Two Ways to Extract More Power from your Engine ECU

Part 1

Owners of performance automobiles are always looking for ways to maximize the power from their vehicles. Simply put, if your customers paid for 500hp you can help them make sure they are getting all 500 horses from their engine. However, getting the power from the engine is not always as easy as it seems and ***we're going to share a few of the reasons why.***

There are two primary drivers of ECU performance: fuel quality and heat. Both affect whether the ECU advances or reduces timing and/or enters limp mode to protect the engine. Let's take a closer look.

One of the biggest variables in facing owners of performance street cars is the quality of the pump gas that is available from their local brands. Most car owners have been conditioned to purchase premium fuel (typically 93 octane) either based on OEM instructions in their owner's manual, or the belief that higher octane means higher horsepower.

Some argue that increased octane doesn't necessarily lead to increased horsepower because modern computer-controlled fuel injected cars self-monitor fuel and air mixture to compensate for engine knock and have one or more knock sensors in the intake manifold, cylinder head, or block. However, this simplified explanation can be misleading because timing advance plays a part in extracting power. As detonation occurs and RPM increases, timing is removed to control the problem – and this works against extracting maximum power.

So, what kind of engines need more timing? Answer: large combustion engines, classic car engines, forced induction engines, and engines running rich fuel mixtures. Forced induction is important to note because the biggest trend in modern cars has been to reduce engine displacement and add turbo charging.

Because automobile manufacturers want to avoid engine warranty claims, the ECU and knock sensor work to limit early engine detonation. However, race engine builders know that "tuning to the knock" is where the most power can be found. So, what if you could extend the window of when the knock sensor kicked in so that you could advance timing to an acceptable detonation limit and make more power?

Fortunately, that's what the fuel formulation experts at VP Racing Fuels wondered when they developed Octanium™ Unleaded.

Octanium Unleaded™

This fuel additive is formulated to provide an octane boost of up to 7 numbers to increase horsepower for classic cars, big block street hot rods, and modern sports cars. Check out the dyno test videos on VP's website to see what Octanium can do for a Ford Fiesta ST and a GMC Sierra pickup truck. Octanium Unleaded is safe for use in cars and trucks with both catalytic converters and 02 sensors. It also eliminates knocking and pinging, cleans fuel injectors, eliminates gum and varnish build up, and improves throttle response and acceleration.

Ask your VP distributor, or contact VP to learn how to become a dealer.

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