*euro*tuner

VAG-COM
REVIEW

THE ELECTRONIC TOOLBOX
EVERY VAG ENTHUSIAST SHOULD HAVE.

WORDS *JUSTIN FIVELLA & SAM DU*
PHOTOS *SAM DU*

Gone are the days of carburetors and point ignition systems. Technology has made the automobile faster, safer, cleaner and more reliable, but with the added complexity comes new obstacles that hand tools can't remedy. Where once a toolbox and elbow grease were a broken car's salvation, now microprocessors and intricate diagnostic tools are the means to a healthy ride.

In recent years, these shifting tides made it virtually impossible for consumers to diagnose or fix problems without expensive dealer-specific computers. While an enthusiast might be a proficient mechanic, a simple check engine light (CEL) would necessitate a $100 trip to the dealer for diagnosis only because the consumer didn't have access to the right tools.

The only way to read a VW or Audi's computer used to be with the dealer-only VAG-1552/1551 diagnostic tool. Once connected, this electronic wonder took the guesswork out of troubleshooting, finding fault codes and problems through interrogating on-board microprocessors and modules. But now, thanks to an ingenious enthusiast, the power of dealer diagnostics is available to the public.

HISTORY LESSON

Back in '97, Uwe Ross was a frustrated VW enthusiast with a deep knowledge of programming. After finding it impossible to work on his GTI without the necessary computer, he did like any gear-head programmer would do and began work on reverse-engineering a VAG-1552. After three years he cracked the code and created a Windows PC-based equivalent called the Ross-Tech VAG-COM, placing the electronic toolbox in the consumer's hands.

While VAG-COM won't replace a repair manual, nor will it tune the ECU, it gives the user access to the car's processor, while also helping monitor and locate broken or ill-performing parts and procedures. In other words, if used with the proper repair manual, it should make it possible to work on your VW or Audi again.

What does this mean to the average enthusiast? The gurus at Ross-Tech explained that one of the many tricks the VAG-COM can perform is check and clear CEL codes. This allows the user to monitor random or recurring problems and
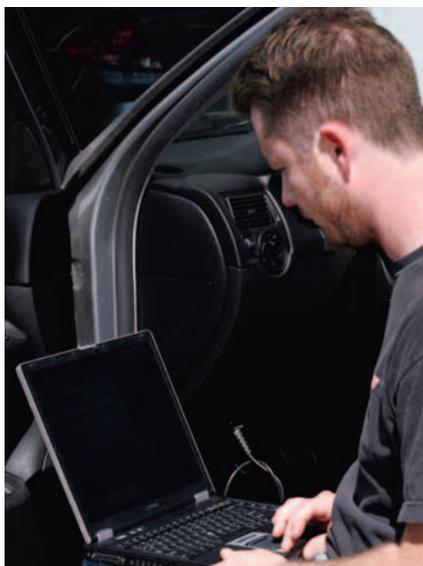
decipher if the part triggering the fault code needs repair or replacement.

Often a random fault code will register and, once cleared, will never return, but sometimes the fault resurfaces. The Ross-Tech technicians explained that even though a code might be intermittent, if it continues to register it usually means the suspect part is malfunctioning.

Prior to tools like the VAG-COM, simply tracking down an intermittent problem was more difficult than fixing it; with a VAG-COM the investigation is essentially done for you.

To the tech aficionado, the VAG-COM can be more than a diagnostic code retriever, since it offers more features than the factory VAG-1552 units. Options include live datalogging, freeze-frame capability, basic settings, resetting service intervals, output tests and readiness settings.

In addition to these invaluable features, you can alter the ride height on factory air suspension, add window up and down features on your key fob and even calculate 0-60mph, quarter-mile and other acceleration times where the applicable factory equipment is fitted.

VAG-COM can even be used to log a car's parameters while hot lapping, allowing you to focus on specific incidents where codes were thrown. It can also be used to reset things like radio presets, throttle body adaptation and auto-leveling headlights.

Currently, the program is offered in Windows format and the latest versions are even Windows Vista compatible. Many different models are available, with prices starting around $229; as the cost increases, so does the compatibly and speed of the units.

In addition to various options, free software upgrades are available. Furthermore, Ross-Tech will buy back your old equipment, allowing you to upgrade to a newer model hassle free.

Not only is VAG-COM an essential electronic toolbox for any VAG enthusiast's garage, but in some cases it's a necessity for the home mechanic. For example, the new Passat requires a computer to release the rear brake pads from the electronic parking brake.

Replacing mechanical tasks with electronic processes is a trend that's here to stay, and this tool will be invaluable in the coming years. The microprocessed era is upon us.

(above) It's easy to use, just install the software, plug VAG-COM into your laptop and connect it to your car

EASY AS 1-2-3

1) Once your laptop is equipped with the latest VAG-COM software (downloadable from www.ross-tech.com), connect the USB cable to your laptop and the other end to the OBD port below the steering column
2) Turn the ignition on
3) From here, start the VAG-COM software and the tool will be fully operational

CONTACT

Ross-Tech

Diagnostic Software for European Automobiles

ROSS-TECH
www.ross-tech.com
215/361-8942

PROJECT SILVERSTONE TESTING

When we planned this VAG-COM review, our project GTI coincidentally passed 100k miles, so we thought it a good idea to scan the ECU for fault codes. We took the car to Dynamic Racing Solutions (DRS) in La Habra, CA to see how the professionals would diagnose the car using VAG-COM.

DRS helped with Project Silverstone in the 1/07 issue by successfully installing and dyno-testing a Kinetic Motorsport turbo manifold. With their experience and knowledge, they were an easy choice to show us the versatility of VAG-COM, a tool they commonly use to diagnose the problems in a customer's car.

After a few minutes of demonstration, no major faults were detected on our GTI. Yet we were surprised how easy it was to use VAG-COM. If you have the ability to connect cables and start a Windows-based program, you'll have no problems. The interface is simple to navigate and there's no element of the tool that could damage your car.

If you have extensive mechanical knowledge or are just starting, we'd recommend VAG-COM to complete your toolbox, just in case a CEL strikes!

FUNCTIONS TRIED

AUTO SCAN
From the main menu, you click 'Auto Scan'. This scans for faults in areas including the engine, transmission, climate control, ABS and more. For our test, it took about three minutes to run.

ENGINE SCAN
More commonly used by DRS, you click 'Select Control Module' from the main menu. In the next menu, you're given a list of common parameters – the engine is the first one. After selecting 'Engine', it quickly scans for fault codes related to the motor. This process took seconds on our GTI.

CLEARING FAULTS
After any scan is over, you can save fault codes to a document, print them and clear them from the ECU, which will eliminate the CEL. If it was a minor fault, it saves you the money spent on a visit to the dealer. If it was a major fault, the VAG-COM can only offer limited information, but it's a good first step and there are still things you can do to narrow down the problem. For example, a misfire is common with the 1.8T. This might stem from an ignition, fuel or vacuum problem. It's best to also have a Bentley manual handy to help with the next task of fixing the fault.

MEASURING TOOLS
Under the engine scan menu, there's an option for 'Measuring Blocks'. While the ignition is on or while driving, you can read various measurements such as coolant temp, ignition timing, mass airflow, throttle angle and more. Within this feature, you can plot the variables on a graph using 'VAG-Scope'. As with the fault codes, you can log the data and save it.

IMPORTANT FEATURES

LIVE DATALOGGING
This allows the user to view and save different processes like rpm, throttle position, injector duty cycle, coolant temps, ignition timing, etc., in real time to verify the condition of your car's current state of tune.

ACCELERATION TESTS
Based on time and distance measured through parameters such as wheel speed sensors, the user can obtain 0-60mph, quarter-mile and other time values. By using some calculations in addition to recorded data, horsepower and optimum shift points can also be plotted.

CHECKING/CLEARING DTC
This enables the access and retrieval of more than 9000 fault codes with an extended definition to aid repair.

RECODE
This allows a user to properly install equipment that needs coding to work – airbags, for example.

FREEZE FRAME
When a fault code is thrown, the computer will take a snap shot of the available parameters at that instant. Depending on your car, this could show speed, rpm, coolant temp, throttle position and others that might help diagnose the problem.

READINESS SETTINGS
After certain smog-related pieces have been replaced, the ECU needs up to one hour to adapt. With VAG-COM, you can set the values and have the car learn instantly.

OUTPUT TEST
Depending on the vehicle, a user can test components such as an individual injector, or the fuel pump to ensure they're working.

BASIC SETTINGS
This allows the user to make throttle adaptations, reset auto-leveling headlights after disconnecting the battery, and other procedures to recalibrate the theoretical starting point. et