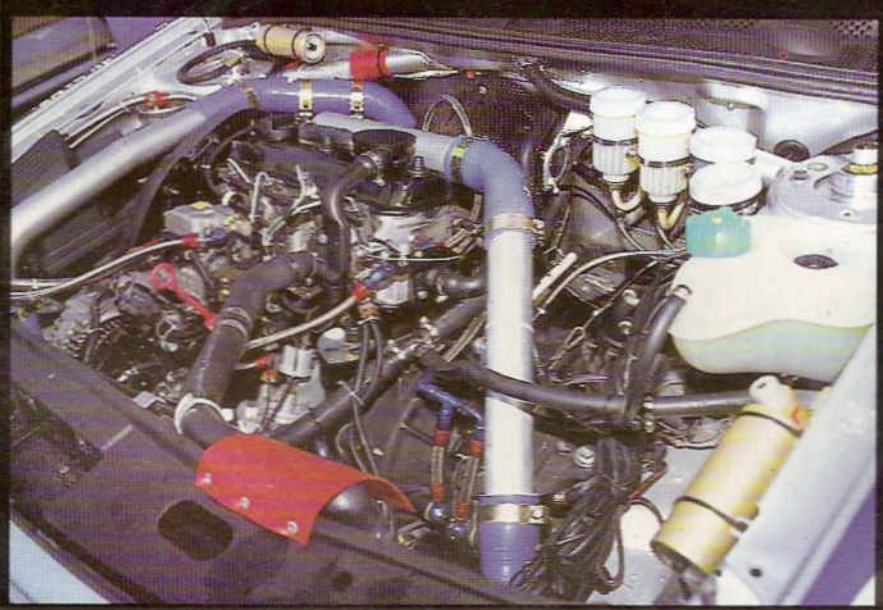
DIESEL

CARS TEST



Although based on a 1.9-litre production unit, this monster can produce nearly 200bhp and 260lb ft of torque. And who said diesels were crap?

VW's ultra-successful endurance racing Golf TDi has been transformed into a equally successful rally car. Simon McBeath reports from the passenger seat

ON THE LOOSE

There they were, last winter, sitting in VW's motorsport base in Germany. The amazingly successful Golf TDi circuit racers were just gathering dust in a corner, so the story goes, until someone said, "Why don't we rally one in the UK?" But we're getting a little ahead of ourselves here, the transformation of the Golf TDi into a highly effective competition car goes back a way further than that.

Actually, VW's Golf diesel was a competitive car in the Eco Tech division of the European long distance saloon racing scene as long ago as 1996. But the rest of the world only really sat up and took notice in June last year, when Kris Nissen, Christian Abt and Jurgen Hohenester brought their Golf TDi into second place overall in the Nürburgring 24 Hours, topping Audi in the diesel class. On that occasion, the BMW 318TDS failed early on in the race.

A month or so later, the Golf came fourth overall in the Spa 24 Hours with Raimund Baumschlager, Jean Christophe Hemroulle and Jorg Siedel taking turns at the wheel, pipped by the 318TDS for the bottom podium step. Then late in the year, in the Italian autumn sunshine, the Golf TDi scored its first outright win in the Vallelunga 6 Hours, driven this time by Rinaldo Capello and Walter Santus. Their victory was prefaced by the two TDis in the competition taking the front row of the grid, ahead of a bevy of petrol-engined BMW M3s. The competitiveness, reliability and (as you might expect) economy of the VW diesels had been proven.

And lest we forget, the versatile Baumschlager scored a win in Austria's Semperit Rally in November 1997 with a suitably prepared TDi. This result must have been instrumental in stimulating VW's desire to run one in UK rallies this year.

Steve Bagnall is manager of SBG Sport (who run the VW Golf Kit Cars in the BRC), and is a man of considerable persuasiveness. It was he who brokered the deal that, in essence, means that VW Motorsport have loaned Neil Simpson the car for the year. But there wasn't a class to run in, you might have said.

There is now. The switched-on organisers of the Mintex National Rally Championship created a diesel class, giving the Greenenergy Citydiesel TDi a chance to display its worth. It's done this in no uncertain terms; out-performing all the petrol-engined two wheel-drive cars in the series, winning its class on the three out of five finishes to date, and coming an amazing fifth on the Manx National in May.

The two retirements were due to sliding wide and hitting a rock on the Granite City in April, and an unexplained (so far) loss of power on the Enterprise Rally in July. Pretty impressive stuff for an oil burner. So how does it do it? TDi pilot Neil Simpson has also driven the 2-litre Golf Kit Car (to fifth on last year's Manx International, helping VW grab the BRC Manufacturers' title), so he's the ideal man to ask. "There are places where the TDi is actually quicker than the Kit Car. Coming out of slow corners, there's so much torque on offer that the car accelerates really well. But it's a bit short of top-end power compared to the Kit Car, so it loses out on the faster stretches," says Simpson. On balance then, the diesel VW is an interesting and effective compromise for stage rallying.

The engine data makes very interesting and unusual reading for your average petrol head (such as me). Maximum power is quoted officially at 187bhp (unofficially, it's said to be in excess of 200bhp), topping out at just 4100rpm, with around 2.5bar boost. Torque is a thoroughly meaty 258lb ft at 3550rpm, with 220+lb ft ▶

available from 2000 to 3900rpm. This is all the more impressive when you realise that only modified standard internal components have been used. The engine is based on the production 1.9-litre TDi unit – unusually a direct injection diesel – which is intercooled and delivers 110bhp and over 170lb ft of torque. The block, crank and head for all the competition units were taken off the TDi production line. Diesel engines run at lower crank speeds than petrol engines because the fuel injection/ignition/ combustion process takes significantly longer. So increasing revs was not an option and the engines are limited at 5000rpm.

The extra power and torque therefore had to come from improvements in the engine's breathing system, to wit, bigger ports, a bigger Garrett turbocharger (like the BMW, retaining the standard engine's variable geometry blade design), and a modified distributor pattern injection pump to permit increased fuel flow and enlarged holes in the five-hole injector nozzles. The cam and valves were blue printed, a lighter flywheel was fitted and the engine mountings were uprated. In its development form, the fuel efficiency of the competition engine was actually better than the production engine on a fuel consumed per horsepower basis!

And because of the VW boffins' work on the combustion process, managed by a Bosch EDC 15 EMS (the combustion, not the boffins), the engine produces no more smoke than the production unit. This is already little enough with its catalyst fitted. The competition engine retains the catalyst, there being no difference in output with or without it. Anyway, it fits the eco-warrior image.

The really strange thing about this engine, though, is that it sounds absolutely nothing like a London taxi. On tickover you can barely hear it at all, and even in full flight, though sounding different to petrol engines because of the lower rpm, it still doesn't sound as you'd expect it to! The very different output characteristics of the engine have meant a rethink on a number of areas of the car. Basically, the Mk3 Golf chassis has been brought up to similar specification to the Mk3 Kit Car. It has a six-speed Gemini Transmissions sequential gearbox, but with an altered final drive to allow for the difference in engine revs. Proflex are the shock providers and have been helping out with tweaks to improve the TDi's traction. The aforementioned ability to rocket out of slow corners becomes something of a scramble on gravel, but Proflex have come up with some secret goodies that markedly improve slow corner traction.

Above: Neil Simpson and co-driver Steve Martin in the TDi on a Winter Rally stage. Right: Simpson gets a visit from the Proflex heavies

LET'S HAVE A GO, THEN

"On a gravel stage? No, I don't think so. But you can sit in the co-driver's seat while Neil takes you for a spin," they said. Oh, all right, that'll have to do for now. So off I went to deepest Wales, in a forest above the Vale of Neath, just a couple of days before the Enterprise Printing National Rally, round five of the Mintex series. Now, you know how lots of rally drivers look completely mad, with that wild look in their eyes, a bit like a racehorse that's just eaten a Mars Bar? Well, I'm pleased to tell you that such a description does not fit Neil Simpson. The 26 year-old Lancastrian car dealer is intelligent, articulate and very definitely a rising star on the rally scene. I chatted to him about the TDi, and how it felt compared to "regular" petrol-engined cars, but Neil's calm, demure talk was belied by the highly controlled aggression I was about to witness in the car.

Best thing about the TDi is the ample room for your weekly shopping

I was lucky enough to get a couple of goes alongside Neil. The first drive we took was also his first of the day, apart from a low speed familiarisation run, so I guess it was a bit like tackling a event stage, with his memory taking the place of pace notes. The quest for grip was evident at the start line but, after an early change to second, we made more progress. In no time, the car was batting along in sixth.

Approaching a right/left kink, a left foot dab on the brakes and a snick down a couple of ratios settled the car, while Neil used the camber of the road to put the back end where it needed to be. Back up to sixth, then hard on the mighty impressive brakes, into first, and a twitch on the hand brake sees us round the right hand hairpin. Up the 'box again, through some narrow kinks – again the left foot keeping a tight rein on things – and we blast over the finish. Neil ponders the run for a few seconds, storing data in his personal data logger. Then he grins at me, "Fancy another go?" You bet.

This time Neil knows the way and we're a lot faster through the kinks and – whisper it – just a bit too fast into the hairpin. But we'd have knocked huge chunks off our first time. When he reported back to the crew, Neil said, "It's well tail happy." Yeah, I thought that, too. So they put on some modified Proflex dampers to do a back-to-back; difficult on this short stage because there was no real heat getting into the tyres. The crew is happier after that and we all went home content.

Sadly, on the Enterprise National Rally a couple of days later, while leading the class and all the petrol-engined F2 cars yet again, the engine suffered the previously mentioned gremlin, and Neil and co-driver Steve Martin chalked up their second retirement of the season. But this car is good and so is its crew.