

# Road racer!

**Give RacingLine the job of building a fast road and track car and this is what you get... Neil Birkitt reports.**



**'IT SHOULD INDEED COME CLOSE TO RACE PACE, BUT ALSO STILL BE COMFORTABLE ENOUGH TO COMMUTE TO WORK ON MONDAY MORNING'**



**ANYONE WHO KNOWS** anything about track days will tell you that it's never as simple as taking a fast car out on the circuit and just driving it. Even the most competent of fast road cars suddenly become compromised when expected to drive for lap after lap at full tilt; the so-called sports suspension soon feels soggy, the brakes fade after a few hard applications, and there's never enough power...

So, it's not surprising that quite a few trackday enthusiasts have turned to professional race specialists when it comes to modifying their cars. The problem, though, is that most race preparation companies are only used to building no-compromise race cars and the resulting product can be fantastic for the circuit, but an absolute pain to drive on the road.

Sure, you can fit full-race suspension and brakes, install a full roll cage, take out all the carpet and trim, lose the air-con and heating system, strip off all the underseal, disable the ABS, and end up with a car which is only half a second off race pace, but if it's too loud and uncomfortable to drive on the road for more than 10 miles, then you'll also have to buy a tow car and trailer...

It's getting the right balance that is so important; using the proper components to produce a credible circuit car, but also retaining reliable road ability. It should

**'THE ULTIMATE ROAD-GOING TRACKDAY CONVERSION IS THE STAGE 4 300R...'**



indeed come close to race pace, but also still be comfortable and civilised enough to drive to and from the track, as well as commute to work on Monday morning and take the family out at the weekend.

That was the target which RacingLine, based at Milton Keynes, set when it developed this Mk 5 GTI as a demonstrator for its new range of upgrade packages. Using the expertise which it has accumulated from building and maintaining cars for the Volkswagen Racing Cup series, RacingLine already knew what parts to use for maximum performance, but they also kept a keen eye on the requirements for real-life road use.

As a result, they've come up with a four-stage package, starting with the basic Stage 1 240R, using a sensible combination

of engine remap, sports rear exhaust box, sports springs, front spoiler, quickshift, uprated brake pads and R logos. Stage 2, the 270R, adds extra power with a more radical remap and full sports exhaust system with high-flow cat, and uses an uprated lower engine mount.

Stage 3 adds uprated engine mounts, a fully adjustable fast-road suspension set-up and bigger front brakes to produce an even more effective trackday performance, and is probably as far as most drivers will want to go for regular road use.

But the ultimate road-going trackday conversion is the Stage 4 300R, featured here, using virtually all the parts which RacingLine would normally fit to a full-blown VW Cup race car, while still remaining usable as a daily driver. It doesn't come



cheap, with the full upgrade package costing over £12,000, but it's the nearest thing you'll get to driving a race car on the road, and on track, without needing a competition licence, or a tow car and trailer.

Indeed, as its name suggests, the 300R is actually a lot more powerful than the cars which race in the VW Cup series. While they typically top out at 250 bhp, to suit the power to weight regulations imposed on the series, the Stage 4 power pack for the 2.0-litre 16V TFSI engine uses a turbo upgrade, new camshafts, fuel pump upgrade, bigger injectors and the full race stainless-steel exhaust system to produce a genuine dyno-proven 308 bhp.

Unlike many big-turbo conversions it still retains a high level of driveability, pulling cleanly from low speeds with hardly

a hint of turbo lag, and it even remains reasonably economical in normal use. We drove the demo 300R from Milton Keynes up to Bruntingthorpe Proving Ground and back, to put it through its paces on the test track, and it cruised comfortably at 70-80 mph on the M1, showing over 30 mpg on the MFA, and then blasted along some of the bumpy B roads in the area without any major discomfort.

Out on the track, though, it is a real animal and while cold frosty conditions on the day prevented us from exploring its full potential, this is clearly a very potent performer. Even in conditions so slippery it was sometimes difficult to stand, we still recorded several sub 6-second times for the 0-60 dash, with 80 easily achieved in under 10, and the 300R squirted from

80-100 in sixth gear in only a little less than 5 seconds. That's genuine supercar performance from a car which retains all the normal everyday practicality of the standard Golf hatchback.

Of course, the package comprises a lot more than just an engine upgrade. With this much power to put through the front wheels, RacingLine fits a gear-type limited slip differential, available for both manual or DSG transmission types. It certainly helps prevent the inside wheel spinning up under hard cornering, but accelerate too strongly in a straight line and you'll inevitably get both front wheels spinning in unison if you're anything less than progressive with the throttle pedal.

RacingLine also recommends the use of upgraded billet aluminium engine mounts



**'RACINGLINE ALSO RECOMMENDS THE USE OF UPRATED BILLET ALUMINIUM ENGINE MOUNTS...'**



on a conversion at this level, essential to keep the driveline from reverberating and shunting under hard acceleration. There is a small cost in terms of noise and refinement, but many drivers will find the resulting 'gravelly voice' to be infinitely preferable to the sloppy response of the standard rubber mounts.

Surprisingly, though, RacingLine didn't fit an uprated clutch to this car. There is a full competition spec clutch available, but it is very fierce and not best suited for normal road use. Instead, by experimenting with the best combination of standard clutch components available from within the VW stable, RacingLine has produced a set-up which will reliably transmit this much power and torque, without compromising its everyday driveability.

But this isn't a car designed purely for the drag strip, it's a circuit racer and so the 300R also has the full complement of race-proven suspension mods. No secret as to who supplies the yellow and purple suspension kit, fully adjustable for ride height and 2-way damping rates, but RacingLine also applies a lot of its experience in spring rates and geometry to get the most out of it.

Not only are the top mounts solid and fully adjustable, but the front strut bodies are also reconfigured to achieve additional negative camber on the front wheels. RacingLine prefers this method to welding the wishbones, and as a result front camber can be adjusted up to 3 degrees negative for track use, with  $-1.5^\circ$  more appropriate for fast road use, achieving the desired

front end grip and quick turn-in without too much tyre wear or loss of braking ability. Polyurethane bushes are also fitted all around, improving suspension location and handling response, without excessive noise and vibration.

The multilink rear suspension of the Mk 5 GTI is already very easily readjusted, and part of the Stage 4 package price is a full laser geometry check and adjustment and corner weight set-up, just as they would with a full race car. The combination of negative camber at front and rear, and additional caster on the front produces very confident and balanced high-speed handling, without any of the twitchiness which can make some modified cars a constant handful to drive.

The wheel and tyre combination also

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**'THE 300R IS ACTUALLY FASTER THAN THE RACE CARS  
AROUND MOST CIRCUITS, EVEN ON ROAD TYRES...'**



**'POWERFUL BRAKING  
IS ALSO ESSENTIAL TO  
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plays an important part in the equation and RacingLine's motorsport experience again comes in handy here. After testing a wide assortment of aftermarket alloys, they've fitted a set of 8 x 19-inch Flashpoint 9-spoke rims, shod with Hankook Ventus K107s in size 225/35 ZR19, in the interests of maximum handling response, although the 225/40-profiles on 18-inch rims would probably be a better bet for long-term road use.

It's probably the only real compromise that you're likely to suffer with the 300R, in that traction will always be a challenge for any front-wheel-drive car with this much power. The 300R isn't going to be gentle on its tyres, but the K107s have been found to hold up better than most high-performance tyres and aren't too expensive to replace.

Powerful braking is also essential to cope with the sort of performance which this car can achieve, and RacingLine has spent a lot of time adapting a full race 4-pot brake set-up to be equally suitable for road use. Typically, a full race braking system is very abrupt, harsh and takes ages to heat up to an effective level, none of which is acceptable for regular road use.

To counter this problem, the VWR Stage 4 kit uses 355 mm vented and drilled floating front discs, which will fit comfortably inside normal 18-inch diameter rims, with the added advantages of 4-pot callipers with individual pads. It's a combination which remains civilised and progressive enough to cope with the commuter crawl around Milton Keynes, but provides phenomenal progressive fade-free performance. It was comfortably capable of repeatedly hauling the 300R down from high speeds at the end of Bruntingthorpe's 2-mile straight.

Surprisingly, the bigger brakes weigh a lot less than the standard set-up, saving 8 kg of unsprung weight per side. Indeed, in conjunction with the much lighter weight of the sports exhaust system (~12 kg) and the lighter alloy wheels (~2 kg each), as well as the other special alloy parts used, the road-going 300R is some 40 kg lighter than a standard GTI.

With all its creature comforts intact, it still weighs some 200 kg more than a fully stripped

-out VW Cup race car, but Volkswagen Racing Director Sam Roach assures us that the 300R, with its extra power and straight-line performance, is actually faster than the race cars around most circuits, even on road tyres.

That's no mean feat for a road-legal car which retains all the standard practicality of the hatchback, and can be driven day in, day out without any serious compromises. Admittedly, it is a little louder and the suspension is much stiffer than standard, but not to the degree which would make it seriously uncomfortable. I'd happily have used it for my daily 120-mile commute for the rest of the week if I could have persuaded RacingLine to part with it for more than the one day!

With prices for good secondhand Mk 5 GTIs currently tumbling towards the £10,000 mark, less than half the cost of a new car just a couple of years ago, the extra investment of a Stage 4 conversion makes an interesting prospect, particularly bearing in mind that the prices include a full fitting service, set-up and a track test session.

The 300R genuinely produces supercar performance on the road, along with race car pace on the track, without seriously compromising the all-round ability of the Golf GTI as a daily driver. Indeed, there is not much else which could live with it, in any of these environments, even at twice the price of a fully prepared 300R. 