenance services – has culminated in the launch of the *BG Platinum™ Fuel System Service*.

BG combines proprietary fast-acting cleaning solutions, innovative equipment, and a simple preventive service procedure to deliver a revolutionary solution for the effective atomization of GDI-specific deposit buildup. The newest in BG's lineup of quality services, the BG Platinum™ Fuel System Service promises to:

- Ø Clean evenly across all cylinders
- Ø Deliver potent detergents to dissolve deposits on intake valves
- Ø Break down deposits on injectors
- Ø Result in no teardown or downtime

The result is greater fuel efficiency, improved performance and enhanced power.

The key components of the BG Platinum™ Fuel System Service include:

1. **The BG Platinum™ Air Intake, Valve & Combustion Chamber Cleaner (PN PF04/261)** – Comprised of a diverse blend of ingredients, this powerful cleaning fluid breaks through the nearly impenetrable exterior of carbon deposits to deliver potent detergents to the vulnerable center. Essentially, deposits are destroyed from within. This unique formula is light enough to be safely atomized into the intake and robust enough to remain there (where other intake cleaners typically evaporate). Following the service, incoming air continues to carry the now liquefied deposits to the combustion chamber where they can be harmlessly burned off.
2. **The BG Platinum™ Fuel Service Supply Tool (PN E101-1249)** – This tool administers the BG Platinum™ Air Intake, Valve & Combustion Chamber Cleaner into the intake manifold. Its clear canister conveniently allows the technician to monitor the fluid level as the cleaner flows into the intake manifold.

3. **The BG Platinum™ Fuel Service Adaptor Set (PN E101-1379)** – The adaptor connects to the vehicle's vacuum port or engine sensor port to disperse cleaner into the intake manifold across all intake valves. Each adaptor in the set is custom-fitted to specific platforms.
4. **BG 44K® Platinum™ (PN 208)** – BG 44K® Platinum™ is poured into the gas tank to restore performance and gas mileage. The improved formula obliterates the most severe deposit buildup found in GDI engines. It eliminates deposits upstream of the fuel rail, including fuel filters and the Fuel Sending Unit, and downstream to the oxygen sensors and catalytic converter.

How does it work? The intake is often the most elusive portion of GDI cleanup. That's where the BG Platinum™ Fuel System Service shines most brightly!

The BG Platinum™ Fuel Service Supply Tool sprays BG Platinum™ Air Intake, Valve & Combustion Chamber Cleaner into the plenum just upstream of the intake valves. The applicator tool is key to the system's effectiveness, because it applies the cleaner in a fine spray and thus ensures the solution reaches the right location without pooling. Aerodynamic forces in the plenum further distribute the cleaner to provide more thorough coverage. The adaptors in the BG Platinum™ Fuel Service Adaptor Set allow the atomization and dispersal of the cleaner into the induction system.

The BG Platinum™ Fuel System Service is currently only compatible with certain vehicle platforms. Each platform has a specific adaptor and set of instructions that can be accessed through a QR code found within the adaptor's packaging:

- Ø Ford (EcoBoost® 1.6L, 2.0L, and 2.3L – excludes Mustang models)
- Ø Hyundai/Kia (1.6L and 2.0 Turbo engines)
- Ø MINI (1.5L and 2.0L engines)
- Ø Subaru (2.0L Turbo engines)
- Ø Volkswagen/Audi (1.8L and 2.0L engines)

Conclusion

In theory, GDI-specific formulas can have an impact on GDI deposits, but improper atomization can cause pooling and may result in hydrolocking the engine. The BG Platinum™ Fuel System Service solves this problem -- it uniquely combines innovative equipment with a preventive maintenance service to provide the most effective atomization for GDI-specific deposit buildup. The result is greater fuel efficiency, improved performance and enhanced power.