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OCTOBER 2008

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POWER UP WITH NOS ENERGY DRINK

NOS Energy Drink's releasing its new PowerShot, a short burst—well, 8oz worth—of the sleep-prohibiting, energy-enhancing Maximum Boost Formula. You can find it at most retail outlets for a mere \$2.99. We're still waiting for those of you who picked up the May issue with the NOS Energy Drink poster to send in those crazy shots of you with the Nasty NOS girls. **Source:** www.drinknos.com



WORD ON THE STREET



CASTROL SYNTEC TOP SHOP CHALLENGE UPDATE

The final stages to complete our Castrol Syntec Top Shop Challenge engine is drawing nearer and our man Bisi Ezerioha is ready to take on the turbocharged heavyweights in this battle. We recently added a couple more key components to making sure our F22A runs smoothly, efficiently and most importantly, powerfully. Don't forget, log onto www.SyntecTopShopChallenge.com to vote for our engine and also for a chance to win it after we smack our competitors down on the dyno. Now, we'll pass the mic to Bisi:

"We experienced something very interesting recently in our own race program, and that's how critical it is to monitor and tune individual cylinders, especially in an inline-four engine. There are different things that occur in engines where each cylinder may or may not receive the same amount of air and fuel, and each exhaust primary may or may not receive the same amount of combustion elements. With that being said, we noticed some challenges with longevity and we could not figure out why it was happening all of a sudden. After using Innovate's LC1s (a built-in O2 monitoring system) we were able to find out that one of our injectors had trouble metering a fuel properly, as if one of the injector coils were bad. Since we're monitoring our air/fuel ratios through the collector, which takes an average of all the cylinders, we couldn't see this problem. The other cylinders were running richer than normal and was canceling out a lean mixture in the cylinder in question, which was cylinder one.

However, running four LC1s, as efficient as they were, was still elaborate. We found a new solution in the LM2, also from Innovate. It is a clean, compact unit and we can mimic what we did with four LC1s with just two LM2s. It allows us to view air/fuel ratios in two cylinders in real time and has the capability of accepting more channels so we can have four O2 sensors go into this one box or we can monitor individual exhaust gas temperatures (EGTs), for example. We can also diagnose OBD2 diagnostic trouble codes if we want. It's very



user-friendly and intuitive. We will use the LM2 system in our build along with my Bisimoto F22 header, and use this technology to monitor each exhaust primary AFR and definitely tune our engine to make sure that each cylinder has the proper air/fuel ratio for power and longevity. This "individual cylinder tuning" setup using the AEM EMS cylinder trim mapping function could possibly yield up to a 7-percent improvement in power over just having a global tuning map for the entire powerplant.

Our header is quite unique. It will have three steps on the primary, a Burns stainless 4-1 collector, and a venturi built in to the collector to allow us to increase the velocity of scavenging through the header itself, resulting in power. This is FL technology, combined with our own meticulous dyno-based research, that we can provide to the street and race enthusiast.

Bad heat is the enemy of performance; Castrol knows that and we know that as well. Even though our engines are a chemical to heat to mechanical energy converters, we want to harness and utilize that heat properly. But that heat can also be our enemy because heating up our intake manifold can result

in a dense mixture of air into the engine, limiting power production. We'll use a Bisimoto-Evolution heat-shielding gasket, a high-temp gasket that alienates the heat from the cylinder head from the intake manifold. The intake manifold stays cool, allowing a denser charge of air for the best power production. We have seen a 50-degree drop in intake degree temperature and a 5- to 6-horsepower gain on our Dynapack Dynamometer.

As I have mentioned before, the cylinder head has the highest potential for naturally-aspirated power. We've partnered with Portflow and Dasa Racing Heads to create a CNC-machined head, but we'll talk more about that next month and show you the final engine assembly as well as a new camshaft design that complements our Kinsler ITB manifold."



SOURCES

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