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**LJ:** Matt, thanks for taking some time to catch up with me again. When we first met, at this year's MPMC show, you showed me your new Stage 3 MPG-Max Diesel Kit, and I want to get more into that, but before we do, can you tell me again exactly how exactly water-methanol injection works?

**Matt:** In gas engines, water-methanol injection does two things: it chemically cools the intake air and suppresses detonation, allowing for a safe increase in horsepower. By cooling and condensing the air, more air gets into the combustion chamber, causing the water and methanol to create a controlled flame front similar to high octane race gasoline. The result is a 20-25 point octane increase over pump gas, allowing for a substantial increase in safe horsepower.

For diesel engines, the injection of water-methanol also chemically cools the intake air, typically dropping air temps 50-100 degrees F, and conditions combustion to help the diesel fuel burn more completely. During combustion, methanol acts as a very safe auxiliary fuel and water converts to steam which expands and also helps to push down on the piston. The effect of a denser air charge and more efficient combustion event produces more power and lower exhaust gas temps. This means less unburned diesel (black smoke) comes out the tailpipe and safer horsepower is produced for the same amount of diesel fuel.

**LJ:** You could almost call it "clean" horsepower. So how does the Stage 3 MPG Max™ Diesel kit work?

**Matt:** It's new from Snow Performance, and it's a system proven to increase fuel economy in all load states—empty or while towing. Special mapping and a sophisticated 2d digital controller results in 1-3 MPG increases! The MPG Max™ system does not require a sustained high-load state in order to provide maximum fuel economy gains. The system uses a new injection management controller that allows for a small, steady spray of water/methanol to be injected across the entire power curve—even while in cruise. This provides an increase in combustion efficiency which provides more power without injecting more diesel fuel. This increase in efficiency translates into an increase in fuel economy. Typical fuel economy increases are 10%-15% or 1-3 MPG. The MPG Max™ system has a secondary output that is used to activate a Power Mode. This introduces a second stage of injection. Larger nozzles are used to inject more fluid to make more power. The Power Mode activation point is adjustable for best performance. The net effect is smooth power in all engine load states with no combustion quench resulting in a true turn-on-and-forget system. It also now has an LCD screen that dis-
Matt's company is in its 7th year of business after successfully launching the BoostCooler® for his supercharged and nitrous equipped '93 Mustang Cobra.

plays boost, EGTs [Exhaust Gas Temperatures] and injection-pump output. This means a savings in gauges you don't have to buy.

LJ: Now, the water-methanol injection process isn't entirely new, right? On your company's website there's a great story about the first widespread use of water-methanol injection during World War II. The German Luftwaffe increased the horsepower in their 190D fighter aircraft. How long has this process been used in cars and trucks and how has it evolved?

Matt: On the gasoline side, the technology gained significance in WWII on supercharged aircraft and had also been dabbled in by the aftermarket hot-rod industry when vehicle owners used systems for increasing power. In the 60's, there were a few examples of OE manufacturers providing water-methanol systems with certain applications, such as the Corvair turbo, Saab 99 Turbo and the Oldsmobile Turbo Jetfire. It was also used in Formula 1, but it was banned because the engines started making too much power. The Boost Cooler® has brought modern digital electronics, higher injection pressure and robust engineering to the process.

In diesels, water/methanol injection has been used extensively for years in high-performance truck and tractor pulls. With the elevated boost levels required for peak power, water/methanol is a common means of cooling the intake charge and reducing EGTs. Also, truckers have used water injection for years to increase fuel mileage.
Matt spends nearly half as much time under the hood researching his company’s products.

Talking shop at the recent MPMC show in LA.
LJ: What other engine upgrades are required to run water/methanol injection?

Matt: No other upgrades are normally needed. On a diesel, simply install and enjoy the benefits. On a boosted application, simply increase the boost or timing to see that additional power. If it’s high compression, simply increase the vehicle’s timing to see large power gains.

LJ: This works in both gasoline and diesel engines, right? Do you get the same results in a gasoline engine you see in the diesel engine?

Matt: Yes and no, both types of engines see a great increase in performance, although diesel engines tend to get more dramatic results. In forced induction gasoline engines, an increase of 10-20% power can be expected, where turbo diesels typically see a 20-30% increase. The diesel system additionally offers more benefits in safety by reducing EGTs (Exhaust Gas, Temperatures), emissions and increasing mileage, all at once.

LJ: Tell me a little about Snow Performance, like where the name came from (kidding), how long you’ve been in business, etc.?

Matt: Snow Performance is currently in our seventh year of fast-paced and growing business. The company developed after I created the first Boost Cooler® for my supercharged and nitrous-equipped ’93 Cobra. The results were amazing and many asked me for systems at the racetrack. I was working for a research and development engineering firm where I had access to technology that allowed me to create a well-designed, well-engineered system. Since then, both the technology and the business have been experiencing a rapid, steady increase in many positive ways. Snow has expanded to new, larger facilities four times already, and in 2007, we were proud to display at our first SEMA Show, winning a SEMA Global Media Award. We currently have a very aggressive business plan for 2008, and we are looking forward to releasing new systems and technology, as well as greatly increased visibility and product availability.

LJ: Matt, in every issue I try to give the performance retailer one good idea—something they can implement today and see results. If you were a performance retailer, what would you be doing differently today to grow your business?

Matt: Especially in today’s economy, it’s important to research where people are spending their money and to also have tight control on the cost of business. A retailer just can’t sit on inventory now. That involves making important product line choices that customers are eager for and ready to purchase, whether it is seen as a power-adder or an efficiency-improver. A huge benefit to the retailer of the Boost Cooler® is the broad application—big benefits on any internal combustion engine. This, and the fact that this is a new intriguing, high-visibility product line.

Thanks for reading this Performance Business feature with Matt Snow. Next month, we’ll interview Marc Cloutier of MBRP Inc.