

Golf MkIV GT TDI

PROJECT

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PART FIVE:

This month, we look at Tunit's claims to improve the drivability of our Golf. Question is, how did it fare? ADAM TAIT finds out...

Not so long ago, diesel engines were considered crude and slow, lacking the appeal of a swifter and less noisy unleaded variant. Look how times have changed! Nowadays it's the petrol diehard fans who are jumping onto Rudolf Diesel's bandwagon, mainly for the torque, power and excellent economy offered by the turbo-diesel. Another draw is the cost of electronic aftermarket trickery for power and torque gains of up to 30% (using Tunit), not to mention improved fuel economy.

This means that you don't have to be power hungry in order to have your car's electronic gadgetry tweaked, because there are genuine fuel economy gains to be had, and this is what spurred us into using our



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1 Everything you need comes packed into this box, including a free one-year driveline warranty on vehicles under five years old.

own MkIV Golf 115PS TDI (PD) as a guinea pig. Our company of choice was Tunit, as it offers a plug and play setup that takes minutes to fit, but offers a hike in power and torque that were near-impossible dreams for tuners of days gone by.

Imagine walking into BMC's Special Tuning Workshops during the sixties and explaining that the diminutive Tunit box in your hand could offer better gains in five minutes' time than its engine-building

department could after hours of serious machining work on a works Cooper S or Healey? They would probably vomit all over the workshop floor.

Performance aside, cab drivers have also reaped the benefits of Tunit, because the increase in torque means they can reduce the revs before changing up and even gate change without the engine labouring, which obviously adds to those vital economy gains.



2 The evolution of technology means the Tunit box has shrunk in size. This current setup could fit in your pocket. The pink potentiometer (to adjust the power) can be seen on the right.



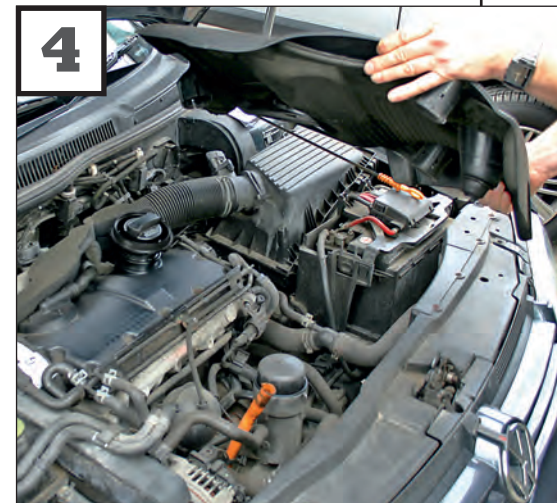
3 OEM-spec connectors also guarantee a quality fit. This male and female T-piece fits additionally to the original factory connection.



5 Turn this plug anti-clockwise and remove it so the Tunit loom can be fitted.



7 Once the Tunit box has been connected to the loom, tidy the installation using cable ties and mount the Tunit in a location that isn't prone to water ingress. Michael chose this ducting that feeds into the top of the bulkhead.



4 On the Golf, the engine cover comes out by removing the dipstick and pulling it upwards. This must be removed to aid access to the round plug-in connection.

Left: Using the positive and negative battery terminals, connect the Tunit's power feeds. A 10mm socket is needed to remove the top nut on either terminal.



8 Mounting the Tunit box was easy. Attach two cable ties to this piece of ducting close the nearside suspension turret.

GOLF MKIV GT TDI project continued



9 The package we opted for was the Tunit V-PD. This suits all Audi/VW PD engines and, should you wish, the unit can be swapped from car to car, including the smaller three-cylinder diesel that can be found in models such as the Polo. The only exception is the Touareg V10 TDI, which requires an additional Tunit box.

At £469, including VAT and delivery, some of you may think a quick eBay search could procure something offering similar power gains, albeit for a fraction of the price. However, many of these alternative units consist of cheap components that are designed just to throw more fuel in and nothing else, which will inevitably cause damage. This will be quickly proved when the engine management senses the over-fuelling and cuts the engine! Another advantage is that a Tunit can be fitted without invalidating the manufacturer's warranty.

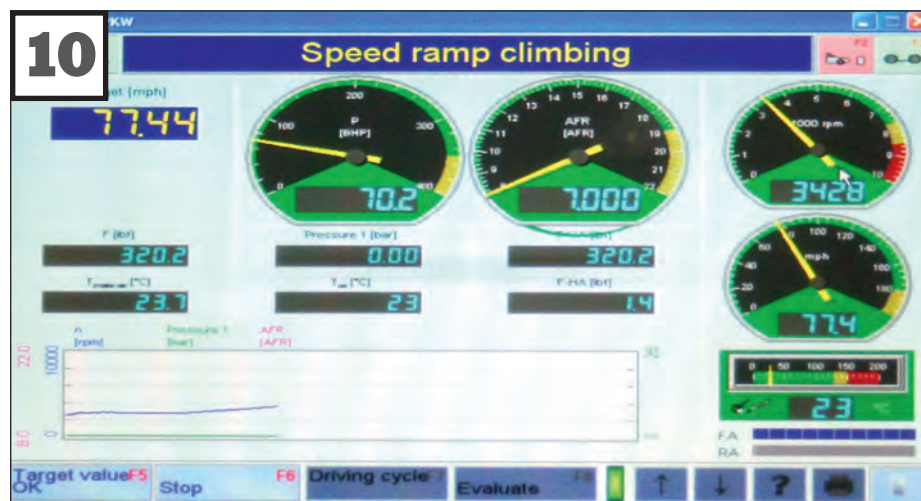
A Tunit does not operate by upping boost pressure from the unit itself, it relies on the speed of exhaust gases to generate this response. The Tunit alters the fuel injection parameters. A potentiometer is used for fine tuning the power output and the whole package compensates for the cars that don't quite live up to manufacturers' claims. Managing director of Tunit, Michael Bromley, knows that every car is different.

Although a rolling road isn't essential to the installation, we used one for the purpose of the feature in order to find out the benefits. Ratchet straps are used to keep the Golf in place during the session. Depending on your outlook on health and safety, ear defenders come recommended. Especially in an enclosed rolling road that amplifies the noise.

On certain units, such as the Tunit V-PD, it's also possible to customise these parameters via a laptop. This can even be done live while the car is in motion. In addition to the gains already offered by the potentiometer, the power can be dialled in further up or down the rev range and delivery can vary from smooth to aggressive. What's more, should this be part of a tuning programme with other improvements to the engine, the Tunit can be tweaked to fully exploit the changes. All of which isn't possible with a fixed map or chip.

Verdict

As regular readers know, this is the 115PS 1.9 TDI model, and our example has two more powerful siblings, the 130PS and 150PS. Prior to the remap, typical fuel economy on a motorway run was around 55mpg, and this is what it delivered on the way to the rolling road facility that Tunit had booked for CM in West Sussex.



10 This wide screen offers live data from the rollers. It is then converted into graph form, which allows the operator and owner to view the engine's behaviour, power and torque throughout the rev range.

In standard form, our Golf did have adequate grunt, but when accelerating from 1000rpm it was prone to labouring, which emitted a deep resonance through the cabin. So you were forced to counteract this by going further up the rev counter, and in turn, fuel economy was hindered slightly because the engine had to work harder. When on boost, however, overtaking was easily do-able, but some anticipation was required before making the move.

Since fitting the Tunit, these downsides have been overcome. Its 238lbft torque figure is on a par with a BMW E36 M3 (3.0-litre), and its biggest brother, the 150PS TDI. Ours has a slightly lower power output of 142bhp on the standard Tunit setting, but it's possible to hike it up to setting nine via the potentiometer, which will improve things even further without breaching the tolerances of the factory parameters.

Alternatively, turning it back to zero should offer factory power. Unlike before, on the road it now pulls cleanly from just 1000rpm, with none of the associated labouring or resonance through the cabin. This makes it possible to use the 1000 – 2000rpm power band without the need to climb any further. No doubt this justifies Tunit's claims for improved fuel economy.



11 A power run pre-Tunit was carried out to find out what the engine was putting out prior to any fettling. The result was a healthy 132bhp at 4330rpm and 211lbft torque at 2195rpm. Although torque remained true to manufacturers figures, this power figure is more potent than Volkswagen's stated 113bhp (115PS).

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Michael adjusted the Tunit's parameters using the mentioned laptop option and on its factory potentiometer setting (five) the outcome was 142bhp@4280rpm and 238lbft torque at 2600rpm. However, slight undulations in the torque curve (before and after) suggest that something is amiss with the engine. With the potentiometer turned up to nine, the gains will obviously be more substantial without breaching what is regarded as unsafe.

Before, there was turbo lag, so power had to be introduced prematurely when, say, cornering, to overcome this phenomenon, but now, this has almost evaporated, leaving the 238lbft of torque to give a thick wristed shove, which occurs earlier on thanks to Tunit transforming low-down power delivery. When exiting a corner on the potentiometer's higher settings, this upsets the MkIV's already flustered composure even more, and the front end will push wide without much persuasion. It's simply a case of adjusting driving style to suit, and gentle tact has seen the mpg readout giving improved readings over the standard car.

Sweep the needle through 2000rpm and beyond and the performance gains soon rise, but economy naturally suffers. The obligatory turbo thrust is more pronounced, and revs mount far more eagerly than before. At autobahn speed, squeeze the throttle at 70mph (2000rpm) in sixth gear and the speedo will indicate 100mph far quicker than its previous guise.

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Overall, the Tunit has revamped the Golf's driveability and should we buy another diesel from another manufacturer, it's simply a case of sending the unit back to Tunit so its technical department can program the software for the specific requirements of your new drive.

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For more information, or to find out if Tunit can cater for your vehicle, please go to www.tunit.com or call **0845 838 1405**.



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