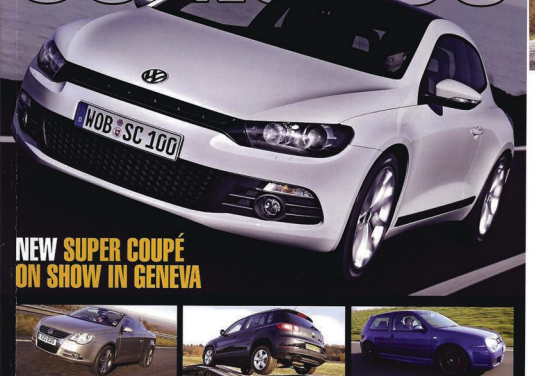


Volkswagen DRIVER

ISSUE 66 APRIL 2008 £3.95

ROAD TESTS • HERITAGE • SPORT • TUNING • TECHNOLOGY • DIY

SCIROCCO



NEW SUPER COUPE ON SHOW IN GENEVA

Modified car: VAGtech/HPA-tuned R32

Heavy breathing!



You don't have to fit a turbo or a supercharger to improve the performance of the R32. VAGTech took Gary Whitehouse down the naturally-aspirated route...

WE'VE FEATURED several supercharged and turbocharged R32s in the pages of Volkswagen Driver, and for good reason. The 3.2 V6 really comes alive when fitted with a forced induction system, with easy power outputs of upwards of 375-400 bhp. From what is essentially a bolt-on conversion, albeit a very expensive one.

But some owners prefer the naturally-aspirated approach and although the ultimate power output is never going to be quite as impressive, there's a lot to be said for conventional tuning techniques which maintain the original character of the free-revving narrow-angle VR6.

One such owner is Gary Whitehouse from Worcestershire, a regular at our track days, so far, he has pursued the naturally-aspirated route when it came to tuning his Mk 4 Golf R32 and the results have to be experienced to be believed, the sound of this engine is worth all the effort, let alone its instantaneous response, flexibility and free-revving delivery.

Modified car: VAGtech/HPA-tuned R32



'THE NEW SUSPENSION PROVED TO BE A COMPLETE REVELATION AS THE CAR HAD MUCH MORE CONTROL THROUGH THE BENDS...'

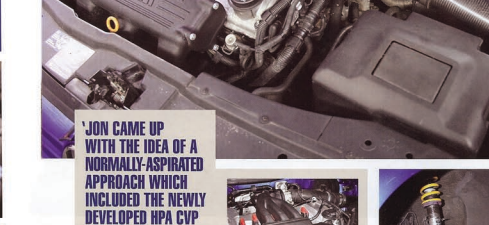
'JON CAME UP WITH THE IDEA OF A NORMALLY-ASPIRATED APPROACH WHICH INCLUDED THE NEWLY DEVELOPED HPA CVP INLET MANIFOLD...'

turbo conversion in the August 2005 issue. After speaking to Jon Watts, visiting the workshop and taking a look at their HPA-turbo'd R32, which you'd think was an OEM install, not a conversion, I realised that their work was well thought out and, just as importantly, they were like-minded enthusiasts. So my car was duly booked in for the Revo re-map and Milltek exhaust.

The next upgrade was prior to the Autotests track day at Croft in 2007. This comprised a set of Yokohama Paracla Spec-2 tyres and EBC Yellowstuff brake pads. The tyres made an instant improvement over the Michelin Pilots, providing higher levels of grip, improved steering feel and predictability on the limit. The EBC brake pads were far superior to the OEM pads, giving much higher levels of bite and no fade on track.

After running the R32 on a couple of track days I was quite surprised at how much body roll I was experiencing, especially given how stiff and crassy the stock suspension set-up is on the road. So it was back to VAGTech for a competition Hallex controller and KW Variant 3 suspension installation, with Forge adjustable rear control arms, along with a C-wheel alignment with a track-focused set-up.

Modified car: VAGtech/HPA-tuned R32



'I VISITED LISTERS IN WORCESTER AND TOOK THE R32 FOR A TEST DRIVE, AND THE DEAL WAS DONE!'

I already knew that the Mk 4 Golf was a popular car for tuning but I only really discovered how much scope there was after buying a few copies of Volkswagen Driver magazine. The car was a year old when I bought it and just prior to its third birthday, when the warranty was due to expire, I started to search the pages of Volkswagen Driver to commence the first phase of the modification plan.

What I had in mind was a re-map and a Milltek cat-back exhaust, which seemed to be a popular combination, and after she listing a few tuning companies I contacted VAGTech, after reading about their R32

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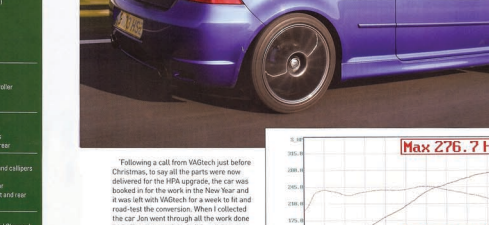
'THE ECS BRAKE UPGRADE PROVIDED MASSIVE STOPPING POWER...'

for improved response. For naturally-aspirated applications, the CVP is not intended as a standalone product, but rather an integrated part of a more extensive tuning package, as with Gary Whitehouse's car which also runs modified cams, exhaust and has a custom re-map.

(Even so, because the CVP is primarily designed to improve breathing at the higher engine speeds, where the 60° intake tends to become restrictive, it has recorded an extra 10-15 hp even without additional modifications.

For more information, log on at the HPA website: www.hpaautosports.com

Modified car: VAGtech/HPA-tuned R32



'THE CAR STILL DELIVERS OVER 30 MPG DURING STEADY DRIVING ON LONG JOURNEYS...'

pulls strongly all the way past 7000 rpm. Indeed, it feels as if the longer you keep your right foot planted to the floor, the harder it pulls!

The proof that the set-up has been well thought out is that the air/fuel ratio remains consistent at 12.8 right across the engine rpm range and the car still delivers over 30 mpg during steady driving on the

SPECIFICATION

Engine - 3.2 VR6
HO top-end bearings
Stainless cams
Carbonio cold-air induction kit
Milltek unrestricted cat-back exhaust
Milltek 200-cell sports cats
Milltek downpipes (w/ ceramic coating)
HPA CVP inlet manifold
Revo Technik Stage-2 re-map

Performance
Max power: 277 bhp @ 6800 rpm
Peak torque: 248 lb.ft. @ 5000 rpm
0-60 mph: 6.3 secs
60-80 mph: 3.1 secs
80-100 mph: 2.4 secs
100-120 mph: 1.8 secs
120-140 mph: 1.2 secs
Fuel consumption: 18-32 mpg

Drivetrain
HPA upgraded 'dogbone' bushes
Competition foranget Hallex controller
HPA short-shifter
Standard clutch, gears and diff.

Suspension
KW Variant 3
Forge adjustable rear control arms
Neuspeed anti-roll bars front and rear

Brakes
ECS Stage 5 (356 mm) front discs and callipers
ECS Stage 1 (200 mm) rear discs
EBC Yellowstuff pads front and rear
Stainless steel braided hoses front and rear
Ate Super Blue brake fluid

Wheels & Tyres
OEM Anello wheels, powder-coated Charcoal grey by Leo Tins in Birmingham (R32) 208 1600
16 mm spacers front and 15 mm rear
Yokohama Paracla Spec-2 225-40-20R16

'THE POWER DELIVERY HAS COMPLETELY CHANGED, PROVIDING A LOT MORE PULL FROM APPROX 4000 RPM UPWARDS WITH NO TAIL-OFF UNTIL PAST 7000 RPM'

Following a call from VAGTech just before Christmas, to say all the parts were now delivered for the HPA upgrade, the car was booked in for the work in the New Year and it was left with VAGTech for a week to fit and road-test the conversion. When I collected the car Jon went through all the work done including photos of the build, and then we started the engine...

The sound was incredible, totally different to before, but not losing any of the distinctive VR6 growl. After taking the car for a quick test drive the engine note was an instant addition, delivering a unique soundtrack which saves the best for 5000 rpm up to the limiter at 7400 rpm.

But it's not just noise, the power delivery has completely changed, providing a lot more pull from approx 4000 rpm upwards with no tail-off until past 7000 rpm. Compared to the standard car, the improved delivery is very noticeable. This was clearly demonstrated when I took the car to Surrey Rolling Road where it recorded 277 bhp and 242 lb.ft. torque at 6800 rpm.

What's most noticeable from the graph is how the torque curve has changed. The peak torque has moved from 3500 rpm to 5000 rpm, but it now produces a broad band of torque, with more than 210 lb.ft. all the way from 2200 rpm up to nearly 7000 rpm, which demonstrates how well the CVP inlet manifold works, providing a substantial improvement across the rev range and in particular at higher engine speeds.

On the road the engine is very tractable at low speeds, yet when pushed it has a smooth and linear power delivery which

