

Laptop Tuning

Victor Harman samples the latest development in electronic engine tweakery: tuning from the passenger seat



The Laptop Tune now makes it possible to have your car tuned in the workshop and then make the final adjustments while driving down the road

We're becoming more and more accustomed to the vital part that electronics play in today's engines, petrol and diesel, even if it has deprived former home mechanics of excuses to avoid other less pleasurable domestic tasks.

There's little scope now for much in the way of Sunday morning under-bonnet activity, other than vital fluid level checks, and the appropriate oil and filter changes – which themselves are becoming less frequent.

But that the day should arrive when a passenger with a laptop computer connected to an engine's ECU could vary the engine's torque and power in real time "on the road" is perhaps a little more than some of us of earlier generations can easily absorb. But that's exactly the point at which Mike Bromley at Bromley Performance Tuning has now arrived, and I recently visited Mike at Chorley, in deepest Lancashire, to find out a little more about this ground-breaking development.

Mike's business focuses almost exclusively on tuning diesel engines – and that means trucks and vans as well as cars. There's surprising scope for tweaking HGV engines, with the benefits frequently translating into significantly better fuel economy, as the extra torque allows these laden heavies to pull a higher, and more economical gear. That can mean serious fuel cost savings for the operator. These same benefits similarly translate into better

mpg in cars, by virtue of the improved flexibility and low rpm pulling power that accompanies the typical 20-25% increase in maximum power output that a Bromley conversion delivers.

The heart of a Bromley conversion is the Tunit module, typically about the size of a compact camera, which is connected into the engine's existing ECU harness. The module is easily removable, returning the engine to standard specification, or it's alternatively a simple matter to arrange for its power supply to be switched, allowing it to be easily deactivated if, and when, required. The module usually tucks away neatly, close to the engine's ECU, which itself may be located in a number of places, according to the manufacturer.

Hitherto, most Tunit modules have offered a variable boost to engine power and torque output, by alteration of two or three vital parameters relating to fuel injection – pressure, flow volume, etc. These were adjusted after connecting the module to a PC, but away from the car and strictly "on the bench", by instructing customised software to vary the settings for the instructions issued from the Tunit module. This facilitates compensation for the normal variations of performance from one engine to another – Land Rover's Td5 engine being an example that exhibits significant such variation, and where the module's adjustability is vital for optimum results. It also allows the level of performance enhancement to be tailored precisely to the owner's

requirements, which may not always necessarily be for maximum boost.

But Mike Bromley reasoned that, these days, there's little a PC can do that a laptop can't, and verified that it was possible to alter the parameters while the engine was running. So following a little more lateral thinking, and considerable hands-on experimentation, Mike is now able to offer the option of the on-the-road "Laptop Tune", for a very modest £30 + VAT supplement to the normal £400 + VAT cost of fitting and setting up of a 'Tunit'.

I was able to join Mike, Eric (his chief technician) and the owner of an automatic Rover 75 CDT on just such a laptop tuning exercise. The owner had been somewhat underwhelmed by the low-down pulling power of the Rover, although it had already had a modified ECU fitted by his local dealer. Apparently early automatic 75 CDTs were reluctant to change up into the higher gears, sometimes not dropping into top until well into illegal speed territory, with resultant and understandable ill effects on fuel economy. A modified Rover ECU has largely solved this phenomenon, but appears in the process to have somewhat over-corrected the situation, at times leaving the car struggling in too a high gear, with insufficient torque to provide meaningful acceleration, yet seemingly now reluctant to execute the appropriate down-change.

After fitting the module, with trailing leads from it to Mike Bromley's laptop, on his knees in

the front passenger seat, we set off into the country; it then took only a few on-road tweaks by Mike before a test run up a suitably demanding hill spread a big grin over the face of the Rover's owner, as he sampled the significant added grunt provided by the Tunit module.

Mike usually stops at the roadside for adjustments, and to discuss his proposed actions with the owner – but, providing that one is prepared to accept a small jerk, (*Well, we've put up with Dr. Diesel for a good many years! Ed*) there's no real necessity to actually stop the car or the engine during the laptop tuning process. On this occasion Mike knew that he had a little more boost up his sleeve, which he offered to unleash, but the Rover's owner was already more than satisfied with the impressive level of added flexibility and torque achieved, and happily called a halt to the proceedings.

The unique features of the Bromley Laptop Tuning package put the icing on an already tasty cake. Bromley's had a brand new, state-of-the-art rolling road dynamometer installed in January, and Laptop Tuning can now run in parallel with this to record full bhp and torque measurements on a 'before and after' basis.

Full details of Tunit conversions, which are also available throughout a nationwide distributor network, are to be found on www.tunit.co.uk, and in Bromley Performance Tuning's full-page advertisement **Diesel CAR** in this issue.