

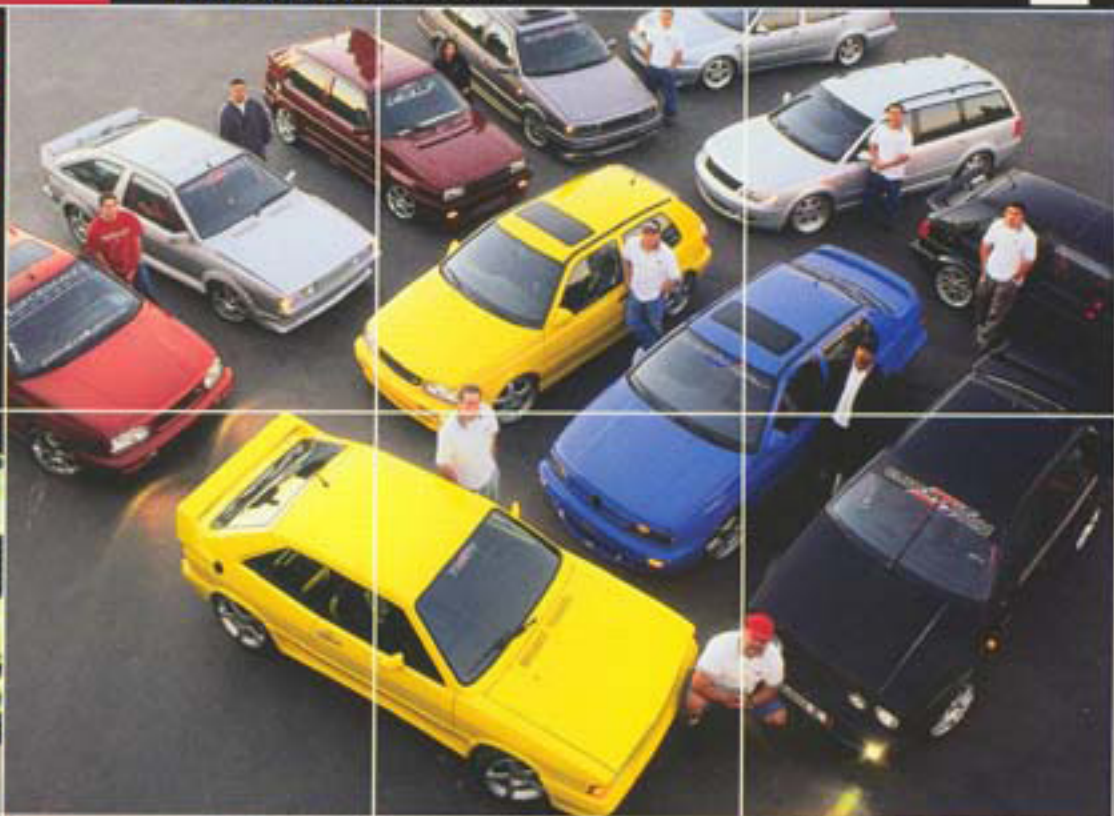
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A Cure as Bad as the Disease

A VR6 Cabrio with a severe case of power-itis

BY DAN BARNES PHOTOS BY ROB HALLSTROM

Fast Volkswagens are much like other naughty pleasures in their ability to make addicts of unsuspecting car owners. Take this Cabriolet as a striking case of the disease. To help celebrate its 10th anniversary in business, HPA Motorsports supplied the owner of this New Beetle a 3.1-liter stroker motor stuffed with cams, headwork and plenty of other go-fast toys. The total was 286 horsepower at the front wheels, but, eventually, inevitably, the owner needed a stronger brew. Something more, something different, something that would be even faster—and this time, could it be a convertible, please?

That was exactly the sort of challenge Canadian tuners seem to thrive on, and HPA sent off a project proposal that was truly irresistible. Soon the stork dropped a bright red 1999 Cabriolet on the firm's Langley, B.C., doorstep, and it set to work. HPA developed a simple two-step formula

for the fulfillment of the owner's hunger. Step one: Add more power. Step two: Add more traction. Thanks to Volkswagen's practice of Mr. Potatohead® parts interchangeability, neither step was as difficult as might be expected. Stuffing a VR6 in a Cabriolet has been done plenty of times. To reduce tooling costs, VW has just



A Cure as Bad as the Disease

one stamping for many body parts. Many of the holes and mounting points required for a VR6 to mount in the engine bay of the A3 Golf/Jetta/Cab are common to all cars, no matter which engine they held when they left the factory.

Of course, the power and torque of a VR6 was just the beginning. The iron block was bored to accept the 82mm pistons that, along with a 95.6mm-stroke crankshaft and custom connecting rods, comprise ABT's 3.1-liter stroker kit. In addition to installing the Schrick variable-geometry intake manifold, HPA collaborated with Schrick to develop a special cylinder head just for this car. It uses 41.5mm intake and 36.4mm exhaust valves with special valve springs, and has some unique features for use with a supercharger, including different valve shapes and camshaft timing. Despite the displacement increase, this engine maintains the stock compression ratio.

Turbochargers are popular additions to VR6 cars, but they carry with them some special maintenance and operating requirements. To

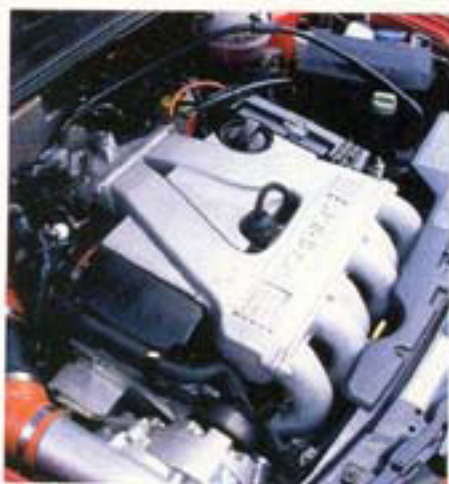
make this car as practical and daily-driver-friendly as possible, HPA chose to install the supercharger kit sold by Advanced Motorsport Solutions, of Costa Mesa, Calif. The kit is based on a Vortech V-1 S-trim centrifugal supercharger. Custom-designed CNC-machined and laser-cut brackets make the kit a bolt-on item. The supercharger uses the engine's oil supply, so it requires no special maintenance other than perhaps more frequent oil changes if the owner is especially conservative. All necessary hoses and fittings (from Aeroquip, among the highest quality available) are supplied, and the kit also includes all required engine management upgrades, including a custom K&N air filter, new spark plugs, new fuel pressure regulator and, most importantly, a reprogrammed chip for the ECU.

On a stock engine, the supercharger makes 8.5 psi and adds an estimated 100 hp at the crank, corresponding to a total of about 240 hp and 250 to 260 lb-ft of torque at the wheels. AMS put its kit on a 3.1-liter stroker motor but was unable to perform tests before the owner drove away with it. HPA has not been able to test this Cabriolet, because it doesn't have access to a four-wheel chassis dyno. The best it

can do is estimate, by adding 100 hp to the 286 hp its 3.1-liter Beetle made at the wheels. Adding fudge factors for losses and the different response of the larger engine to the supercharger, we come up with three-hundred-plenty-five. Which is a lot to be putting through the front wheels.

More traction was obtained by the addition of more Volkswagen parts. It's possible that there are more Rallye Golf drivetrains in North America in other cars than there are in Rallye Golfs. All-wheel drive is achieved by means of a driveshaft connected to a rear differential via a viscous fluid coupling. If traction is lost at the front wheels, the viscous coupling locks, transferring power to the rear wheels. The awd Rallye Golf makes so much sense, it is unfortunate that it was never imported. But that didn't stop the intrepid wrenches at HPA, who somehow scraped together a complete drivetrain, trunk floorpan and fuel tank. The Cabriolet's trunk floor was cut out and replaced with the Rallye Golf floor, which sits 3 to 4 in. higher in the chassis to make room for the rear suspension and differential. The new floor was undercoated and painted, so the car





looks as if it left the factory this way. A few more miscellaneous braces were required, but HPA was surprised how many of the holes and indentations required to mount the rear driveline and rerouted exhaust were provided from the factory in the forward parts of the Cabriolet floorpan. While you'd sort of expect all A3 chassis to be very similar, at the same time it seems almost too much to hope for. The only drawback is that with the higher trunk floor, capacity was reduced to roughly one suitcase instead of two.

It was not possible to install a Quaife limited-slip differential in the Rallye Golf transaxle, but the Quaife six-speed gearset fit with no modifications. This gearset features shorter, more closely spaced gears in first through fifth, while providing a 0.80:1 sixth gear that is actually a taller overdrive than the stock fifth gear. The result is that the engine can better be kept in the really fat part of its torque curve for maximum acceleration, while comfort and fuel economy are improved by using fewer rpm at cruise. Plus, six-speed trannies are just cool. The stock linkage worked fine with the six-speed box, but HPA knew it could make it better, so it built its own "shift kit" by modifying the factory parts.

With the straight-line modifications taken

care of, it was time to make the Cabriolet handle. Since it is a distributor, it was natural for HPA to choose KW coilovers for this car, with adjustable ride height and damping characteristics. KW builds a system for the Golf III Syncro, which worked perfectly in this car, lowering the chassis about 1.75 in. from stock.


Building the exhaust system was left until this point for a reason. No North American manufacturer makes a high-performance exhaust for the Rallye Golf, and fabricating it was perhaps the most challenging part of the whole project. Slowly, though, with a mandrel bender and a pile of 2.5-in. T-304 stainless-steel tubing, the system came together, snaking over and around the rear drivetrain and suspension, through a made-in-Canada Brullen stainless-steel silencer, and out the back to the all-important zoomy-looking 4.0-in. polished tip.

HPA Motorsports believes that A3 and A4 cars are almost over-braked from the factory for anything less than race track use, so nothing really fancy was called for. The brakes were upgraded with 11.0x8.0-in. front discs from a Corrado and Beck-Arnley pads, a Canadian brand similar to Metal Masters. The rotors were left factory-smooth, because HPA prefers slot-

ted rotors over drilled, and slotted Corrado rotors were not available. Rolling stock was another matter. KW Cup wheels in 17 x 8.5-in. sizes were used, wrapped in 215/40R-17 Yokohama A520 rubber. HPA states most tuners only go to 75-in.-wide wheels, but KW provides just the right offset to make the wider wheels work. The spacers are not a band-aid but rather an integral part of the TÜV-approved KW wheel system. They bolt to the hubs, and the wheels are in turn bolted to the spacers.

In keeping with German-tuning philosophy, the point of this car was to go fast, not to get attention. The bright red exterior was kept fairly plain so that, from a distance, the unfortunate and unwarned could mistake it for just another tarted-up chick car. A Reiger Tuning spoiler and headlight eyebrows blend neatly with the factory sheetmetal. Discrete lettering identifies the car as an "HPA 3.1L Syncro Six-speed," but how many people in NASCAR-loving North Carolina are going to be cautioned by that?

Discretion and subtlety continue inside the car, where the factory tan leather upholstery was restitched with red thread, and "Syncro" was embroidered on the front seats and convertible top boot. The finishing touch was a shift knob with a six-speed pattern.

This topless beauty has us drooling and imagining all sorts of illegal, perhaps even dangerous, behavior. If you somehow feel like you ought to keep this magazine hidden under the mattress, we'll understand. If you have vague, unexplainable cravings, or perhaps anxiety, or even a nervous tick, you probably have the same problem as the man who commissioned this car. Don't call the Betty Ford clinic, though, because they can't help you. Instead, call the kind, understanding folks at HPA Motorsport. They'll be happy to fix you up with a cure for what ails you. 

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