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FOR IMMEDIATE RELEASE

Trifecta Performance Provides Tuning for First STS Turbo Powered LS3

SEATTLE – This week, Trifecta Performance concluded the “dyno tuning” of the very first 2008 Chevrolet Corvette to receive a rear mount twin turbocharger kit from STS (Squires Turbo Systems). With the 2008 model year, the Chevrolet Corvette brings a number of improvements, the most important being a new 6.2L powerplant, named the LS3. After dialing in the fueling and timing curve (at 6 pounds of boost), the car produced 519 peak horsepower and 515 pound-feet of torque at the wheels (SAE uncorrected). These results represent a gain of about 145 horsepower, and 152 pound-feet of torque thanks to the twin turbochargers and tuning by Trifecta Performance. The installation and dynamometer services were performed/provided by Meridian Performance Services, in Lynden, WA.

“It was an honor and privilege to be the first to tune one of these kits”, said Vince Geglia, owner of Trifecta Performance, who also performed the tuning. “We received excellent support from STS and Meridian Performance Services throughout the tuning process. The car makes incredible power, yet retains its road manners.”

As anyone would expect when fitting the existing design of a product on a new vehicle for the first time, there were a couple challenges the project team faced along the way. The LS3 brought about two subtle, but relevant changes which required fabrication: 1) The factory fuel injectors on the LS3 are shorter than the predecessor engine, the LS2, and 2) The LS3 uses a new style Mass Air Flow (MAF) meter similar to the Z06. With some machined spacers, the LS2 style fuel injectors that were provided with the kit were incorporated. STS provided a new intake pipe designed for the Z06 which was able to accommodate the new style MAF meter.

The other challenge was related to tuning the configuration. Vince explains, “There wasn’t a single person that had tuned one of these kits yet. All we had to go with was a tune from a 2007 Corvette with the same kit, but using a different engine, and a timing table that was thought to be appropriate for the setup. But, there were a number of engine control module (ECM) changes between 2007 and 2008 – the biggest being the MAF slope. What we knew about the 2007 tune wasn’t 100% applicable to the 2008 tune. Also, with the increased displacement, that would likely change the fueling and timing requirements. We didn’t know if the injector flow rate (IFR) slope would be similar, either.”

Indeed, after initial startup of the car, long term fuel trims (LTFT) in the idle range were pegged out at 25% too rich. After bringing these inline by massaging the MAF meter slope and IFR slope, the car was strapped down on the chassis dynamometer and testing began.

“The theoretical timing table we received was pretty good. We had to remove some timing in the 4400-5000 RPM range, and add some timing from the 2000-3400 RPM range. We picked up some great power in the mid RPM range with these timing changes. We spent most of the time getting the AFR where we wanted it to be, and getting the AFR line straight. The car’s power was nosing over around 6000 RPM, though. The LS2 in the 2007 car continued to make power up to around 6500RPM. We suspect improved valve springs may increase the peak power numbers yet with the LS3. We also expect bigger numbers once this engine has some miles on it and has loosened up.”

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On the road, the car performed nothing less than spectacular. Under cruise conditions, one wouldn't even guess the car is capable of making over 500 horsepower at the wheels as it drives super smooth. Once the driver lays into the throttle, however, hold on. Road conditions were wet during our test drive, so traction was limited to begin with, but we found even in third gear, once you go past about ¼ throttle, you could forget about keeping the tires from spinning.

Founded in August, 2006, Trifecta Performance provides custom EFI tuning services and products for late model vehicles. Trifecta Performance is the first company to bring to market a hand-held programming device that allows customers to mail-order full custom PCM programming without requiring a PCM swap or installation of any sort. Trifecta Performance is proud to serve the needs of the modern performance-minded car and truck enthusiast, providing innovative, useful, high-quality products and services to the performance community.

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