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# Paddle power

Don't like Porsche's PDK and Tiptronic shifters? SpeedArt has the answer with its paddleshifters, tested here on its 420bhp 997 Carrera S conversion

Written and photographed by Ian Kuah



Porsche's PDK transmission is one of the most frustrating pieces of technology introduced in recent years. As a marriage of engine and gearbox it is absolutely brilliant, producing fast, jerk-free up and downshifts that make an old-style manu-matic or conventional automatic gearbox seem crude.

However, the way that the manual selection of ratios has been implemented in terms of the steering-wheel paddles and floor shift lever leaves a lot to be desired. Porsche says it did it this way to avoid confusing past Tiptronic owners; others reckon it was simply a case of Porsche not wanting to copy the accepted left for down and right for up arrangement used by all its competitors.

Whatever the reason, the resulting thumb levers are counter-intuitive and confusing, as is the shift lever, as they force the driver to push or pull against the G-forces that impose

themselves under acceleration and braking. If you have to think about how to operate something in a moment of stress, it is too late.

Because of this, if the F1 paddleshift sports steering wheel was the only modification to the way SpeedArt's SRS 420 drives, it would be a major improvement all by itself. The familiar motorsport paddle arrangement of pulling the left for down and the right for up instantly removes the need to think about which way the paddles work.

Both journalists and owners have also complained that you can accidentally trigger a shift if your palm brushes across the long PDK shift select buttons when you turn the steering wheel. Again, having proper paddles behind the wheel obviates this problem.

A long-standing debate among paddleshift advocates per se is whether or not the paddles should be fixed to the steering column or move with the wheel. There is certainly a strong case for both designs.

“If you have to think about how to operate something in a moment of stress, it is too late”

If the paddles are long enough to allow you to hook them with your finger when you have some lock wound on, then that works just fine. The Ferrari F1 system allows you to do this, but the much smaller paddles on the Lamborghini Gallardo, shared with Bentley and Volkswagen models, do not. ☹



SpeedArt's paddles are middle-sized in that respect, but being fixed to the steering wheel and rotating with it, they allow you to operate them without moving your hands from the nine-three o'clock position, providing you do not have too much steering lock on.

Detractors of rotating paddles say that this can be confusing when the steering wheel is upside down, but so long as you know the wheel is 180 degrees out, you just use the opposite paddle!

The other good news is that SpeedArt's 340mm-diameter F1 steering wheel is not only manna from heaven for the latest PDK-equipped cars, but also the Tiptronic-equipped Boxster, Cayman or first-generation 997. SpeedArt will shortly have a wheel available for keen Cayenne drivers as well, and no doubt a Panamera version will not be far behind.

Out of the box, the 385bhp and 400Nm of torque from the all-new direct-injection 3.8-litre second-generation 997 Carrera S engine gives the car a sharpness in response and beefiness in delivery that is hard to better for the money.

The lighter internals and direct fuel injection deliver a crisper edge than before and improving

this fine engine would seem to be a pretty tall order. But this is exactly what SpeedArt has done with its Power Kit II for the face-lift 997.

This conversion includes a sports air filter, equal-length exhaust headers, 200-cell metal catalysts, stainless-steel sports exhaust and an ECU remap. If your car is fitted with the factory Sport Chrono package, you can also have the exhaust system with electronically controlled bypass flap that activates when the e-gas throttle pedal is pressed beyond a certain point.

Excessive exhaust back-pressure is the bane of gas flow in any engine, especially a forced aspirated one, but you still need a certain amount of back-pressure to keep the gases moving properly.

Porsche has got its standard exhaust systems flowing so well in recent years that it is very hard for an aftermarket exhaust specialist to improve the sound without actually losing some power at the same time.

More than that, with the high precision of the ECU programming required for current emissions laws, it is also clear that the intake and exhaust systems are now optimised along with the fuel

and ignition maps. So for any meaningful gains to be had, intake and exhaust upgrades and ECU remapping must be done together as a package.

With all these modifications carried out, SpeedArt's Power Kit II delivers 420bhp, or 35bhp more than standard, along with 440Nm of torque. That's the same horsepower as a 996 Turbo but from a street-legal, normally aspirated 3.8-litre flat six, albeit with 120Nm less torque. How things have moved on.

Porsche's PASM active damping system has some leeway for different spring rates, and SpeedArt takes advantage of this by using 25mm shorter, uprated springs made to its specification by H&R.

Unlike some of its competitors, whose brakes fade like the last rose of summer after a few hot laps of a racetrack, Porsche's bespoke Brembos have a good reputation for staying power. They also have reasonable headroom built in, so coping with a few more horses will not push them over the edge.

Because of this, SpeedArt does not insist that you uprate the brakes on the Carrera with the 420bhp conversion, but the company does substitute the rubber brake hoses for braided stainless-steel ones that resist flex, thus giving better pedal feel. If you are a trackday junkie, however, SpeedArt will happily fit an uprated road or race brake system to your car.

SpeedArt boss, Björn Striening, is particularly proud of his new 20-inch diameter three-piece, forged alloy wheels. They are around 4kg lighter per corner

than cast alloy wheels of the same size, which helps to keep unsprung weight low.

Available in three sizes, 8.5J, 11.0J and 12.0J x 20-inch, these wheels look even larger than they actually are, thanks to an optical trick with the design and colouring of their spokes. You see, because the spokes overlap the outer rim, they are as long as they would be on a 22-inch wheel.

This gives the illusion that they are more than 20 inches in diameter. In addition, their centres are slightly concave, which makes them look deeper and helps to give the car its purposeful stance.



Exterior changes are subtle, and consist of new front bumper, rear wing and sideskirts. The big news is the PDK paddles (opposite)



"It has the same horsepower as a 996 Turbo but from a normally aspirated 3.8-litre flat six"



The fixed wing has purposeful air intakes (above), while the twin exhaust outlets (right) are neat and businesslike



Crackle finish on the wheels (right) is distinctive and practical. Note how the spokes extend right to the edge of the rim

## Ten years on

Stuttgart-based SpeedArt is ten years old this year. It was started in 1999 by Björn Striening, and initially sold just wheels and tyres. Björn made himself a bit of money and bought a Porsche Boxster and before long he was developing body parts for this. "One of the most popular products was a 'Turbo-look' front bumper for the Boxster and 996," he recalls.

Soon, the company was offering a range of bodykits for Porsches, but Björn wanted to go further. "My aim was to make Porsches look sportier but also faster. So I began to develop power upgrades, in particular, sport exhaust systems and engine tuning, not to mention uprated suspension.

"We still hold the lap time record on Nürburgring with a street-legal SpeedArt-tuned 997 Turbo and also the fastest 997 Turbo Cabriolet on the Hockenheimring."

Recently, SpeedArt has expanded to offer tuning parts for the Cayenne, and Björn says he also has his eye on the Panamera. However, the 911 – in both modern and classic guises – is still the mainstay of the company.

[www.speedart.de](http://www.speedart.de)

PDK controls – good or bad?  
[www.totalgt.com/forum](http://www.totalgt.com/forum)



"I'm still an enthusiast always looking for ways to make things better and more appealing"

Grey is becoming popular as a colour for wheel spokes and centres, and looks particularly good with polished outer rims. Looks apart, it has the advantage of hiding brake dust as well. Being the innovative company that it is, though, just using grey paint would have been too easy for SpeedArt. While the spokes look a normal dark metallic grey from a distance, when you come closer, you see that they actually have a rough finish, like the old black crackle on classic Ferrari rocker covers.

This kind of originality and attention to detail shows that Björn's personal interest and involvement in his company's products goes far beyond the norm. "It is easy to make a wheel design, commission a few hundred sets from a

wheel manufacturer and then just sell lots of boxes all over the world," he explains. "But I'm still an enthusiast always looking for ways to make things better and more appealing to my clients.

"A few years ago, chrome wheels were the in thing, but now everyone is looking for a new trend to help sell products to their customers," he continues. "For me, innovations in design and finish are the new way and I am very pleased with the quality my subcontractors are achieving."

Unless they develop a car's suspension closely with one tyre manufacturer for optimum results, most car manufacturers use three or four tyre suppliers. The same is not true for aftermarket tuners, though, who tend to work with specific companies for all their parts.

SpeedArt uses Michelin and Continental tyres depending on the application and driving style of its individual clients. "We offer customers a choice of Michelin Pilot Sport 2 or Continental Sport Contact 3 tyres," Björn explains. "The Michelin is a slightly better steer on track and on a dry road, while the Continental is superior in the wet.

"We wanted to build an everyday useable street car. That's why this car is street-biased, and we're not entering it in this year's Tuner Grand Prix."

The SRS-II aerokit adds a lower valance and a splitter to the factory front bumper. "We retain the factory front bumper with its LED daytime running lights to keep the cost to our customers down," Björn explains. "Together with the GT3 'moustache' air outlet, the face of the car is significantly changed without the added expense of a complete new moulding."

SpeedArt's signature sculpted sideskirts visually join the lower front spoiler to the rear bumper. Here, SpeedArt removes the lower rear section of the factory bumper and adds its own diffuser. This is flanked by the four 90mm diameter outlets of the sports exhaust system, whose tips can be ordered with either a matt black or polished finish.

The finishing touch for the aerokit is a rear wing with ram air inlets flanking its support structure. The wing is inclined at a five-degree positive angle of attack, and the combined effect of the new front and rear aerokit is a 25kg reduction in lift.

The Terracotta interior is a factory finish, and the only SpeedArt additions to the cabin are the paddleshift steering wheel and the brushed alloy door kick plates.

I first drove this car in August 2008, when SpeedArt had only just fitted its older-style



The interior is standard apart from a chunky SpeedArt steering wheel and those PDK paddleshifters



ten-spoke wheels, front spoiler, moustache, sideskirts and a modestly sized fixed rear wing. The engine was standard at this time, and the paddleshift steering wheel, rear diffuser and larger rear wing were still in the works.

Now completely transformed, the SRS 420 demo car promises to be a different animal altogether, and as I drive it on local country roads to the nearby Malsheim test track – an old airfield now used for automobile testing and driver instruction – I am eager to see by just how much.

First impressions are encouraging right from the word go. I select Manual mode for the PDK gearbox and drive the car on the paddles without having to think about which way is up or down. Because of this, I instantly feel at one with the car.

Around town, the lower, uprated springs make the ride a lot firmer than standard, even on these smooth German roads. They move the secondary ride to a point between the normal car's Comfort and Sport modes, and I am not totally convinced that this setup would be tolerable on badly maintained UK roads.

That said, the car had just returned from a group test at Hockenheim with a German magazine and

“It feels more aggressive and incisive than standard when you open the taps fully”

was still set lower and stiffer than a customer's car would normally be.

Moving faster on the open road, though, the primary ride turns out to be just fine, and at high speeds, the SRS 420 exhibits rock-solid body control both on turn-in and through high-speed bends. It maintains that feeling of agility through tighter bends, inspiring the confidence you need to really lean on the mechanical grip and the ability to throttle steer the car once you have learned what it is able to do.

The other part of the SRS 420 I took an instant liking to was the uprated engine. As I said before, the new direct-injection engine has a spunkiness to

it that was not present with the previous generation unit. The better breathing, more aggressive ignition advance at low revs and snappier e-gas throttle response, provides noticeably better punch and make this conversion feel like money well spent.

At Malsheim, I have the chance to run the car to the redline in the intermediate gears, and am really impressed with the way it seamlessly delivers its power ratio after ratio. It feels more aggressive and more incisive than standard when you open the taps fully, yet is just as docile as the standard car in everyday town driving.

Over the years, I have become blasé about some upgrades that simply involve air filter, exhaust and ECU remap, as their results are sometimes no more than 10bhp with more decibels behind my head. In this case, however, the extra 35bhp and 40Nm of torque can really be felt, and they are delivered cleanly with a crisper throttle response.

As a modestly priced, normally aspirated 997 conversion, SpeedArt's SRS 420 really does what it says on the tin. And even if you don't want to go faster or look more extrovert, the paddleshift steering wheel at last fulfils the inherent promise of the PDK gearbox. **911**