

# The truth about spark plugs.

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***The Bottom Line*** - *Don't believe outlandish claims of miraculous power gains simply by installing overpriced or gimmicky spark plugs.*

I'd like to dispel a couple of automotive myths and in the process perhaps save you a few dollars. Expensive spark plugs do not increase your vehicles performance and power. Regular replacement does. While using a premium platinum plug will extend the service life of the plug, it will not in any way increase performance or power either.

The only realistic advantage of any premium platinum plug is a decrease in gap erosion. Gap erosion occurs when the spark burns away small bits of the electrode and ground contact during combustion. Over time a properly gapped plug will slightly increase it's gap but not generally enough to cause any problems if the plugs are replaced in accordance with the manufacturers suggested maintenance routine. So the extra dollars you pay for these kinds of plugs are truly wasted if you are a responsible vehicle owner who changes the plugs regularly like you should.

I know many of you have heard and seen advertisements from ignition component manufacturers claiming their "special" plug design increases spark duration or voltage which is absolute nonsense. I've personally tested over thirty brands of spark plugs in both new and used engines using both a Sun scope and a bear engine analyzer. Not one "premium" or "performance" plug showed any improvement in spark trace, voltage or duration of spark and several showed faults not present when using standard stock replacement parts.

One prime example is the fraudulent campaign of a company I won't mention claiming to increase performance by using a V shaped electrode which they say (And show in their advertisements) creates "two" sparks during combustion thereby causing an increase in combustion output and more complete combustion in the chamber. One word. BULL. Any professional worth his weight can tell you that once combustion has begun, that's it. Everything else affecting combustion will be determined by the engines compression, timing and fuel mixture. You can't

ignite the fuel mixture twice. Once it explodes, it's spent. So even if there was a second spark it would be attempting to ignite inert gases that no longer contained any combustible fuel, or, in the event of an inefficient combustion chamber (Due to bad valves, rings or worn cylinder walls.)any remaining usable fuel mixture would be pushed out the exhaust valve during the exhaust stroke of the engine. Also, electricity ALWAYS tries to take the path of least resistance. So again, once that path has been established, that is the path that voltage is going to take and any other ground electrode location present can only come into play at some later date if the resistance on the preferred path becomes fouled or some other factor increases the resistance to the point where now this secondary ground electrode becomes the preferred path.

So in one sense you could say that in this way there might be a slight advantage in maintaining a good path for a longer period of time than with a single electrode grounding point, but in all reality unless there is a condition present that creates unfavorable surface changes to the ground electrode such as coolant or oil contamination, or out of spec thermal conditions, gap erosion or insulator failure are more likely to become factors than a problem with the ground electrode.

Here's another one. "Our plug has a higher voltage which increases the sparks efficiency." Bull. I've tested factory and aftermarket coils vs. "performance" ignition coils and the stock coils consistently produced higher and more sustained voltages than the supposedly performance ones every time. The voltage that is sent to the plug will be the only determining factor of spark voltage in an otherwise properly performing engine, meaning as long as the plug gap, vehicle electrical system and the rest of the ignition system components are working properly, there can be no increase in spark voltage no matter what kind of plug you are using. Problems in plug gap, coil integrity, plug wires and cylinder compression are the determining factors at play. Any of these could contribute to spark pooling though. This condition is usually due to increased voltage needed to jump an improperly gapped plug, improper cylinder compression or to overcome a badly grounded plug and adversely affects performance. Inefficient combustion or misfiring may result as well.

Keep your engine and your wallet happy by installing properly gapped, stock or

quality replacement spark plugs at the required intervals. Having been in this business for more than 23 years I will generally use either AC Delco, Motorcraft, NGK or Bosch depending on the application and what's available at my favorite parts house and also where the specific inventory for that brand carried by the local part suppliers is coming from. Not every Delco or Motorcraft part is the same and in some instances you need to investigate the packaging or even the part itself to see if it's made domestically, in Mexico or overseas. Motorcraft, just as an example, has manufacturing facilities here in the USA but also has them in Mexico and elsewhere. Despite what some others might believe, I firmly stand by the conviction that regardless of what quality assurance provisions the root manufacturer has established, parts imported from Mexico, China and Taiwan are rarely as good as those built in the USA, Germany or Japan.

When it comes to the price vs performance question regarding "performance" spark plugs, in most cases these O.E equivalent plugs are actually less expensive and generally more reliable than those "other guys" products.