

# GIMME A BOOST

IMPROVES POWER AND FUEL EFFICIENCY, PLUS IT'S EASY TO INSTALL. WHAT'S NOT TO LOVE ABOUT IGNITION SOLUTION'S PLASMA BOOSTER?



Disconnect the battery and remove the air intake tube leading to the throttlebody for easier access.

OVER THE YEARS WE'VE WITNESSED MANY MANUFACTURERS MAKE BOLD PERFORMANCE CLAIMS IN ORDER TO CATCH THE BUYER'S EYE. SOME PARTS THAT WE TEST FALL SHORT OF THE PROMISES, WHILE OTHERS PLEASANTLY SURPRISE US. ONE MANUFACTURER THAT IS RELATIVELY NEW TO THE MUSTANG SCENE WHOSE LATEST PRODUCT FALLS INTO THE "PLEASANT SURPRISE" CATEGORY IS IGNITION SOLUTIONS. SPECIFICALLY, WE'RE TALKING ABOUT THE COMPANY'S PLASMA BOOSTER.

The Plasma Booster is a new spin on an old concept—amplify the spark plug voltage to more thoroughly burn the air/fuel charge in the combustion chamber, thereby creating more torque and horsepower throughout the rpm range. The question that begs to be asked is what's so innovative about the Plasma Booster? After all, ignition amplifiers have been in use by Mustang enthusiasts for years. Just go to your local speed shop and they will probably have several different capacitive discharge/multispark ignition amplifier boxes with matching "hotter" ignition coils for the venerable 5.0 Mustang.

But what if you have a modular 4.6L Mustang? Do you settle for factory stock and leave well enough alone? Of course not. With Ignitions Solution's

Plasma Booster you have an option.

This is the first system that we have seen which is intended specifically for a coil-on-plug ignition system (such as is found on any 1999 and newer Mustang GT or Cobra). Consequently, the Plasma Booster is 50 states smog-legal and fully compatible with OBD II computer systems and any other electronic components that your Mustang may have. No need for special spark plugs or ignition coils either, as the Plasma booster will work with factory or aftermarket pieces. Gone are the days of trying to adapt a universal ignition amplifier into your pony, which often meant cutting, splicing, soldering and, in many cases, pulling your hair out. With the Plasma Booster's "plug and play" technology you spend minimal time under the hood of your car and



1. Locate each individual coil and carefully cut the electrical tape to reveal the wires. Use the supplied quick-splice connectors and attach to the left wire of each coil. Use pliers to ensure a proper connection, and repeat this step for all eight cylinders.

2. Attach the quick-slide connectors located on the ends of the Plasma Booster wiring to the coil leads.

3. The Plasma Booster installs in the engine compartment via double-sided tape. An excellent location is the back of the firewall. Find a suitable location, clean it thoroughly to ensure adhesion, and firmly press the unit in place. Route the wires neatly and away from moving parts, such as the throttle linkage.

maximum time behind the steering wheel.

The Plasma Booster is designed to provide a hotter, more powerful spark than the OE Mustang ignition. According to Ignitions Solutions it's supposed to be four times the spark energy over the factory stock ignition system. This is done during the initial spark discharge while also doubling the secondary current (also known as spark amperage).

Huh?

In other words, the energy boost is a result of the Plasma Booster creating a multiple spark discharge of about 10 sparks within 500 microseconds, and do so without altering the timing of the ignition event. Simply put, the Plasma Booster doesn't affect when the spark takes place and therefore doesn't affect ignition timing in the conventional sense. However, by increasing the spark amperage, the Plasma Booster does advance the initial phase of combustion by creating a faster flame front in the cylinder. The end result is a faster more complete combustion of the air/fuel mixture in the combustion chamber.

Keep in mind that the combustion exerts pressure on the piston and pushes it down the cylinder. Naturally, the larger and faster the combustion in the chamber, the more downward pressure the piston is subjected to. This, of course brings forth

many useful benefits, such as a smoother running engine (from idle to redline), reduced emissions, easier starting in hot or cold weather, improved throttle response, better fuel mileage and, most importantly (if you ask us), more horsepower and torque.

In the search for quantitative data to verify performance claims we cited a few examples of dyno test results using the Plasma Booster. Ignition Solution's provided dyno results on a 1999 GT which revealed gains of seven horsepower and 9 lb-ft of torque, and a Cobra Mustang that picked up 10 horsepower and 6 lb-ft of torque. In an independent dyno-test of a supercharged 2000 GT gains of 12 horsepower and 12 lb-ft of torque were realized, while a "basic bolt-on" 2001 GT saw a gain of 6 horsepower and 4 lb-ft of torque. Obviously, the extent of modifications directly impacts the test results.

(Note: As is always the case with *Mustang Enthusiast*, if we are not on-the-ground overseeing dyno testing in person, we tell you so, and make no claims as to the accuracy of the supplied data.)

The Plasma Booster has proved to be especially helpful in supercharged, turbocharged or nitrous injected applications, as the higher spark energy ensures proper ignition under higher combustion chamber pressures. Generally speaking, when using any of the above mentioned power adders, it is common



to reduce the spark plug gap to prevent high rpm “spark blow-out” or a misfire. With a high-energy ignition system such as the Plasma Booster, theoretically, the spark plug gap does not have to be reduced as much. This could allow for a larger nitrous shot or more boost pressure from a turbo/blower setup, which could really make a dramatic improvement in power output.

Ignitions Solutions has a complete line-up of Plasma Boosters that are designed for a variety of vehicles, but naturally we are only interested in their offerings for the late-model Mustangs. For our beloved ponies there is a Plasma Booster for the 1996-1998 Mustang V-8 and the 1999-2004 Mustang V-8 models. There’s even a dedicated Plasma Booster for the 1994-2004 V-6 Mustangs. No more “one-size-fits-all” ignition amplifiers.

Installation of the Plasma Booster is a simple affair, requiring a minor amount of time with basic tools. This is a modification that is well within the realm of even the most inexperienced wrench-turners. If working on your car isn’t your thing, a professional shop should have no difficulties installing it for a minimal fee. We asked GTR High Performance of Rancho Cucamonga, California—a late-model Mustang performance vendor/shop and Plasma Booster distributor—for assistance and they were able to demonstrate how truly simple the Plasma Booster is to install.

Here they installed the Plasma Booster on Lauri Herchenroeder’s new 2004 Mustang GT. Lauri’s GT was outfitted with an aftermarket exhaust system and underdrive power pulleys. Since her Mustang was close to stock, we thought this might make for an interesting test vehicle. Following the brief installation period, we had an opportunity to test drive and wring out the GT a bit. Our first initial impression was the noticeably smoother idle quality...a sure-fire sign that the Plasma Booster was more fully burning the mixture in the cylinders. Normal and part-throttle driving was more responsive, and under hard acceleration the revs seemed to climb easier and more smoothly without missing a beat. Although our driving impression was limited in time, we did get some feedback from Lauri about a week after the installation. She reported a definite improvement in fuel mileage. According to her, that alone was worth the upgrade, as eventually the Plasma Booster will pay for itself with the money she will save at the gas pump.

Eliseos Patronas, one of GTR’s skilled installers, showed us a few installation tips along the way. Considering the fair asking price for the Plasma Booster (GTR High Performance retail price of \$274.99) and the noticeable improvement, this is a sound investment that will pay dividends every time you fire up your Mustang. ■

## SOURCES

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**IGNITION SOLUTIONS**  
www.ignitionsolutions.com  
(Plasma Booster; \$274.99 GTR retail price)



4. Find a suitable location to ground the Plasma Booster. We sandwiched it under a bolt from the upper intake plenum.

5. Eliseos applies electrical tape to all the wiring to give this installation a professional and clean look. Finally, reconnect the battery and re-install the air tube to throttlebody.

6. Check all wiring connections and start the vehicle. You’ll notice that with the key in the “on” position all 8 LED indicator lights on the Plasma Booster should be lit. If any connection is not properly attached, the corresponding light will not be on.