

Performance enhancing technique proven to boost your car's libido

KTR of Ayer tinkers with computer chips to add more torque, horsepower



T & G Staff/RICK CINCLAIR

Theo Paroulidis replaces the fenders on an Audi S4 with wider fenders that are available on an S4 wagon in Germany, at KTR Performance in Ayer.

Presidents Day 2004 ★ Auto Showcase ★

By Glenn Gould

SPECIAL TO THE TELEGRAM & GAZETTE

The driver of the electric blue Subaru WRX sti hit the gas and slammed through the gears.

Within seconds, the speedometer was reading 100 mph.

Even with the bedlam of the revving engine and thrashing wheels, I casually poked my head through the driver's window for a better look. Indeed, the red glowing gauges confirmed the vehicle's "speed." That's right, I leaned into, not out of, the car's window. You see, the WRX was "standing still" on a

dynamometer in the KTR Performance building in Ayer.

It is all a matter of perspective. The WRX was mechanically speeding along at 100 mph, with the wheels spinning the dyno rollers. And although I knew it was safe to be standing this close to the "moving" Subaru, it was disconcerting.

According to Franz Diebold, general manager of KTR Performance, the objects of the WRX's "runs" on the dyno were to confirm the computer programs he had written for this car. The car had been chipped, and was rewritable.

Give your prized auto an upgrade in power, performance at KTR

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Although, the technicians still use wrenches, computers are a mainstay of their brand of hot-rodding.

In the good old days, the only way to change performance was mechanically altering settings or components by hand. Then, then mechanics had to take it on the highway and run it.

If further adjustments were warranted, one could work on a blistering hot engine or wait for it to cool off, a very labor intensive and time-consuming approach, not to mention possibly painful.

Ah, time has moved on and the "shade tree mechanic" has been replaced by the computer

geek. The goals remain the same — to get as much performance as possible out of an engine.

Also the term "hot rod" has, to some extent, been replaced by the term "tuning."

KTR has been in business for over 20 years, primarily as a classic Ferrari restoration company.

In the last few years, it branched out to work on a variety of high-end exotic automobiles. Not only do they perform restoration, but also will maintain those vintage sports cars and motorcycles for their owners.

Now, the KTR Performance division does a variety of modification, rebuilds and upgrades on Audis, Subarus and Nissans

in addition to Porsches and Ferraris.

Why the change?

According to Andrew Funk, general manager, the tuning market is "huge and growing," whereas the world of collectors and their cars is dwindling.

He also said that the overhead associated with the company's high-tech operation necessitates a larger customer base than the collector car arena.

What is the appeal of having your personal car "tuned" by KTR Performance?

I asked Mr. Diebold what he could do for my daughter's 2003 Audi A4 1.8T.

He said that would install a new computer chip into the A4. From this operation, we could expect a 50-horsepower and a 70-foot-pounds torque increase.

While it may be fun to have bragging rights to more horsepower, in reality it is the torque that makes the car feel powerful. KTR tunes for torque, not just horsepower.

The cost for the chipping procedure is \$499, plus \$65 labor and tax, which is "short money" for a 50-horse increase in power.

For example, on a Porsche 911 a factory power upgrade is \$14,000, and the power increase is only 20-horse. Admittedly, the whole engine is upgraded, but still that's a lot of dough.

Mr. Diebold said the reason the horsepower increase for the A4 is so cost-effective, is because the engine is turbocharged. The chip remaps or reprograms the car's computer to increase the boost on the engine.

Mr. Diebold also said that German cars are overbuilt and can easily handle the power increase.

Interestingly, KTR can install additional maps to the chip. This software tuning allows one to have different programs for a variety of conditions, for example valet, race or 100-octane fuel, for cars similar to the A4.

The advantage is that the car can have the factory stock program, a performance map and a detuned version for their teen-



T&G Staff/RICK CINCLAIR

Roger Patten fabricates a nose cone for a 1959 Stanguellini race car.



T&G Staff/RICK CINCLAIR

Modern and classic performance cars sit in storage.

accesses the different programs.

The cost for the first additional map is \$149, each additional one is \$70.

Mr. Diebold said the tuning approach on Japanese car performance is slightly different.

Mechanically, they're built to the limit of the designed power output and nothing more, he explained. Thus, one cannot expect the easy power upgrades found on the A4.

Instead, KTR uses the Japanese car's computer maps to fine-tune the car's performance.

However, the Japanese cars have one edge over German cars. For instance, the Subaru we were watching on the dyno allows rewriting of its computer chips.

KTR can even e-mail you a new program for your particular car.

In addition, if you wish, KTR Performance will roll your car on its Dyno and actually give you a printout to prove the power increase. And it can provide a graph for a car similar to yours to show what one can expect from the modification.

online.

Chipping is so important in tuning modern cars because the computer operates nearly all the systems within a car.

Many modern autos use "drive-by-wire" systems. Here, throttle, steering and even brakes are electrically operated. No longer is there a mechanical link between you and the system.

In a way, modern tuners are going back to their automotive roots. The operator of a Model T Ford not only could but HAD TO adjust the car's throttle, spark and carburetor as he or she drove.

A gasoline engine needs constant tuning to be able to cope with different driving conditions. As roads improved and speeds increased, engineers found ways to automate these adjustments. Now companies such as KTR allow drivers once again to tune their cars as they drive.

We should emphasize how unusual it is to have an operation like KTR in Central Massachusetts. Its new state-of-the-art 32,000 square foot facility makes the "Monster Garage"

garten.

Talk about a monster. KTR has an S4 Audi drag car that is pushing 500-horsepower on a single turbo. This is a demo vehicle and definitely not something you would drive on the road.

Its Australian-built chassis, Dyno Dynamics 4WD Low Boy Dynamometer, is used for diagnosis, performance, exhaust emission testing and research and development. This allows KTR to run tests on front-wheel-drive, rear-wheel-drive, all-wheel-drive and four-wheel-drive vehicles.

Along with software tuning, KTR also sells and installs a wide variety of mechanical upgrade components, including shocks, short shifters, ECU units exhaust systems, suspensions, and transmissions. It can also fabricate roll cages and provide stress bars and racing seats.

KTR Performance LLC, 99 Fitchburg Road, Ayer Mass. (978) 772-9911. Web site: ktrperformance.com. KTR operates by appointment only, 9 a.m. to 5 p.m., Monday-Friday.