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FAST FVD

GERMANY CALLING! FVD'S BIG CAPACITY UPGRADE FOR GT3 RS EQUALS 4.0-LITRES AND 500BHP



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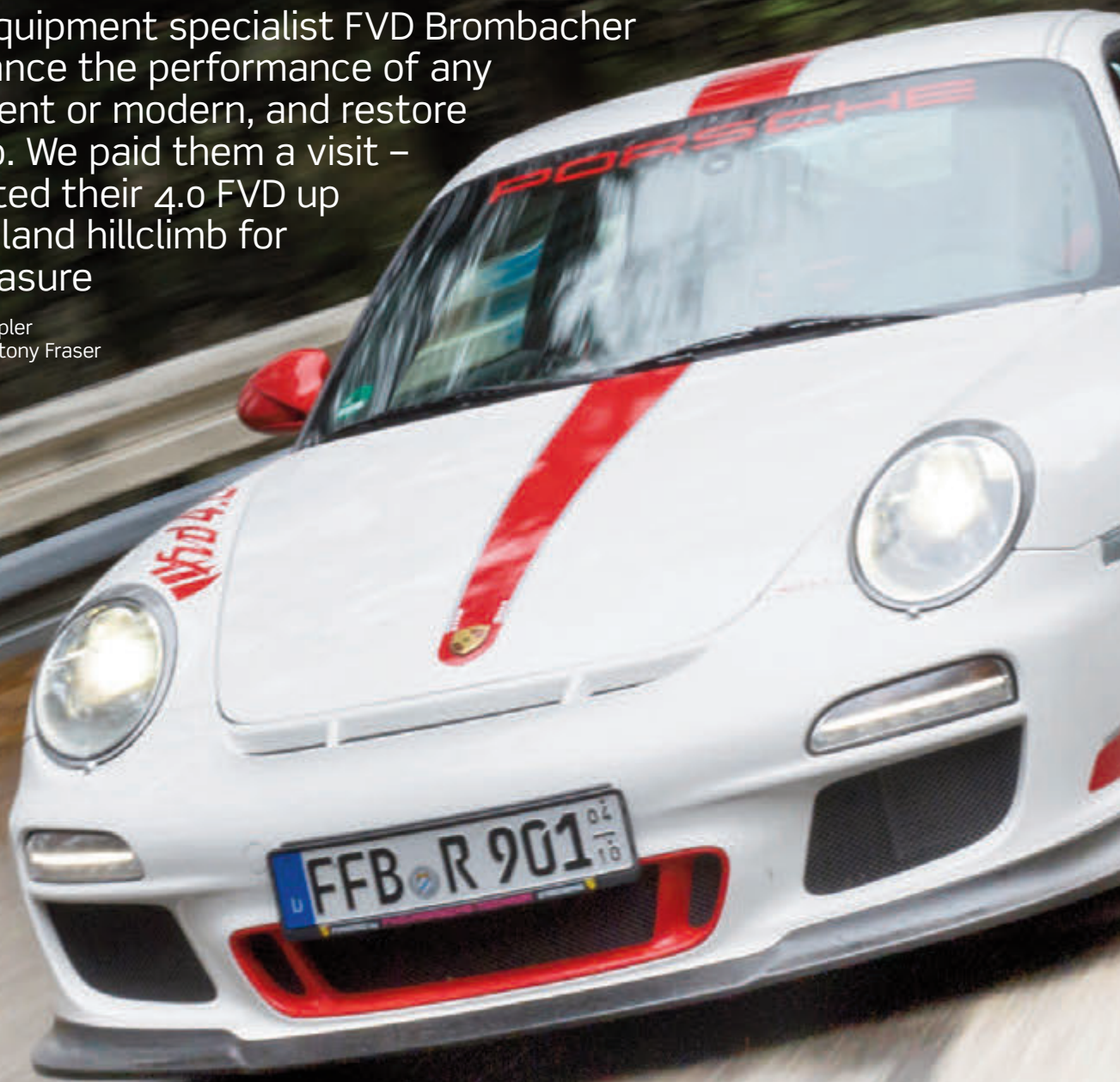


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CALLING THE TUNE

Tuning equipment specialist FVD Brombacher can enhance the performance of any 911, ancient or modern, and restore them too. We paid them a visit – and blasted their 4.0 FVD up Schauinsland hillclimb for good measure

Words: Johnny Tipler
Photography: Antony Fraser





Wild thing! FVD's 4-litre GT3 RS on the famous Schauinsland Hillclimb. FVD believe in capacity increases as a cost effective tuning package

There's no substitute for cubic capacity, so they say, and if you want more power and torque, increasing your engine size is a no-miss method. Sure, the management system has to be adjusted accordingly, but it's a more economical way to go than, say, adding forced induction to the recipe. For the componentry, look no further than FVD.

The Freiburg-based firm has been purveying such goodies for 27 years and the business has grown to the extent that it has distributors in 33 countries worldwide as well as bases in Florida and Switzerland. Curious to see what the operation looks like, Cameraboy Fraser and I board a steamer at Dover and head for south-west Germany.

We arrive at a single storey building on a mature trading estate, with trees, hedges and a bicycle dealer opposite. Exhaust systems familiar to 911 cognoscenti fill the shop window, and a mint green 964 effigy decks the wall above the reception entrance. I'm liking these guys already!

Through the cosy reception and admin office we enter the packed workshop; diversity rules, from 356A and VW bay-window bus (with 3.2 Carrera lump fitted), to 993, 964 RS and, oh yes, the company's latest offering, the gleaming white FVD 4.0 – the firm's showpiece based on a 997 GT3 RS (see sidebar). The staff are all enthusiasts, and none more so than co-founder and prime mover Willy Brombacher. Skilled in carpentry and electronics, he acquired his first Porsche, a gold 3.0 SC, 30 years ago. Tall and shaven-headed, he bounds over and makes the introductions, ahead of our guided tour. The workforce numbers 35, mechanical, technical and administration people, and we meet the other two members of the founding trio, chief engineer Dieter Ohnstedt who runs the engine shop, and bodywork and trim specialist Günther Barhofer. Adjacent workshops contain race- and road cars in

varying degrees of dereliction: we are looking at another side of FVD's business here, repairing and restoring accident damaged and classic Porsches. One is a race-winning 650bhp 993 GT2 that FVD built ten years ago, which its owner crashed recently at the Nordschleife; another is a 964 RS racer that's been on its roof at Hockenheim – and its owner managed to drive to Freiburg despite zero headroom. Without the cage he'd be history for sure. More typically, there's a Boxster mangled in a traffic accident, which is an insurance job. Some wrecks are beyond salvation, but market values mean that certain models demand attention. 'We can still re-jig these cars to make them perfect again,' says Willy, 'but sometimes we have to tell the customer that there's just not enough value in it, it's too much work, so then we say, "ok the engine in this car is still viable, you keep that," because 993s now, especially Turbos, they're getting really pricey and the running gear has a value to match.' Another model that FVD will rehabilitate whatever it takes is the 964 RS 'it's suddenly gone through the roof,' he affirms: 'when you have one in perfect condition we are talking now about 150,000 euros for an RS. That's twice the price that the car was new, because I bought one in '92, and I know exactly: it was 149,000 Deutschmarks, a lot of money back then. And now the regular 964 is also following on.' I like the sound of that too.

It's not just re-jigging basket-cases: Willy is keen to point out that FVD has restored no less than eighteen 2.7 RSs over the years. Hmmm... A rapid rethink is in order: these guys have expertise of a completely different kind to what their monthly adverts in *911&PW* suggest.

As well as restorations FVD builds up cars for clients, though the waiting time can be two to three years. FVD doesn't sell cars: as Willy says, 'you need to come to us when you own one, then we can tune it for you.' Willy emphasises FVD's commitment to ride quality: much as he likes racing cars, their

FVD's 4-litre conversion is based on the 3.8-litre engine. To say it simply has new pistons and barrels is a little simplistic, but that's the heart of it. Power is 500bhp



uncompromising suspension makes them less than an enjoyable proposition on the road. 'The thing we do most of is street cars, and we strive for "streetability". The customer is not happy when the car behaves like a race car, bouncing and jumping around and unable to idle properly. It needs to be perfectly driveable on the road and that is our philosophy. We have a special clutch that can handle big-time horsepower, and we make a double-spring suspension set-up for the 997.'

Practicing what they preach, another FVD core activity is raising engine capacity, with precedents to the new FVD 4.0 going back 20 years. There are numerous flat-six engines about the place, shipped in from around the world for rebuilds that will incorporate the magic FVD ingredients. Willy describes a typical scenario: 'we strip the engine, rebuild it using new barrels and pistons, then it goes on an engine dyno; it gets fine tuned, and we ship it back. It's mostly the newer cars that we're doing, the

“FVD will rehabilitate a car that's been overtuned to the extent it's unusable for the road”

FVD's Willy Brombacher at the wheel of his latest creation. He puts a great deal of emphasis on the driveability of FVD's cars. A car with race suspension for the road is useless to him

Occasionally FVD will rehabilitate a car that's been overtuned to the extent that it's unusable on the road. 'A lot of people, especially from the US, bring their car to have it de-tuned, because you cannot even drive it on the street any more. So we might install double-spring Bilstein suspension and a Fichtel & Sachs clutch or even a steptronic system which can handle the 650bhp they've wound it up to. But it can get very expensive.'

993 RS, the 996 GT3, and the 997 GT3 RS, now that finally we have the cylinders for them.'

The appetite for hiking engine capacity took hold in the early-'90s with the 3.8-litre 964: 'it was a straightforward way to get more power, and it was not difficult to do,' says Willy; 'our own 3.8 used the 964 Turbo's wide body and we called it the 964 RS 3.8. Afterwards some customers bought expensive wings and BBS wheels and



BLACK FOREST PLATEAU

It's a double bonus that not only does Willy Brombacher have the FVD 4.0 for us to try, there's also the nearby Schauinsland hillclimb for us to open it up on. We drive across Freiburg, an ancient university city. With a wary eye on the slippery tram tracks we make a left off the stately high street and head for the Black Forest uplands. Instantly we notice the police cars: coincidence or what? 'No, they are always patrolling Schauinsland,' says Willy; 'we must be very careful about speeding.' Our hillclimb route is a petrolhead's honeypot, to the extent that bikers are even banned on weekends, such was the attrition rate. Once across the sub-alpine meadows the road ducks sharply left where the timed hillclimb kicks off, whereupon it becomes a succession of tight left- and right corners interspersed with short straights. The faster we go the more incessant they seem. No wonder it's popular with speed freaks. Now though, it's wet and our 4.0-litre bolide is shod with barely road-legal slicks!

Literally a 'vantage point', from a distance Schauinsland is an innocuous hill, until you start to attack its ascending curves. Then you understand why it captured the imagination of the quick boys, from Rudolf Caracciola's Mercedes-Benz SSK in 1930 and Hans Stuck's Auto-Union in 1937 to the likes of Stirling Moss in a Kieft in 1951. All Porsche's rising stars drove 356s there in '53, from Walter Glöckler, Hans Herrmann and Karl-Günther Bechem, even veteran Hans Stuck Snr. A round of the European Hillclimb Championship, in 1958 Jean Behra was 2nd in his 550 RSK. Mid-'60s stars Ludovico Scarfiotti, Gerhard Mitter, Gunther Klass and Rolf Stommelen handled a variety of Porsches up Schauinsland. It was even a round of the World Sportsscar Championship in 1963, when Mitter in the 904/8 Bergspyder placed 2nd to Scarfiotti's Dino. Hallowed tarmac indeed. And today it's wet tarmac. So it's point and squirt with the FVD 4.0, exercising real caution to avoid locking up and sliding into those barriers. And thank heaven for them, as the drop-offs into unyielding forest would otherwise be exceedingly daunting. And of course they are relatively recent installations; in the '50s the road was lined by a substantial fence at the start but mostly just by large stones. In 1964, winning Cobra driver Bob Bondurant described it as 'vicious'. Schauinsland goes 18km to the top where it's 1,284m (4,213ft), and where, on our run, there's still snow lying. We pause halfway up at the vast Tiefenbaum Kurve where there's a restaurant and timekeeper's box. When the clouds lift there's an amazing view out over the distant Black Forest landscape. Last one to the summit buys the gâteau!





FVD's engine shop is a busy place. Indeed the whole FVD operation is a busy one with 35 employees

fitted those as well. And then in '95 the 993 came out, and we did the same for that, including screw-on flared wheelarches, which were an inspiration for Porsche themselves.' FVD's 993 RS show car was built on a narrow body version using a twin-turbo GT2 engine, painted baby blue with pink and yellow detailing: 'a very flashy car,' as Willy attests. 'During a magazine road test at Anneau du Rhin circuit (near Mulhouse, France) we had it from 0- to 100kph in 3.6 seconds.'



reprogramming for maximum potency. 'With this we are able to programme every car now – 996, 997, Panamera, even a private customer's, and we've even made our own movie to explain how it works. You can go to the race track and you have five programmes on it, and it will respond to different kinds of fuel as well.'

In an adjacent room two more computer guys programme FVD's comprehensive on-line shop: 'we have quite a few things on the website and we have a lot of

“Electronics wizards including Willy's son work on the engine management boxes”

Below: FVD will work on any type of Porsche, modern or classic. Below right: Our man Tipler and Willy Brombacher. 964 RS was the first FVD car to have the big bore treatment with capacity rising from 3.6 to 3.8-litres

We pass through the workshop into another admin block and board a tiny lift. Willy's spacious office is on the first floor, a wooden model of a gothic church taking pride of place. Two floors up is another crucial aspect of the business: electronics wizards including Willy's son work on the engine management boxes that complement FVD's mechanical performance enhancements. 'This is my genius,' says Willy, indicating the apparently innocuous stack of flat black rectangles, ECUs in the throes of

information about each component, with pictures and installation instructions, sometimes with movies like those for the exhaust systems so you can see them and hear what they sound like.' Willy knows his market: 'all the dealers check us out for spare parts, including Porsche Classic at the Zuffenhausen factory, because we have lots of original items and that's a very strong part of our business.' So is customer service: 'online customers generally phone first and the sales department then



STROKING A PORKER

Willy Brombacher's latest creation is the FVD 4.0, and g11&PW has scooped first drive. Given FVD's specific tuning expertise, building a 4.0-litre car was a given, and in white with red highlights and graphics, it looks the part.

They've endowed a 997 GT3 RS with the kit to lift it from 3.8- to 4.0-litres, and coaxed from it a similar output to Porsche's 4.0 997: 500bhp, no less. Factory-built 4.0-litre 997s were all spoken for before they'd been built, so clearly the niche was ripe for filling. 'Porsche made less than 500 units, so you cannot get it now,' states Willy. 'This GT3 started as a 3.8, but it doesn't matter if it is a 3.6 or 3.8, it's the same operation.' They remove the GT3 engine and modify the crankcase by a millimetre to incorporate the water channels and the oil pump, then in go the new barrels and pistons. The factory Porsche 991 4.0-litre installation uses a different crankshaft and a longer stroke, retaining the 100mm pistons, while FVD uses larger 102mm pistons. Willy explains why: 'if you go longer with the stroke the car gets a little bit lazy, it's not so energetic, so we kept the stroke the same as it was so it's livelier.' The power delivery is different to the 3.8 too: says Willy, 'if you told me a couple of years ago that we'd be getting 500bhp from a normally aspirated engine I would say you are crazy. But a lot of power comes through higher revs, and we can go to 9,000rpm. A couple of years ago you'd say, "a Porsche engine, revving to 9,000rpm? No way!"'

As long ago as the early '90s, Willy's goal was to create a 4.0-litre flat-six. 'The main problem was that the liners were too thin for an air-cooled engine. We talked a lot with Mahle, but the maximum for the 964 and 993 was really 3.8. Now, we have practically the same engine casing but the advantage is, it's water-cooled.' FVD ran it virtually non-stop for three days and three nights to establish there were no weaknesses: 'we really beat the shit out of the thing,' says Willy. 'There are a few, let's say, secrets, but it's actually been easy to achieve.' When the kit comes to

market he predicts it will cost around 15,000 euros, including an exhaust system: 'We can do it for that price because there are a lot of customers out there with 3.6- and 3.8 RS who are waiting for that. A few guys have already bought the 4.0-litre pistons, cylinders and crankshaft from Porsche, but you are already talking about 30,000 euros just for the parts.' All told, the FVD 4.0-litre conversion could be done within 20,000 euros total. 'We will provide our dealer network with the information so they can build the engines for customers,' when, he suggests, 'it would be a 50-hour build, costing in the region of 5,000 euros. You have a lot of race teams out there and the guys who're already familiar with the GT3 RS should be able to build it in half the time.'

The FVD 4.0's suspension is 'standard' 997 GT3 RS: 'on that car, honestly, you're better off doing nothing,' says Willy. 'That car is perfect, provided you don't want to drive races; for streetability you make it worse if you modify it.' And boy, it's a stiff chassis, endowed with a full cage within the cabin. Tractable too, pulling effortlessly from low down, even in 6th gear. I remark on a noise from the gearbox: 'it has a single flywheel,' explains Willy; 'Porsche eliminates this with a double flywheel and a rubber between, so when you have a single lightweight flywheel you hear the gears when you release the clutch.'

Its tyres have more in common with slicks than the tread depths normally accepted by TÜV inspectors, and that's because, says Willy, 'it's destined for a career on the circuit: it will be driven at Hockenheim, the Nürburgring, Monza and the A1 Ring in a kind of amateur racing league.' Nevertheless, street or circuit, these semi-slicks make rapid progress a tad more entertaining, deploying 4.0-litres on our damp road outing. Discretion is the better part of valour, as far as I'm concerned, but Willy has no such qualms. The hills are alive - to the sound of cubic inches: at a stroke, FVD has given the 911 twice its original launch capacity.





Heart of the matter: Willy Brombacher with modified GT3 crankcase, ready to accept new barrels and pistons

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And this is what it's all about. Enhancing the driving experience on the road or in this case on the Schauinsland Hillclimb

guides them through the website.' FVD tests all its products before they're released so they're sure that they work on the car. As for fitting it, the customer always has a lifeline: 'let's say you want to buy a brake system; you can buy that everywhere now online, even eBay, but then when you want to install it, most suppliers say, "no, we cannot help you." With us it is different: the customer calls here and one of my mechanics gives him technical tips to install it, so there's always back-up for our products and the customer is never alone. He can always call, get an answer, and sometimes we tell him it is better

the warehouse just to take care of everything.' Four multi-lingual FVD scouts search the world for new products and systems for Porsches, liaising with their colleagues in sales and dispatch on availability and lead times. It's run on a just-in-time basis, like a modern car production line, so the throughput is slickly handled. Orders are logged, products sourced, checked in, when strict quality control is applied, before being packaged and dispatched. That's the way it has to be: 'we are ISO (International Organisation for Standardisation) certified, because in Germany now it is almost a law, you cannot

“Four multi-lingual FVD scouts search the world for new products and systems for Porsches”

you bring the car here than attempt it yourself.' FVD's online aftermarket accessories store will be familiar to *g11* & *Porsche World* readers after 15 years' advertising, and the actual operation is a quarter-mile through the trading estate on the periphery of a '50s housing estate. Considering the volume of goods handled it's not vast, though Willy says expansion to a bigger building is imminent. 'We list 45,000 different items right now, from the tiniest nuts and bolts to the biggest engine components, and there are 12 people in

sell to another dealer or customer if you are not certified, and it costs us about 20,000 euros every year just to keep that certificate.'

In this area, FVD's most prolific business is its vehicle tuning packages, closely followed by exhausts and electronics. I have to declare a vested interest, especially in the former: though 4.0-litres may be out of the question, the 3.8 capacity hike is an alluring proposition for the Peppermint Pig. So, 'big boar' fans, watch this space! **PW**

