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Issue 155

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# Ignition



Issue 155 October 2014

ugust was always going to be about classic Porsches and specifically their values. Every year the good, the bad and those with nothing but red trousers in their wardrobe gather in California to look, discuss, sell and, of course, buy classic cars. Pebble Beach is the classic car event.

I've never been, but then if I wanted to look at an old car sat on a piece of grass I'd park the wife's Golf in the garden. Over the last few years, however, it's become an event I mark in the diary and make a note of the date and time of the big auctions. This year specifically those of Gooding & Company, Bonhams and RM Auctions.

You may have read or heard about one or two of the sales already, especially if you have an interest in old Ferraris because 2014 would appear to be the year that every Ferrari with 250 in its name was entered into a Monterey auction. Bonhams even entered a 250 GTO into its sale without a reserve hoping to cash in on such a unique circumstance. At £22 million it set an auction record for a GTO, but this was someway off the predicted result Bonhams and some collectors (speculators?) were hoping for.

What does this have to do with Porsches? Quite a lot, as it happens. In years gone by the Pebble Beach auctions were home to well-restored and presented 356s, mainly \$500,000 Speedsters that were some of the best examples in the world. There would be the odd smattering of pre-'74 911s too, short-wheelbase 2.0-litre and late 2.4S models, and once in a while an RS would go under the auctioneer's gavel.

But 2014 was, by recent years, a big year for Porsche at Pebble Beach.

Sadly the ex-Jo Siffert 917 was withdrawn a week or so before its night under the spotlights but there was a still a wide spread of Stuttgart machinery to catch the eye. You can read what prices the headline cars sold for in our *News* pages.

What interests me is how these prices reflect the overall Porsche market. Anything air-cooled with an RS badge is now a six-figure car if you want the right example with a strong provenance — and you do; why wouldn't you? A more 'humble' pre-'73 2.2- and 2.4-litre 911 will also command a six-figure asking price, while a plain Jane 964 Carrera will cost at least £25,000 for an example that's going to deliver what you hoped it would. Yes, you could get a very good one for £13,000 a few years ago. I should know, because I bought a kitchen instead of a rear-wheel drive, manual C2.

Of course, water-cooled cars don't have the cachet of the air-cooled motors but the very best examples of anything water-cooled are now climbing well above the dross, from 924s to the GT3 RS 4.0. The latter commanding at least £100,000 over its original retail price, the very best of the former will set you back up to £5000, possibly more. Or £40,000 if you want an achingly cool 924 Carrera GT.

Where would my money go if we're not talking silly sums to invest and you want something you can still enjoy? A Boxster Spyder: low production volume, unique (Porsche will never do it again) and, crucially, a brilliant car. It's our generation's 356 Speedster.



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Training Day We've been impressed with the Macan to date, but as yet we've not put it through the long haul road trip treatment, until now. So how does the Macan S Diesel stack up after a 2000-mile road trip?

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Rallying Cry Richard Tuthill wanted Porsche to head back to the WRC, but Porsche didn't offer a rally car, so he built one himself – the magnificent 997 GT3 RGT

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End of Days Eventually the day will come when you'll need to sell your Porsche, so to make the process as easy and as painless as possible we've produced this comprehensive guide to everything you need to know when selling your Porsche.

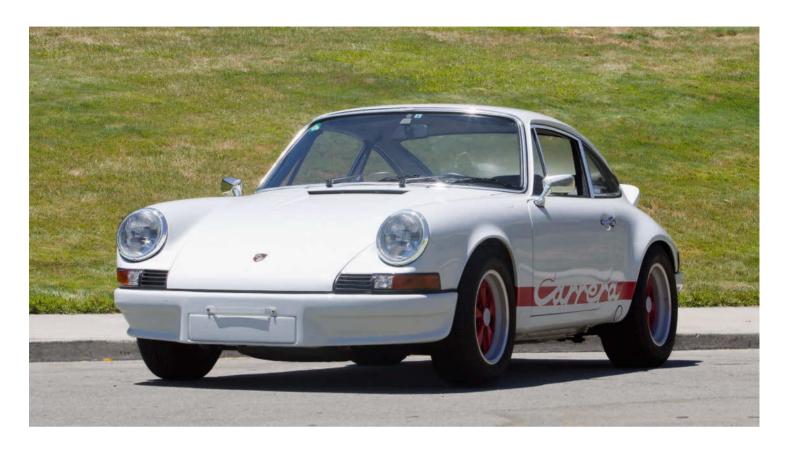




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# AUCTION FEVER AS PORSCHE VALUES RISE

Pebble Beach auction enjoys a sales boom as Porsche values continue to climb



Pebble Beach saw a strong gathering of Porsches going under the auctioneer's hammer. Pre-'73 911s were in the majority, including this rare non-ducktail India red 2.7 Carrera RS





August is auction month as the world's great and the good arrive in California for the annual celebration of all things classic car related. Alongside the world famous Pebble Beach concours event, it is the auctions that provide the conversation stimulus as car values are endlessly discussed. This year was no different, and while Ferraris may have led the headlines Porsches were equally well represented with the results providing yet another barometer as to the health of the Porsche market.

The mix of metal going through the three big auctions – held by Gooding & Company, Bonhams and RM Auctions – covered a wide spread from 356s to 911s, 959s to a handful of 1970s RS models.

The headline sales came from Gooding & Company who, after achieving \$181,500 (£109,535) for a

three-owner 1994 964 Speedster offered with no reserve, moved on to its star Porsche of the sale: a 1998 959 Komfort model. One of only 242 Komforts made, the example had covered only 8800km and had three previous owners. And despite coming with the stipulation that it could not be resold in California, sold to a resident of California or used primarily in California the gavel still came down at \$1,485,000 (£896,167), comfortably more than the \$900,000-\$1,100,000 estimate.

Following the 959 Gooding & Company presented a 1974 911 Carrera 3.0RS. Finished in white with gold livery the car had extensive competition history and sold for \$1,001,000 (£604,103), which to some will look a bargain considering the prices being achieved by Carrera 2.7 RSs.

An rare auction lot was next on the stand in the guise of a 1968 911 T/R. Sold new to Paul Ernst Stahle and raced by Porsche's own Herbert Linge, this example came fitted with a period 2.2-litre 911 S engine. A rare 911, and perhaps a bit to specialist for the an auction market, the T/R sold for \$440,000 (£265,452), having had an estimate between \$400,000 – \$600,000.

Perhaps the sweetest entry into the Gooding auction was lot 64, a simply beautiful 1965 911 two-litre. One of the original 254 early production cars, it retained its unique early production design details and had undergone a thorough restoration in 2013. It sold for \$407,000 (£245,543).

Over at Bonhams a trio of RS models led the Porsche line-up. A white with red '73 RS 2.7 Touring, that

had originally been sold into Japan and was one of the first 500 homologation examples, it had stayed with its original over from 1977 through to 2009. However, an engine fire in the early 1990s meant the car had only recently been reunited with a genuine RS motor and as such was not a desirable matching numbers car, a fact backedup by its \$462,000 (£278,429) sale price. This wasn't the only 2.7 RS Bonhams had. There was also a 1972 car, number 125 of the original 500 homologation build, that was again a Touring model but finished in India red and it came with no ducktail or Carrera script (both a factory delete option at the time). A very original example that had been restored by Ruf in 1984 the car sold for \$935,000 (£563,488).

Bonham's headline Porsche sale was a 1974 Carrera 3.0 RSR. With top





Mike Maez





three finishes in the 12 Hours of Sebring and Daytona 24 Hours (it competed a total of nine times at the former, eight at the later race) it was no surprise to see it sell for \$1,100,000 (£662,927). Away from the RS models Bonhams also sold a delightful matching numbers, 1973, 2.4-litre 911 for \$176,000 (£106,068). This was one of the last of its kind to be built by the factory and was offered with no reserve.

RM Auctions offered an eclectic mix

of Porsche cars in its sale including a 1989 Speedster that had covered less than 400 miles from new. Originally bought by Jim Ellis Porsche the car was used as a showroom display model before being sold to its first owner in August 1992 who never drove it, the mileage having been accumulated on post-service test drives. It's little wonder it sold for \$308,000 (£185,816).

At the other end of the Speedster scale RM also offered a delightful 1958 356A 1600 Speedster. Built by Reutter this very original Meissen blue example achieved \$440,000 £265,452.

Also within RM's sale were two pre-73 911s, an early 1965 two-litre matching numbers car that achieved \$308,000 (£185,816) and a matching numbers 1972 911 S 2.4 Targa that had recently undergone a bare metal, nut and bolt restoration and came with a history file going back to the day it was built. It was, in fact, the second to last 1972 model built. The hammer finally fell on this Sepia brown example at \$242,000 (£145,998).

One Porsche RM didn't close a sale on was a 1986 962 IMSA GTP race car. Owned from new by the Hotchkis Racing team, the car raced in its distinctive Wynn's Engine Oil livery in the IMSA and GTP Series before continuing on as a regular in the Historic Sports Car racing series. The bidding reach a high of \$575,000 (£346,897) but unfortunately failed to sell



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# NEW PORSCHE FESTIVAL HITS UK

The Porsche Club GB has joined forces with Brands Hatch circuit owner MSV to host the Brands Hatch Festival of Porsche over the weekend of the 19-21st September.

The event is also supported by Porsche Cars GB and the main day of action at the Kent circuit will be on Sunday 21st. A Porsche Club GB track day will take place on Friday 19th and race practice on Saturday 20th. In addition to a variety of on-track action, the venue is expected to be surrounded by all types and ages of Porsche, from the 356 of the 1950s to the very latest plug-in hybrid 918 Spyder super sportscar.

The Brands Hatch Festival of Porsche coincides with the 40th anniversary of the 911 Turbo, and a special celebration of this model will form part of the festivities. A dedicated parade of over 60 examples of the 911 Turbo from the 1970s to the present day will take to the track on Sunday afternoon.

With Porsche returning to the top LMP1 class in the World Endurance Championship (WEC) this year, there will also be a sports car endurance racing theme, which has added resonance given the Brands Hatch circuit's history as the venue for many memorable motorsport battles.

In support of this the Porsche Museum will be showcasing a number of its jewels from the worldrenowned exhibition in Stuttgart. Porsche is the most successful marque at Le Mans with 16 outright wins, and two past victors will thrill visitors to the Festival. The 1987 Porsche 962 and the 911 GT1 from 1998 will line-up in a pit lane display, and other iconic racers will join them in the activities.

In addition to famous cars a number of Porsche personalities will also take an active part in the event. Leading the on-track action will be former Porsche works race drivers and Le Mans winners Derek Bell and Richard Attwood.

The Festival will also be the finale of a national contest organised by Porsche Cars GB that challenged Porsche Centres to undertake the Classic Restoration project. This is the second year Porsche Cars GB has run this competition; for 2014, with the 911 Turbo's 40th in mind and the new 911 Targa being launched, Centres are restoring any classic Porsche model that is turbocharged and/or a Targa. This, of course, includes the frontengined turbo models such as the 924 and 944

Race fans will be able to enjoy a full on-track programme including the Porsche Club GB Porsche Club Speed Championship, Porsche Club Speed Championship and BRSCC Porsche Championship. There will also be a Concours Display for cherished cars, and extra off-track attractions including trade stands, a fun fair and live music.

Tickets can be purchased by visiting: www.festivalofporsche.com









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### VELOCE PORSCHE BOOKS

Veloce has reissued some classic Porsche books which have been out of print since 2011. The books are a must for all Porsche fans and are written by renowned historian Brian Long. The Book of the Porsche 356 has been revised, reformatted and completely remade, while Porsche 928 includes more than

100 colour photographs of the eight-cylinder model.



## DREMEL MICRO MULTI-TOOL

Dremel has created its most compact cordless tool ever - the Micro. Perfect for small maintenance jobs, the Micro is powered by a rechargeable lithium ion battery and can be used to clean, polish, cut and grind metal, as well as sand wood. It weighs 250 grams and has an ergonomic design so it's comfortable to use for prolonged periods, while it's small enough to work in a confined space, such as the engine bay of your Porsche. How much? £110

Where from? www.dremel-direct.com





# CARGRAPHIC DIESEL PERFORMANCE EXHAUST

Porsche specialist Cargraphic has launched a new stainless steel sports exhaust featuring the company's Performance Active Sound System designed to provide a V8 sound for Porsche's diesel models.

Available for the Macan, Cayenne and Panamera models the system is integrated within Cargraphic's performance exhaust with an easy to install plug 'n' play control unit that provides two different sounds: V8 Sound and V8 Super Sound. How much? €3495

Where from? www.cargraphic.de or www.parr-uk.co.uk



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# SNOOPER VENTURA PORTABLE POWER PB80

Old Porsches will occasionally need a jump start, and Snooper – which is better known for its speed camera detectors – has launched a new portable power pack: the Ventura PB80. It has a 400 amp jump starter, while the 12,000mAh rechargeable battery can also be used to revive flat smartphones, tablets and cameras via the built-in 2.1 amp USB output. The unit also comes with a built-in LED flashlight and includes jump-start clips.

How much? £99.99

Where from? www.snooper.co.uk







# ST SUSPENSION LOWERING SPRINGS

ST Suspension has launched a new range of lowering springs for the 987 and 981 Cayman. Manufactured by KW Automotive, the ST lowering springs are made from a high-quality, chrome-silicon construction and are a direct replacement for the OEM spring.

Lowering the car by 30mm (987) and 10mm (981) on both axles, the springs can be combined with an ST wheel spacer kit if desired.

How much? £299

Where from? www.kwautomotive.co.uk or call 0870 990 7536



## YOKOHAMA W.DRIVE V905 WINTER TYRE

With its angled straight and lateral grooves, the new W.drive V905 winter tyre from Yokohama provides exceptional grip on wet and slushy roads, according to the manufacturer. It also says that the combination of different types of sipes also helps the tyre grip in snowy conditions.

The tyre is currently available as a 17-inch size only, so it's suitable for the 964, 993, 944 and 928. **How much?** From £56

Where from? www.yokohama.co.uk



# TOMTOM START SERIES OF SAT NAVS

The brand-new Start series is an entry-level sat nav in TomTom's range. Available in 4-, 5- or 6-inch screen sizes, the devices include the new Quick Search feature to help you find your destination faster, and the advanced route bar has also made its way down from the more expensive Go range of sat navs. Prices start at £119.99 for the Start 40, rising to £159,99 for the Start 60. Each has maps of 45 European countries, and you can get lifetime updates for free by connecting the device to your computer. **How much?** £119.99 (Start 40); £139.99 (Start 50); £159.99 (Start 60)

Where from? www.tomtom.com



# porsche shop\_

### SPARK 935

In 1976 Jacky Ickx and Jochen Mass drove their Porsche 935 to victory in the 6 Hours of Vallelunga and now Spark has built a 1:18 resin model of its winning car. It's rather lovely and would make a great addition to any collection.

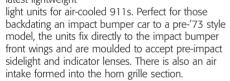
How much? £129.99

Where from? www.diecastlegends.com



## EB MOTORSPORT LIGHTWEIGHT 911 LAMP UNITS

EB Motorsport has released its latest lightweight



Manufactured from composite the units are finished in white gelcoat with each unit supplied with bulb holders and bulb.

How much? £280 plus VAT Where from? 01226 730037 or www.eb-motorsport.com

# AUTOART 997 GT3 RS

As prices of the Gen 2 997 GT3 RS climb ever higher into six-figures Autoart's lovely 1:18 diecast model may be the only hope the majority of us will ever get to owning this iconic water-cooled 911. Finished in white with red graphics the model is highly detailed and brilliantly finished.

How much? £141.99 (code: AA78143)

Where from? www.diecastlegends.com





# POWERFLEX 964 & 993 TRANSMISSION MOUNTS

A new range of transmission mounts has been released by polyurethane bush specialist Powerflex for the 964 and 993 type 911s. The gearbox front mounting bush replaces the original OEM part and is available for all rear-wheel drive 964 and 993 Carreras fitted with either a five- or six-speed manual or five-speed Tiptronic transmissions.

How much? TBA

Where from? www.powerflex.co.uk





### HRF RS1

San Diego-based alloy wheel manufacturer HRE has announced a new three-piece wheel series for later Porsche models, which will be available from in the UK from RPM Technik.

The Series RS1 will offer six new styles, including a nine-spoke mesh RS100, the seven-spoke split RS101, a five-spoke RS105 and the six-spoke RS106. The Series RS1 is available in 18- to 22-inch diameters and from 7- to 14-inch widths. **How much?** POA (determined by size and finish) **Where from?** www.hre.com or www.rpmtechnik.co.uk 01296 663824





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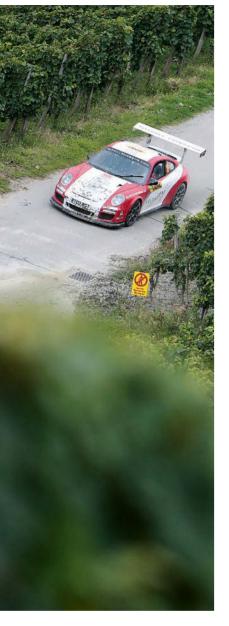
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<sup>\*</sup>Participating centres only. Fixed price maintenance tariffs apply to Boxster Type 986 (1996-2004) and selected 911 Type 996 (1998-2005) models only. Fixed price maintenance tariffs may be withdrawn or varied at any time. Contact participating centres for full details, terms and conditions.

# motorsport month



# TUTHILL PORSCHE CLAIMS FIRST WRC PORSCHE FINISH IN NEARLY 30 YEARS

Tuthill Porsche brought the Porsche name back to the World Rally Championship last month with a near-faultless performance on the FIA WRC Rallye Deutschland as the team finished inside the top 30 in its 997 GT3 RGT rally car.

As you can read on page 82 the classic Porsche rally specialist has turned its attentions to the WRC, and its debut couldn't have gone better.

A solid start on day one, consisting of three stages run twice each, saw a couple of minor overshoots caused by driver Richard Tuthill confessing that his pace note making may be a little rusty.

A puncture on stage four saw the crew drop over four minutes to the front runners, but with a goal of finishing the rally, the crew of Richard and seasoned co-driver Stephane Prevot stuck to its strategy and completed the day's opening stages in one piece and 46th overall.

Day two of the rally was not only the longest but the first chance for the team to start to build on its early pace, finishing the 17 kilometre stage seven just one minute down on WRC hot shot and ex-F1 driver Robert Kubica. With a big accident for rally leader Sebastien Ogier cancelling stage eight the teams headed for stage nine in time for the rain and for the GT3 RGT to shine. "That stage was just like the Safari!" exclaimed Richard. "Terrible surface: exceptionally rough concrete. Thankfully the mechanics had seen it coming and raised the ride height last night. Their efforts paid off."

Now running in 40th position, Richard and Stephane had settled into their WRC stride, posting consistent times on each stage. The weather played into their hands at times allowing them to continue their climb up the leader board as others spoke of treacherous conditions. It was music to Tuthill's ears as they sat waiting with their wet tyres already fitted and raring to go. On stage ten the 911 finished just 42 seconds behind Kubica in 19th position and had climbed to 31st overall. On stage 13 Richard and Stephane finished just nine seconds behind stage winner Jari-Matti Latvala. Caution led to the team dropping one position on the final stage of the day as the conditions were still there to catch them out.

The final day saw the team safely negotiate the last couple of stages and bring home a Porsche 911 on a WRC event for the first time since Saeed Al Hjri's fourth place on the 1986 Acropolis Rally.

At the end of the event a clearly elated Richard summed up what it meant: "This week has been overwhelming. The magnitude of our accomplishment will take a few days to sink in. Months of hard work have gone into developing a car we hoped would succeed, with the team then investing great trust in me to drive it.

"I've revelled in this challenging return to the fiercely competitive World Rally Championship, made possible by an incredible team, a wonderful car and the ultimate co-driver: Stephane Prevot. No doubt there's more speed to come from this car, but to reach the chequered flag was our primary goal, and we have done that in style."

But the final word goes to the team's chief engineer, Graham Moore: "This car: what more can you say? It handles well, it flies level, looks great and sounds terrific. Crowds just adore it!" We certainly do too.







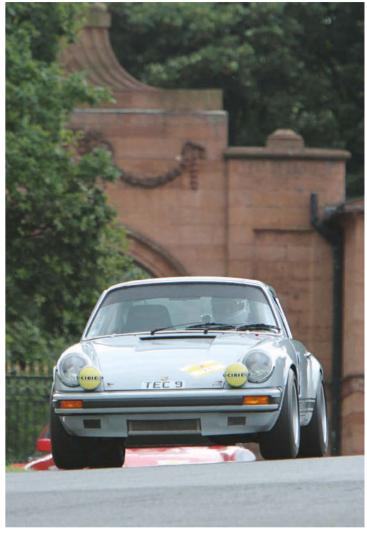




# motorsport month







# HINDLEY SECURES TOUR BRITANNIA VICTORY HAT-TRICK

Phil Hindley completed a hat-trick of victories on the 2014 Tour Britannia, following one of the closest contests in the event's ten-year history. The Porsche specialist brought his 911 SC R home ahead of Steve Perez's Mk2 Ford Escort.

The conditions for the event were as challenging as the race itself, with heavy rain catching many-a competitor out on a number of the special stages and circuit-based events. Indeed, winner Hindley found himself on the wrong tyres for the first of three events held at Oulton Park on the opening day of the Tour. It was only after two spirited drives on the two short special stages held later in the day that Hindley was able to claw back the time he had lost on the circuit.

The second day saw the teams head to North Wales for a number of

special stages that allowed Perez's rallying experience to take hold and pull out a 26-second lead over Hindley. A lead that Hindley would only eat into (by ten seconds) when the teams lined up on the grid at Anglesey for the circuit race.

A third and final race at Anglesey was won by Hindley on the morning of day three which saw the Tech 9 boss draw level with Perez, but it wasn't until the long airfield stages at Llanbedr that Hindely was able to press home the 911's advantage to build a 20-second lead as the crews headed into the final two stages of Britain's only classic race and rally tour. Despite a great run through both stages by Perez he could only take 13 seconds out of Hindley's lead, the closest he'd get to Hindley who claimed his third Tour Britannia victory.







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# motorsport month

# SPECTACULAR BAMBER SHINES IN SPA SUPERCUP BATTLE

Porsche Scholarship driver Earl Bamber repaid every bit of faith the factory motorsport department has put in him by dominating the Belgium round of the Mobil 1 Porsche Supercup round held at Spa-Francochamps

The weekend belonged to Bamber who topped the time sheets from the very first practice session, secured pole position, posted the fastest lap of the race and took the chequered flag. Throw in a masterful save and the pass of the season so far and it's little wonder the New Zealander came away with maximum points and moved to the head of the Championship table.

A clean start saw all 27 Cup cars make it round the first corner but as the back of the pack were jostling for position, heading into the fearsome Eau Rouge, Bamber's season was flashing before his eyes as his Fach Auto Tech-prepared GT3 started to drift wide as it climbed the hill, before finally drifting off the track at the exit of Eau Rouge and through Radiallon. It was the only invitation second-placed Nicki Thiim needed and Bamber's weekend looked over, the 6.9 kilometre track notoriously tricky to pass on in these cars. Clearly Bamber had other ideas.

For six laps Bamber harried Thiim and was clearly the quicker car but

Thiim isn't a Supercup Champion by default and the Dane drove masterfully to hold off the Kiwi cornerafter-corner, lap-after-lap.

Bamber's pressure finally paid off, and as the Kiwi went round the outside on the entry to Les Combe, Thiim defended. The two briefly touched and both had to get out of the throttle with Thiim also having to gather a slide. Bamber saw his chance. He cut back quick enough to position himself on the inside for the following right-hander and despite Thiim's best efforts Bamber was through and off, running the following five laps to the flag unchallenged, finishing over two seconds ahead of Thiim and taking his second victory of his debut Supercup season.

Behind the top two, Klaus Bachler, Porsche's Junior driver, took the final spot on the podium, finishing well ahead of a tight pack behind Phil Eng, Kuba Giermaziak (who was leading the Championship before Spa), Ben Barker and Sven Müller. The German Müller finished fourth, but early contact in the race meant his pace was slower and he led the train of quicker cars home, much to their frustration, but ultimately to Bamber's delight who was able to take more points off Giermaziak and take a three-point lead into the next race to be held at Monza.



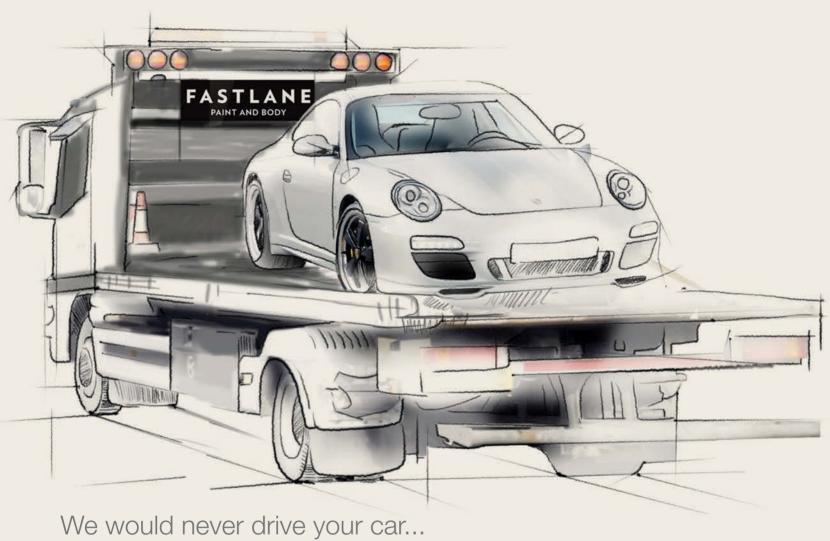




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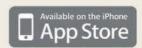
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## MEADOWS BACK IN THE TITLE HUNT

Double Carrera Cup Champion Michael Meadows got his 2014 championship back on track with a dominant performance at the Knockhill rounds of the series which saw him finish ahead of championship leader Josh Webster in both races.

Meadows, who had had to watch Webster go four races unbeaten, was back in title contention with a dominant victory in the weekend's first of two races. After sprinting away from pole he built an unassailable six-second lead over rival Webster and Victor Jimenez in third. It was Meadow's 20th Carrera Cup victory.

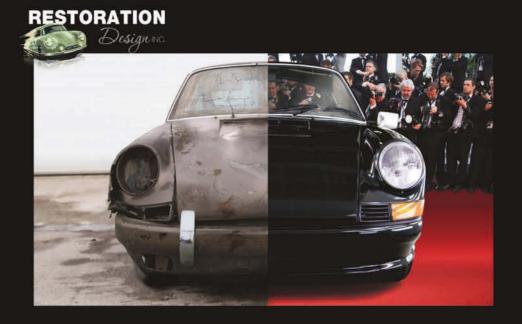
The weekend's second race was a similar affair, with Meadows once again leading Webster away from the start and building a comfortable gap, although never as big as it had been in race one. But as the 32-lap race progressed the leaders began to catch the slower drivers on the tight 1.2-mile Knockhill lap, and as Meadows hesitated passing Steven Liquorish, Webster closed the gap to less than a second and began to push Meadows for the lead. It took all of Meadow's experience to keep his head and hold Webster off to flag, crossing the line just half a second ahead of the Porsche Scholarship driver.

In Pro-Am1, newcomer Jordan Witt showed his class with two controlled victories that saw him and Rob Smith push each other all the way in both races as well as matching the pace of some of the Pro drivers too. In Pro-Am2, debutant Claire Brown scored a double victory finishing ahead of seasoned racers Peter Kyle-Henney and Steven Liquorish.

After 13 rounds, Webster leads Meadows by just eight points with six races still to run. With Justin Witt scoring two wins and Rob Smith finishing ahead of Justin Sherwood – and Karl Leonard absent for the second meeting in a row – the Pro-Am1 class is looking equally as tight.







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# Klaus doesn't seem to mind travelling all over the world showing off Porsche's race history



his year's Silverstone Classic produced yet another encyclopedic selection of historic racers and classic cars, covering acres of the old airfield with sparkling chrome and gleaming paint. Silverstone is perfect for this type of event because the site can absorb thousands of people without actually feeling overcrowded.

For the first time Porsche took part in the track action, running the Allan McNish Le Mans-winning GT1-98 in the '90s GT Legends on-track session.

As ever, veteran Motorsport 'tech Klaus Bischoff was on hand and he was coaching factory driver Brendan Hartley on how to drive the museum car. "It was the same at Goodwood," Klaus grinned. "I keep having to tell him he has to use the clutch to change gear!" Of course, young Hartley did a great job on the day and clearly thoroughly enjoyed his weekend at the Classic.

I really enjoy talking to guys like Klaus about Porsche days gone by and we spent some time admiring the flat-six twin-turbos in the back of the GT1-98 and a nearby 993 GT2R. The GT1's 550bhp 3.2-litre water-cooled engine represented a pinnacle of Porsche powerplant development. The core engine can trace its roots back to the

1982 956's 2.65-litre and Klaus reminded me he was a race engineer back then for the Ickx/Bell car's debut at Silverstone. That engine was itself a stepping-stone in the remarkable development story of the air/watercooled flat-six, being developed since 1978 by Hans Mezger's team as part of a family of race engines with capacities of 2.1-litres and 3.2-litres. If you ever wonder why the 996 Turbo and GT3 are finding their feet in the collectible Porsche marketplace, it's because of heritage like this, with their engines have direct lineage to the '98 Le Mans winner

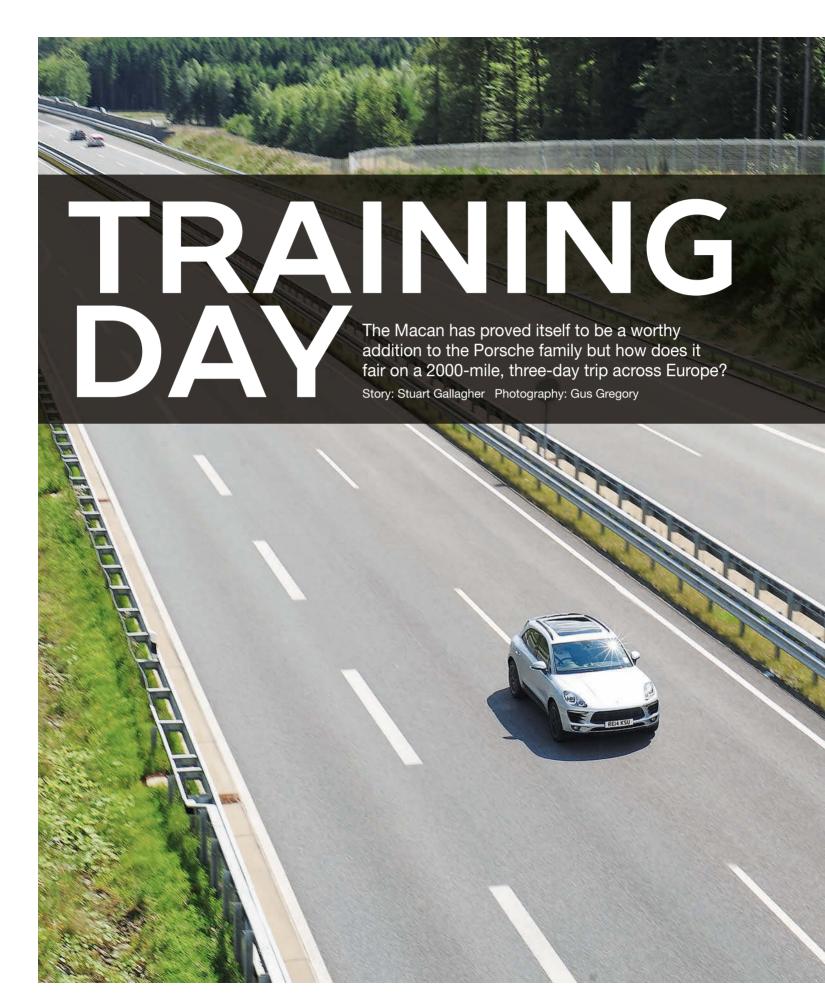
Klaus doesn't seem to mind travelling all over the world showing off Porsche's race history. You would have thought he was ready to hang up his Snap-Ons after some 40 years service to Zuffenhausen. He is among the last of the old regime left in full time employment and fortunately a change in German company law that allows staff to work on after reaching 65, means he will be looking after the museum cars for a while yet. He has recently moved back to the Motorsport Centre in Weissach after running the historic race cars out of the museum's workshop. "It will let the young guys in the LMP1 team know that they have a

tough act to follow!" he said. And he's right. Before Le Mans this year, he asked fellow veteran Peter Falk if he was going. Falk, a founder member of the Piëch-run Porsche race team that grew up looking left from the pits at La Sarthe, has a reputation for being a perfectionist and wanting everything absolutely right. He said he didn't want to go this year because it would be too frustrating. The new (LMP1) guys would still have so much to learn as it was their first time and they wouldn't want to listen to him! Klaus pointed out that while Falk himself must have run team cars at Le Mans on at least 25 occasions, he had 'only' won it on 14 or 15 times, so maybe the new boys could make some mistakes as well!

Klaus mentioned that recently he had some fun giving the 1960s 718W-RS Spyder a run on the Gaisberg hillclimb course with driver Marc Lieb. Known still as *Grossmutter* (Grandmother), this was the car in which Edgar Barth (Jürgen's father) had so much success, particularly in the *Europa Bergmeisterschaft* (the European Mountain climb Championship). The car has the twolitre sports car variant of the flat-eight Formula One engine, which in the day produced around 225bhp. It is one of

Porsche's better sounding engines. The Type 771 had a major makeover in 1967 with capacity increasing to 2.2litres. It worked and Vic Elford led the team to a stunning 1-2-3 victory at the 1968 Daytona 24 Hours. Many people think 1968 was the swansong of the 771 engine, but Klaus reminded me that the featherweight 909 hillclimber also used the 771. We also couldn't remember whether the 2.2-litre was the first engine to use titanium con rods, so Klaus called Hans Mezger to get the answer! As is typical of the man, Hans was able to instantly switch his mind to the very specific engines he had developed some 45 years previously. He did indeed confirm the 2.2-litre had titanium con rods, although he thought the race version of the 901 engine had them a year earlier. And the 909 was the last time the 771 eight-cylinder went into a factory race car.

My impromptu chat with Klaus and Hans made me realise what a priceless legacy these guys have left to Porsche, and, in particular, the leadership provided by first Ferdinand Piëch and later Helmut Bott in delivering an unrepeatable string of race cars. We enjoy them today in our own backyards only because of Klaus Bischoff's efforts ○







by a company known for building the best sports cars; and Porsche isn't prepared to stand by and watch Audi, BMW and Mercedes cash-in. And now that Porsche is under the VW umbrella it needs to be accountable, which means selling 200,000 cars a year, a target Porsche knows it's not going to reach with endless derivatives of 911s and Boxster/Caymans. SUVs sell, and the trend now is for small SUVs and that's exactly what Porsche has built in the Macan.

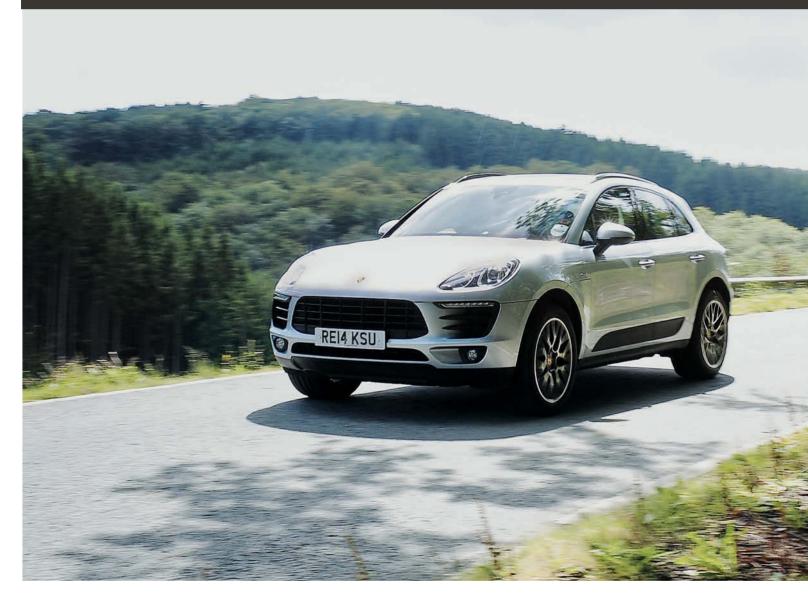
One of the reasons for the Cayenne's success is that it doesn't drive like a traditional SUV, although it doesn't drive like a 911

either, instead it steers and stops like a car. There's no wallowing ride, lurching dynamics and steamship-style reaction to steering inputs. It drives like a jacked-up estate car and if you removed all the off-road suspension and lowered the ride height Porsche would have a fast estate car competitor to take on Audi and Mercedes' efforts. Now there's a thought...

The Macan has a lot to live up to. Not only is its big brother rather good to drive compared to its rivals, but by being smaller and lighter the Macan should shine brighter, too, and have thicker traces of Porsche DNA threaded through it. On the car's international launch the signs

were very good. It was obvious Porsche had worked above and beyond to make the Macan feel and drive how you'd expect a car developed by its engineers to perform. A further drive of the Macan Turbo on track highlighted that the micro-SUV is more sport than utility. But both occasions were confined to a day behind the wheel and we needed – wanted – more wheel time to discover exactly what this newest of Porsche models is about. 2000 miles driving across Europe should do the trick.

The Macan of choice for this 'getting to you know you' journey is the S Diesel, primarily because the it's going to be the biggest seller. It





also costs the same £43,300 as the regular petrol engined S that features a turbocharged V6 petrol engine, which, while it produces 340hp as opposed to the turbocharged V6 diesel's 258hp, the latter generates a mighty 427lb ft of torque, a healthy 88lb ft more than the S and all of which is delivered nice and low in the rev-range where we the average driver spends most of their time.

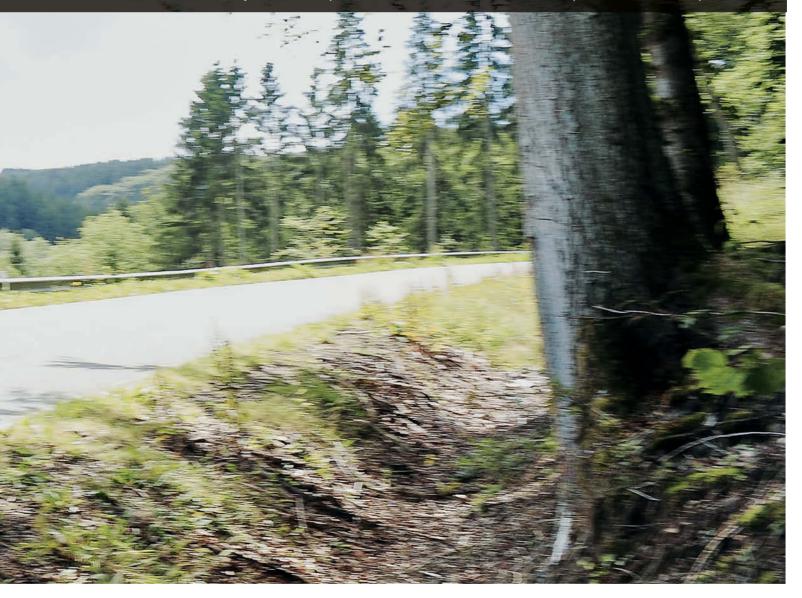
The Macan is not a car you would describe as handsome but it's well-proportioned and the front end has more of an identity about it than the Cayenne. It's low and wide to give it a more car-like look than that of an SUV. The optional

black side blades break up a slightly slab-sided profile but the rear of the car looks a little pinched and not as cohesive as the front end. Sitting on optional 20-RS Spyder alloys it looks more like a jacked-up hatchback than a small SUV, which we think is a good thing.

The first time you step in to the Macan the driving position feels a little alien. You expect to be sitting up high, peering over everyone and everything below, but you sit nice and low, with your feet stretched out rather than hanging in the footwell, with the 918-inspired multifunction steering wheel pulled nice and close into your chest. As for the rest of the

surroundings, think Cayenne/Panamera interior that's been configured to fit a smaller cabin space.

The Macan is surely going to be Porsche's multipurpose car, the model that will be expected to cover more bases than any other in the model line-up. The sports cars (911, Boxster, Cayman) have an air of practicality about them but their core remit is to entertain rather than be practical. That all three offer an element of the latter is purely a bonus. The Panamera is there to serve your luxury needs with a touch of performance its rivals can only dream of, whereas the Cayenne mixes



The Macan continues a design theme first started with the Cayenne and continued with the Panamera. The rear's non its greatest angle but expect to see plenty of it on a road near you soon





luxury and practicality with a performance level that is unlikely to be reached by the majority of its owners. The Macan has to combine every element of Porsche's model line. It needs to deliver like a sports car, not just have a set of acceleration and top speed figures to brag about but a chassis that can utilise said performance. It needs to be practical, ferry this, fetch that and slide into someone's life, most likely a family one, and not make them wish they had kept the massproduced MPV. And it needs to be a quality product offering a level of luxury that Porsche customers have come to expect. So we've loaded the cabin with your editor and a

photographer and the boot with every piece of photography equipment you can think of, which swallows it whole.

The 3.0-litre diesel is the smaller of the V6 motors the VW group produces but at this early stage of the Macan's life it was never going to get the Audi SQ5's bi-turbo V6 diesel engine. You'll have to wait 18 months or so for that. What the S Diesel does have is enough go to get you up to a reasonable pace. There isn't that traditional surge of torque more powerful turbo diesel engines have from low in their rev range and at first you're left thinking 'is that it?' But the power blends in smoothly and while it's gone by 4000rpm the seven-speed PDK gearbox has well

spaced ratios to get you beyond cruising speed.

Our first 500 miles are spent on the east coast of the UK, an area of this fair isle that road planning forget existed after the war. This can be the only explanation as to why motorways are non-existent and the major A-roads are still single carriageway. It makes for slow, tedious progress when the endless convey of 40-foot artics plod along at 40mph and passing opportunities are few and far between. The S Diesel has the guts to get passed most lines of traffic but on more than one occasion you think twice about a move, not convinced you'll pass the obstacle before a lorry appears coming the other way with no intention of lifting.





This is irritating because the Macan has a great chassis beneath it (our car came with standard
steel springs and optional PASM dampers), one
that encourages you to exploit all its available
performance at every given opportunity. It will
understeer quite early on in a corner, but corners
remarkably flat with the steering loading up just
enough to tell you what's going on and what's
required of you. After experiencing a couple of
corners you readjust your angle of approach to
quell the understeer and allow yourself to get on
the power as early as possible to drive through
the corner. The multi-link suspension employed
front and rear provides a more precise and agile
car than is expected in this market. The PTM

# Engine: 2967cc V6 turbo diesel Transmission: Seven-speed PDK, PTM four-wheel drive Chassis: Multi-link with coil springs and gas dampers Brakes: Four-piston callipers, ventilated discs Weight: 1880kg Top speed: 142mph (claimed) O-62mph: 6.3-seconds (claimed) Fuel consumption: 46.3mpg (claimed) PASM 18-way adjustable sp Bi-Xenon Dynamic Li Roof rails in black Black window surrou Heated front seats Sport Chrono Packag PCM 3.0 inc sat-nav a BOSE surround soun Panoramic sunroof

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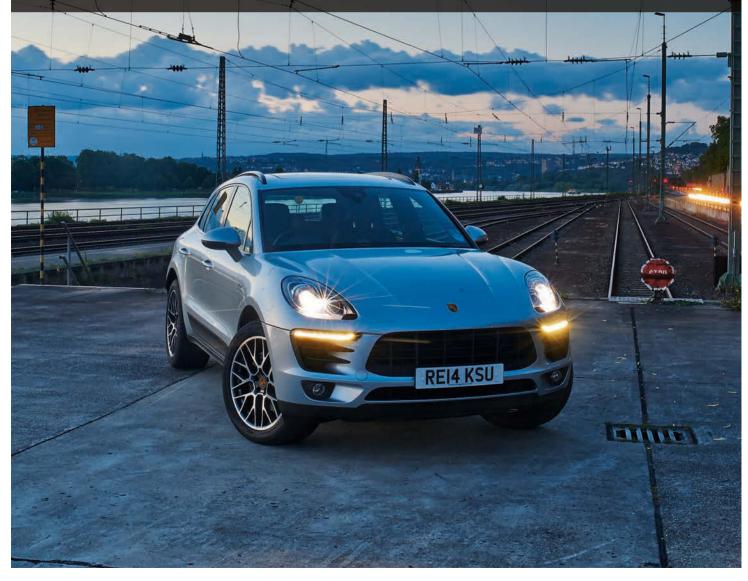
four-wheel drive is unobtrusive, the drive always feeling rear-biased which makes for a really well-balanced setup. So, cross-country it's quick and more fun than you give it credit for, but for all this agility on a stretch of single carriageway across Lincolnshire chances are you'll have to follow the meandering trails of Eastern European lorries carrying rotten fruit because that torque band is rather too narrow and the top end a bit light.

That's really the biggest, and only, criticism we could level at the diesel Macan, although the standard brakes did result in a soft brake pedal after numerous back and forth runs for the camera up and down a small forest pass; a situation that wouldn't occur with the optional PCCB stoppers, but in reality all it needs are the bigger rotors and callipers from the Turbo. Once we hopped across to mainland Europe the topography allowed the baby Porsche to shine. Where it will cruise

pretty silently at 70mph in the UK it will do so 30mph quicker on the Continent. On the faster, flowing cross-country roads that link Belgium and Germany it covers ground at a wholly unexpected pace and still manages to involve you in the process. And on the autobahn it lopes along at 120mph all day long, with wind noise unobtrusive, tyre roar kept to a minimum and the Macan feeling rock solid. But, up your pace to above 130mph and onto the car's 142mph maximum and the front-end goes too light for it to be a comfortable cruising speed with the car becoming susceptible to the very slightest of crosswinds. A minor defect that will affect the tiniest of Macan drivers, I'm sure. But it's a Porsche and the first one I haven't felt comfortable running for long distances at near to its maximum speed.

The Macan entertains, is practical, quick and performance-orientated and after a tortuous tenhour journey that should have taken half that

time it proved to be comfortable, too, helped in no small way by the optional 18-way adaptive sports seats. There is no doubt that Porsche has built its small SUV with a greater emphasis on sport than utility, it feels the least off-road off-roader you can imagine, so in this respect Porsche has hit the nail on the head. Despite this, every mile I covered (and for days after Porsche took it back) I couldn't stop thinking what the Macan would be like if Porsche ditched the PTM four-wheel drive system and the two rear doors, made it rearwheel drive, and fitted road car-biased suspension and associated ride height in place of the off-road orientated setup it comes with. Surely then Porsche would have one of the best premium hot hatches on the market and at last add a sports car to its line-up. The Macan is really very good but it could lead to something much better: a sports car in the traditional Porsche sense



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### Adjustable Control Arm Links

986/996/987/997

If you're serious about how your 993, 996, 997, Cayman, or Boxster handles, you should upgrade the rear suspension with adjustable control arm links. There are two major drawbacks to the factory links: 1) You can't lower your car and maintain proper suspension geometry. The factory links create too much toe-in, which cannot be adjusted out, creating handling problems and excessive tire wear. 2) The factory links have rubber bushings, which make handling imprecise, especially in performance driving when suspension loads are highest. Rennline adjustable control arm links solve both these problems. Manufactured from 6061 aluminum and feature a turnbuckle design that allows each arm to be lengthened or shortened as needed to restore proper suspension geometry on a lowered Porsche.













his may be one of the biggest clichés in the book, but the last time I drove a 991 Turbo S at no point did I consider that its 3.8-litre, twin-turbocharged motor needed any more power. After all, 560hp and 516lb ft of torque is plenty to focus the mind and alert the senses. Isn't it? Not if you are a customer of Techart, the Porsche specialist that has a clear focus on pushing Porsche's turbocharged engines a little harder than the factory first allows.

The Leonberg-based specialist has developed this, a 620hp Turbo S that also offers a 654lb ft whack of torque, too. That's the same power, but more than 130lb ft more torque than a 997 GT2 RS fed through the oh-so-easy-to-use standard seven-speed PDK gearbox as opposed to the RS's

old school H-pattern manual. And a GT2 RS is a ferocious, feral beast, so what does that make Techart's Turbo S?

Initial thoughts are of a slighter tougher Turbo S. The Sport spring kit fitted is the only modification to the car's chassis and the effect is a ride that removes some of the standard Turbo S's suppleness and all but eliminates body roll in all but extreme circumstances. The sport exhaust, which is still switchable and utilises Porsche's own cockpit controls, has a deeper tone at tickover and a thicker texture as the tacho sweeps through the rev range. The PDK 'box shuffles through the gears with no sense of being highly strung or constantly trying to reign in a flat-six that has nearly double the horsepower of a Boxster S. But Techart's engineers haven't slaved

away over their laptops so we can ease our way through the German hamlets that populate the surrounding area of their west of Stuttgart base. It's time to head for the for the hills.

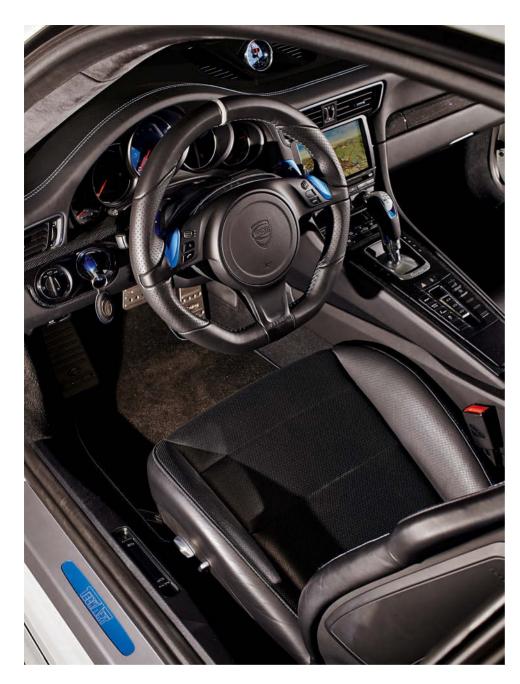
The performance increases have been achieved by Techart installing what it calls Techtronic, a complex ECU remap that not only manages the increased boost pressure from the pair of VTG turbos but every parameter therein.

There are some that think the switch to electronic software to control everything in a car has made engine tuning easy, but we'd suggest you don't say this in front of a modern day engine tuner. The systems are incredibly complex, made so by the manufacturer who doesn't want the likes of Techart to go diving into its programming and increasing power and











torque levels at will. It's not because the manufacturer has developed an engine to its peak performance and tolerances, but the likes of Porsche need to leave room for expansion so it can introduce more powerful and faster models later in the car's model cycle. Techart releasing a 620hp Turbo S within 12 months of the factory car going on sale can cause Porsche's product planners a niggling headache when customers start asking for a factory built 911 with the same power and performance as a Techart's.

Running around the hills surrounding Weissach with the Turbo S's engine map left in its most docile mode, this 991 is markedly quicker. Left in Normal or Sport mode the engine produces the same maximum of 620hp but 'only' 612lb ft of torque and this is plenty to start giving you and the chassis a workout. In either mode the PDK shift feels sharper than the standard car, the anodised paddles on the back of the steering wheel needing little effort from your finger tips to select another higher or lower ratio. It's a more tactile mechanical feeling action compared to the factory paddles, too, not that Techart claims to have adjusted the shift action, rather the control surface is nicer to touch than the factory one.

With little effort you're travelling much quicker. Techart has stretched the torque range in the lower 612lb ft setting from 2500rpm to 5000rpm compared to the standard 516lb ft which stretches from 2200rpm through to 4000rpm. This means that not only is the shove in the back a bigger one but it's shoving you

down the road harder and for longer. Combined with the mix of long straights and medium-to-slow corners in the Weissach countryside, you reach serious three figure speeds between corner exit and the next braking zone no matter which gear you exit the corner in.

Second gear corner exits require a firm grip of the wheel and a sharp eye for the rev limiter. Do the same in third and you think the rear tyres are ripping chunks out of the surface. Fourth just leaves your jaw on the floor as you try to comprehend how an engine has gone from such low crank speeds to such dizzying rotations without tying itself in knots.

Then you switch to Sport Plus. The power remains the same but the additional 44lb ft of torque makes itself noticed along with the



The heart of Techart's conversion is its mighty 620hp engine, but the company also offers a new aero kit, wheels and Sport chassis springs. Inside the car the company's in-house trimming department can deliver your most extreme ideas



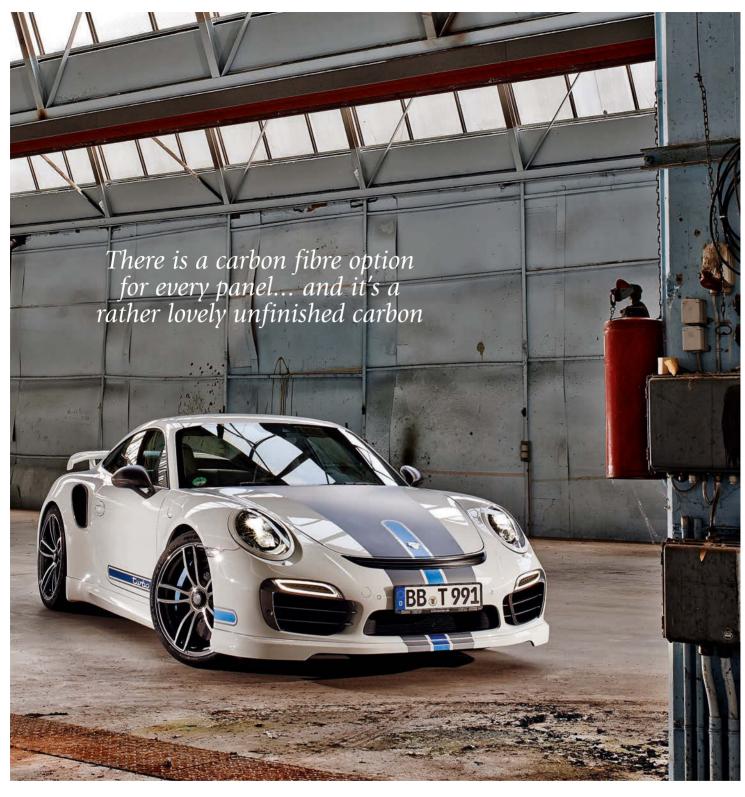












wheel with PDK buttons allowing you to mix a multi-function steering wheel with the more ergonomically sound paddles.

With manufacturers, especially Porsche, building more powerful, complex and technologically-advanced sports and supercars the aftermarket tuner should be looking at a bleak future. But these independents thrive on looking for the advantage and supplying the niché that wants something the factory can't offer. "Some of our customers only want the

engine upgrade; everything else they keep standard," says the Techart's PR chief Bastian Schafer. "If they pull up alongside another Turbo S they want to know they are quicker than that car but without the other driver knowing. Tuning isn't always about being able to show off that you can afford something more than the next guy."

With Techart, like many others in their industry, focusing solely on engine upgrades for turbocharged cars ("the cost to tune a naturally aspirated engine and the results we can achieve

isn't worth it and the customer base just isn't there," says Schafer) and with manufacturers moving towards models with only turbocharged engines, tuners are going to have an even bigger part to play than some have imagine. As the manufacturers turn to forced induction in a bid to increase their engine's efficiency ratings, so companies such as Techart will flourish as they tap into the unused performance these engines offer. In the 911 Turbo's 40th year it appears its future has never looked stronger  $\bigcirc$ 



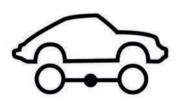


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## George Follmer and the 917/10

Think of Can-Am racing and Mark Donohue immediately springs to mind, but there is another driver who delivered the success Porsche craved that all too often goes unnoticed.

Story: Andrew Frankel Photography: Porsche Archive

ery soon, there will come a time when every single Porsche model will carry at least one turbocharged variant. The 911, Panamera, Cayenne and Macan do already, but if the rumours are to be believed (and they are) even the Boxster and Cayman are heading that way, thanks to turbo versions of a new flat-four engine Porsche is known to be readying for sale.

The history of the turbocharged Porsche road car begins 40 years ago with the launch of the original 911 Turbo, but that is not where the

journey to Porsche's forced induction future began. For that you need to look back a couple of years earlier to the transatlantic heroics of one man you may barely have heard of and the most extraordinary racing car the world had yet seen.

George Follmer. He's the bloke I'm talking about. If you follow only Formula One you'll probably never have heard of him: he only did one season, during which he started 11 races, finished just six and scored points only twice, his best being an impressive third in Spain. But that was it. In sports car racing his record is even

more indistinct, his only notable achievement was helping to pedal a Porsche 956 to third place at Le Mans in 1986, years after he had retired from the sport.

On the other side of the Pond where he was, and remains, far better known, he was still no Mario Andretti. He did the Indy 500 a few times but never finished higher than 15th, he won a couple of Formula 5000 races and did a few NASCAR rounds without troubling the top step of the podium. Then, and by luck both good and bad, he found himself driving a Porsche in

In 1973 George Follmer was back in a 917/10 but this time as a privateer entrant

the 1972 Can-Am series. And his fortunes there were different.

Imagine a race series today where you could write the rules on the back of a beer mat. 'For this series we mandate that all cars must be open and have, er, space for two seats.' And that, pretty much was it. How big an engine could you use? As big as you could fit in your car. What minimum weight limit must you work to? As light as you can make your car.

Porsche had not been total strangers to this mad, lawless form of motorsport, Jo Siffert having entered a works-backed 917PA Spyder as early as 1969. But for the next three seasons Stuttgart would have its hands full, using the conventional 917 Coupé to grind to dust all opposition in the World Sports Car Championship. But it did its job too well, and for 1972 a 3.0-litre sports car formula was conceived if not specifically then at least tacitly to exile the 917. Now ineligible but not yet ready to hang up its spurs, the 917 did what all good outlaws did, and headed for the wild west of closed wheel racing.

By that time McLaren ruled the Can-Am roost like few others had in any form of motorsport. Of the 43 races that took place between the start of 1967 and the end of 1971, one McLaren or another had won 40 of them, dropping on average less than one race per season despite no shortage of opposition. And what Siffert had proven beyond a doubt was that an open version of an otherwise fairly standard 917 was not going to do anything to alter this status quo.

Porsche's analysis of the situation revealed three possible routes. The first was simply to make the most of what was already there. By 1971 the standard Chevrolet big banger V8 was producing around 750hp in the back of a McLaren, or around 140hp more than a five-litre 917. But the engine would go to 5.4litres and 660hp, which would cut the deficit significantly, even if the space-frame Porsche was, and would always remain, heavier than the monocoque McLaren. But Porsche wasn't looking to make up ground on McLaren, it wanted to leapfrog the orange cars completely, so that plan was going nowhere. Plan B actually made it into the back of the Spyder and was so mad only the combination of free-thinkers at Porsche and Can-Am's crazy regulations could have come up with it. If one 917 engine was not enough to do the job, why not use one and a third? A flat-12 with another couple of cylinders added on each end of the 5.4-litre engine would displace 7.2-litres which was still less than the American motors displaced, yet generate 880hp which was more.

The 16-cylinder engine was duly built, tested in an elongated Spyder, still exists and any time I see anyone from the Porsche museum I exhort them to restore it and run it in the back of the







PA Spyder: I'd buy a ticket to almost anywhere just to hear it. But there were problems, even beyond the obvious size, weight and consequent handling issues of using such a mighty motor. A 7.2-litre flat-16 would not be short of power but relative to an 8.4-litre V8 it would be desperately short of torque, perhaps even more an important commodity for such cars. Moreover, it would be expensive and time-consuming to develop. Mark Donohue, who will be appearing more fully in this story shortly, said the engine was so large and complex "you could hear one end start up before the other". If only there was something they could simply bolt to the existing engine that would near enough double its power and produce enough torque for which not even

McLaren had an answer. Four-valve cylinder heads would have provided a sizeable step in the right direction, but there wasn't enough space in the head for them to be cooled by air alone, so they'd have to be separately cooled by water, which was far too much work for far too little gain. But there was a rather simpler alternative.

Turbocharging wasn't new, even in 1971. Far from it, turbocharged aircraft had been around since the 1920s and even in the racing world they were not unknown. Indeed, for fans of weapons-grade automotive trivia, the pole position for the 1952 Indianapolis 500 was secured by a car powered by a turbocharged diesel engine. But in all normal walks of road and racing life, turbos were, if not unknown then

certainly no more than footnotes in the history of car development.

But the technology was perfect for Porsche, at least in theory. By forcing fuel and air into the engine at better than atmospheric pressure, you got a bigger bang and therefore both more power and torque without the need to build a new engine and a new chassis to take it. But Porsche was about to realise that the reality gap between what worked on paper and what worked in practice was rarely larger than in the weird, wacky and largely unchartered world of turbocharging.

Though the new turbo engine was running by mid-1971, one of its bigger problems was it was near enough undriveable. Testing was done both

## If one 917 engine was not enough to do the job, why not use one and a third?



by Jo Siffert (who'd sadly be dead before the year was out) and Willi Kauhsen. The issue was that to accommodate hitherto unimaginable boost pressure, the compression ratio of the engine had to dropped through the floor, which meant that when the turbo wasn't boosting, the engine had all the bite of a comatose Labrador. You had to floor the throttle entire seconds before you wanted the power – often as you were turning into a corner – and if you misjudged it you would be in the scenery before you could say "opposite lock".

Which is where the Americans enter the picture. Arguments over who tamed the car now known as the 917/10 will probably rage forever but it's fair to say it was a joint effort between

Porsche and Penske Racing, the team it had appointed to race its cars in Can-Am. Donohue was Penske's main driver, an engineer by training, who was already a Trans-Am champion and who would win the 1972 Indy 500 before his first race in a 917.

The culture clash between these two proud but different organisations was considerable but once trust had been established, progress was made. According to Donohue's autobiography (*The Unfair Advantage*) the fundamental difference was that Porsche was focused on seeing how much power it could prise from the engine, while he and Penske with a wealth of Can-Am experience already under their belts, wanted a car that could actually be driven. At first

the engine was so raw and cussed that in early testing it could barely match the times of the non-turbo engine, despite an additional 300hp.

It took an age to sort out, with work going on in both Germany and the US. According to Donohue the problem turned out to be Porsche and Bosch had the fuel system setup to work only on full boost and above 5000rpm. When Donohue asked why no attention had been paid to how the engine behaved below 5000rpm, he was simply told "it does not run there". But by now the teams had developed mutual respect and understanding and Donohue, using nothing more than intuition, helped Porsche produce a complete map of the engine's entire fuelling requirements, from 2000-8000rpm and all



throttle positions and load conditions. Bosch then went away and came back with a fuel system that worked. On its first run the car took nearly a second off the Weissach lap record and, straight out-of-the-box, produced the same 880hp promised by the flat-16, but with the Chevybusting torque it lacked. With work to optimise the suspension and aerodynamics carrying on in parallel, the car was ready, just in time to make the first race of the 1972 Can-Am season.

McLaren had not been blind to the Porsche threat and had produced a brilliant new design in the M20, while it too turned its attention to a turbo version of the Chevy V8. Had it ever been made ready to race, the story of Porsche's participation in Can-Am might have had a very different tale. In the event, McLaren turned up at Mosport for round one of the championship with a normally aspirated engine and when Mark qualified the brand-new Porsche on pole, 0.8-seconds faster around a very short lap than the quickest McLaren, the winds of change picked up a knot or ten. What few knew at the time was Donohue was sand-bagging furiously and the real gap between Porsche and the best of the rest was easily two clear seconds per lap. Interestingly, Penske were still so terrified of the turbo motor's savage manners, they brought a

spare 917/10 with a normally aspirated engine, just in case it rained...

In the race Mark duly disappeared and cruised around in the lead for 20 laps until something went wrong with the turbo that took three full laps to fix. Yet he still came second to Denny Hulme's McLaren, two laps clear of the rest of the field. For everyone else, including privateers in non-turbo Porsches, it was already looking like a very long season.

But then, in testing for the next round at Road Atlanta, Mark had an accident eerily similar to that which had killed Bruce McLaren in a Can-Am McLaren while testing at Goodwood in 1970. His rear bodywork came loose and sent the 917 cartwheeling down the track. By the time he came to rest, the entire car from the steering wheel forward had gone. He was still strapped into his seat surrounded by nothing but a few twisted tubes and a now burning flat-12 engine. Despite one leg bent at the knee by some 45degrees from the conventional, Donohue managed to undo his straps and drag himself away from the wreck with his hands. He was safe but he'd not race a Can-Am car again for three months, by which time the bulk of the season would have passed.

Remember George Follmer, a man introduced

to you almost 2000 words ago? He's late on to this stage but that will not deny him his starring role. He's a man of modest racing achievements next to the superstar Donohue and, at 38 years old, past his racing prime. The telephone rings. It's Roger Penske asking him to get to Road Atlanta pronto where he'll need to race a car unlike anyone save Mark Donohue has ever raced before. What does he do? George gets on the plane...

Follmer is still with us aged 80 and, by accounts both then and now, not the easiest of characters with whom to get along. Tough and with a temper described as "legendary" by his biographer Tom Madigan, if anyone could tame the 917/10 by strength of character alone, Follmer was that man.

I think his achievements at Road Atlanta that weekend are among the most undervalued in all of motor racing. He got in a car that was still absurdly difficult to drive, with several hundred horsepower more than anything else he'd ever sat in and lapped the entire field.

Consider too the pressure: Porsche had not yet won in Can-Am and many of the company's staff thought he was the wrong man for the job; the burden of expectation on Follmer's shoulders must have been close to intolerable.



Right: Away from Can-Am Follmer raced the 917/10 at the Nürburgring in the ADAC 300km

Yet he didn't put a wheel wrong.

A problem with the engine restricted him to fifth place at the next round at Watkins Glen but at mid-Ohio he won, staying out on slicks when everyone else went for wet tyres when it rained. Try to imagine that for a second: driving a 917/10 now developing around 1000hp, on slicks in the wet. I can't.

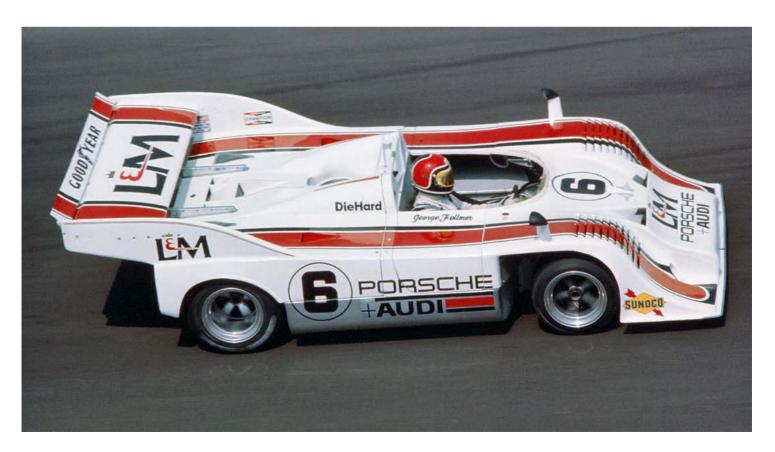
Next time out, he missed first qualifying at Elkhart Lake and it was wet for the second session so he wound up 14th on the grid. Not that it

mattered much, by the time the chequered flag fell he'd lapped the field again.

He should have won the next round too at Donnybrooke, despite Donohue's return in a sister car. Mark was sidelined by a puncture that pitched him into a 190mph spin and George led with ease until running out of fuel with half a lap remaining. It was George's turn to have a flat at Edmonton so Mark won and by Laguna Seca such was the car's advantage over the rest of the field, Penske could pick and choose his winner.

Donohue led for most of the race but much to his dismay was forced to let Follmer through at the end as he alone could win the championship. This he duly did at the last round at Riverside with the racing driver's holy trinity: pole position, fastest lap and victory.

George Follmer wasn't even meant to enter the 1972 Can-Am championship and missed the first round, yet he still won the title with a total of 130 points. The next best driver was former F1 world champion Denny Hulme driving for the hitherto



near-unbeatable McLaren; he finished with just 65 points, exactly half Follmer's total.

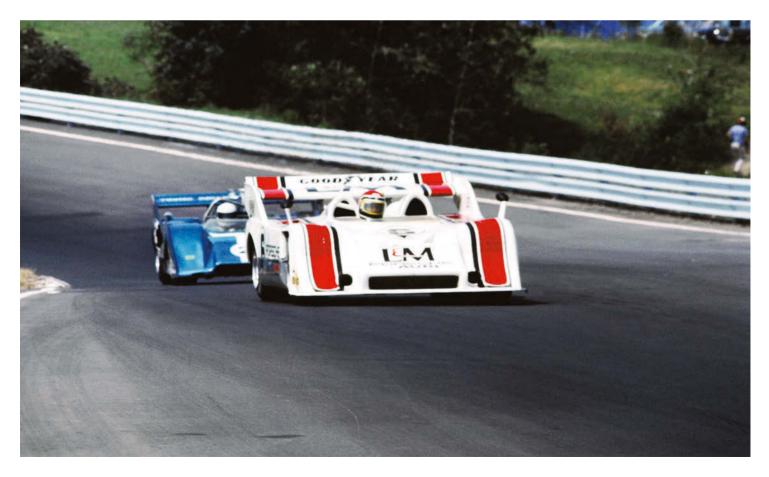
Instead of coming back stronger with the turbo Chevrolet engine, the works McLaren team which had been in Can-Am since its inception in 1965 fled the series.

On the strength of his 1972 performance, Follmer might have thought he'd a right to stay with the team for '73. But Donohue had other ideas. By his own admission he was a selfish racing driver who'd described seeing George in the 917/10 as akin to watching a man sleep with his wife. He convinced Porsche it could save a stack of money and get the job done with a one-car team, that car to be driven by Mark. And he was right. He won six of the eight rounds in the 1200hp 917/30, with the other two going to private 917/10s, one of them driven by George. That autumn, using lessons learned from Can-Am, Porsche showed its first concept of a 911 Turbo road car.

So next time you settle into your turbocharged Porsche, whatever variety it may be, spare a thought for how it got that way. The combination of Mark Donohue and the 917/30 are considered the true legends of Porsche's overwhelming of Can-Am in the early '70s and rightly so. But it is only fair to remember the car that started the process and the man who parachuted in at the last moment who made it happen: George Follmer and the Porsche 917/10  $\odot$ 



George Follmer wasn't even meant to enter the 1972 Can-Am championship yet he still won the title





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# Back to the Fort

This year Porsche returned to top flight motorsport, but the 919 isn't the company's first Le Mans prototype.

Story: Brian Laban Photography: Gus Gregory

n 2014, Porsche has returned with a full factory programme to the sharp end of sports car endurance racing, at Le Mans and the World Endurance Championship, bringing the all-new 919 Hybrid to the premier, 'manufacturer' division of the LMP1 Le Mans Prototype ranks.

It's a much-welcomed return for a marque that still holds the record for the number of outright wins at Le Mans (16 between 1970 and 1998). A return which has already shown that Porsche has bounced back all guns blazing – and as a force immediately to be reckoned with, even in a radically new and ultra-competitive era.

That's a big mark of respect, given that by the time the 919 Hybrid made its debut at Silverstone in May, it had been almost five years since a Porsche last contested the prototype classes at Le Mans. Furthermore, during that sabbatical, technology in the sport had moved on more dramatically than at any other time in the race's 91-year history.

This time, Porsche is clearly shooting for the stars, with sights set on extending that record tally of outright wins. Last time, on the face of it, they settled for the moon, having pointedly turned their backs on LMP1, where Audi was well into a period of domination, and contested

the 'second-tier' LMP2 category. But far from being a support act, for four glorious years between a winning debut at the end of 2005 and a rule-enforced retirement by 2010, Porsche's fabulous LMP2 RS Spyder punched massively above its weight.

Rewind to 1998 and the end of the last Porsche Le Mans era. A winning sign-off, with the 911 GT1-98 of McNish, Aiello and Ortelli leading team-mates Müller, Alzen and Wollek. It was the end, too, of an era when Le Mans rules favoured the 'production-based' GT1 class over the traditional prototypes. That GT1 interval began with Porsche's 14th outright win in 1994, when the Dauer 962 LM GT Porsche beat the Toyota 94CV prototype. The Dauer Porsches, so far as the rules were concerned, were GT1 cars and as such were allowed up to 600hp. They were also, under the thin disguise, 962s - based on a road-going version of Porsche's race car, built by Jochen Dauer and trotted around the motor show circuit. McLaren continued the GT1 wins in 1995 with the BMW-engined F1 GTR (which was a lot closer to a genuine production car), before two more Porsche prototype wins in 1996 and 1997 - both for the Joest TWR Porsche WSC, as the old-school fought back.

And then there was that brilliant 911 GT1-98

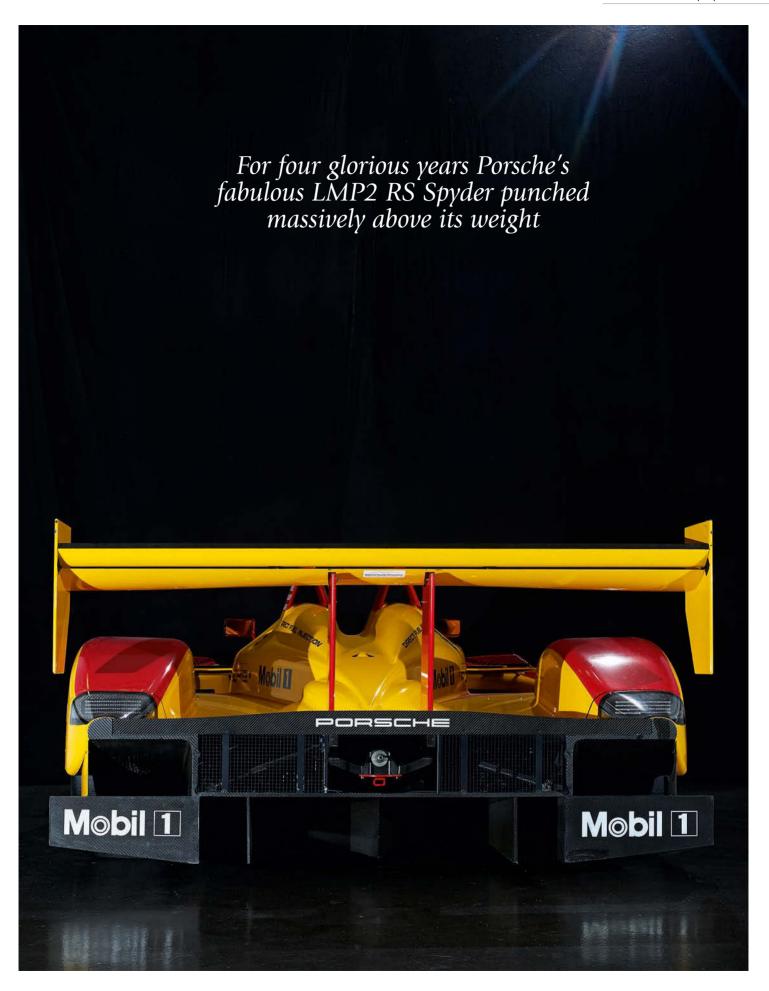
one-two finish. But not with a prototype: from 1997 the mid-engined, water-cooled, 3.2 twinturbo 911 GT1 was officially listed as a 544hp, 194mph 'production' model. At £457,057 Porsche planned a run of 30 cars and quickly took orders for most of them - seven of which would join two works cars at Le Mans in 1998. But no sooner had they arrived in the paddock it was the end of the road for the controversial GT1s. The start of a new prototype era, led by BMW in 1999, was underway and before long was dominated by Audi with pretenders to the throne from Bentley and Peugeot coming and going and more recently, Toyota admirably taking the fight to Audi. The 1998 race was also the end of Porsche's factory involvement as a front-running team, coming in the company's 50th year.

Porsche's eventual return to the prototype ranks was surely inevitable, but when it came, the big surprise was that it was in LMP2, not LMP1. But what an LMP2 car! In a class dominated by privateer teams, smaller, specialist chassis manufacturers, and nominally less exotic, less powerful engines, the 9R6 RS Spyder was instantly the stand-out car.

The decision to build an LMP2 rather than an LMP1 was essentially commercial - not because it would be a cheaper car to develop or build but because in true Porsche tradition it would become a customer car; and the potential customer base in LMP2 was substantially greater than in LMP1. It could be commercially viable because sports car racing had rarely been stronger, with Le Mans itself topping the pyramid, but strong ACO-sanctioned offshoots (with essentially similar technical regulations) in the European and American Le Mans Series. ALMS, championed by entrepreneur car-builder Don Panoz, had evolved from a one-off 'Petit Le Mans' race at Road Atlanta in 1998 to a full series in 1999, including races in Europe and Australia. That in turn led to a dedicated European series, while ALMS concentrated on US races only; and that meant potential entrants needed cars.

In effect, the RS Spyder was commissioned by Porsche Cars North America and Porsche Motorsport North America on behalf of racing









customers eyeing the ALMS LMP2 category. But it was developed at Porsche's R&D Centre in Weissach near Stuttgart, and its long-term future clearly included Europe as well as America, and ultimately the jewel in the crown, Le Mans itself – although not yet.

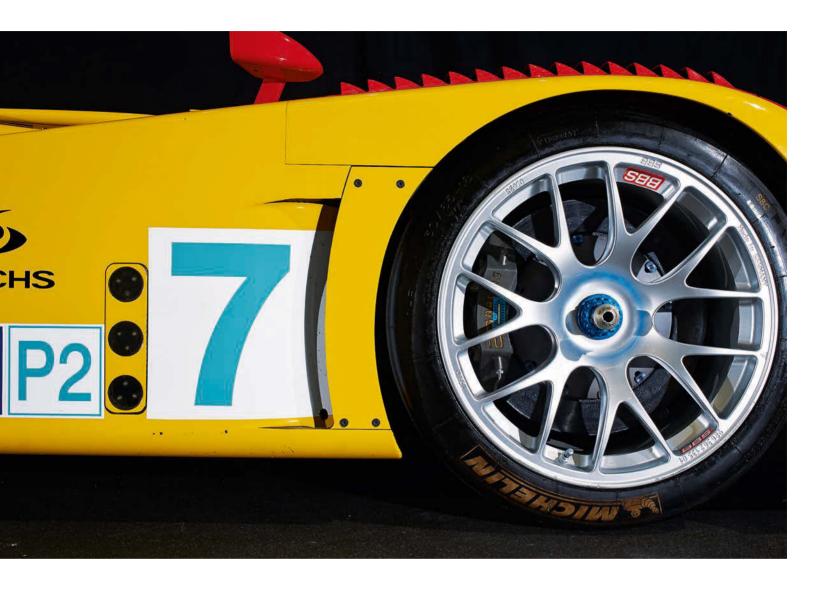
The RS Spyder was designed to conform with a new set of rules evolved for 2006 by Le Mans' governing body, the Automobile Club de l'Ouest, and similar rules governing the ALMS. The plan was to contest the full Series in 2006 but to have the car ready for a shakedown debut by the end of the 2005 season, and that's what they delivered.

The first US 'customer' (but very conspicuously a works-supported one) would be Penske Racing, who would run two cars through the 2006 ALMS season. Like Porsche, Penske could be relied on to do the job properly. Roger Penske is American racing royalty, whose businesses have more spines than a porcupine. Some 2014 figures: 39,000 employees worldwide at more than 3300 locations in North and South America, Europe, Asia, Australia and New Zealand. Penske is also big in shipping, moving more than 200,000 vehicles in the USA alone. His interests also include component manufacturing, car and commercial vehicle sales

and rentals, and business equity investment.

As well as being able to afford the Porsche programme, Penske Racing could bury pretty much any other potential entrant for experience and success: a racer in the 1950s, a team owner since the mid-1960s; 15 Indy 500 wins as an owner between 1972 and 2009; race-winning F1 constructor in the 1970s; prolific winner in NASCAR, IMSA, you name it, Penske Racing had either entered it or won it.

Penske is known as a tough customer. Allegedly, when Carroll 'Cobra' Shelby was waiting for a heart transplant he asked the surgeon if it was possible to have Penske's. When



the surgeon asked why, Shelby said: "because it's never been used."

But you'd go a long way to find anybody more respected for what they've achieved. And Penske had already had major success with Porsche – Mark Donohue won the 1973 Can-Am Championship with Penske's mighty Porsche 917-30, and a couple of years later set a world's closed-course speed record at 221.2mph with the same car.

The Porsche Penske bought into in 2005 might not have been an LMP1 car, but it was absolutely at the cutting edge of LMP2, with a completely new engine, transmission, and

chassis, all reflecting Porsche's latest technology and design thinking, and Penske's budget.

It was based on a carbon-composite monocoque with fully adjustable double-wishbone suspension all-round, the front links picking up directly on the tub, the rear ones to the transmission casing. It used torsion-bar springs, pushrod-operated gas dampers and adjustable anti-roll bars. It had internally vented 15-inch (380mm) carbon brake discs at the front and 14-inch (355mm) vented carbon discs at the rear, with twin master cylinders, six-pot AP callipers, and adjustable brake balance. It had power-assisted steering and a tyre-pressure

monitoring system for tyres supplied by Michelin, on 14-inch wheels.

The longitudinally mid-mounted MR6 engine was a 90-degree, four-cam, 3.4-litre V8 (LMP2 had an eight-cylinder ceiling), with four valves per cylinder, dry-sump lubrication, Bosch injection and individual throttles for each cylinder. It was light, and compact with a low centre of gravity, and using the ACO-mandated LMP2 air-restrictor it claimed 480hp at 10,100rpm (640hp/tonne) with 273lb ft torque at 7500rpm, which for a racing prototype is pretty flexible.

The engine was mated (via a triple-plate



Sachs/ZF carbon clutch) to a Porscheengineered, fully load-bearing six-speed constant mesh GR6 transmission, with electro-pneumatic sequential shifts operated by paddles on the back of the Alcantara-covered 'cow-horn' steering wheel. The wheel (shaped to help quick driver changes) also carried buttons for radio contact, traction control settings, headlight flash, data

retrieval (to the digital display), pit lane speedlimiter, drink dispenser, neutral selection and an 'overtake' function, which gave a brief power increase when it was needed.

Outer bodywork used carbon fibre and Kevlar composites, while the adjustable rear wing was designed for maximum aerodynamic efficiency within the ACO rules, with the lowest possible

weight and an eye on ease (and cost) of replacement. For its original ALMS role the RS Spyder weighed in, quite comfortably, at the LMP2 minimum of 750kg.

Penske based the cars in its own section of a massive and impressively swish new multi-series racing facility at Mooresville, North Carolina – another quantum leap from the early racing days



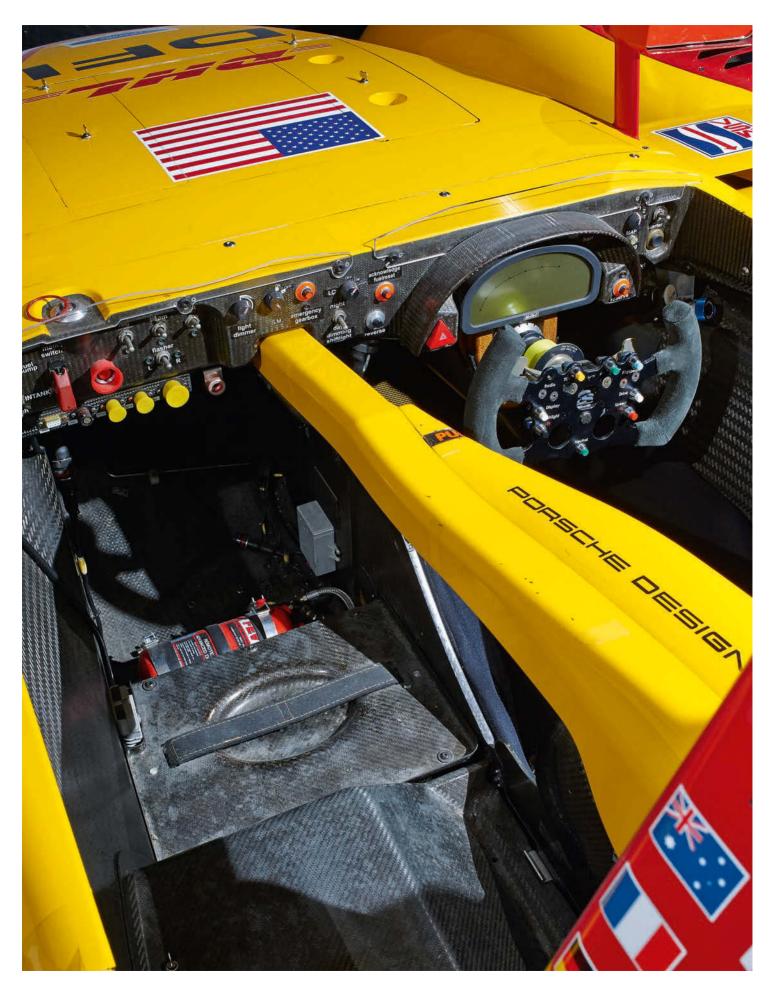
of working under a canvas gazebo at track-side, but absolutely typical of what had made Penske the team to beat.

Then there was the colour-scheme: a vibrant yellow with red highlights recognising the support of DHL couriers, with splashes of bare, black carbon fibre aero trim, and nods to suppliers Mobil, Sachs, ZF, Snap-On, Adidas and,

of course, tyre partner Michelin.

Penske's 2006 driver pairings would be Timo Bernhard with Romain Dumas in one car, and Sascha Maassen with Lucas Luhr in the other. The cars were delivered during the 2005 summer and the RS Spyder's first race was at the ALMS season finale at Laguna Seca, near Monterey, California, in mid-October, where Penske entered a single car for Luhr and Maassen. It dominated the LMP2 class and finished an impressive fifth overall. The RS Spyder was on its way.

Not surprisingly, that win sent the Penske RS Spyders (both cars from now on) into the full 2006 ALMS series with huge expectations and they delivered everything asked and more. Seven class wins included an astonishing outright one-





## The RS Spyder was up against more powerful cars, but... it took a sensational win

two victory at Mid Ohio beating all the LMP1 cars, including the dominant Audis, giving Porsche its first outright victory at this level since Le Mans 1998. The RS hit the ground running, claiming the Team and Manufacturers titles, and Maassen the Driver's Championship.

Successful as the RS Spyder had been in 2006, no-one was letting the grass grow under its wheels for 2007; almost every area of the car was further evolved. The ACO's LMP2 weight limit was increased by 25kg to 775kg (not least because they had seen the threat to the blueriband LMP1 ranks), and as Le Mans was now a closing target for the RS Spyder, it evolved to suit. On the upside it found another 23hp, taking it to a quoted 503hp at 10,300rpm (meaning almost unchanged power-to-weight ratio), and the gearbox was upgraded, primarily to make shifts more precise, more consistent, smoother and easier on other transmission components. The suspension was further tweaked for performance and durability, and various other areas such as the electrical and electronic architecture, the hydraulic system and the power steering were further optimised.

With growing race mileage, CAD work and wind tunnel time, this 2007 'Evo' version (as Porsche called it) had aero-improving changes to the rear wing and diffuser that also gave more setup options for different circuits. Reshaped radiator ducts improved cooling and other body changes made the car much easier to

work under the pressures of a race.

Penske continued to run two cars while a second RS Spyder customer team, Dyson Racing, joined them with two more – factory fresh, in Dyson's blue and white livery. Like Penske, Dyson had Porsche connections. Rob Dyson founded his team in 1974 and raced successive developments of the 962 in IMSA from 1985 to 1993, with factory support from 1990. Dyson won the inaugural ALMS title in 1999 with a Fordpowered Riley & Scott, dominated Grand-Am from 2000 to 2002, and gave the new Audis a hard time with another Riley & Scott (then a much more modern Lola) in ALMS through to as late as 2006.

For 2007 they paired Butch Leitzinger with Andy Wallace and Chris Dyson with Guy Smith in their two RS Spyders. And while they couldn't match the already well-sorted Penske versions, they helped Porsche to another Manufacturers title, took second in the Teams race, and their driver pairings took third and fourth in the driver's standing – all inevitably behind you-know-who.

Penske had an astonishing year, with eight overall wins – twice as many as Audi's LMP1 R10 TDI. Maassen has described outright victory at Houston (with Luhr) as his most emotional moment with the RS Spyder: "On a tight urban course where every mistake had immediate consequences, we took the lead with a great pit stop. Then a safety-car period closed the field up

again. Fifteen minutes before the finish, our lead had disappeared – so I drove like qualifying, absolutely at the limit, taking every risk it needed. It was a terrific win..."

They started 2008 where they'd left off in 2007, with the RS Spyder's biggest win of all, in the 12-Hours of Sebring – universally seen as second only to Le Mans, and traditionally used by any serious Le Mans aspirant as the big test before June in France. In 2008 the RS Spyder was up against far more powerful Audi and Peugeot LMP1 cars, but on one of the world's most punishing circuits they took another sensational win. Not just a class win but the outright victory, for Bernhard, Dumas, and Emmanuel Collard. With a nice touch of serendipity, it came exactly 20 years after Porsche's last outright Sebring win.

The car had evolved again during 2008. Still watching nervously, the ACO upped the LMP2 weight limit again to 825kg. Porsche had introduced a new direct-injection (DFI) version of the 3.4 V8, hanging on to its 503hp, now at 10,000rpm, and increasing peak torque to 284lb ft at 8500rpm, crucially with improved fuel efficiency (especially in low-load situations, such as safety-car periods, where it could run very lean). It was also more drivable, allowing full-throttle gearshifts.

They added another outright win in Utah, and for the last race of 2008, Petit Le Mans, Penske entered a third car to help snatch the Manufacturers prize for Porsche from the four-car

Acura squad by a single point, while Penske and its drivers completed the clean sweep once again.

Even bigger news for 2008 was the addition of three European customer teams in LMS, and the RS Spyder's first appearance at Le Mans itself, with special, low-drag aero developments, quite different from the ALMS versions. Team Essex, from Denmark, had John Nielsen and Caspar Elgard; Horag Racing, from Switzerland, had Fredy Lienhard, Didier Theys and Jan Lammers; VM Motorsport, from Holland, had Jos Verstappen, Jeroen Bleekemolen and Peter Van Merksteijn (as in VM). Between them they won every LMS round and another championship clean sweep (led by VM), while Essex and VM took the RS Spyder to Le Mans – where VM won

the LMP2 honours with Essex second. Predictably enough, Penske and Dyson also steamrollered ALMS – edging the RS Spyder's eventual tally towards 13 overall wins and 35 class wins in ALMS and LMS.

They had it tough in 2009. New restrictor rules finally bit into the RS's power, which dropped dramatically to around 440hp, and downforce was also reduced. In truth, its career was starting to wind down. Penske stepped away, and only CytoSport appeared in ALMS, with an ex-Dyson car whose best result was second in class at Road America.

It was a wind-down year in Europe, too: aside from Le Mans, where they added another class win, Essex only raced at Spa (albeit winning again), while future Audi winners Team Goh also raced at Le Mans with VM's 2008 car, but the glory days were fading.

2010 was the final fade-out. CytoSport had a last LMP2 class win at Sebring and two more unlikely outright wins at Lime Rock and Mosport, but the RS Spyder's title-winning run was over. There were no more Le Mans entries, as increasingly punishing technical regulations and new cost caps brought LMP2 back on the rein. But the RS Spyder had done its job − for Porsche and for endurance racing in the bigger picture. It had shown what was possible, that LMP2 needn't be a pale imitation of LMP1, and that Porsche could come back when it needed to. Just as it has in 2014 ○





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## **Ultimate Guide:**

993

It's the last air-cooled 911, one of the most sought after classic Porsches, and this is your ultimate guide to a motoring icon.

Story: Peter Morgan Photography: Antony Fraser

s the 993 the prettiest of all the 911s? It's a question that Porsche fans the world over have been asking since the car's launch back in September 1993. The 993 was only meant to be an interim solution – a stopgap – before the revolutionary 996 and Boxster took Porsche in a fundamentally new direction. Nevertheless, sometimes evolution can be a sound development path to take. The last of the aircooled 911s emerged as arguably the best 911 ever – not only in sales terms but also in terms of Porsche's earliest mantra – to deliver driving in its finest form

The 993 was a revelation from a Porsche business that nearly everybody had written off. The car was a lifesaver for the-then fiercely independent car maker at a time when sales had stalled and production costs had overwhelmed revenues. In 1993, just 8292 Type 964-model

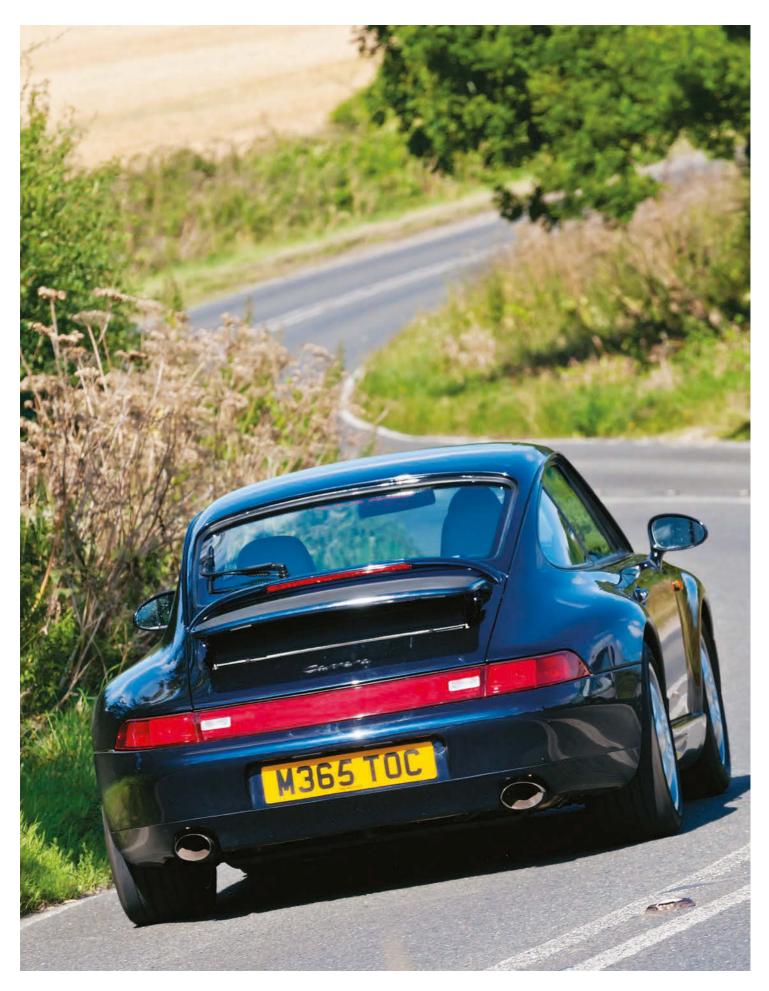
911s had left the factory gates in Zuffenhausen. In 1994, from a standing production start in December 1993 (three months into the industry year), 16,643 Type 993s were sold and in the coming years this 911 went on to break all the previous production records.

It's no coincidence that today, 20 years after the first 993 went on sale, the model is firmly in the cross hairs of every classic Porsche collector, but it's a sad fact that many 993s bought today are considered only in investment terms. That's missing the point, as the best thing about this thoroughbred sports car is how it drives.

It's the completeness of the performance package that impresses most. The later 996 and 997 don't even come close when it comes to driver involvement and tactile handling, because they've compromised too much of the tangible performance in the search for new customers.









All 993 Carrera models were powered by a 3.6-litre flat-six motor – the last air-cooled Porsche engine. Later VarioRam engines produced 285hp compared to the earlier unit's 272hp

Find a good 993 and you'll appreciate it's the car you've always promised yourself.

Porsche's best and most experienced engineers were set to work from as early as 1990 to develop the car, working from a design brief drawn up by top development engineer and Motorsport head Peter Falk. The bean counters and time ensured that central to the result was that the underpinnings and key parts of the bodyshell should be developed from the 964. Nevertheless, the end result was 80 per cent new. Porsche's British designer Tony Hatter sketched out the new appearance for the model, which he described as a more muscular look. The bodyshell was 20 per cent stiffer, the brakes had a 45 per cent greater sweep area and the new multi-link rear suspension brought a whole new stability and agility to the 911's dynamics. Derived from the 928's 'Light-Stable-Agile' rear suspension and further improved for the stillborn four-seat 989 model, the 993 gained a confidence and security not seen before in a 911. The 'tail happy' anecdotes of the past were summarily consigned to history.

At first there was only the 3.6-litre Carrera Coupé (later popularly termed the C2) with traditional rear-wheel drive, but by Spring 1994 there was a Cabriolet version and by October, a Carrera 4 (C4) and a Tiptronic (a full automatic with an alternative clutchless manual mode

using steering wheel buttons).

The new Carrera 4 was given a completely redesigned all-wheel drive system, which was half the weight of that used on the 964, and Active Brake Differential (ABD). ABD worked with Bosch's uprated ABS 5, which claimed to reduce braking distances by 20 per cent. C4s can be spotted by their titanium painted brake callipers compared to the C2's black items.

The first cars produced 272hp, a handy 22hp up on the older 964. The 3.6-litre powertrain had delivered a few headaches during the 964's time, but for the new 993 the bugs had been ironed out and the 3.6-litre engine had matured into a lusty, reliable powerplant.

Porsche was not slow to make the most of its 'interim' model. A further evolution came for the 1996 model year when maximum power increased to 285hp with the new VarioRam induction system (described in detail on page 79). The Targa concept was reinvented in 1996 with a new panoramic, sliding glass roof, while the 'wide-body' S and 4S Carreras delivered the Turbo look without the hefty price tag.

Production of regular Carreras finished at the start of the 1998 model year in September 1997. The good news was that production of the 993 wide-body models (and the Targa) continued to the end of March 1998, sustaining the production start up of the new water-cooled cars

and giving worried enthusiast buyers a last chance to buy into the air-cooled legend.

Buying a 993 today is a specialist purchase. We'll outline the basics here, but further research will reward with a car that is less likely to surprise you (good and bad). It's a fact that if you know your Tiptronics and VarioRams from your Targas and Turbos, you'll give yourself a head start when sifting through the ads and kicking tyres at sellers. Know the limit of your budget and stick to it. There's always a Porsche more expensive than the one you can afford and the reality is that going over budget by £2000-3000 may not offer you much extra.

You may read that the 993 is bulletproof in terms of reliability, but it will only be so if it has been maintained well. Many have chequered histories and more than a few cars that look promising don't bear close examination.

Be methodical about checking out the various sections of the car (documents, bodyshell, interior, etc), don't be pressured by the seller when looking at it and follow your gut feelings – the mind's eye sees thing that often don't register immediately. It is really important to look underneath and know what to look for there. Take detail photos so you can study them later. Most importantly, if you don't feel confident checking out a car yourself, get expert help with a pre-purchase inspection.



The 993's interior was very much from the old school and still featured the idiosyncrasies that you'll find on many older 911s







#### CARRERA (MANUAL AND TIPTRONIC)

We'll call these 993s the 'narrow body' cars, as it's the easiest way to separate them from the other models. The Carreras make ideal first Porsches for those who are looking for the air-cooled 911 experience, yet want a degree of confidence in the reliability. There are plenty of conditions attached to that statement of course!

The 993 isn't a model to be found in the main dealers and even many of the independent Porsche dealers rarely carry a 993 Carrera in stock, or rather 993 demand is such that they can move a car on without the need to market it. You will need to research which of the specialists can offer these older models, but the majority of cars actively advertised will be offered privately through the various online classifieds.

You'll need a budget of £25,000-35,000 for a

C2, with three main factors driving the asking price for any given model – condition, mileage and service history. Anything less than 60,000 miles is now considered low mileage for a 993 and less than 40,000 very low mileage; asking prices rise in a steepening curve the lower the mileage. Nevertheless, verification of low mileage is essential as it is quite easy to change the speedo on these 911s. Look through the old service bills and MoTs, and probe deeper if the service stamps aren't all from the same place (or are missing altogether) if the car has had the same owner for a number of years.

The Carrera has a well-earned reputation for longevity, but the key to a good car is having a record of good maintenance. That's why the service history is at the heart of a 993's intrinsic

value. An engine that has had its oil changed every year from new, whatever mileage it has done, will last longer than one that has a Swiss cheese service history with the occasional big bill.

You will see cars that have undergone significant cosmetic restoration immediately prior to sale, but it's important to look behind that showroom makeover for a solid previous record of maintenance. You'll notice we haven't suggested you must go for the later VarioRam cars either. Condition is the key factor here and a great early car can be a better investment than a madeover later model.

After the regular wear and tear items such as tyres, brakes, belts and clutch, there are relatively few trending items that wear out on the Carrera engine. We're talking items like lower cam cover



gaskets, the lower HT leads and hydraulic tappets. Pull the dipstick with the warm engine idling and check the quality of the oil. Fresh oil will be a translucent brown colour and be viscous. The level should be between the 'max' and 'min' marks. Old oil will be black and if it runs off the stick like water, you can assume that's how well it's protecting the insides of the engine.

Look for a record of routine major service items, like the spark plugs, pulley belts (including the little one that is fitted in the distributors), filters and, if it has it, air conditioning system upkeep. It used to be a standing joke that the 993's air-con systems never did work but today, buyers expect the chill. If the engine undertray has been wiped clean, expect an oil leakage problem. Removal of the undertray should only

be done if you know what you are doing, but it can reveal engine oil leaks, oil pipe and sheet metal corrosion and it allows full inspection of the rear suspension. The Carrera's exhaust system is amazingly long-lived and many cars will still be on their original systems. Unfortunately, the rear bumper heat shield and side stays do deteriorate and can cause annoying rattles.

Any flat-six can blow oil smoke for a few seconds after starting from cold. As long as this disappears after around 20 seconds, then it's usually no problem. On cars with more than, say, 60,000 miles, the small internal seals inside the hydraulic tappets can wear out and leak oil. The tappets make a light knocking noise on start-up until they refill with oil. The solution is to replace the tappet or tappets. As a general rule, the engine

should not need a compression check or similar invasive inspection prior to purchase unless there is an obvious smoking problem – and you shouldn't buy the car if it has.

The 993's clutch life is typically 60,000-70,000 miles, but it is strongly dependent on the type of usage. The usual symptom is the engine revving higher than you expect as the drive to the gearbox slips on the worn clutch. A clutch change involves removing the engine and gearbox, so expect a £1500 bill if the mileage is greater than 60,000 and no change has yet been made.

The manual and Tiptronic gearboxes have good reputations generally. If you want the full sports experience a manual shifter is the way to go, but the Tiptronic S is a proven automatic option and easier to live with for some. You should instantly



A good 993 will have unmarked alloy wheels and N-rated Porsche approved tyres with plenty of tread left; it shows the seller cares



feel any baulking issues with a manual (usually into second or third) and if the Tiptronic's torque converter is noisy or gear selection appears difficult, move on to the next car.

A clear sign of a previously shunted 993 is one or both of the fragile front jacking points having been knocked backwards. While under a C4, check the front diff housing seals for oil leaks and the front suspension lower control arms for play in their front bushes. This can be done using a large screwdriver inserted between the arm's front mounting and the crossmember.

It isn't so unusual to find higher mileage Carreras with full bodywork repaints. An expert will use a paint gauge and an experienced eye to assess whether the car has been repainted over repairs, but poor repaints can easily be identified. Signs include overpainted seals, runs and inclusions, poorly fitted bumpers and overspray in the wheel arches. The plastic bumpers can have previous crazes and scratches visible under the new paint from contact parking.

Corrosion isn't yet a big issue on the 993 – its shell is galvanised – but many cars have needed some attention to surface rusting on the scuttle (the panel ahead of the windscreen) and at the rear of the rear screen pillars.

The colour of the example may influence you, but it's not so important to value as condition and mileage. The mainstream colours for the Carreras were the silvers (Arctic and Polar) and blues (Midnight, Ocean and Iris), but don't

dismiss striking Guards red or Grand Prix white.

Another body detail that can run up a good bill is the repair or replacement of broken door check straps (it's broken if you hear a loud crack as you open the door). Some check strap weld repairs can be poor, but to do the job properly can cost £500 a side.

Look inside the front luggage compartment, lift the carpet centre section and sides towards the back. The side carpets are attached with Velcro, so will peel back easily. What you are looking for in a crash-free car is the paler, unpainted finish towards the front of the body longitudinals and in the front folds of the structure. There should be a Vehicle Identification Label (VIL) under the bonnet, a paint code label on the nearside inner wing and regulatory labels on the offside. And make sure you don't forget the tool kit, spare wheel inflation compressor and jack!

The alloy wheels should all be free of kerb scrapes or other damage. The tyres should have at least 3-4mm tread right across the width. While there is no law about the age of tyres, it's good practice not to use tyres that are more than ten years old. There's a significant difference in the ride quality between old and new rubber. Check the four-digit date stamp on the tyre sidewall – for instance 3605 would indicate manufacture in week 36 2005. Tyres should also be checked for cuts and perishing. Uneven wear on the tyres suggests wheel misalignment and in the worst case, previous accident damage.

You should be able to aim a finger through the wheel spokes to feel for a wear lip on the disc brake outer rim. If it feels like more than 2mm, the disc is probably ready for replacement. Use a torch to look at the brake pads. If these have less than 1.5mm material remaining, they will need to be changed. Crumbling front shock absorber bump stops suggest the ride could be improved, but the shocks should be changed in pairs on an axle if one is weeping.

In the 993's cabin, it's the high contact areas that inevitably take the most punishment, particularly the driver's seat offside bolster, the handbrake, shift lever and the driver's door handle. Otherwise, the interior is fairly rugged. Run a hand over and under the carpets (especially the rears) to check for wetness (or a caked feel after they have been dried out following a cabin leak or flood damage).

With the engine running, check all the electrical accessories work. It's surprising how large a bill can rack up when items such as headlights, adjustable seats and little things like the dash digital display don't work. Finally, don't worry too much about options. A UK-spec car (carrying the C16 factory option code) came with a good starting spec. Accepting the in-car entertainment of the day is now out of date, that leaves extra leather, air-con (nice to have but not essential on a classic) and multi adjustable seats. Your money is better spent looking for that basic spec car with a good maintenance history.



#### CARRERAS & 4S

Everything we have just said for the narrow body Carreras applies to the wide-body S models, introduced in 1996. The Carrera S has the Turbo's wide body on the regular narrow body Carrera's mechanicals, with some unique trim detail differences. The 4S has the Turbo's 'big red' brakes and wheel style, plus a higher level of equipment. The S and 4S (despite their weight penalties) have the same acceleration figures as the Carrera, but are 3mph slower at the top end (thanks to greater frontal area). The big differential today is in the bottom line – the better 4S examples command up to £5000 more then the better S models and both £15,000 over the best Carreras.

In terms of driveability, the 4S has the allwheel drive system with ABD, which makes it better for touring and arguably easier driving, while the S has a more agile character.

Perhaps reflecting where the market is, colour does appear to be more important with these models than the narrow body cars. Dark metallics or silvers with either Black, Classic or Marble Grey interiors sell best. That said there are many exceptions, but we would stress condition should be the driving factor in choosing a car.

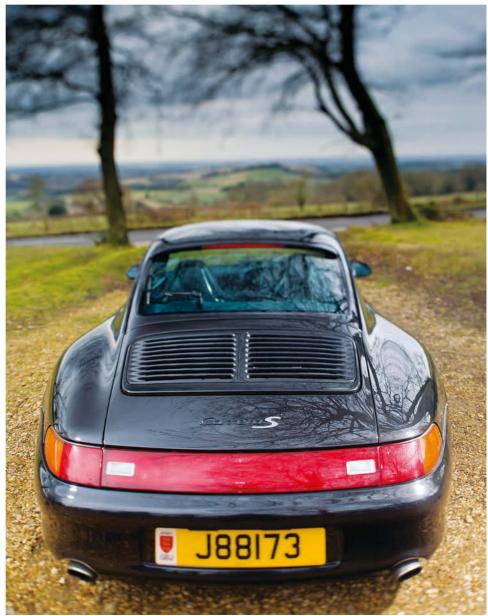
Vesuvio was a unique S colour and more generally an S can be identified by its special 'steel grey' coloured trim differences (including the door handles, mirror cases, wheel centres, rear spoiler grille, kickplates, handbrake and the special logo in the tachometer). The S came with the Carrera's black callipers and standard 17-inch Cup alloys. Lowered 10mm at the front, 20mm at the rear, the model was given a squatter appearance by 31mm spacers on each rear wheel. The 4S was only available with a manual gearbox and came with Turbo-look alloys (with the ribs on the backs of each spoke) standard.

The S and 4S models do not have unique Vehicle Identification Numbers (VINs), so identifying an S comes down to knowing what unique spec each model has. Some non-specialist traders will try to pass off the confusingly named Tiptronic S as a Carrera S, when in reality the car is simply a narrow body auto. Watch out also for shunted cars repaired using wide-body panels.

What S model buyers do not like is any kind of customisation. This particularly applies to replacement rear spoilers. Strut braces, aftermarket 18-inch alloys, so-called sports exhausts and dire in-car entertainment systems will also have a negative affect on value.

One option that adds value to the S models are the Turbo 'Technologie' or 'hollow spoke' 18-inch alloys – which were an option on both the S and 4S. These desirable lightweight alloys (made by friction welding the rim to the hub/spoke casting) have a smooth back surface to the spokes. A set of 'hollow spokes' can add £1500 to the value of an S or 4S and save 11kg in unsprung wheel weight. Cars with these desirable wheels from the factory will have the option code 408 listed on the Vehicle Identification Label (VIL).







#### CABRIOLET AND TARGA

It's your choice whether you prefer the shape of a Coupé or the wind-in-the-hair experience of a Cabriolet. In the UK, you have to accept that you'll be spending a lot of time with the roof up in a Cabriolet and, in our view, there have been more attractive convertibles than the 993 version. The plastic rear window has a relatively limited life and all-round visibility isn't so good either. These are all points in favour of the hard-to-find Targa with its light and airy cabin. Both Cabriolet and Targa offer a solution for taller drivers and the Targa scores extra with its more relaxed driving experience and better security if you have to park in the street. In general, we haven't noted any specific price premiums for these models outside the normal Carrera price bands.

The Cabriolet's roof is well made, but the mechanism can be unreliable - in particular the two little clamping motors at the front where the roof locks to the windscreen. Make sure it all works without hesitation, skewing or jamming and when the roof is up, check the fabric for heavy fretting. This can be a problem just behind and above the side windows where an internal pin on the mechanism rubs the material. If there is condensation in the cabin or moisture under the carpets, it can be a sign that either the window seals or the fabric are past their best. The roof can be recovered, but expect a bill for £2000. The plastic rear window can also be replaced for less, but check the stitching/gluing for quality. There should be a tonneau, or cover, for the top when it's folded down (but many have been lost over the years) and a wind stop is a luxury (but check it fits properly as they are easily broken).

After the roof condition, another unique Cabriolet issue is that generally many have led fairly hard lives. It isn't unusual to find seats with the beading split open and tears in the backs. Surface corrosion can be a problem as many

Cabriolets have spent time by the sea.

The Targa was a major development when it was new, but its roof mechanism is a fiend to adjust properly. Those that have had exposure to inexperienced hands either don't work, leak or have annoying wind noise over 40mph. It's important to check all the functions work without hesitation (including the sun blind). A good Targa roof will also have no rusting where the roof rails attach to the top of the windscreen (peel the door seal back to have a look).

Targas are fairly rare and weren't available as a C4. The extra 30kg weight over the C2 would

have been higher but for the unique two-piece alloy wheels, which have magnesium alloy centres. Restoring these properly involves dismantling and replacing all the little rim bolts. It's not a cheap job, but cheap repainted wheels really let down a good Targa.

We shouldn't forget that six Speedster-bodied 993s were built in 1996 by the Porsche Exclusive workshops. This followed a special narrow bodied Speedster built for F.A Porsche in 1995. The '96 Speedsters are all wide-bodied cars and if you stumble across one, an authenticity check is a worthwhile starting point.



#### TURBO

The 993-model Turbo features the Carrera 4's allwheel drive system and thanks to two turbochargers, hits you with 408hp. Porsche's flagship 993 delivered a sophistication not seen before in the forced induction models and became an instant icon among collectors and enthusiasts alike. The X50 powerkit is a soughtafter option and lifts maximum power to 430hp. The 1998-only Turbo S included that X50 powerkit as standard with other Porsche Exclusive modifications including scoops in the front bumper and rear quarter panels. The special low profile rear wing was complemented inside by burr walnut trim and special detailing.

As we move into these more expensive variants of the 993, so the opportunity for buying a dog (or being ripped off) increases. The 993 Turbo has increased in value over the past three years and fine examples now ask upwards of £100,000-120,000. With just 345 Turbo S models built worldwide all that remain are prized, with typical prices for low mileage cars pushing £200,000.

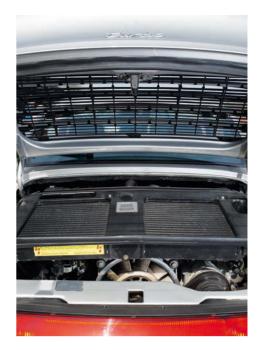
The very first step when looking at any Turbo is to establish authenticity. An expert would be able to verify the VIN and VIL data and has the experience to catch the signs of back street repairs. It is a minority, but some cars will be reshelled (replacement of the whole bodyshell using the same trim, engine and gearbox etc) or have received significant structural repairs. The quality of these non-authentic cars can be very high, with a lot of the work carried out in eastern

Europe and Japan as well as the UK. It is vital to know when you're looking at a potentially faked VIN stamping (on the tab under the fuel tank) and the validity of the other identification tabs and labels. These include the small tab inside the windscreen, the labels in the offside B-pillar and in the front compartment. A lack of (authentic) VILs, either under the bonnet or in the service book and a lack of other supporting information should always ring alarm bells.

Mechanically, the Turbo is generally a very strong car with a good reliability record. The unique points to look for are underneath (you can't see much of the engine from the top), with the turbocharger wastegate actuators prone to seizure and the turbo heatshields likely to corrode. The turbo oil feeds can weep, along with worn rear main oil seals (yes, on the 993!). As on nearly all flat-sixes, the lower cam covers will almost routinely develop leaks over time.

Turbo values are strongly affected negatively by customising. The rule is don't customise the body or chip the engine. The same applies to all aftermarket suspension and braking systems.

It's important to drive a Turbo, if only to gauge whether you can live with the power delivery. This can be fierce and requires a particularly alert driver in the wet. Good, recent (Porsche approved, N-rated) tyres with more than 3mm tread and a careful throttle style are highly recommended. A standard Turbo should see 0.8bar boost on full acceleration in second gear



on a dry road. If the boost pressure exceeds 0.9bar, it's probable there's an aftermarket chip fitted. Don't check this on a wet road and do let the owner know what you are doing!

As with the Speedster, there were a limited number (believed to be 14) of Turbo Cabriolets made by Porsche Exclusive in 1996. These unique cars used the 964 Turbo 3.6 engine and were installed in narrow body Carrera Cabriolet bodyshells. One was recently advertised for £400,000 in Germany. Again, diligence is required.





#### CARRERA RS

This is the most sought-after 993 model and among the most difficult to find. The RennSport version was manufactured only during the 1995 and 1996 model years and factory records suggest 1123 non-Cup cars were manufactured. The street RS (option M002) wasn't as raw as the earlier 964RS and was carefully aimed at collectors who wanted the famous RS title on their 911. It can be casually identified by its whaletail rear spoiler and special front bumper treatment. With an eye on the Formula 1 supporting Supercup race series, the Club Sport (M003) was delivered with a race-ready interior and biplane rear spoiler – another 227 cars over the two model years, the latter you'll also find on some road cars.

The RS bodyshell was seam welded and the wheel arches rolled to clear the tyres, as ride height was 30mm lower at the front and 40mm at the rear. The car received hard suspension mounts, adjustable anti-roll bars and all the details needed by a production race car. At its heart was a 3.8-litre flat-six, producing a super smooth 300hp thanks to a new intake ducting system called VarioRam. This optimised torque at both medium and higher engine speeds. Up to 5000rpm, the induction pipes are almost double the length of those in an early 993. Beyond 5000rpm, a vacuum operated sliding sleeve on each intake pipe reduced the length in two stages, so optimising the torque at different crank speeds.

Like the Turbo, the RS came with a unique VIN, so this is the first item to check. Such are the asking prices (£200,000-250,000) of the 993RS today that it isn't enough to simply check in a book that the numbers are in series. Faking these cars has reached high standards and it is essential to get an expert to check the car out using the correct resources. Dubious cars tend to have an immediate history of passing through several

sellers so that provenance is difficult to trace. Most of the doubtful ones are left-hand drive.

The principal mechanical checks required, once the authenticity has been established, involve looking for any sign of damage repairs, non-standard welding and validating the VIN and engine numbers on the car. A thickness gauge should be used for the paint and an understanding of what is expected and what isn't throughout the car.

One of the simplest checks to assess authenticity (whether a claimed RS is real, reshelled or a regular Turbo or Carrera converted) is to measure the thickness of the side glass. It should be 3mm, not the regular 5mm.

These cars are often considered too valuable now to use for track days, but back in the late

1990s, many were used this way. It's important to check the suspension is original and that the underbody shows no signs of distortion following, for instance, an impact that may have wiped off a suspension corner. That said, legacies of simple shunts in a genuine car can be corrected – if the selling price is right.

It follows that the special Speedline alloys should be authentic with the correct decals on the rims and it's worth checking the diameter of the adjustable anti-roll bars (23mm front, 20mm rear) as well as having a checklist of all the other unique modifications made to the basic car. Like the Turbo, custom modifications are shunned by the quality marketplace.

In short, the RS and the following GT2, are very specialised purchases today.



#### GT2

The 430hp 993 GT2 is a very special car for Porsche. This was a rear-wheel drive Turbo stripped to RS levels of equipment and developed to qualify in the FIA's GT2 class for endurance racing. Produced from early 1995, the model took advantage of the then-new sports car regulations that allowed professional, nonmanufacturer race teams to run closely controlled production-derived sports cars in endurance racing. Competing with Honda's NSX and Ferrari's 348, the GT2 quickly established itself as the class of the field and would become the backbone of events like Le Mans over the coming few years.

There were the usual Motorsport variants -Basic, Comfort and Club Sport and our records suggest that there were 202 street GT2s built, including 21 Evo models completed in 1998. Typically, other sources conflict in the detail.

The Comfort version makes very few concessions to street use, although air conditioning and electric windows were options. The ride is very firm indeed and the 1996-spec car's 430hp power delivery is more fierce and abrupt than the regular Turbo. Inevitably, the most sought-after model is the upgraded 1998 'Evo' with 450hp. The GT2 is over 200kg lighter than a regular 993 Turbo.

It is sad to relate that many of these models have now disappeared into inaccessible collections worldwide and it is very rare indeed that one is seen in public or comes on to the market. Prices can be typically better than £500,000-600,000, which tells its own story about the car's desirability.

Establishing the car is genuine and that the history presented is authentic are again the starting points when buying.

Condition on these cars takes on a different view because of the rarity and original cars with authentic patina or previous well-known ownership can command significant premiums. The race cars are far fewer and require even more care when purchasing. The difficulty is that race

teams reshelled these cars almost routinely after the inevitable shunts that come with the action of long distance racing. That makes original cars extremely prized purchases.

When checking out a GT2, look for signs of poor repairs, legacies of aftermarket roll-over bars and non-standard interior. The key details are the originality of the Speedlines, the increased (0.9bar) boost pressure and a lack of aftermarket customising to the suspension and engine. We would want to see a compression check if the history was in any way vague.

We've driven several GT2s and the differences were marked in the way they had been set up. One of the cars we tried had never been apart and it was sublime. It still retained all the typical ex-factory driving ease - the hallmark of every original faster 911. Other not so well cared for or restored cars have been nervous, point-and-squirt missiles.

This is a very powerful 911, one of the most raw ex-factory street 911s of all time and it isn't for the inexperienced buyer or driver  $\circ$ 





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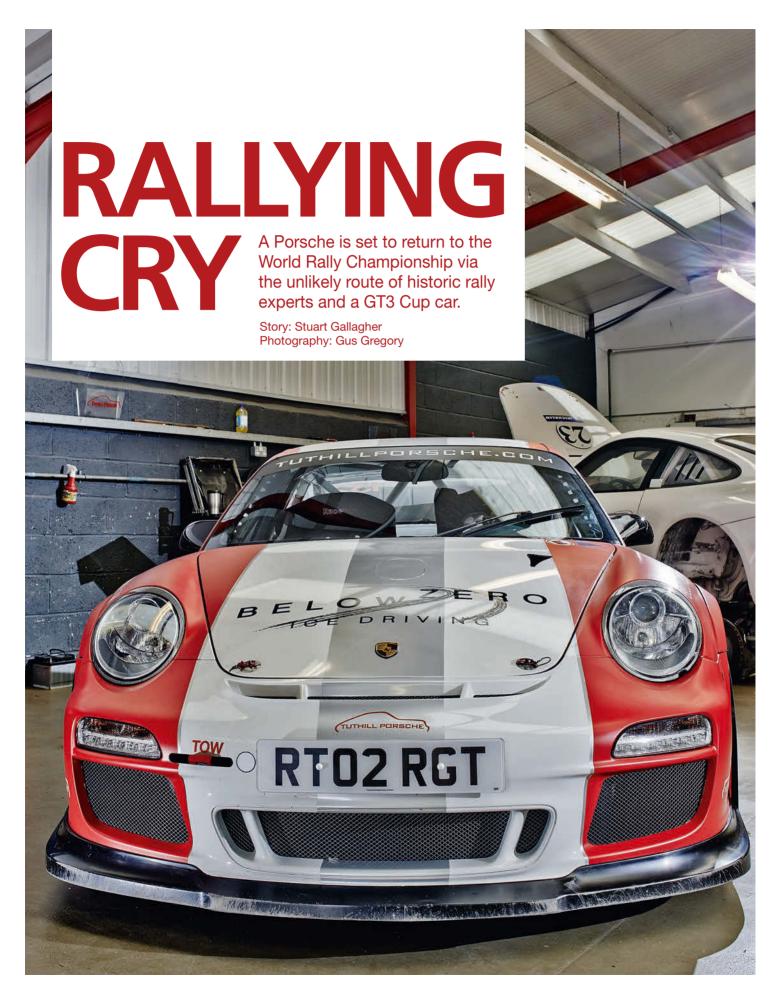
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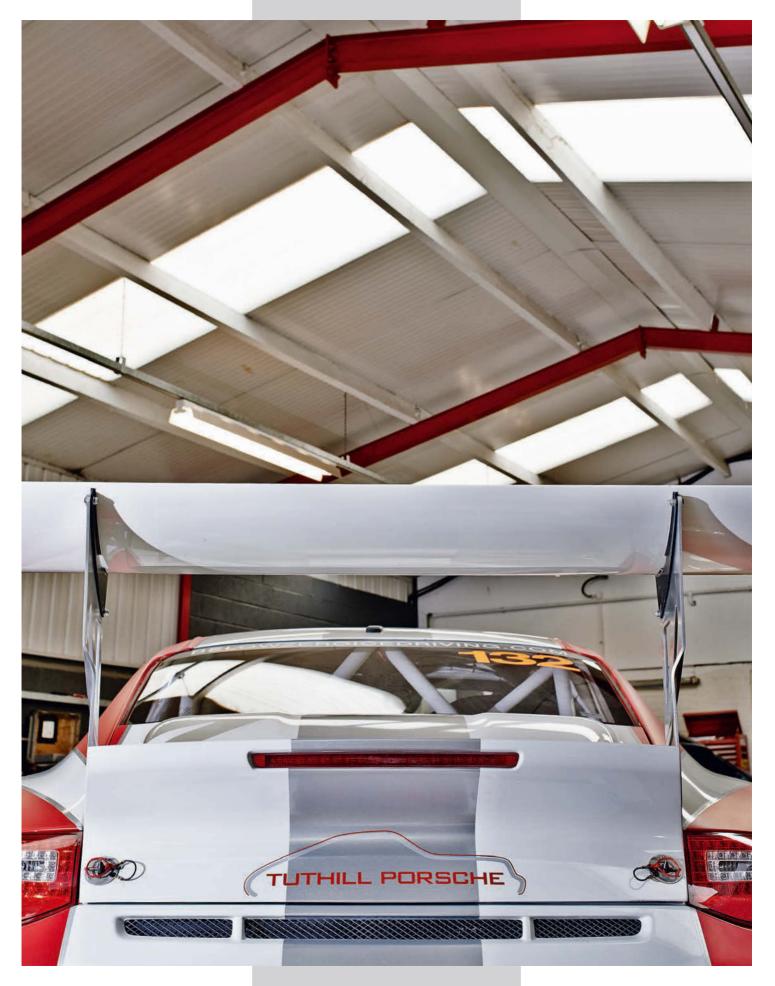


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orsche is back competing in the FIA
World Rally Championship. Or rather,
a Porsche 911 GT3 has made its debut
in the FIA World Rally Championship
and it's all thanks to those geniuses at
Tuthill Porsche.

If you follow historic rallying you'll know exactly what Tuthill is capable of when it comes to building 911s for special stages. Such as winning the East African Safari Rally, dominating the European historic rally scene and building a fleet of 911s that you and I can hire to dance around a frozen Finish lake every winter. But its latest project is something very different – and very special.

"I entered a 996 in the WRC Swedish Rally in 2006, but nothing came of it," says Richard Tuthill, the ball of energy who runs Tuthill Porsche alongside his father, Francis. "It's something I've always wanted to do and after a lot of work it looks like we're going to be entering a round of the WRC in a 911."

Before we get ahead ourselves there's a bit of homework with regards to explaining the World Rally Championship setup. The front running cars are called WRC cars and have to be powered by a 1.6-litre, fuel injection, turbocharged four-cylinder engine fitted with a 33mm air restrictor with peak power restricted to 300hp. The block and head of the engine have to be based on the standard car but items such as cranks, con rods, pistons, cylinder linings, valves and camshafts can be modified. They must run a four-wheel drive transmission through a sequential gearbox and use mechanical differentials front and rear. They can fit 300mm brake discs for gravel and 355mm discs for Tarmac rallies.

The main contenders come from Citroën, Ford, Hyundai, Mini and Volkswagen in the shape of mundane-looking hatchbacks. Below this top class are three further categories with variations of the same regulations with different size air restrictors to limit power outputs and there are individual minimal weights of each class. Of the four classes a 997 GT3 Cup car is ineligible for all four. For a start it has too many cylinders, too few driveshafts and too much power.

However, in 2011 the FIA introduced an RGT class specifically for GT cars to be able to rally, although welcomed by fans and competitors it required a manufacturer to build a car specifically for the regulations and to be homologated, which would mean at least 30 examples had to be built. Aside from Lotus who built an Exige R-GT rally car that it displayed at various international motor shows, the only other manufacturer to show interest was Aston Martin with its V8 Vantage.

Ultimately, the investment and commitment required by a manufacturer has meant the category has never really got off the ground. But in 2014 a change to the RGT regulations meant individual cars could be homologated via the

FIA Technical Passport route, which meant instead of building 30 specific cars you could start with any road car so long as 30 examples have been made. Then it's a case of working with the FIA to get the car its Technical Passport to go rallying. This is not a quick form-filling exercise. It starts with a 70 page document that requires forensic examination to determine what is and isn't required for your chosen car. It's this route Richard has gone down with the 997 RGT.

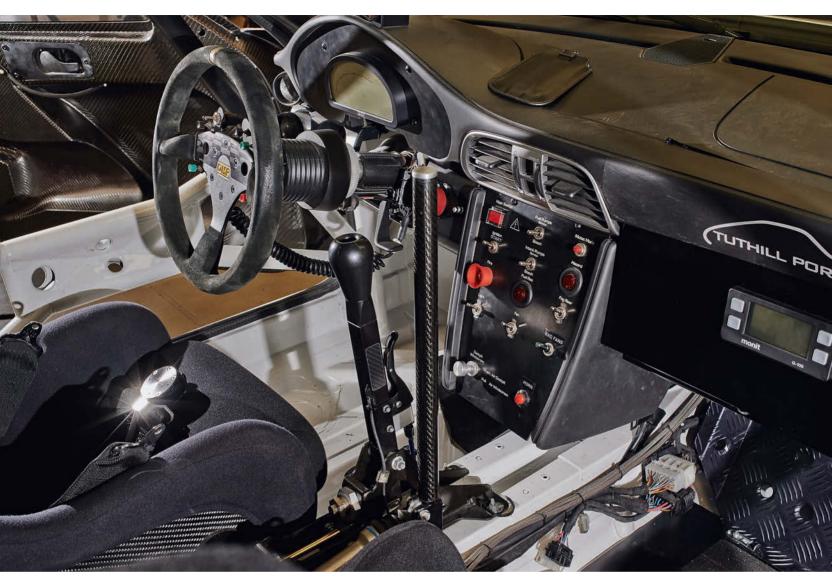
The car started life as a 997 Cup car (2009-2011) and has required a great deal of effort to prepare it for a life on the stages of the WRC circuit. It may look like a Cup car that requires a polish but the effort that has gone into preparing it in order to achieve its Technical Passport has taken a great deal of time and not an inconsiderable sum of money. "Starting with a Cup car seemed the logical starting point," says Richard, "because even though we were building an individual car in order for it to receive its own Technical Passport you still have to start with a homologated road or competition car. Porsche builds hundreds of Cup cars a year so that was the easy bit!

"There is also a great deal of FIA safety kit already built into the car from the factory. That saved some time and money, especially with the roll-cage. The FIA is, quite rightly, very focused on side-impact protection – when you hear of a fatality in rallying inevitably it's because the car has had a heavy side impact – and it's meant we've had to move the side bars that are behind the door as far out as we can and then we've had sections of foam specially made to fit between the cage and the seats. Another problem, however, was that the Cup car comes with carbon fibre doors which didn't please the FIA, but we argued that if they are homologated for circuit racing they should be for this rally car, too. A metal door isn't going to offer any more protection than one made from carbon fibre anyway. The FIA agreed, eventually, but we've had to have new inner carbon door skins made to accommodate the cage." Other concessions to side-impact safety include bars that connect the seats to the roll-cage and the windows in the doors, manufactured from a strong, shatterproof Perspex need to be removable so the driver and co-driver can punch them out should their only means of exiting the car be via the window; the solution is to score around the window frame so they can be pushed out. There is no instruction manual for the team to solve the unique conundrums they come across.

The running gear is as you'd expect on a Cup car with a 3.8-litre Mezger engine and a six-speed sequential gearbox driving the rear wheels. The engine is untouched – "Porsche build these things strong enough" – save for a 36mm air restrictor that reduces the engine's power output to 300hp from the original 430hp. The gearbox, however, is a little different. "Cup ratios aren't suited to rallying so we've selected our own,







"The idea of a rear-drive 911 blaring away, covered in mud and sliding at silly angles will be great"

which we handed to the FIA and said 'here you go, these are the rations we want to use'."

The big change to convert a Cup car to a rally car is the chassis and specifically the suspension. "We've worked with EX-TC for many years on the old 911s and our ice driving cars and what these guys don't know and understand about dampers isn't worth knowing. And their WRC pedigree is beyond doubt – they won nine WRC World Championships with Citroën...

"The work EX-TC has achieved along with our project engineer Graham Moore (ex-Prodrive) is remarkable. If you've ever driven a 997 GT3 you'll know that tight, bumpy country lanes is not its natural habitat, but the first time I drove the car I was genuinely shocked at how well it behaved over the bumps and crests. Over jumps it lands nice, flat and smoothly, which is crucial in rallying and the dampers settle so quickly. Even though we have more travel in the

suspension and the dampers do more work than the springs, the chassis has reacted really well, which was a huge relief," explained Richard.

The regulations mean the GT3 RGT has to run 18-inch wheels as the Cup car was homologated with that size wheel. The brakes are standard GT3 Cup brakes, and even though the discs are too big according to the regulations, Richard successfully argued that the 997 was a bit chunkier compared to a WRC car and reducing its braking performance probably wasn't the safest option. The FIA agreed.

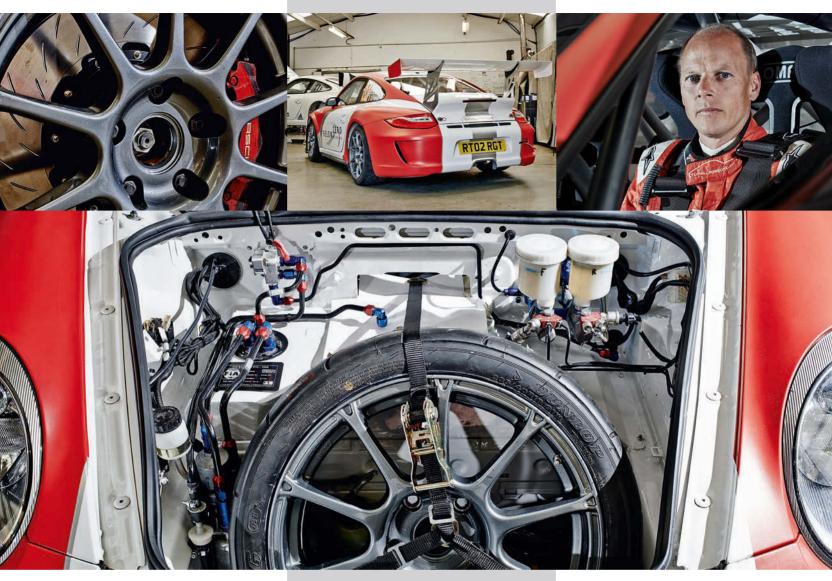
The project has been a long and sometimes complicated one. "The FIA has given us great support, Michelle Mouton (the FIA's head of rallying) is behind the project and wants to see the RGT class succeed and bring some variation to the rally stages," says Richard.

"I love WRC. I think the cars are amazing and anyone who says they are boring or dull has

clearly never seen one in action. They are bundles of energy that move around and cover the ground at phenomenal speed and the guys that drive them are some of the best drivers in the world.

"But I also think rallying needs to be entertaining to a larger audience and the idea of a rear-drive 911 blaring away, covered in mud and sliding at silly angles will be great. We're not going to challenge for victories – a WRC car is way quicker than our car will every be. But the FIA is concerned our old 911 might upset the apple cart hence the restrictor, but I'm sure after the first event they'll see we're not a threat and hopefully they will give us a bit more power."

Currently there is no class championship for the RGT to score points in, for 2014 any rounds the 997 RGT is entered in to it will contest the WRC category with the works teams, but in 2015 six rounds of the FIA World Rally Championship



Starting with a homologated 997 GT3 Cup built by Porsche Motorsport was a good starting place, especially when it came to the safety kit – although the roll-cage still had to be modified for greater side impact protection. Tuthill also had to find somewhere to store a spare wheel in a 997

will have an RGT class in which entrants will compete for points like the other four categories.

"I'd love to run six or ten cars next year if there are people out there who want to run in the WRC in a Porsche. Why not? There are people spending big budgets to run in the lower (slower) categories. I think RGT will appeal to some of these guys when they see and hear the car in action. And for us, when you've run 17 old 911s on the Safari rally, to do the same with a dozen modern cars on a modern WRC event with central servicing will be straightforward."

For 2014 the team, led by Graham Moore, without whom Richard wouldn't have embarked on the project if he wasn't on board, will have debuted the car on the German round of the WRC by the time you read this (turn back to page 18 to see how they got on), and unless something catastrophic happens the car will be entered on this year's Rally of GB in November.

That's right, this is no Tarmac special rally car, the intention is it will be able to compete on every surface and the idea of seeing a 911 covered in mud sliding around a Welsh forest is an endearing one, but Richard's ambitions don't stop there. "I'd love to drive the car on Rally GB, but if I can get someone in the car who can raise the profile of both it and the new category I'll step aside." Who would Richard step aside for? "Bjorn Waldegard, he was the last driver to win a round of the WRC for Porsche, and Walter (Rohrl) - wouldn't it be great to have him in the car? (Francois) Delecour is a fan favourite and has rallied a 996 a couple of times, so he'd be great to have in the car. Factory driver Timo Bernhard has his own 997 rally car he competes in Germany - he would be a good one to get in the car too. I wonder if VW would let (Sebastian) Ogier or (Jara-Matti) Latvla have a go? VW owns Porsche now, doesn't it?"

Discussing the project with Richard highlights not only his enthusiasm for this new challenge, but his deep rooted knowledge of the sport, not only how it works but what it needs to keep the interest and the profile at the very highest level. "We know we'll never challenge for an overall WRC win, but with the RGT championship there will be a goal to aim for in 2015 and I'm confident that will attract people to our project and maybe other marques too. I haven't worked out a budget to run a car in RGT round next year, but I'm confident it will be similar to running a Cup car in the Carrera Cup."

For the rest of 2014 the development process starts in earnest. All going well, you can don your bubble hat and head into the Welsh forests in November and enjoy the sound a flat-six howling through the woods accompanied by the sight of a filthy 911 sliding around in the mud. I can't wait  $\bigcirc$ 

Porsche and motorsport is intrinsically linked to circuit racing: Le Mans, Daytona, prototypes and GT cars, but rallying was at the core of the company's motorsport activities when it was cutting its teeth in the sport car world.

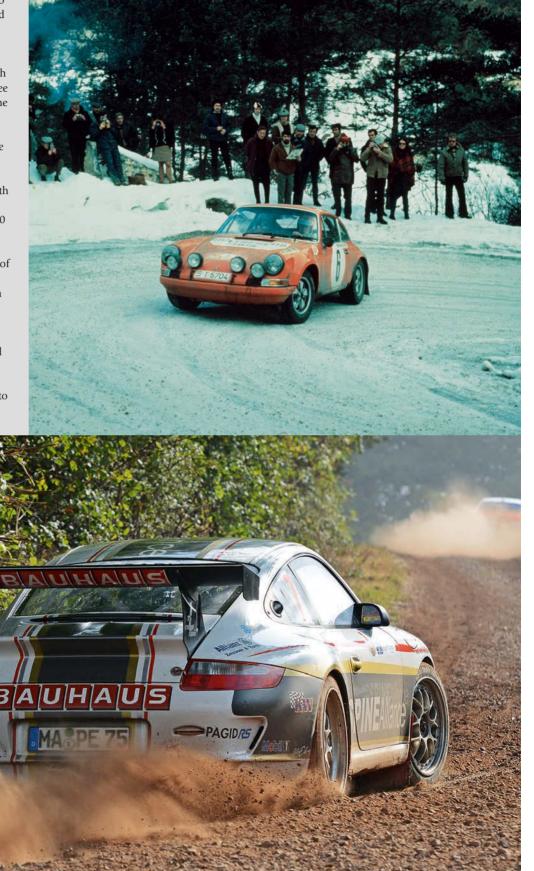
In 1965 the 911 marked its rallying debut with a fifth on the Monte Carlo Rally and within three years it had won the event outright, repeating the feat 12 months later before completing a hattrick of victories in 1970. The 911, with its traction advantage soon became a firm favourite on the rallying scene.

Despite no manufacturer support from Porsche, a 911 won the Monte again in 1978 with Jean-Pierre Nicolas bringing his 911 SC home first, and in 1980 Jean-Luc Therier won the 1980 Tour de Corse round of the WRC. A 911 also claimed five European Rally Titles and in 1984 and 1986 Porsche won the most gruelling rally of them all, the Paris-Dakar with a 959.

In 2004 Porsche announced it was to build a 996 GT3 rally car for the Belgium Future World team to run in the Belgium National Rally Championship. Featuring a shorter final drive ratio the car was honed for the gravel stages and provided the launch pad for the number of privateers to embark on 911 national rally programmes throughout Europe that continue to this day.

The 911's rally career started on the Monte Carlo and still contests
European rally championships to
this day. Now a 911 will be back

competing in the WRC





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# 986 Boxster (1996-2003)

The first-generation Boxster has become the new affordable Porsche, with prices as low as £3000 and up to £14,000.

hen the Boxster was an exciting new model back in 1996, at the back of our minds we never thought that, one day this entry-level Porsche will surely become as cheap as the 944 was then. Today, 18 years on, that day has come and you can buy a 986-model Boxster for as little as £3000 – a ridiculously low figure for a modern, mid-engined sports car engineered and built by Porsche. But is it also a ridiculous plan to

buy such a cheap example?

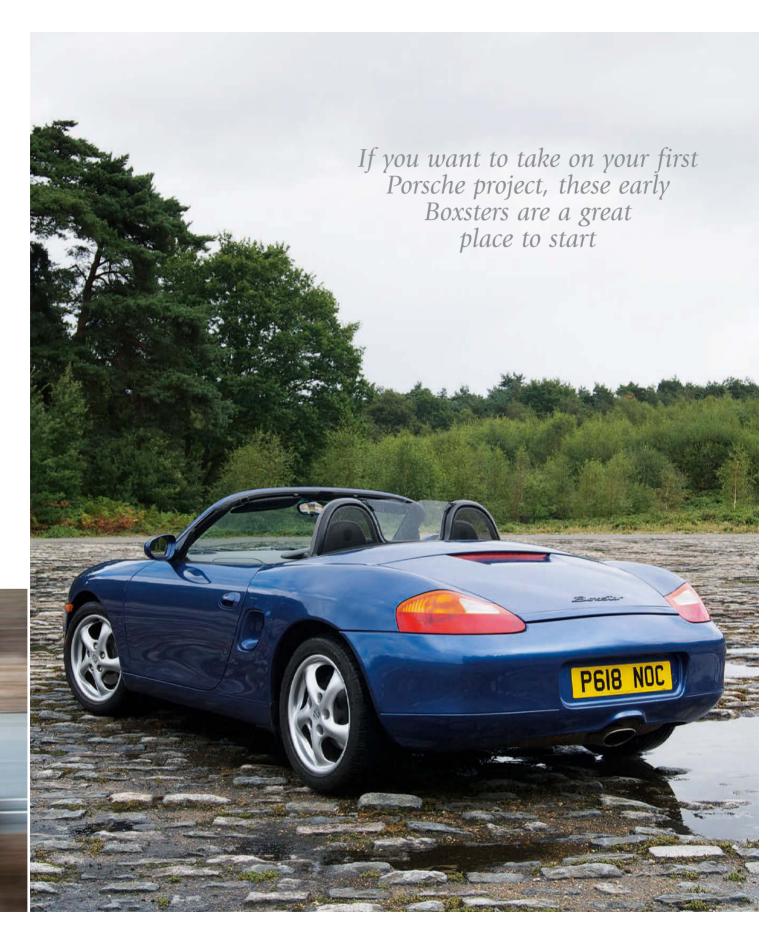
It seems that £3000 is the bottom line for a Boxster that is both running and HPI clear, and between that and £4000 you will find a range of early 1996 to 1999 cars with the original 2.5-litre engine that have covered at least 100,000 miles. Let's not have any illusions here; a Boxster at this price point will be tired, scruffy and probably a bit bruised around the body and hood. Oh, and if some internet forums and magazine articles

are to be believed, it will also be a 'ticking time bomb' with an engine that will explode within the first few miles of ownership. This is not the place to go into detail about the supposed issues with Boxster engines but suffice to say, the chances are the engine will be fine but, if you're very unlucky and it does fail, well, you've not lost a lot of money and you'll be able to sell the non-running car for between £1500 to £2000. If you want a cheap Porsche to cut your

teeth on buy an old 2.5-litre Boxster and have some fun with it. But don't be tempted to pour too much money into it beyond keeping it roadworthy and in a respectable condition. If you want to take on your first Porsche project, these early Boxsters are a great place to start and there are plenty of Porsche part specialists offering both new and used components to suit every budget.

The 3.2-litre Boxster S was launched in 1999 and you'll need



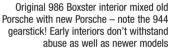




If you want a sub-£10,000 Porsche the Boxster is your only option if you also covert peace-of-mind driving









£4500 to gain access to its 252hp, while the original 2.5-litre motor gained 200cc and 15hp (a great improvement that makes it worth choosing one of these over a 2.5) and can be had for the same money. In both cases, though, you'll again be looking at 100,000-plus mile examples at this lowest price point.

These bargain-basement Boxsters are all very well but, as with anything in life, it's worth paying a bit more to get a decent example. And the good news is for £5000 you can get a very reasonable 2.5-litre Boxster that you will be proud to own and will be a joy to drive. Look hard enough and you'll find a similar quality later post-'99 2.7-litre car for not much more than that. Oddly, the Boxster S has never carried much of a price premium over the standard model, so £5500 to

£6000 will buy a reasonable example of this more powerful version. And not only is the S more powerful but you get other upgrades such as larger brakes (from the base model 996 Carrera of the time), lower, stiffer sports suspension and higher equipment levels.

Buy a good Boxster at this budget and you can be confident that it won't drop in value, if at all. Roly Baldwin of ePorsch (www.eporsch.co.uk) is a UK Porsche dealer who actively sell early Boxsters and insists that they are good buys: "They are great value for money," he says. "At this price, they will hold their value, too, as prices of decent Boxsters aren't going to drop below £5000. What's more, I've never had any engine problems with them."

Engine capacity apart, the first major upgrade to the 986 Boxster

came in 2002, when the car was updated with more powerful engines plus restyled front and rear bumpers and side intakes. At the same time, the interior received some tweaks (including the welcome addition of a glovebox) but the most worthwhile upgrade was the fitting of a glass rear window in place of the previous plastic one that was prone to cracks and discolouration. Although many earlier Boxsters have had glass windows retro-fitted, these face-lift cars are worth seeking out if you can afford one. Prices start at £6000 for a 2003 2.7 but it's a good idea to stretch to £7000 to get a cleaner, lower mileage and all-round better example. Indeed, from £7000 to £9000 the world is your oyster, with a huge number of good 2003MY Boxsters to choose from. You'll also

find some earlier, low mileage, pampered examples, too, but these are overpriced and best avoided in favour of a later face-lifted example. The Boxster really did improve with age.

There is also a surprising number of overpriced Category D Boxsters on the market. These examples have been deemed by an insurance company to be uneconomical to repair, which on a sub-£10,000 Porsche can mean surprisingly minor damage — a common scenario is the roof being slashed and the ignition barrel broken in order to steal the car. Replacing these two items along with new door

locks will make a car uneconomical to repair in the insurance company's opinion. Despite the owner having been paid out on their insurance policy the car isn't scrapped and is offered to the trade where it is repaired but the car remains Cat D and will always be flagged up by an HPI check and, typically, should be priced at 20 per cent less than an equivalent unsullied example. If you're looking for a Boxster as a track day project, for example, a Cat D is a great way to go.

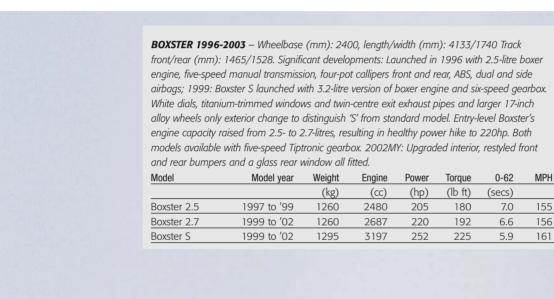
At the top end of 986 prices, from £9000 to £14,000, you get the cream of the crop. That means a lovingly kept

2003 to 2004 example with 30,000 or less miles and a great service history. The problem with 986s of this value, though, is that they overlap with the newer 987 Boxsters and even 996-model 911s. While it makes sense to buy a good 986 over a higher mileage 987, it's hard not to be tempted by the newer car (or, indeed, a 996). Roly Baldwin agrees and says it's inevitable that later 986 Boxsters will still drop in value: "You won't lose much money, though," he says. "For example, I recently sold a 2004 2.7 (one of the last 986s) with 50,000 miles for £10,000. Now compare that

with a very similar 1997 2.5 I sold about the same time for £6500. That's only £3500 depreciation over seven years, which is pretty good."

With prices of air-cooled 911s going wild and many 924s and 944s either consigned to the scrapheap or priced as appreciating classics, if you want a sub-£10,000 Porsche the Boxster is your only option if you also covert peace-of-mind driving. However, despite being cheap, it's far from nasty and offers a mid-engined, flat-six, wind-in-the-hair Porsche driving experience. Well worth waiting 18 years for! O

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### the garage



It was the biggest race of the year for Steve and Ian as they took to the grid at this year's Silverstone Classic.

o racing weekend is without anticipation, a few anxious moments, some drama and, hopefully, a decent result and a good race with other fellow racers.

This is the first time we've raced at the Silverstone Classic and it's a huge event. Bring a bike or scooter unless you want to cover serious mileage on foot when not in the car. Because of the 800+ race cars and 100,000 spectators over the weekend it's also a logistical nightmare, with passes for this and that, separate parking for trailers, cars and campsites, and two (yes two) paddocks and race controls etc. But what a weekend – if you've not been I highly recommend it.

We were racing in the RAC Tourist Trophy under the pre-'63 GT race series run by Carol Spragg – and what a great series it is, with lovely original cars (no hot rods). I hadn't previously appreciated the significance of the race but it is actually the oldest continuously competed-for race in the world, first run in 1905. It was immortalised in the 1960s when Sir Stirling Moss won it twice in Rob Walker's Ferrari SWB. The format is a 50-minute race with an untimed pit stop (a rarity these days), which is a great duration as it really tests driver and machine.

Happily team-mate Ian Clark and I have finally sorted the poor running issues that had plagued us over the past two races: the baffling foam was breaking down in the old fuel tank that came with the car. Also, the predetonation was sorted, though it was a little less advanced, simply needing a new coil and fresh plugs. The grid was packed with the best cars from (in my opinion) the best era of the late 1950s/early '60s, from Ferraris, Astons, Ginettas, Turners, Morgans, Jaguars and Lotus. So out of a starting grid of 43 cars we qualified 36th with a 2:54.7 lap, ahead of the two other 356As (both German cars), but four seconds off the 356B that had the benefit of running with disc brakes, and a chasm of a gap to John's Ruston's Carrera which posted a 2:45.

So to the actual race. The start was madness with three abreast through Abbey, when a white E-Type with red strips suddenly lost all power in front of the packed grid and everyone had to take drastic action to avoid running into him. I managed to drive around the outside of a green Turner Climax that lost momentum after the 356B throttle linkage came loose at Aintree, which was a brave move as I had nowhere to go if he shut the door on me by running wide. I was therefore

committed, half on the track, half on the kerb. It paid off though as our drift angles didn't coincide!

It was sad seeing the 356B go into the pits to fix the linkage as it would've been great to dice with it, and the German 356s never got under threeminute laps so we never saw them in the rear view mirror either. The Carrera obviously started further up the grid and simply drove away into the distance. The main competition in the drum brake class was the Aston Martin DB2 Le Mans, which had out-qualified us but took a long pit stop and then the gear knob came away, leaving the car stuck in third gear! They finished just 50 seconds behind us though as the power of the Aston suited the long, fast circuit that is Silverstone.

My main pre-occupation was racing a white Elan and green Aston Martin DB4 – in trying to overtake both I managed to pull my time down from a best of 2:54.7 to 2:52.09, so it was satisfying to bring down my personal best by over 2.5 seconds. Both were quicker on the straights as one would expect, but the Aston braked early and the Elan was uncharacteristically slower through some of the corners than our 356 so we had a proper gentlemanly fight for the whole of my stint. I finally managed to get ahead of

the Aston by going round the outside of him at Club, having forced him to take a tighter defensive line the corner before by having feigned to go inside him as we came out of Vale.

A good quick pit stop and a drag racing start saw team-mate lan on his way and he was immediately on the pace – the white Elan exited the pits at the same time lan passed another one on the inside so he was the Porsche meat in a Lotus sandwich through Copse! Thankfully no-one touched and he made it stick.

Two laps later, though, lan was the first car to come upon oil dropped on the racing line at Chapel which the marshals hadn't spotted. As he accelerated out of the corner the back snapped round and he was instantly a passenger. Watching the footage it could've been a *lot* worse than it was given that he spun at over 80mph... the car pirouetted backwards in a large arc before touching the grass, bumping the wall and brushing momentarily down it before coming to a halt on the grass in a cloud of dust and whitewash from the wall.

There was no obvious mechanical damage and he was straight back out racing, but was obviously annoyed by the off. I can tell you that from the pit wall it's the worst experience, looking



at the timing screen and seeing the expected lap time go past and the car not appear... 34 seconds went by before he came past. Our main concern being holding our place as we knew we had clawed our way up the order due to a number of retirements and crashes, as is to be expected in a race of this length.

Fortunately the damage is nothing that won't polish out, although the Reutter badge now stands 2mm proud of the bodywork and now looks like a sander has been taken over the leading edge of it. It will be left as a reminder of a precision crash and a great race!

We finally crossed the line in 27th place overall, finished fourth in the under 2.0-litre class, and first place in the drum-brake class which was a tremendous feeling and a lovely way to end a great weekend. My family had joined me for the first time so it was nice to be able to show the kids a trophy after having raced for three seasons with no hardware to show for it. When you're six it's not easy to understand why your dad doesn't win and gets overtaken lots. All three of them are well-versed in the primary racing excuses of oldest car, smallest engine GT, and drum brakes so it was nice to finally win a class! O

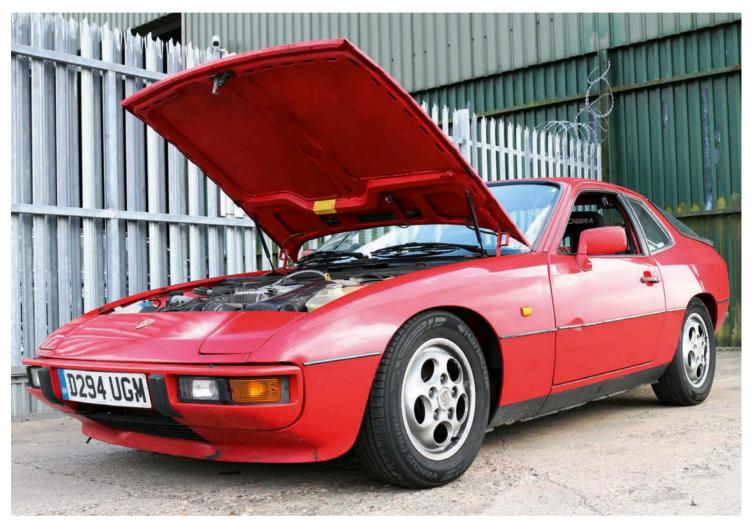




Three years in the making and Steve and lan finally have a tin cup to show for their racing endeavors. They've even got a fan club, too



There's been a lot of cleaning and not much track action this month, which is an anomaly for our fleet. Not that there isn't plenty to report on.



#### 1986 924S

You're taking the 911 SC? That, since the blue car's arrival, has been the prevailing assumption of others. The truth is, I haven't been exaggerating how good the 924S is, and I really enjoy driving it. So, when I was invited to the MotorPunk Car Club 18-30 track day at Blyton Park, I signed up the 924S. Yeah, save the sniggering, 18-30 refers to the age of the cars. There was an element of the SC not being track ready in my decision but this sounded ideal for the 924, mixing it with cars of a similar age and power instead of being outgunned by the modern stuff.

The S has been running well of late, so there was little that needed doing prior to departing, just some fresh brake fluid. I run an ATE performance fluid, which performs on track but requires changing more often than standard brake fluids. For some reason changing the brake fluid is a job I often put off, but I don't know why. I have a Sealey brake bleeder that

attaches to the fluid reservoir, pressurising the system, thus keeping the fluid moving through the pipes without the need to keep pushing the pedal, and it holds more than enough fluid to keep the reservoir from running dry. Bleeding out the fluid at each corner is taken care of in short order.

I had not been to Blyton Park before; I had been told it was in the middle of nowhere and it was certainly a long way from home. I don't like the idea of being up too early before a track day so decided to travel up the night before, staying in a hotel with some other MotorPunk attendees. There was enough big talk in the bar that evening to leave me moderately concerned that I was going to be left for dead, again.

The following morning we breakfasted and set off for the track, which really is in the middle of nowhere, and I suspect with the prevailing local

community influence over race tracks, all the better for it. I had just enough time to remove my tools and other sundry items from the car and wind up the SPAX coilovers before heading in to sort my paperwork and attend to the briefing. Unlike some who can be very dry, Richard Usher's run through of the track and rules was very entertaining and quite possibly worth the entrance fee alone, for most of us, the chap who'd turned up in an XJ-S took a gentle ribbing — rightly so, it broke down, as foreseen.

The sighting laps made the track seem impossibly narrow, and I did wonder if I was ever going to get up a head of steam. Added to this, on the second of the sighting laps the speed picked up a little and my tyres began squealing through certain corners. This had the makings of an interesting day. I did my usual: headed back to the pits and let the keener drivers get out first.









Thanks to MotorPunk (www.motorpunk.co.uk) for the track time and the photos

There were a few other Porsches dotted around the car park, Richard Duisberg from MotorPunk in his 968 Sport (that he also took on the Rallye des Jonquille earlier this year), a very well setup 944 Turbo and a couple of 911s, both Cabriolets. As the early runners began coming back in to the paddock it was time to head out. I had been standing on the embankment by the pit exit, and as I went out on track there remained a gaggle of spectators, this was not a time to do something stupid.

I am uncertain whether it was the balance and forgiving nature of the 924, but it took very few laps to change from the track to feeling intimidatingly narrow to being challenging. With the exception of the Wiggler, a chicane on the back straight, I worked out my lines and braking points early on.

Blyton has a policy of long trousers, which is not uncommon, and long sleeves, which is less widely adopted. Sadly I'd left my long sleeve T-shirt and home, so had to don my jumper, which felt like a boiler suit and I was sweating profusely by the end of each stint. After a few sessions, once I had sped up, there was a new problem, that of overtaking: there were only two places on the track where other drivers seemed to pull over. I am not complaining though, I got to lap with some great machinery, including a Camaro and a couple of Alfa GT Juniors. There was faster kit too, that I had to move aside for, a Lola replica and a TR7 with a 4.6 V8 on full slicks stood out.

In the afternoon, I got out on track with another entrant from the French rally, Ben Williams, who had left his 944 at home in favour of his stunning BMW E12 M535i. His tyres were in a similar state to mine, so we set about exploiting the oversteer and getting some video footage of the shenanigans. At the tight

corner next to the pit exit the 924 was spinning up the rears almost every lap, even using third gear. The loose back end made for fantastic fun coming back through the corners from the far end, even with my limited experience, through Bunga-Bunga it was possible to pile on the steering early and manage the car on the throttle. I know more experienced drivers would do it better, but from where I was sat, it felt absolutely brilliant!

Blyton is a great circuit that suited the 924 S well and while it will never be the fastest car on track I think it really surprised a few of the other drivers. While I am really looking forward to the *GT Porsche* evening at Brands with plenty of other Porsches, it was fantastic fun getting out on track with the 924's contemporaries.

Matt Biggs @PawnSacrifice

#### 1993 964 Carrera 2

There's nothing like an MoT to make you a bit apprehensive when you own an old car. Normally I'd be totally aware of any potential issues that might need attention in the run up to the yearly test, but in these last few weeks the 964 has been in storage whilst I concentrated on building it a new garage/workshop as part of a larger extension to our house. So I'm a bit out of touch at the point of writing as to any potential issues that could keep it off the road. I do know the windscreen washer pump has decided to call it a day so I'll have to attend to that and I'll give it a general once over to check anything else that might have taken exception to not being used for a while.

With regards to the garage, many people have suggested that I must have pulled a fast one to design and build a man space as big as the new living space. But no, thankfully I have a very understanding wife who knows how much a large practical space means to me, plus it keeps all of the oily bits out of the kitchen...

I'm sure many old Porsche guys would share my excitement at having a purpose-built garage space to store and generally pamper their pride and joy. I've even left recesses in the (insulated) concrete slab for a lift in future if my finances ever recover enough to buy one. No more worrying about jacking points and crawling around on the floor to get at the mechanicals. There are many great examples of home garages that are extensions of their owners' personalities and expression of the pleasure they get out of owning and enjoying their favourite car or cars. I'm really looking forward to making my own space to tinker with the car in.

Combined with the excitement of having a space to work in, being separated from the 964 often leads to idle thoughts about upgrading and restoring areas of the car that may require attention in the future. When I bought the car four years ago, I ignored most of the advice when it came to choosing a second-hand car. For starters it was the first and only 964 I'd been in, let alone driven, it stank of petrol and the interior was grubby, but my dream was within reach so I bought it with an eye on its potential, not just its current state. And so I've been keeping a mental log of all the things I'd like to do that would mark it out as mine and make it impossible to justify selling!

In my more idle moments, I daydream that if money were no object I'd strip the shell back to bear metal and repaint it in a non-metallic seal grey (so in-keeping with the original colour), retrim the interior in classic Porsche red leather with Alcantara headlining, with a lightweight rally twist. Replace the dampers with Öhlins and fit big brakes, which will necessitate the fitment of bigger, lighter wheels. I'd rebuild the engine to 4.0-litre spec so I can keep up with those pesky GT3s on track and to make the most of it use a six-speed 993 gearbox with an LSD. Mentally I've just gone and spent £40,000 and yet when I next go out for a drive, whether it's down to the shops or to a deserted B road, all that upgraditis fades away and I find myself immersed in the pleasure of driving my 911. It might not be GT3 sharp or RS valuable but it's mine and it will stay that way until the oil runs out if I can help it.

Ben Bradley @BenB\_7

















#### 1986 911 3.2 Carrera

I'd been itching to get some proper miles under the 3.2's wheels this month, and to get it up on a ramp so that the experts can have a proper poke around at it. I've managed the former, but alas not yet the latter, but even so, just driving it has been very revealing.

The obvious first job was to fit some fresh rubber, as the car had sat for a while before it came to me and the suspicion was that the Michelins were both hard and square. In fact, even on the journey home from collecting it we had a bit of an unexpected wobble on a damp white line on the road, so my confidence in what the Carrera was going to do next at any given point hovered only slightly above zero.

I wasn't totally sure on which way to go with the tyres: whether to go for an advanced modern tyre offering the maximum amount of grip possible, or to look for something that would offer a more periodlike feel to the ride and handling. I happened to be speaking to Steve Winter at Jaz Porsche about all things Porsche and asked his opinion, to which he replied he ran his own Carrera 3.0 on Falkens and that they were good news.

So in fairly quick order ULY was shod with a nice new set of Falken ZE914s. I say 'fairly quick' because even this ostensibly simple task was affected by 'new car teething troubles', in this case the mystery over how to remove the locking wheel nuts protecting the Fuchs alloys. There was a small key on the fob that looked to all intents and purposes like the right sort of key, and yes, it fitted the lock perfectly, but no, it didn't undo them! An hour at the tyre centre passed, and in the end I had to wave the white flag. It was only later on when I happened to lift the driver's side mat and found another identical key with a different serial number on it that a solution was found...

All of this was frustrating, but when you're new to a car that's a real character, and has led a life too, there's bound to be these little issues and foibles that you have to 'learn'. For example, I'm never going to make that mistake with the keys again!

The new Falkens aren't the company's latest high performance tyre, but rather a more general, all-purpose tread with more mellow characteristics that are hopefully in-keeping with the 3.2's nature. We shall see over the coming months if it was the right decision, but the first impression is that they've totally transformed the car.

As it transpired, the first long journey I did in the 3.2 was an important work trip. I must confess, a part of me wanted to leave the Porsche in the garage and use the long-term test car that I've been running; the possibility of messing up a job that had taken over six months to prepare for by being stranded on the hard shoulder of the M6 seemed ridiculous. But in the end I decided to put my faith in the 911: after all, you only live once, and it would be an ideal

opportunity to really see where the car was at. I'm so glad I kept the faith — ULY was brilliant, and never missed a beat. It made the day much more of an adventure.

The upshot of all this is that the only obvious issues are a very slight vibration at high speed and a ventilation fan that can chirp a bit — sometimes. Driving from London to Liverpool and back really showed what a great long distance car the 3.2 Carrera is: it was something thrown into relief when I had the opportunity of a quick drive in Matt Biggs' fantastic blue SC. The SC feels lighter, revvy and perhaps more responsive, but the Carrera counters with rock-solid stability and a bigger accelerative punch over a wider rev band. They're actually quite different cars.

Since the Liverpool trip I've found myself using the Carrera as much as possible. The best drive recently has been a thrash back from Mallory Park — supporting a rather more glamorous 911, but that's another story — on a hot, humid, summer's evening. Both windows down, making 'good' progress, listening to the engine and feeling the car work beneath me, it was a magical experience and I felt myself forgetting about all day-to-day troubles. That's what owning cars like these is all about.

Adam Towler @AdamTowler

#### 2004 996 GT3

Compared to the frenetic activity of July with the film shoots, track days and road trips, August was the polar opposite. Work and family commitments (I had been absent from both for large chunks of July) combined with two weeks sat on a beach marshalling errant children have meant very little driving. In fact, the car has done, quite literally, a handful of miles. Those were done to and from the lock-up in order to spend some quality time cleaning those delicious GT3 curves.

The previous four weeks had seen FAB subjected to everything from baking heat to torrential rain. Runs up the Kemmel straight at 160mph, navigating under-sea transport and tiptoeing through the muddy country lanes of Cheshire. The car was looking like its old self again, covered in mud, with a film of road grime, and rubber smears all up the bonnet and wings. Time to get to work.

It's at this point that I have a little confession to make. As soon as the car came back from its respray I had planned a two-pronged attack to try and keep the paintwork in the best condition possible. The first phase has been well-documented and was to get the

front-end protected with a paint protection film. That was done by PaintShield and has been doing a fantastic job so far. The second phase was to add some decent topcoat protection to the paintwork that wasn't film-wrapped.

I approached Clark Aitken (find him on Twitter @Clark\_PB) as he is a fellow 996 GT3 owner, professional detailer, and part owner of Polished Bliss, probably the best web-based detailing retailer going. I asked him for some basic advice and to recommend me a couple of products that a ham-fisted buffoon like me could use. He knows I'm not one of those 'polisher' types and the products needed to be quick, easy and fool-proof to use.

In the end we came to the conclusion that a couple of the Auto Finesse products were going to be easiest for me to use to add protection and then a new shampoo product from Gyeon to use as my 'regular' maintenance wash.

Because the paint was brand-new and the car had yet to be driven, the preparation for the Auto Finesse Tough Coat was very straight forward, requiring just a single application of the supplied cleaning solution and

then straight on with the protective coat. It really couldn't have been easier. The only time-consuming part was making sure that I got the coverage right up to the rubber window and sealing strips without actually getting it on the strips themselves. Not the end of the world, just a pain to get the rubber looking good again afterwards. I have to admit that the car didn't look much different after it was coated, but then it is later on that you expect to reap the rewards of this kind of preventative maintenance. Mainly when you next come to clean it.

Unfortunately, up until this month I hadn't seen it being washed since I put the Tough Coat on. The lads at Sports and Classic had done it, following my specific instructions and using the products and expensive Gyeon wool mitten I left for them. But they assured me that they only had to wave the jet wash nozzle at the surface from a distance to see the dirt fall off the slick surface. Certainly I was very surprised to see that even after a few washes and a couple of months use that the first wipe with the Gyeon mitt and Bathe+shampoo removed all the build-up of dirt and grime effortlessly. Within minutes the car, nose to tail, was





looking immaculate again. The bug splatter came straight off the PaintShield as I would expect and even the rubber smears came off painlessly with minimal elbow grease required. As far as car washing goes it was a completely pain-free experience.

After that, a quick dry with a microfibre towel and I pootled back to the lock-up and put its cover back on.

And that is where it's sat and hopefully will still be sitting when I get back from my hols. I haven't got anything specific planned for next month but another track day would seem in order before the weather starts to change for the worse again. I've unfortunately chosen two weeks out of the country when my GT3 track buddies are down at Silverstone on the new GP circuit and the *GT Porsche* Brands Hatch track evening is taking place. Poor planning there on my part. Still, I'm earning some good brownie points on this holiday that I can hope to redeem in the near future. As long as I don't let the kids drown each other, that is.

Finally, for those keeping count, I managed to rip my splitter off four times in July and August...

Jack Wood @Jackkwood









#### 2002 996 Turbo

Before I bought one, I was of the opinion that the 911 Turbo looks at its very best when covered in road grime and dead flies, having just stamped its authority on another autobahn or back road. However, I also have a bit of OCD when it comes to my own cars and can't stand to leave them dirty for long, so one of the first people I called after collecting the Turbo a few months ago was Richard Tipper of Perfection Detailing.

Richard worked wonders on my old Boxster despite me thinking there wasn't much he could do to improve it, and so I was looking forward to seeing what he could do to the Turbo. It's not just about the washing and the polishing, either – Richard has a wealth of experience in assessing the state of the paint finish and bodywork and can give a detailed report of the originality of the paintwork and even

whether there's been some concealed crash repair work done.

I booked him in for a Full Enhancement Detail, which takes a whole day and involves everything from the obvious wash and clay bar process, to washing all the carpets in the interior. It also includes treating the leather, a full machine polish of the paintwork followed by a coat of nano sealant on the paint, plastic and glass, and a final coat of wax on top.

Silver cars can always look reasonably clean even after a cursory wash, but after a day's effort Rich had the Turbo positively glowing. There's a subtle blue sheen in the paint that just wasn't visible before and the nano coating makes it incredibly easy to clean off dust and grime. Ten minutes with a sponge and it's back to its shiny best, rain just beads and rolls off all of

the surfaces, and going on my experience with the Boxster, the finish lasts a very long time.

On the subject of paintwork originality, it seems that my car has definitely had quite a bit of respray work. Richard checked the paint depth on all the panels and with the exception of the roof and the rear body panel, it seems that virtually every other panel has been resprayed at some point. That might sound like bad news, but Richard was at pains to point out that the work was of a very high standard and most likely to have been tidy-up work by a conscientious previous owner to remove scratches and chips. He also inspected the paint on the inside of the doors, particularly around the hinges, which can be giveaway points if a car's been in an accident or had replacement panels fitted. Fortunately, the paint there



A full enhancement detail by Richard Tipper at Perfection Valet turned the 996 Turbo back to better-than-new condition. Origins of the sports exhaust are still a mystery though

was original, as are the hinges. The panel gaps and tolerances are also factory-spec, so my fears that the car might be hiding dark secrets were unfounded.

The Full Enhancement Detail costs £650, which isn't cheap, but I'd budgeted for Richard's work, knowing the difference he can make to a car. I feel it's worth every penny, though, particularly with regard to the paintwork.

During the detailing process, we also took a close look at the exhaust, since the car has had an aftermarket system fitted. I've been through the reams of invoices and receipts that came with the car and can't find any mention of the exhaust being replaced, but this system is definitely not standard.

One of the first things I noticed when I went to testdrive the car was the beefy sound it made, and I suspect it swayed my decision to buy the car over a 997. I'd been concerned that a Turbo wouldn't have a discernible exhaust note, but the bellow that my car makes when you start it from cold definitely puts a smile on your face.

Neither Richard nor I could find any identifying marks, but it's a stainless steel back box that looks very similar to a Milltek system. It gives the car a bit more personality to my ears — at full throttle there's more of the flat-six howl mixed in with the induction roar that you'd expect from a turbocharged engine. During normal use it's probably a bit louder than the standard system, but no more so than the exhaust fitted to a GT3. It does make passing noise limits at track days a bit more of a worry, though. Static tests for 911s are notoriously unfair since having the engine at the rear

adds more noise, but a recent trip to Bedford Autodrome I had the car registering 102dB on the static test, with the limit for the session ostensibly being 101dB. Fortunately, I was allowed on despite failing the test, with a word of advice from the officials to short-shift around the areas where the noise meters were located!

I'm off to Brands Hatch this month for the *GT Porsche* track evening and I'll be interested to see if the Turbo passes the static test there. As much as I enjoy the system as fitted, if the extra volume means I can't get on track due to increasingly stringent noise limits, I may have to source a standard exhaust for peace of mind.

Martin Spain @MartinSpain

#### 1981 911 SC

A month or so into 911 ownership presented a shakedown for the SC: a long weekend in Wales driving with fellow fleetists, Jack and Ben (Martin sadly couldn't make it) and a few other friends in a variety of quick cars. It was a couple of firsts for the 911, its first public outing and first long trip.

On the journey north the rattling noise from the exhaust, at high revs, was becoming less intermittent and more pronounced. After a couple days of high tempo driving the car was becoming quite noisy under throttle and my mechanical sympathies caused me to back right off.

Making my way home from Wales the symptoms abated and I wondered if I had just been paranoid, as I was with every little rattle during the getting-to-know-you period. Sadly though, with the few occasions that I used the SC over the subsequent weeks the exhaust noise was back and present even at low revs if I opened the throttle fully. I suspected the cause was actually something other than the exhaust.

I thought back to my visit to AutoFarm and the chat with Matt, one of its engine specialists. Matt told me that when AutoFarm replace the head studs it re-torques the nuts after 600 miles or so. I was doubtful that this had been carried out with my car so wondered if that was, in fact, the cause. That the engine noise only occurred under load meant I was unable to test this theory, it certainly wasn't showing any alarming signs when Matt checked the car over at idle and had I got a fuller diagnosis I don't doubt the cause would have been identified.

I consulted my book: 101 Jobs for your 911 and checked instructions on Pelican Parts to learn that the head studs are located behind the valve covers. There are two valve covers per cylinder bank; upper for the inlet and lower for the exhaust valves. Whilst difficult to access, the valve covers, and in turn the head studs are accessible with the engine in the car.

I decided, if only because I wanted a solution, that the troublesome engine noise was a consequence of the head stud nuts not having been re-torqued. I ordered up a valve cover gasket kit, which included the four gaskets and new nuts and washers. As I was due to remove the valve covers it seemed reasonable to get on and check the valve clearances at the same time, again I consulted my book. The valve clearances was a job I have never tackled before, and for the SC it transpired I would need a specialist tool to check the clearances. so I ordered one of those too.

Undertaking a job for the first time, especially when digging around in the engine, I always allow far longer than is actually required to complete the work, to save any simple mistakes. The parts and tool arrived in time for a commitment-free weekend and the second England v India test match; the perfect accompaniment to spannering.

With the radio on and the rear of the car jacked up

I drained the oil from the engine. The dry sump didn't need draining meaning less mess and less of the relatively fresh oil wasted. The upper valve covers are accessed via the engine bay and, to make that simpler, I removed hoses from the heating system and unbolted the AC compressor and took out its rear mounting brackets. I took a lot of photos as I went, as a reference to ensure that all the parts went back in the correct order. Access to the lower covers required negotiating the exhaust manifold, but little else; I removed the rear wheels for better light and to give myself more room.

The valve cover bolts removed easily enough, despite a few bringing the studs with them. The studs that came out with the bolts were soaked in penetrating fluid, the bolts removed before cleaning and checking for damage: all were in good nick.

I decided to get the fiddlier task out of the way first; checking the valve clearances. Removing the distributor cap and turning the crank I set the engine to Top Dead Centre. I must confess that I spent some time frustrated that the crank would not turn easily, before realising I had left the car in gear.

Even with the special tool, checking the clearances is a delicate task. The valves are checked in the firing sequence with the crank rotated 120° after each pair. A few of the clearances required minor adjustments but most were true.

The head stud nuts take a 10mm hex tool. With restrictive access to the nuts the hex tool wouldn't fit but a cobbling together of a few small socket pieces with electrical tape provided something that would do the job. From the first nut it was clear that they were a long way from the correct torque setting, this actually pleased me as I, well, Matt from AutoFarm, was correct as to the problem. If the nuts are not tight, the cylinder head is not tight to the crankcase and leaks under load. Torqueing the head studs took an hour or so due to poor access and a three-stage tightening process. I then fitted the new gaskets, fitted the valve covers, other parts and filled with oil.

When I first drove the car I was impressed with the engine. I haven't pushed too hard yet but am delighted to report that the now-airtight SC engine make it a different, better car from the one I bought. While there is little drama at low revs the delivery is much more willing. At 3500rpm the engine's character changes and it starts to come alive. By 5000 it seems to be eagerly surging toward the limiter. The way the engine saves everything for the top-end feels like it could have some sort of VarioCam in there. It is fantastic and even without giving it full beans, the feeling at the top of the rev range is addictive. I cannot wait to give the full rev range a run out.

Matt Biggs @pawnsacrifice















# End of Days



# The time has come to sell your beloved Porsche, so here's your guide on how to get the best possible price and make the process as painless as possible.

Story: Philip Raby

hen you own a Porsche it seems inconceivable that, one day, you may have to sell it. Sadly, though, for many people that day will come. The onslaught of children, change of job, a home move, illness and many other factors can force even the most loyal Porsche aficionado to have to bid farewell to their pride and joy. Of course, though, there's also the much happier scenario of selling one Porsche in order to purchase another.

There are various ways of selling a Porsche

and the best option for you depends on how quickly you want to complete a deal, how much you want back and how easy you want the process to be. Your choices are: selling the car to a dealer, part-exchanging it for another vehicle, using a broker to sell it on your behalf, or selling it privately yourself.

Turning up at a dealer and offering them your Porsche is a quick and painless way of selling but the chances are you won't get a particularly good price for it – that said, in today's market if you have anything classed as a classic or wearing

an RS or GT badge you may be pleasantly surprised as to what you are offered. Any car dealer needs to factor in various expenses, including a margin to cover any unforeseen preparation (and pretty much every car needs something spending on it to get to a showroom standard), a service and MoT, valeting, the price of a warranty, VAT and, of course, they need to factor in a profit margin. That said, there are factors which will work in your favour; if the dealer knows the car (perhaps they sold it to you, or serviced it for you), if it's a particularly







good example, it's a rare or sought-after car (a 993 Carrera S, for instance), or the dealer has someone looking for a Porsche just like yours. If any of those apply to your car, then a dealer may well offer you a better price. Indeed, it's worth talking to several specialists to get a steer on how the market values your car.

Part-exchange can give you a better return than a straight trade sale because the dealer has more incentive to take your Porsche as it's facilitating a sale for them as well as giving them another car to put into stock. However, that's only likely to be the case if you're dealing with a Porsche specialist: arrive at a Jaguar dealer with a classic 911 and they won't want anything to do with it.

A number of Porsche specialists act as brokers, selling your car on your behalf – a process also called sale or return (SoR). The car is prepared, put in the showroom, the dealer does all the marketing and selling on your behalf, and charges a commission to cover their costs and to make a profit. This generally gives you a better

return than selling to a dealer, especially when you consider that a dealer will command a higher price than if you sold the car yourself. Bear in mind, though, that the car may not sell immediately so it's not an ideal solution if you need the money quickly. There are one or two unscrupulous dealers that will take your Porsche off your hands with the promise of a swift sale and then make it difficult to get – or even refuse to give – the car back if you change your mind. If you go down the brokerage or SoR route, research any dealers you are considering working with both online and through any contacts or friends who have done the same.

The final way of selling a Porsche is to do it yourself. In theory, this will give you the best return as there is no one else taking a slice of the proceeds. However, selling a Porsche privately can be difficult and you probably won't be able to ask as much for the car as a dealer will. With higher value Porsches, in particular, buyers are often loath to buy from a private individual as

they have limited rights and no warranty if anything goes wrong, nor can finance and partexchange be arranged. The seller, meanwhile, has to deal with time wasters and strangers visiting their home.

Whichever option you choose, the key to achieving the maximum return is linked to how well you present the car for sale, either to a dealer or as a private sale; this doesn't mean just giving it a quick vacuum and a sponge down. Anyone buying a car subconsciously wants to picture it as their own even before they've bought it, so you need to make it easy for them to do that. Which means de-personalising it by removing all the clutter (CDs, phone chargers, air fresheners, loose change) and peeling off stickers from the windows and bumpers. That Nürburgring sticker that you proudly display on the rear bumper suggests to buyers that the car has been driven hard on track and all the connotations that will swim around their head when they envisage track days, so it has to go.





Once you've removed all your personal belongings, take a good look at your Porsche from a buyer's point of view. What lets it down? Are the wheels scuffed, the front bumper chipped, the floor mats worn? Now's the time to decide what remedial work, if any, you need to do. Sure, you don't have to have the wheels refurbished if they're scruffy but doing so will make the car more attractive and easier to sell; potentially the higher price you sell the car for will more than cover the costs of refurbing components. Small dents and scratches can often be removed by a specialist dent repair company and the latter by a top end valeter and detailer rather than requiring a trip to the body shop, and the bill will be far less. It's a case of weighing up the cost and time required to rectify the imperfections against the benefits of presenting a perfect car for sale (an advantage of using a broker is that any such work will be handled by them prior to marketing the car).

You will also need to assess the car

mechanically - either by you or by your local Porsche specialist. Are the tyres in good condition - how much tread is left on them? When was the last time they were changed? Are they out of date - have the sidewalls started to crack? If relevant are they N-rated? Tyres are an area that can tell a buyer a lot about the car - if you've skimped on tyres or haven't replaced them when worn, the buyer will think what other areas have you have skimped on. Is there any untoward noises from the suspension? Is the engine leaking oil? Do the brakes squeak? Again, you don't have to sort out every problem but a well-sorted car is always going to be more attractive to buyers - trade or private. If the car is due for a service, then get that done; buyers like the idea of buying a car that, with luck, will need nothing doing to it for 12 months. The same goes for an MoT - it doesn't cost much to put a car through an MoT test and buyers will appreciate the fact that it's just passed. A canny buyer will knock the cost of a service from the

asking price. Further areas to check and investigate include the windscreen – is it cracked or chipped? Many insurance policies will cover a repair without effecting your no claims bonus or costing you your excess. And air-conditioning systems will need re-gassing on early cars, so make sure yours works. You could tell a perspective buyer the air- con only needs a regas, but how are they to know it's not a more serious problem?

Speaking of servicing, Porsche buyers love to see a well-documented service history, with every receipt for work done going back to day one. While it's good to have such old invoices, it's really what's happened to a car over the last three or four years that's really useful, so gather together all the paperwork you have. Old MoT certificates are a useful way of verifying mileage while some owners even keep old tax discs, which, although of little real use, do suggest a conscientious owner. It's worth investing in a smart ring binder and some plastic sleeves to file

all the paperwork neatly and in chronological order. If you have the urge, it's nice to create a one-page summary of the car's history, showing service dates and mileages, plus any major work. Buyers will appreciate being able to see the history at a glance without having to wade through pages of receipts. Finally, check that the service book has been fully stamped – it's surprising how often dealers forget to do this after a service. If any stamps are missing, take the book to your dealer and get them added.

In short, when it comes to the mechanical condition is there anything on your car that, if you were buying it, would put you off? If so, chances are those who come to look at your car will feel the same so either remedy the issue(s) or price the car accordingly. Check the oil and water levels, and the washer level too. Does the battery start the car on the button? If not, give it a charge or replace it. And it goes without saying

to check all the electrics work – windows, central locking, driving lights and foglights. If you're selling a convertible, does the roof open easily? If not, why not? Talking of roofs, does the car have a tonneau cover and/or hard-top? Do you know where it is? Is it damaged and can you remember how to fit it? Does it need a good clean? Is the spare wheel and tool kit all present and correct?

Now that you've sorted out anything that needs doing, it's time to clean your Porsche – there's no point in doing this before it goes to a dusty bodyshop or oily workshop. And when we say clean, we really do mean that. Your car should be spotless, inside and out, to impress would-be purchasers. That means investing some serious time giving it a good valet.

Starting with the interior, use a soft-haired brush in conjunction with a vacuum cleaner to remove dirt and dust from the many nooks and crannies that any car's cockpit invariably has. If the seats and carpets remain dirty after this, you will have to shampoo them (but ensure you dry the interior thoroughly to avoid nasty odours). Attention to detail is everything here; for instance using a cotton bud to dust off each vane of the air intakes make a subtle but noticeable difference to a car's presentation. Finally, don't forget to devote as much time to cleaning the boot area, which is often neglected by sellers but noticed by buyers.

Obviously, the exterior of the car also needs to be spotless, but this extends beyond the outer body panels. Make sure that you clean the door, boot and bonnet shuts to eliminate dirt, leaves and grease. Window and sunroof seals, meanwhile, need to be cleansed of the inevitable moss that builds up around them. Alloy wheels can be a pain to wash but it's worth spending time on them – smart wheels are the automotive

Porsche buyers love to see a well-documented service history, with every receipt for work done going back to day one



equivalent of shiny shoes, they say a lot about a car – ensuring that you clean the inner faces as well as the outer (if you have the facilities it really is worth the effort to take them off to clean). Speaking of wheels, remember to clean inside the wheel arches, as buyers will inevitably run their fingers around them. On older cars it's a common area for rust, on newer cars a loose wheel arch liner could say the car has had a new wing at some point.

An area that's often overlooked is the engine compartment. Boxster, Cayman and 991 owners have it easy here as the engines of these cars are completely hidden, but for the rest of us the minimum is to wipe down the surfaces of the engine and its surroundings. On later cars it will be mainly wiping dust from the plastics, on older cars you might want to degrease some of the metal surfaces. Remove any oil marks from filler caps – oil, header tank, power-steering etc –

and tidy up the pipe work and any wiring that may have come unclipped or fallen from its intended position. A private buyer may not have a clue about what they are looking at under the bonnet, but if it is clean and well-presented it will give them peace of mind. Now that your Porsche is spotlessly clean, inside and out, it's time to add some gleam to the paintwork by polishing it, again paying attention to the door and bonnet shuts as much as the panels. Finally, clean the glass inside and out (another detail that makes a huge difference to a viewer's first impressions). Oh, and remember to polish the exhaust tailpipes, too! If all this sounds like too much work (and it is a lot) then it's worth investing in the services of a professional valeter to do it for you; they'll have all the right equipment and the skills to do a superb job.

Be warned, at this point your Porsche will be looking so good you probably won't want to sell

it! If you do, though, what's it worth? With modern cars it's fairly easy to type the registration and mileage into an online price guide and get a fairly good indication of what your Porsche is worth. Even so, it's sensible to trawl the classifieds for cars similar to yours to get a good feel for what other sellers are asking, but do make sure you are comparing like-forlike, in terms of age, mileage and specification.

That said, prices asked don't always equate to prices achieved, and remember that dealers will always command higher prices than private sellers. Owners of classic Porsches can have a harder job valuing their cars, as price guides offer little to no indication to what people are prepared to pay. It's simply a case of looking at similar cars advertised and building up a picture of what to expect. If you've owned your classic Porsche for some time, you may be pleasantly surprised at how much it is worth.





There's little point in going to all the trouble of making your Porsche look amazing if its gleaming good looks don't come across in the photos you take for advertising. No one's going to expect professional images of the quality you see within these pages but they will want to see sharp, well-exposed photos that show the car clearly and honestly.

Pick a bright but overcast day for your pictures (direct sun creates harsh shadows) and take the car to a tidy, unfussy location free of distractions. Even some professional car dealers let themselves down by shooting their stock in front of messy forecourts or in scruffy alleyways. The key exterior shots to take are a front three-quarter, rear three-quarter and a side view. A full frontal and rear shot are worth doing too.

For the interior, make sure the steering wheel is straight, the keys are out of the ignition and there's no clutter. Don't use a flash if you can help it. Take a shot looking into the driver's side (so the buyer can imagine themselves climbing into it), one looking back at the front seats, the rear seats where relevant, plus the luggage compartment. Detail shots of the engine bay, one or all of the wheels if you want to show off how good they are and any special features (such as sat-nav) are all worth recording as well. It's common now to show a picture of the instrument dials too, so start the car and show the dials at tickover and the fluids warm. Buyers like to see the mileage and that there are no warning lights illuminated. Remember, a picture really is worth a thousand words, so if you have a hard-top roof to go with your Boxster or watercooled 911 Cabriolet, take a picture of it. And if it is a convertible you're selling, take a picture of the roof in the open and closed position.

Now the important bit: the words. A good advertisement needs to be carefully worded and the key here is to be factual and honest. Some sellers write great swathes of text waxing lyrical about how wonderful the car is, while others (some dealers included) say nothing more beyond the colour and mileage. Buyers want to know the car's colour (inside and out), specification (if a later car has Bose, PCM etc) and the key points of the car's service history (a recent big service or maybe a clutch change, new brakes or perhaps new dampers). Tell the truth, and don't say the car is 'immaculate' if it isn't. If there are any flaws the buyer needs to know about, mention it in the advert; they're going to find out when they come to view the car anyway. And don't put 'no time wasters' or other such aggressive demands at the end of your advert it's a great way of putting off genuine buyers and it's just as common today that the seller is the one wasting the buyer's time. If the car is modified, make sure you are clear as to what the modifications are, who carried out the work and when and if any of the original components are included in the sale.

Where you advertise depends to an extent on what the Porsche is. For UK sellers Pistonheads (www.pistonheads.com) has pretty much cornered the market for both classic and modern Porsches, but the latter still sell well on Autotrader (www.autotrader.co.uk). You may think eBay is just for auctioning items but eBay Motors allows you to place classified adverts and, while perhaps best for lower value Porsches, we are seeing more expensive cars offered on eBay. Rare and exotic Porsches that will be attractive for the overseas market are worth advertising on the Continental-based Classic Driver site. Always add

a phone number and an email address to your advert – increasingly buyers get in touch via email in the first instance. And if you don't want to be contacted at unsociable hours, say so.

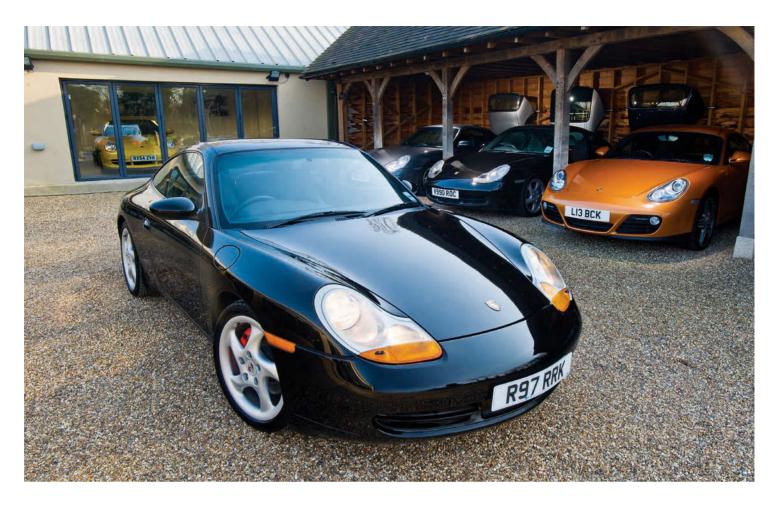
It's now just a case of sitting back and waiting for a stream of buyers to contact you about your beautifully presented and advertised Porsche. The chances are you'll have some time wasters so try to filter them out before they visit with some qualifying questions: Do they currently own a Porsche? Is your car the first one they have looked at? Do they need to sell their car before buying yours? If so, where are they at with their car? Anyone who says they only have a certain amount of money to spend probably can't afford your car so politely decline their offer, and also be wary of anyone who opens a conversation by asking for your address. A genuine enquiry will be from someone who has done their homework and asks intelligent questions. Answer them honestly and willingly if you can and, if you can't, just say so. If your mechanical knowledge isn't that hot and they ask technical questions you're not confident in answering, ask them to contact the specialist who services your car.

You may be reluctant to have potential buyers coming to your home but, conversely, they'll be suspicious if you ask to meet them in a car park so your house or place of work it needs to be. Be tidily dressed (but not overdressed!) and welcome the person by offering them a coffee – treat them how you would like to be treated. Show them around the car and go through the paperwork with them, answering any further questions they may have. One buyer will want to crawl all over the car with a torch and a notebook, another will just have a cursory look at it – either could be a serious



No one expects professional images but they will want to see sharp, well-exposed photos that show the car clearly





purchaser so keep an open mind.

There's a good chance that a buyer will ask to test drive the car and herein lies a problem; they probably won't be insured for more than third-party cover and it's unlikely your insurance will allow strangers drive your car. You may be able to arrange temporary cover but you're far better saying that you will take the buyer for a drive and explain that any sale is subject to a test drive when suitable insurance has been arranged.

Chances are a potential buyer will employ a specialist to come and inspect the car on their behalf if they are serious about buying it. This process will add to the selling process but don't be offended if they do and the inspectors understand that both parties want an agreement as soon as possible. An inspector will – should – also have the correct insurance to test drive the car, too. But of course you should check this with them when they contact you to arrange an inspection.

A buyer's offer may reflect any inspection they have had carried out, so if you think it's too low an offer ask if the inspector discovered anything that has determined their offer. If there was no inspection don't be afraid to ask why they are still offering such a low price. You need to be prepared for a negotiation and know in your mind what price you are prepared to sell the car for. Once the deal's done ask for a deposit to hold the car – £500 to £1000 is acceptable. This could be in the form of cash or a cheque; and

provide a receipt with any agreed terms and conditions to the sale.

When it comes to paying the balance a cheque is only acceptable if the buyer presents it to you in time for it to clear before they collect the car. For lower value Porsches, cash is an option but money laundering laws mean that you could have problems if you try to pay more than £8000 into your bank account. What's more, there's a chance that you could be given forged notes, so if you do go down this route, insist that the buyer accompanies you to the bank when you pay the money in.

An alternative is to ask the buyer to pay by bankers' draft - essentially a cheque produced by the bank made out to your name and which is guaranteed by the bank - which can only be issued if the account holder has the cleared funds available. Again, though, these can be forged so it's sensible to have the buyer with you when you pay it into the bank. These days, the usual way to pay for a car is to make a bank transfer. This can be done online when the buyer is with you and you can check your bank balance to see if it has appeared. Most banks, though, have a £10,000 or £20,000 daily limit on such transactions so, for larger amounts, the buyer will need to arrange in advance to make a bigger payment, in the UK this will be in the form of a CHAPS payment.

If you have ever had finance on the car the buyer will want to see evidence that there are no payments outstanding, and if there is any outstanding finance on the car, and it is less than the purchase price of the car the buyer might be happy to make a payment to the finance company and a second payment to you for the balance. Ultimately, it's best to clear any finance on the car before you sell it, even if this means taking out a personal loan so the car is clear when you come to sell it.

Once the payment has been made, you need to provide the buyer with a receipt that includes your name and address (include the buyer's too), plus the car's registration number and chassis number, the mileage on the day of sale and the amount paid. This can be prepared in advanced and have two copies that both parties sign, with the buyer taking their copy and you retaining the other. They must fill in the V5 document with their details, after which they retain the new keeper's portion and you send the rest to the DVLA. It's important to do this promptly to avoid any future issues with road tax or traffic offences incurred by the new owner! If you sell the car to a dealer you need to fill in another portion of the V5 to inform the DVLA of this for the same reasons. There's also a section that needs completing if you're selling the car and it is being exported from the country it is registered in.

When your Porsche is driving away with its new owner behind the wheel don't be too disheartened and think of all the good times. And then think about which Porsche you're going to replace it with  $\bigcirc$ 

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# Brakes

Their primary function it to slow you down and stop you but your Porsche's brakes also determine how fast you can go, too, as Jesse Crosse explains.

rakes are something most drivers take for granted until they stop working or begin to deliver less than the optimum performance. Although primarily intended to slow or stop the car as quickly and efficiently as possible, they play a major role in how fast it goes too, or to be more precise, how fast a driver can comfortably drive.

Brakes are amazing things. When a car is moving it possesses kinetic energy and brakes work by converting that into thermal energy (heat). The faster the car is moving and the quicker the driver wants to stop, the greater the amount of heat that has to be produced and dissipated.

Imagine then, a 911 Turbo weighing 1.6 tonnes or a Cayenne tipping the scales at over two tonnes stopping in a hurry from 100mph. Now imagine the size and bulk of the cars and visualise the size of the engine and transmission needed to get them up to that speed. Then picture the size of the discs at between 330mm and 350mm in

diameter plus callipers. That's right, they're not all that big but must unload a lot of energy time and again, for long periods and without any maintenance.

Back in the day, disc brakes didn't exist at all and when they did emerge, remained the province of racing or high-end sports cars. Time was, drivers had to pace themselves according to how well the brakes worked and would keep on working. Drum brakes (fitted to early Porsche 356s for example) had limited performance and because of the design, struggled to dissipate the heat they generated.

Brakes fade when they get too hot for the materials they're made from and lose the ability to produce friction until they cool down. If that reduction in stopping power is accompanied by a spongy pedal, it means the brake fluid is getting so hot vapour is being produced in the callipers. As gas is compressible (whereas fluid is not), the brake pedal becomes spongy.

For high performance road cars such as Porsches, or track cars, brakes need to be capable of withstanding more 9heat without fading. Some brake pads designed for competition use are extreme in terms of the heat they can withstand and still generate enough friction to stop, but they don't work so well when cold and for that reason may not be road legal.

The mechanical design of brakes is crucial, too. A brake calliper fitted to an average saloon car will usually have a single piston that acts directly on the pad on one side of the disc but not the other. As the piston pushes against the pad, the calliper body can slide, allowing the opposing pad to be pulled towards the disc; it's a simple and cost effective design with fewer moving parts.

Early designs incorporated at least one piston on each side of the disc, one for each pad. High performance brakes have more than one piston, maybe four or six. A basic Cayman has 'four-pot' callipers but the more powerful Porsches — GT3s, Turbos etc have six which, by general standards, is the maximum you're likely to see. More pistons provide more stable and even force across a wider area,

allowing the use of pads with a larger

Brake force is multiplied from the foot-pedal to the brake callipers by hydraulics. A small piston capacity at the 'master cylinder' foot pedal end drives larger capacity pistons at the calliper end. So travel at the brake pad is smaller but the force is much greater. The hydraulic system is assisted by a brake 'servo' or 'booster' that is usually powered by a vacuum from the engine inlet on a large diaphragm which multiplies the force made by the driver even further to increase braking pressure.

A car manufacturer can design the brake system to give more or less pedal sensitivity and generally the trend over recent years has been towards super-responsive brake pedals that some drivers find over-sensitive. In racing or rallying, servos are not generally included, while this increases 'feel' but requires more pedal pressure from the driver.

Brake discs (or rotors) are always ventilated on high performance cars



today, whereas on ordinary cars, rear discs may be solid. Ventilated discs are simply those that have radially perforated centres allowing cooling air to be drawn between the two friction surfaces as they spin. The diameter of the disc makes a big difference, the larger the diameter, the greater the leverage applied by the brake calliper for a given braking force.

The latest developments in braking (i.e, the last 30 years) are ABS, ceramic disc brakes (PCCB in the case of Porsche), brake-based stability systems such as Porsche PSM and torque vectoring by braking (like Porsche PTV Plus). ABS automates the old advanced driving technique of cadence braking.

The cadence concept is that maximum retardation is achieved just before a tyre locks and also, that the front wheels can only steer as long as they're turning. By stamping fast and hard on the brake pedal, the pre-ABS driver locks the wheel as many times as possible, achieving lots of maximum braking events to slow the

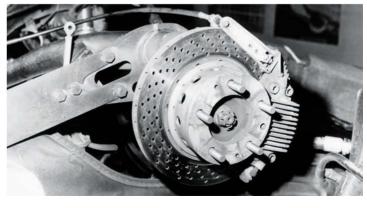
car, but allowing the front wheels to rotate and steer in between. ABS does exactly that, only better and faster and without the stamping. Stability systems, like PSM, apply individual braking force when the car begins to slide and 'steers' the car much like you would steer a toboggan by dragging a foot on one side.

PCCB is a quantum leap in brake design but only worthwhile if you intend to drive your Porsche like you stole it. The cast carbon fibre rotors are impregnated with silicon and heat cured to create diamond-like surfaces. They take three weeks to make and Porsche charges £5000 for them.

Ceramic composite brakes work from cold yet can shift massive quantities of heat without batting the proverbial eyelid. The same technology is used in F1, so specifying them with anything other than track work in mind definitely marks them down as a vanity purchase, but when it comes to inexhaustible stopping power, they are the ultimate both on an off track O



Brakes need heat to work at their best, but too much heat and their performance suffers







# Steering Wheels

The steering wheel is the most important component connecting you to your Porsche.

hanging the steering wheel is a favourite upgrade for anyone who wants to personalise their Porsche and there are a number of different reasons why you may want to do this. Improving the appearance by replacing an ugly original (early triangular airbag types or 1980s slabfaced 3.2 and 930 911 wheels) is the most obvious, but you might want to alter the driving position or change the feel or the grip too. For track work especially, getting completely comfortable is crucial to get the best out of the car and fitting the right wheel in conjunction with the right seat is the best way to do that.

Upgrade options extend beyond the obvious race-style wheels and there are alternatives to more modern airbag-equipped cars, which, by employing a bit of trickery, don't always involve abandoning the safety of an airbag. One reason for upgrading a standard airbag wheel is to fit the multi-function version. If we take the 997 as an example, people have fitted multi-function wheels in place of the standard plain version but even if you're buying a used MF wheel, the job won't be particularly cheap once you've paid a friendly specialist to do the necessary reprogramming.

If your pockets are deep enough

there are direct replacement, carbon fibre wheels available for most of the more modern cars from the Carrera through to the Panamera, which all retain the original airbags.

Removing steering wheels from cars fitted with airbags needs care for obvious reasons and should always be done with the battery disconnected. On these cars (such as the 997) you'll need a special tool to remove the centre bolt after the airbag has been disconnected and removed. Mark the top of the steering column splines with a felt marker if you're refitting the wheel for any reason and remember to put the steering wheel in the straight ahead position before removing it. Sit in the driver's seat and take a visual reference as to what lines up where and, better still, an eye level photo.

Alternatively, you may want to fit something racey and ditch the airbag altogether. If fitting a non-airbag sports wheel to an airbag-equipped car it's possible to trick the system into thinking the airbag is still in place with a three Ohm resistor fitted across the airbag connector. The system will still need reprogramming by a specialist to extinguish the airbag error light, but this means the passenger airbag remains armed in the normal way. If you're stripping the car out for track day or competition use then you won't need either airbag and can have the system deactivated.

Airbag irritations aside, or if you have an early car without, the world is pretty much your oyster and all that's left is to choose a wheel style from your favourite supplier. You'll need both the wheel and the boss to mount it and prices will range from a couple of hundred pounds to around £460 without fitting or airbag tinkering.

Be aware of the style of wheels and. in particular, how much dish they have as this will affect your reach and driving position, so check measurements; think about the covering too. Many motorsport, or motorsport-inspired, wheels are suede-covered these days for better grip and would normally be used in conjunction with gloves, so if your car is for road use, be sure you're happy with the feel.

There are plenty of styles to choose from, mainly because compatibility with a particular model is decided as much by the boss rather than the wheel itself. Assuming a boss is available for the car, there are usually a number of different wheel designs to fit the hole pattern. Check out generic suppliers like Demon Tweeks as well as the Porsche specialist suppliers. The range of options from the former is likely to be wider and if necessary, you can get the airbag system resistors from them

too. There's even an eccentric adapter available to lower or raise a wheel although bear in mind that on extremes of lock the wheel will rotate off-centre. For more serious racing applications, quick release bosses are also available.

Apart from coverings and dishing, there's a wide choice of styles available from the generic to well-known brands like MOMO. If you want to fit a 996 GT3 Cup wheel to your 996 you can, via Porscheshop for £461.31 including the boss. One final thing to remember is if you're swapping the wheel on a classic Porsche, put the original in a safe place in case you decide to sell, as an aftermarket wheel will devalue the car o

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# specialist focus



### Jasmine PorschaLink

What started as a classified ad for second-hand wheels has blossomed into a fully fledged international Porsche specialist.

ome say that running a Porsche is one of the easiest cars to keep on the road. Not only because of the German reliability, but because it's one of the biggest-supported marques in the aftermarket market place and you're never far from a specialist who can sell, buy, fix, service or supply you with what ever it is you or your Porsche needs. One such company is Jasmine PorschaLink, one of the UK's biggest parts suppliers.

A company that grew out of its owner, the affable Brian Goff's need to sell some of the 40-odd Porsche wheels his circuit racing and rallying career had seem him accumulate is now one of the go-to Porsche parts specialists, not only for used parts but also official Porsche parts too, as it is proudly an approved Porsche parts supplier. On top of this it is also a growing service and repair centre, a builder of Boxster race cars and

specialist in producing rather splendid 964 RS replicas.

What started as a house-based operation has seen Brian and is wife Sue build into a highly regarded operation that runs its parts supply business with mesmerising efficiency. It has a global customer base that is as likely to see the team package an engine up for shipping to the Far East as it is a set of wheels to the South East of England on any given day.

The used parts side of Jasmine comes from many avenues, from recycling useable parts from accident-damaged cars to stripping Porsches that are more valuable as a source of parts than they are as a road legal car. With every part removed, tested, cleaned, prepped, itemised and listed it is then stored, awaiting sale via the company's website, eBay shop or from you phoning to place an order or dropping in with a shopping list.

Wheels are still a core part of the

business, but if you look around the 100s of metres of racking and storage there is very little you won't find. From the smallest piece of interior trim to an engine, body panels, a Cabriolet's roof or an entire body shell, all are presented to the highest standards.

The company is also an official Porsche service centre and its experience of taking Porsches apart also means the team are a dab hand at putting them back together too. This also makes them a leading repairer in the business.

Away from the parts side of the business, Brian and his team's considerable Porsche knowledge means they can also build you your dream Porsche – back in 2008 the company branched out into building exquisite 964 Carrera RS replicas (see issue 80) and in 2013 it became the headline sponsor of the BRSCC Boxster Championship. This association has also led to the company building race

cars for competitors. And for a number of years the company has also hosted successful open evenings, attracting customers new and old to spend a couple of hours discussing their Porsche needs with each other and the Jasmine staff.

With customers around the world and Porsche expanding at an unprecedented rate, Brian and his team are constantly striving to keep ahead of the game. When it comes to parts this means learning about each new model and how it falls into the parts supply chain. And as more people obtain their dream Porsche they'll continue to rely on the skills and experience of likes of Jasmine PorschaLink to keep their dream on the road O

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#### JANUARY 2014

Cover Story: 996 Carrera Ultimate Guide. Inside: 991 Carrera v Carrera 4. Le Mans Legends. 2.4S S/T replica. VAD 997 Turbo RSR. Vic Elford, Panamera Turbo and Diesel first drives. Buying a Porsche for £10,000. The Market Place: 944. How Does That Work? Aerodynamics.



FEBRUARY 2014

Cover Story: 997.2 GT3 v 997.2 GT3 RS. Inside: 918 Spyder first drive. Porsche hyper cars: 959, GT1 and Carrera GT. Your Ultimate Guide: 996 GT3, Turbo and GT2. 964 Anniversary driven, 912 revisted, The Market Place: 968. Tony Hatter interview. Magnus Walker 911. How Does That Work? Turbocharging.



#### MARCH 2014

Cover Story: PS Bespoke Speedster. Inside: 981 Boxster v Cavman S. 911 3.0 RSR replica. 964 Carrera 'RS'. 997.2 GT3 v 997.3 GT3 RS track test. 964 Carrera 3.8. 911 SC Lightweight, 991 Targa first details. Porsche & I: Rolf Nilsson. Market Place: 997 Turbo Coupé. Buying a Porsche for £30,000



APRIL 2014
Cover Story: 968 Club Sport Inside: Macan first drive. Panamera 4S UK first drive. 991 Turbo S UK first drive. SVP Cayman SV driven. Porsche and Le Mans, The Return: Part 1. Ultimate Guide: 911 E. T & S. 3.0 Carrera RS replica. 917/30 at Talladega. The Market Place: Glass-roof 911 Targa (1995 - 2013).



#### MAY 2014

Cover Story: 919 Hybrid Inside: 550 Spyder. First drive: 911 50th Anniversary Edition. Me & My Porsche: Phil Hindley's 911 SC R. Driven: Panamera S E-Hybrid, Road Test: Parr Motorsport 997 Turbo. René Metge interview. First look: 981 Boxster & Cayman GTS. Porsche and Le Mans. The Return: Part 2.



#### **JUNE 2014**

Cover Story: 911 2.4S Barn Find Inside: StudioTorino Moncenisio. First drive: 991 Targa. 911 Carrera 2.7 Targa. 981 Cayman 2.7. 997 Carrera. Ultimate Guide: The four-cylinder coupés. Porsche and Le Mans. The Return: Part 3.



#### JULY 2014

Cover Story: Ultimate Guide: 987 Boxster Inside: 997 Speedster v 991 Turbo Cabriolet, First drive: Boxster & Cayman GTS. UK first drive: Macan Turbo. 996 Carrera 4S. Front-engined Porsches: the V8s. 956 1982 WEC debut.



Cover Story: 964 25th Anniversary Inside: Porsche at Le Mans, its return. 987 Cavman Ultimate Guide, 911 2.4 S Targa. 991 Carrera4 25th Anniversary. Derek Bell and the 962. The Market Place: 996 GT3 RS. Tech Guide: Strut braces.



#### EPTEMBER 2014

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#### GMÜND COUPÉ/356: 1948 – 1964

GMÜND COUPÉ/356: 1948 — 1964
Two-door, two+two Coupé, Roadster, Speedster. Rear-mounted four-cylinder air-cooled 'boxer' engine.

This is where the Porsche story begins. After the aluminium prototypes and numerous projects for Volkswagen, Dr Porsche gave the go-ahead for his company to relocate from the converted shed in Gmünd to a rented workshop in Stuttgart (owned, incidentally, by Reutter, the coachbuilder responsible for building the 356 body for Porsche). At the 1949 Geneva Auto Salon Porsche displayed a 356 for the first time, with a coupé and drophead model taking the limelight. A makeshift production line was started in the same year.

The following year the 356 was shown to a meeting of Volkswagen main dealers as well as European and overseas importers who promptly placed orders for 37 cars. The first Stuttgart-built 356 rolled off the production line in Easter 1950.

The 500th Porsche was built on 21 March 1961, with the 1000th model arriving just six months later, and when the last 356 was built in 1964 — a 356C convertible — a total of 76,302 examples had been built.

The arrival of the 356 also signalled Porsche's first forays into motorsport. Dr Porsche's cousin, Herbert Kaes, is thought to be the first to compete in a Porsche car when he took an early 356 and entered it in a race around the streets of Innsbruck, Austria on 11 July, 1948. Kaes and the Porsche won their class, obviously. The first recognised 'factory' victory came in 1951 in the 24 Heures du Mans (where else!) when Porsche's French importer, Auguste Veuillet, convinced Dr Porsche that by entering a car into the twice-round the clock race it would result in a big boost in sales and Porsche's global awareness. Veuillet, along with his co-driver Edmund Mouche, won their class in the 1100cc 356. The rest, as they say, is history.

Today the 356 enjoys the status of a genuine classic car. Collectors and enthusiasts alike have seen that the majority of examples have been meticulously restored and maintained and this is reflected in the



#### 356

Dimensions: Wheelbase (mm): 2100 - Length (mm): between 3850 (1950) and 4010 (1959). Width (mm): 1660

1948 to 1949: Gmünd Coupés:- the 356's predecessor was first produced in July 1948. The aluminium-bodied Gmünd Coupés used virtually all VW mechanicals from a four-speed gearbox to torsion bar suspension, and, of course, the Beetle-derived 40hp flat-four engine complete with twin Solex down-draught carburettors and 7.0:1 compression ratio. Drum brakes were fitted all-round. 1950: 'Pre-A' 356:- Following the move to Stuttgart, the 356's integral body was made of steel and the design given a higher waistline than Gmünd Coupés, with the distinctive V-shaped roof to accommodate its split-screen. The 1.1-litre engine now produced 40hp and, along with the other engines offered after 1952, was mated with Porsche's own four-speed gearbox. 1951: 1300cc and 1500cc (60hp) engines introduced. **1952:** Split-screen front windscreen replaced with single piece window; bumpers mounted higher and further forward from body; rectangular rear taillights replaced with circular items. 1500cc engine loses 5hp but is more refined and was the first engine to feature the 'Alfinger' crankshaft. 1500 S (70hp) engine introduced. Fully synchronised gearbox fitted across the range. 1955: 356A:- New engines and suspension altered. New curved 'V-screen' does away with the need to split the screen, vinyl replaces cloth inside. New dash, combined ignition/starter. New gearbox in 1957. Four Cam Carreras launched at the 1955 Frankfurt Motor Show, these engines were directly derived from racing technology, with GT-denoted models aimed specifically at motorsport. They were dry sumped, had reduced compression ratios and revved much higher. The bodies around them were lightweight, making them very potent on the road for their day. 1959: 356B:- 90hp 1600 introduced for Super 90 which gets 'compensating rear springs' to improve handling. Changes to bumper position, headlamps and numerous interior details. 1961: Larger rear window and engine cover with twin air intakes introduced, electric sliding roof optional; 1600 S engine gets four-ring pistons, S-90 gets modified flywheel. 130hp Carrera 2 announced (introduced in 1962), featuring Porsche-designed disc brakes. 1963: 356C:- Reworked engines, clutch from Super fitted to 75 and 95hp models, disc brakes introduced all-round, rear compensating spring special order only, no external changes but there was a rethink of the interior details. 1964: Porsche takes control of Reutter and 356 C introduced, Roadster dropped from the line-up.

MODEL	MODEL	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	YEAR		CC		(lb ft)		(mph)
Gmünd Coupés	1948 to '50	605	1086	35-40	50	23.0	80
'Pre-A' 356							
1100	1950 to '54	745	1086	40	51	23.5	87
1300	1951 to '54	810	1286	44	59	22.0	90
1300A	1954	830	1286	44	51	22.0	90
1300S	1953 to '54	830	1290	60	64	17.0	99
1500	1951 to '52	830	1488	60	75	15.5	105
1500	1953 to '55	830	1488	55	77	16.5	96
1500S	1952 to '55	830	1488	70	80	13.5	108
356A							
1300	1955 to '57	860	1290	44	60	22.0	90
1300S	1955 to '57	900	1290	60	65	17.0	99
1500GS Carrera	1955 to '58	835	1498	100	88	12.0	124
1600	1955 to '59	835	1582	60	81	16.5	99
1600S	1955 to '59	835	1582	75	86	14.5	108
1600GS Carrera	1958 to '59	835	1587	105	89	11.0	124
356B							
1600	1959 to '63	905	1582	60	81	16.5	96
1600S	1959 to '62	925	1582	75	86	15.0	108
1600S	1960 to '63	925	1582	90	89	13.5	112
1600S	1961 to '63	935	1582	75	86	15.0	108
1600GS Carrera GT	1959 to '61	890	1588	115	99	10.5	124
Carrera 2	1962 to '64	890	1966	155	144	9.0	124
356C							
1600C	1963 to '65	935	1582	75	89	14	109
1600SC	1963 to '65	935	1582	95	90	13	116
2000GS	1962 to '64	935	1966	130	119	9.0	124

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911 (1964 – 1989)

(**Zero**) **0-Series – 1963 to 1966:** '64 to '66 Model Year – Wheelbase (mm): 2211 Length/Width (mm): 4163/1610 – Sianificant developments: 911 (very briefly 901) first shown at 1963 Frankfurt Motorshow, went on sale in 1964 with six-cylinder 2.0-litre engine. Targa announced in 1965 and goes on sale 12 months later. Weighs 50 kilos more than coupé

MODEL	MODEL YEAR	WEIGHT(kg)	ENGINE (cc)	Нр	TORQUE (lb ft)	0-60*	MPH
901	1963	1080	1991	130	119	8.5*	131
911	1964	1040	1991	130	120	8.3*	130
911	1965 to '67	1080	1991	130	128	8.3*	130

A-Series - 1966 to 1968: 1967 Model Year - Significant developments: 160hp 911S introduced, as are 5.5-in tyres. 911L had vented discs taken from 911S. Four-speed Sportmatic introduced in 1967. All models available as Targa, glass window replaces plastic item from 1968.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911L	1353/1321	1075	1991	130	130	10.6*	131
911T	1353/1321	1080	1991	110	116	8.3	124
911	1353/1321	1080	1991	130	128	9.1	130
9115	1353/1321	1080	1991	160	132	8.0*	137

A-Series - 1967 to 1969: 1968/69 Model Year - Significant developments: Wheelbase extended by 57mm to enhance handling, single battery replaced with twin 35amp alternatives in front luggage compartment to keep front end more securely planted and enhance handling. S and E both have mechanical Bosch fuel injection, 911T introduced, 'E' model replaces 'L'.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911T	1353/1321	1075	1991	110	115	8.3	124
911E	1353/1321	1020	1991	140	129	8.4	134
9115	1353/1321	995	1991	170	135	8.0*	137

C-Series - 1969 to 1970: 1970 Model Year - Significant developments: Increase in bore from 80 to 84mm raises engine capacity to 2.2-litres. Aluminium crankcase replaces magnesium alloy item. 225mm clutch introduced. Sportmatic no longer an option on 911S. Front upper strut attachment points moved forward 14mm.

**D-Series – 1970 to 1971:** 1971 Model Year – Significant developments: PVC-coated, galvanised underfloor areas introduced. Tweaks to injection and ignition required to meet new European emission laws

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911T	1362/1343	1020	2195	125	131	9.5	127
911E	1372/1354	1020	2195	155	141	7.6*	137
9115	1372/1354	1020	2195	180	147	7.0	138

**E-Series – 1971 to 1972:** 1972 Model Year – **Significant developments**: Engine stroke increased to 70.4mm giving 2.4-litre capacity. Compression ratio dropped to allow use of regular petrol. Gearbox uprated to cope with increased torque. External oil filler cap located between door and rear wheel. All models supplied with Fuchs wheels.

F-Series - 1972 to 1973: 1973 Model Year - Wheelbase (mm): 2271 Length/Width (mm): 4127 (RS 4147)/1610 – Significant developments: External oil filler removed due to customer confusion at the petrol pumps. Chin spoiler introduced on S to reduce front end lift (option on T and E) and greater variance in standard wheels. 2.7 Carrera RS is first to be fitted with duck-tail rear wing.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911T	1360/1342	1050	2341	130	144	8.1	127
911E	1372/1354	1050	2341	165	151	7.9	138
911S	1372/1354	1050	2341	190	158	6.6	144
Carrera RS	1372/1394	975	2687	210	188	5.8	152

**G-Series – 1973 to 1974:** 1974 Model Year – Wheelbase (mm): 2271 Length/Width (mm): 4291/1610 (Carrera 1652) - Significant developments: Shock absorbing bumpers introduced as a result of US legislation. Range-topping Carrera model came with 'black look' trim and 210hp.

H-Series - 1974 to 1975: 1975 Model Year - Significant developments: Turbo introduced early '75 with four-speed gearbox and higher spec. Duck-tail replaced by whale-tail on Carrera models. Silver Anniversary model launched, 1063 sold.

MODEL:	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911	1360/1342	1075	2687	150	173	7.9*	131
911 S	1360/1342	1075	2687	175	188	6.1*	142
911 Carrera	1372/1354	1120	2687	210	188	6.3	150
930 Turbo	1432/1500	1140	2993	260	253	6.0*	155



911: 1963 – 1989

911: 1963 — 1989

Two-door, two+two Coupé, Convertible and Targa. Rearmounted six-cylinder air-cooled 'boxer' engine, four- and five-speed manual and four-speed Sportmatic gearbox.

For some a real 911 is an air-cooled 911, and some of the greatest examples are from this period. Two of the most iconic 911s ever produced — the 2.7 Carrera RS and 3.0 Turbo — arrived on the scene during this time and Porsche also gave us the sublime 1970 2.2 S. Bosch K-Jetronic fuel injection was introduced (1976) and the first 911 Cabriolets (1983) arrived in showrooms. The 3.2 Carrera fed the Yuppie boom (1983) and the Carrera Club Sport (1988) was the first lightweight 911 special since the original Carrera RS some 15 years earlier.

On its arrival the original 911, or 901 as Porsche had first intended calling it until the French manufacturer Peugeot pointed out that they owned the trademark to model designations with an 'O' in the middle, was a huge leap forward from the company's original four-cylinder 356. With its 2.0-litre flat-six, five-speed gearbox, independent suspension and disc brakes the new 2+2 sports car was quickly snapped up when it first appeared at the 1963 Frankfurt Motor Show.

A seemingly continuous development programme saw the 911 evolve at a pace. The Targa model was launched in 1965 in anticipation of US legislation that would ban fully convertible cars (it never happened, but the Targa proved a popular choice with its distinctive brushed stainless steel rollover hoop and zip-out plastic rear window). More power (160hp) and larger wheels (5.5-inches) arrived 12 months later, as did ventilated discs and a four-speed Sportmatic gearbox. The Targa's plastic rear window was replaced with a more conventional glass item in 1968.

The start of the next decade saw the flat-six's capacity grow to 2.2-litres and gave us the sublime 2.2 S and a chunky 180hp (190hp in 1973). Measures were also taken to prolong the life of the 911 with PVC and galvanised floors both introduced, and the legendary Fuchs wheels became

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customers with its first RS road car, Porsche unveiled its concept for a new, more powerful, luxury-orientated version of the 911 at the 1974 Paris Motor Show – the

911 Turbo.
With a 3.0-litre flat-six motor and a single KKK turbocharger the new model produced 260hp delivered to the rear wheels via a four-speed manual gearbox. With a 0-62mph time of just 5.5 seconds and a 155mph maximum speed it was the fastest, most powerful Porsche road car to date, and its arrival coincided with the oil crisis. With its flared rear-wheel arches, deeper front and whale-tail rear spoiler it was far from subtle, but Porsche's customers loved it and nearly 3000 were built. In 1978 it gained a bigger, 3.3-litre engine and more power (now 300hp), could crack 160mph and would continue in production until 1989.

Porsche also offered as a 911 Turbo Cabriolet and Targa model from 1987-88, as well as the 330hp 'slant-nose' coupé from 1983 through to 1989. And if you wanted the show without the go you could order Turbo-look Coupés, Cabriolets, Targas and Speedsters. Has there ever been a more blatant example of the excesses of the '80s?



During the 1980s Porsche hit upon a winning formula for its rear-engined sports cars, despite the best attempts by various management boards to try and kill it off.

As engine capacity rose from 2.2-, through 2.4-, 2.7-, 3.0- and finally 3.2-litres, so did the power and performance of the numerous models and variants introduced. The first 911 Cabriolet arrived on the scene in 1983, and before this a whole of host models had come and gone: the 2.4S became the Carrera in 1974 with 2.7-litres and 210hp, and the 3.0 Carrera in '76 with 200hp (US emissions laws had strangled the flat-six a bit). The 3.0 SC arrived in 1978 with a feeble 180hp but redeemed itself in 1981 with the new 3.0 SC arriving with 204hp. In 1984 Porsche delivered its latest 911: the 3.2 Carrera. With 231hp, a 6.1 second 0-62mph and a 151mph maximum speed the 911 was back on track. In 1987 the somewhat wayward 915 transmission was replaced with a slick Getrag G50 'box and this generation 911 saw out its final years able to hold its head high and compete with the more youthful opposition.

I-Series - 1975 to 1976: 1976MY - Significant developments: Bodies now zinc-coated, galvanised steel. Bosch K-Jetronic fitted to all models. Sportmatic now only three-speed, not four. **J-Series – 1976 to 1977:**1977MY – Wheelbase (mm): 2271, Length/Width (mm): 4291 (Turbo 4318)/1610 (Carrera 3.0 1652, Turbo 1829) – Significant developments: Sportmatic cars get brake servo assistance. 'Black-look' trim standard on Targas.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911	1360/1342	1120	2687	165	176	7.8	135
Carrera 3.0	1372/1354	1075	2994	200	188	6.3	150
930 Turbo	1432/1500	1195	2993	260	253	6.0*	155

K and L-Series (the SC) - 1977 to 1979: '78 to '79MY - Significant developments: Super Carrera combined old 911 and Carrera with 3.0-litre engine, all had servo-assisted brakes. Turbo 3.3-litre engine equipped with intercooler and tea-tray spoiler replaces whale-tail. SC (New A-Series) - 1979 to 1980: 1980MY - Significant developments: Revised ignition and camshaft timing results in 188hp SC model. Turbo gets twin-exit exhaust.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911 SC	1369/1379	1210	2994	188	188	7.0	141
930 Turbo	1432/1500	1300	3299	300	304	5.1*	162

SC (New B-Series) - 1980 to 1981: 1981MY - Significant developments: First year of 17-digit international chassis number. SC now runs on 98RON fuel. SC (New C-Series) - 1981 to 1982: 1982MY - Significant developments: Limited edition 'Ferry Porsche' model goes on sale. Tea-tray spoiler option available for SC. SC (New D-Series) - 1982 to 1983: 1983MY - Significant developments: Cabrio rushed into production and launched following successful design study.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911 SC	1369/1379	1210	2994	204	189	5.7*	146
930 Turbo	1432/1500	1300	3299	300	304	5.1*	162

Carrera (New E-Series) - 1983 to 1984: 1984MY - Wheelbase (mm): 2271 Length/Width (mm): 4291 (Turbo 4318)/1610 (Turbo) Significant developments: Carrera replaces SC. Engine capacity climbs to 3164cc, Digital Motor Electronic engine management introduced as was the engine oil-fed chain tensioner. Turbo-look option ads 50 kilos and increases drag.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911 Carrera	1398/1405	1210	3164	231	209	5.6*	152
911 SC RS	1398/1405	960	2994	255	184	5.0	159
930 Turbo	1432/1500	1300	3299	300	319	5.1*	162

Carrera New F-Series – 1984 to 1985: 1985MY – Significant developments: Carrera available with catalytic converter. Four-spoke steering wheel standard. Carrera New G-Series - 1985 to 1986: 1986MY - Significant developments: Sport seats now a no-cost option. Turbo-look track 1434mm front/1526mm rear.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911 Carrera	1398/1405	1210	3164	231	209	5.6*	152
930 Turbo	1432/1500	1300	3299	300	319	5.1*	162

Carrera New H-Series – 1986 to 1987: 1987MY – Significant developments: Targa and Cabrio models available with Turbo engine. Slant-nose becomes an option. 915 transmission replaced by Getrag-built G50. Power hood standard on Cabrio. Carrera New J-Series - 1987 to 1988: 1988MY – Significant developments: Celebration anniversary model available. Club Sport model weighed 50 kilos less, blueprinted engine pushed power to around 241hp. Carrera New K-Series **- 1988 to 1989:** 1989MY – **Significant developments:** 16-inch wheels now standard. Speedster introduced and available with either Turbo-look or flat-nose bodies.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
911 Carrera	1398/1405	1210	3164	231	209	5.6*	152
Club Sport	1398/1405	1160	3164	231	209	5.6*	156
930 Turbo	1434/1526	1300	3299	300	319	5.1*	162

964 (1989 – 1993)

**1988 to 1989:** 1989MY – Wheelbase (mm): 2271 Length/Width (mm): 4250/1651 – **Significant** developments: Launched in January 1989 with a new flat-six engine, suspension, brakes and numerous body parts, Porsche claim only 13 per cent carry over parts from predecessor. Carrera 4 split torque 31/69 front to rear. All wheel ABS and power steering standard, catalyst introduced. 1989 to 1990: 1990MY - Significant developments: All pre-964 models now deleted. Carrera 2 introduced, Targa

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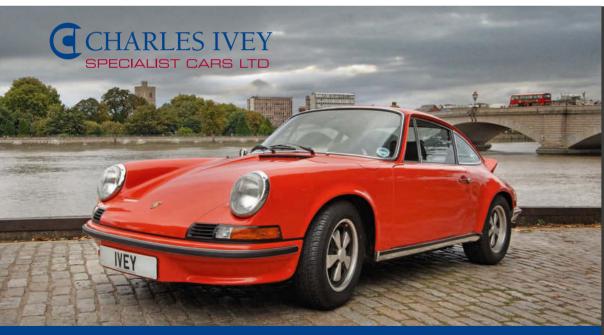




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#### <u>(964): 1989 – 19</u>93

911 (964): 1989 — 1993

Two-door, two+two Coupé, Convertible and Targa. Rearmounted six-cylinder air-cooled 'boxer' engine, rear and four-wheel drive. For a company that had very little left in the piggy bank and suffering from an economic and sales downturn, Porsche's engineers pulled off a remarkable achievement when developing the 964-series 911.

This latest 911 was '87 per cent new' over the model it replaced, and the big news surrounding the 964 was the increased capacity flat-six and the introduction of a four-wheel drive transmission. This resulted in the gearbox and rear final drive having two electronically-controlled wet clutches, limiting slip in both the centre and rear differentials. A torque tube connected the centre and front diffs. The torque split was 31:60 front-to-rear.

Joining the new C4 was a Carrera 2 Coupé, Cabriolet and Targa models, three Turbo variants: 320hp 3.3-litre, 360hp 3.6-litre, and a limited run 381hp Turbo S. The stripped-out 964 RS and limited run 3.8 RS were available from 1992.

Overlooked by many, the 964 offers an affordable entry into classic 911 ownership, although they require regular maintenance and some TLC.



911 (993): 1993 — 1996

Two-door, two+two Coupé, Convertible and Targa. Rearmounted six-cylinder air-cooled 'boxer' engine, rear- and four-wheel drive. Argued by many to be the most beautiful 911 design of all, the 993-series cars are also the best engineered, and for many purists the pinnacle of the model's achievement.

The last of the air-cooled 911s had it all — pace, grace and, for once, a bit of space. The entry-level Carrera 2 was all you ever really needed, but who could resist the appeal of the Carrera RS or, for the first time, the all-wheel drive, twin-turbocharged Turbo? For the seriously brave there was the GT2 and those after the Turbo look without the go could always opt for the Carrera 2S and 4S.

The 993 also saw the introduction of VarioRam (in 1996). This controlled the length of the engine's induction tracts, and at low and medium engine speeds longer tracts would provide a fuller torque curve, while at higher engine speeds the shorter induction length delivered higher peak power outputs.

and Cabrio available for both Carrera 2 and Carrera 4 models. Tiptronic available on C2. Both Cabrio and Targa 50 kilos heavier than coupé equivalents. 1990 to 1991: 1991MY - Significant developments: Rear drive, 3.3-litre 320hp 964 Turbo introduced complete with 'Cup' design mirrors. **1991 to 1992:** 1992MY – **Significant developments:** Stripped-out Carrera 2 RS launched – the first RS since 2.7 Carrera RS in 1973 – and proves a hit for those who like their 911s raw. 381hp Turbo S model available to order (80 built). 1992 to 1993: 1993MY – Significant developments: Speedster introduced, rear-wheel drive only and based on Cabriolet for US market. 3.6 Turbo production begins in Jan 1993.

TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
(f/r mm)	kg	CC		(lb ft)		(mph)
1379/1374	1350/1450	3600	250	228	5.7	162
1379/1380	1250	3600	260	240	5.3	162
1442/1448	1470	3299	320	332	5.0	168
1440/1481	1210	3746	300	266	4.9	168
1442/1448	1470	3600	360	383	4.8	175
	(f/r mm) 1379/1374 1379/1380 1442/1448 1440/1481	(f/r mm)         kg           1379/1374         1350/1450           1379/1380         1250           1442/1448         1470           1440/1481         1210	(f/r mm)         kg         cc           1379/1374         1350/1450         3600           1379/1380         1250         3600           1442/1448         1470         3299           1440/1481         1210         3746	(f/r mm)         kg         cc           1379/1374         1350/1450         3600         250           1379/1380         1250         3600         260           1442/1448         1470         3299         320           1440/1481         1210         3746         300	(t/r mm)         kg         cc         (lb ft)           1379/1374         1350/1450         3600         250         228           1379/1380         1250         3600         260         240           1442/1448         1470         3299         320         332           1440/1481         1210         3746         300         266	(f/r mm)         kg         cc         (lb ft)           1379/1374         1350/1450         3600         250         228         5.7           1379/1380         1250         3600         260         240         5.3           1442/1448         1470         3299         320         332         5.0           1440/1481         1210         3746         300         266         4.9

#### 993 (1993 – 1998)

**1993 to 1994:** 1994 Model Year – Wheelbase (mm): 2272 Length/Width (mm): 4245/1735 (Carrera 4S and Turbo 1795mm) – Significant developments: 993 production begins in Jan 1994. Internal engine upgrades increase power and torque. Multi-link rear suspension is one of the biggest developments in the 911's history and transforms 993 into a more driver friendly sports cars. Fourpiston brake callipers standard front and rear. Two- and four-wheel drive offered across the range in either Coupé or Cabriolet quise. **1994 to 1995:** 1995MY – **Significant developments:** Carrera RS introduced as is redesigned, all-wheel drive system for Carrera and Tiptronic S with steering wheelmounted shift controls for automatic gearbox. New 408hp four-wheel drive, twin-turbocharged 911 Turbo is launched and includes a six-speed gearbox and hollow spoked alloy wheels.

MODEL	TRACK	WEIGHT	ENGINE	Hp	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)		(mph)
Carrera 2/4	1405/1444	1370/1420	3600	272	243	5.6/5.3	168/162
Carrera RS	1413/1452	1270	3746	300	262	5.0	172
Turbo	1411/1504	1500	3600	408	398	4.5	180

1995 to 1996: 1996MY – Significant developments: VarioCam engines announced and up both power and torque; revolutionary sliding glass-roofed Targa introduced. Lightweight, 430hp, rearwheel drive, homologation special GT2 launched. It's the most powerful and fastest 911 production road car ever built. **1996 to 1997:** 1997MY – **Significant developments:** 430hp Turbo S offered as run-out model with 450hp factory engine upgrade also available. Turbo-bodied Carrera 2S built alongside Carrera 4S, but two-wheel drive obviously. It's the last rear-wheel drive, air-cooled 911. 1997 to 1998: 1998MY - Significant developments: An end of an era. Production of the all-wheel drive Carrera 4 and Turbo continues until July 1998 but when the last car finally rolls off the production line (a Carrera 4S) it marks the end of air-cooled 911 production after 35 years. The purists aren't happy, but it signifies a new dawn for Porsche.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	Нр	TORQUE (lb ft)	0-62	TOP SPEED (mph)
Carrera 2/4	1405/1444	1370/1420	3600	285	251	5.2	172
Carrera 2S/4S	1411/1504	1450	3600	285	251	5.2	172
Turbo	1411/1504	1500	3600	408	398	4.5	180
GT2	1475/1550	1290	3600	430	398	4.0	184
Turbo S	1411/1504	1500	3600	430	398	4.3	185

#### 996 (1997 – 2004)

1997 to 1998: 1998 Model Year – Wheelbase (mm): 2350 Length/Width (mm): 4430 (Turbo & GT2 4435)/1765 (Turbo & GT2 1830) - Significant developments: All-new water-cooled, 3.4-litre VarioCam six-cylinder 'boxer' engines. Rear-wheel drive, six-speed manual transmission or five-speed Tiptronic S at extra cost. Traction control also available. Four-wheel drive Carrera 4 introduced at the end of the year along with Porsche Stability Management (PSM). 1998 to 1999: 1999MY stripped-out, 360hp GT3 introduced. GT1-based engine helps create most focused 996 to date. Additional cooling for radiator, gearbox and engine account for extra weight over standard Carrera 2. Available in 'Comfort' or 'Club Sport' trim, breaks Nürburgring Nordschleife lap record for a production car (8mins 03sec). 1999 to 2000: 2000MY - the new 911 Turbo arrives. Twinturbocharged, water-cooled flat-six with VarioCam Plus develops 416hp through four-wheel drive chassis. First 911 Turbo available with Tiptronic S. 996 - 2000 to 2001: 2001MY - GT2 returns with 462hp, rear-wheel drive, Porsche Ceramic Composite Brakes and no PSM! Breaks production car lap record at the Nordschleife (7min 46sec).

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	0-60*	(mph)
Carrera 2/4	1455/1500	1320/1430	3387	300	258	5.2	174

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996: 1997 — 2005

Two-door, two+two Coupé, Cabriolet and Targa. Rearmounted six-cylinder water-cooled 'boxer' engine. A water-cooled engine in a 911! Whatever next? Once the purists had calmed down, beneath the 996's slightly frumpy looks is one of the greatest cars of our time.

Carrera 2 is all you ever actually need, but the four-wheel drive Carrera 4 and Carrera 4S are unstoppable. The latter, with its Turbo sourced brakes, suspension and bodywork is possibly the best value 911 Porsche has ever built. The 416hp, four-wheel drive Turbo is a contender for the greatest supercar ever built, and swept aside all in its way during its time on the price list. The 462hp GT2 was deemed a tad excessive for most on the road, and didn't enjoy the kudos of its predecessor, nor that of the 911 GT3. This stripped-out 911 was as close to a 911 RS you could get without actually calling it such. One of the most rewarding 911s when it was new, it's still a favourite amongst the purists but subsequent evolutions are better still. GT3 RS was further honed for the track, compromised for the road. The Targa featured the now traditional opening rear glass hatch, while the Cabriolet was perfectly at home in Miami.



997: 2004 — 2008
Two-door, two+two Coupé, Cabriolet and Targa. Rear-mounted 3.6- and 3.8-litre six-cylinder, water-cooled 'boxer' engine. More evolution than revolution, the second-generation water-cooled 911 has a hint of 993 look about it and was available with two engine options. 997 ownership began with the 321hp 3.6-litre Carrera, with the majority of customers opting for the more powerful 355hp Carrera S. Porsche Active Suspension Management (PASM) was standard on the Carrera S and allowed the car to play at continental GT cruiser one minute and Nordschleife slayer the next. Interior quality improved over 996. Turbo and GT3 models were even better than their predecessors, with the Turbo introducing Variable Turbine Geometry and Porsche Traction Management, while the GT3 got traction control! When Porsche combined these two models' philosophies the GT2 was built. At 530hp and 204mph it is the most powerful and fastest Porsche 911 to date. The Targa offered hatchback practicality – and four-wheel drive – and a big glass roof at the expense of ultimate driver involvement.



#### 911: 2008 – 2012

Two-door, two+two Coupé, Cabriolet and Targa. Rearmounted 3.6- and 3.8-litre six-cylinder, water-cooled engine with Direct Fuel Injection and VarioCam Plus; normally

GT3	1475/1495	1350	3600	360	273	4.8	188
Turbo	1465/1522	1549	3600	416	413	4.2	190
GT2	1485/1520	1440	3600	462	457	41	197

GT2 1485/1520 1440 3600 462 45/ 4.1 **New 996 - 2001 to date:** 2002MY - **Significant developments:** Second-generation 996 introduced. Engine capacity grows to 3.6-litres, power increase to 316hp. Turbo's trip computer standard across range, as are Turbo headlights. Cup holders fitted for first time. New Carrera 4S introduced with Turbo brakes, suspension and wide-body. 996 Targa model launched with retractable sliding glass roof. 996 2003 to 2004: 2003MY - Significant developments: GT3 returns with 381hp while the GT3 RS has the same power but weighs 20 kilos less thanks to carbon fibre body panels and a plastic rear window. Turbo and Carrera 4S launched as a Cabriolet models, GT2 gets power hike to 483hp. 0-62mph time drops to 4.0 seconds, top speed climbs to 198mph. 996 -**2005:** 2005MY – Significant developments: The 911 Turbo S makes a return and signals the beginning of the end for the 996, 450hp and PCCB come as standard

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MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)		(mph)
Carrera 2/4	1465/1500	1345/1405	3596	316	273	5.0	178
Targa	1465/1500	1415	3596	316	273	5.2	177
Carrera 4S	1472/1528	1470	3596	316	273	5.1	173
Turbo	1472/1528	1540	3600	414	413	4.2	190
Turbo S	1472/1528	1549	3600	450	457	4.1	190
GT3	1485/1495	1380	3600	381	284	4.5	191
GT3 RS	1485/1495	1360	3600	381	284	4.4	190
GT2	1495/1520	1420	3600	483	457	4.0	198

#### 997(2004 - 2008)

**2004:** 2005 Model Year – Wheelbase (mm): 2350; Length/Width (mm): 4427/1808; Height (mm) 1310/1300 (Carrera/Carrera S) – Significant developments: 3.6-litre 321hp, and 3.8-litre 355hp, water-cooled flat-six engines for Carrera and Carrera S respectively. New six-speed manual gearbox standard on both models, Porsche Active Suspension Management (PASM) standard on Carrera S – lowers car by 10mm, cost-option on Carrera. 19-inch alloy wheels standard for Carrera S. **2005**: 2005MY - Carrera 4 and Carrera 4S launched. Engines as Carrera and Carrera S respectively, rear body widened by 44mm, PSM now equipped with 'pre-filling' brake system to quicken responses. 2006: 911 Turbo and GT3 launched. The former features Variable Turbine Geometry, Porsche Traction Management and 480hp. The third-generation GT3 is the best all-rounder yet. PASM fitted as standard, as is a 415hp 3.6-litre flat-six engine and traction control. 911 Targa 4 and 4S launched based on the wider Carrera 4/4S shell and feature the full length glass sliding roof. GT3 RS launched. Same power as a GT3 but 20 kilos lighter and unique aero pack. 2007: 997 Turbo Cabriolet launched, followed by the new 911 GT2 with 530hp, rear-wheel drive, traction and stability control, and launch control. 204mph claimed maximum.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-60	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)		(mph)
Carrera	1486/1529	1395	3596	321	273	5.0	177
Carrera S (Pkit)	1486/1511	1420	3824	355	295	4.4 (4.4)	182
Carrera 4	1488/1548	1450	3596	321	273	5.1	174
Carrera 4S (Pkit)	1488/1548	1475	3824	355	295	4.8 (4.7)	179
Targa 4	1488/1548	1510	3596	321	273	5.3	174
Targa 4S	1488/1548	1535	3824	355	295	4.9	179
GT3	1486/1511	1395	3600	415	298	4.3	192
Turbo	1490/1548	1585	3600	480	457-501	3.6	192
GT3 RS	1497/1558	1375	3600	415	298	4.2	192
GT2	1515/1550	1440	3600	530	501	3.7	204

#### 997 aen-2 (2008 – 2012)

**2008:** 2008MY – Wheelbase (mm): 2350; Length/Width (mm): 4435/1808; Height (mm) 1310/1300 (Carrera/Carrera S) - Significant developments: All new 3.6-litre 345hp and 3.8-litre 385hp, water-cooled flat-six engines for Carrera and Carrera S now fitted with Direct Fuel Injection. Six-speed manual gearbox standard on both models and new seven-speed PDK available as option. Porsche Active Suspension Management (PASM) standard on Carrera S, cost-option on Carrera. 19inch alloy wheels standard fitment for Carrera S. Minor styling changes to lights and bumpers. New PCM3, Bluetooth and steering wheels. Carrera 4 and 4S model get reflective light strip across tail and identical updates to two-wheel drive models. Cabriolet models of all variants go on sale with coupés. PDK-equipped cars two-tenths quicker to 60mph, but 1mph slower on the top speed. **2009:** 2010 MY - Eagerly awaited Generation-two 997 GT3 is launched with larger capacity 3.8-litre, normally aspirated flat-six. New 911 Turbo quickly follows with all-new 3.8-litre, Direct Fuel Injection, twin VTG turbocharged engine, it's the first all-new engine for the 911 Turbo in 35 years. PDK replaces Tiptronic and Porsche offer optional steering wheel mounted paddle-shift controls for the first time. Limited run of 250 Sport Classic models mix Carrera 4 wide body looks with rear-wheel drive and a 408hp 3.8litre Powerkit engine. Built by Porsche Exclusive it also features a double-domed roof, ducktail rear spoiler and the return of Porsche's famous Fuchs wheels and PCCB as standard. A bespoke leather interior also fitted. 911 GT3 RS is announced alongside Sport Classic at Frankfurt Motor Show. New RS comes with a wider front track, a new aero-pack that doubles downforce, a more powerful version of the Mezger 3.8 litre flat-six and a 25kg drop in kerb weight over a regular GT3. Air-con, PCM and leather all options. 2010: 2010MY - 530hp Turbo S available as coupé or cabriolet. PDK with paddleshift, PCCB, dynamic engine mounts, Sport Chrono Package Turbo and Torque Vectoring are all standard. Interior features a dual tone leather trim and adaptive sport seats. The 620hp 911 GT2 RS is the most powerful production Porsche the company has ever built. Based on the GT3 RS it features further aero dynamic tweaks and recalibrated PASM, Traction and Stability control systems. 3.6-litre engine is the final swan song for the Hans Mezger flat-six, and is fitted with a single-mass flywheel and a revised charge air intercooler. It's the first Porsche to feature different N-rated tyres on the front

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aspirated and turbocharged. Six-speed manual gearbox fitted as standard, seven-speed PDK, double-clutch gearbox optional. Porsche shows its green credentials by introducing its cleanest car to-date, claiming a 3.6 Carrera fitted with a PDK gearbox will return over 29mpg.

This heavily revised flat-six engine should prove more reliable now the intermediate shaft is no longer needed, but some of the soul has gone AWOL when it comes to the flat-six's voice. PDK is a revelation, despite some complaining about the up/down buttons being the wrong way round. Although this is easily rectified with the optional paddle-shift controls.

complaining about the up/down buttons being the wrong way round. Although this is easily rectified with the optional paddle-shift controls.

The 911 line-up expanded like no other series under the 997. Along with the regular Carrera, Targa, Turbo and GT models Porsche introduced four-limited production models — GT2 RS, GT3 RS4.0, Sport Classic and Speedster. The second-generation 997 Series was Porsche's most expansive line-up of the 911 in the car's history with 22 'basic' models having been introduced. Of the 22 models only four aren't available with PDK (Sport Classic, GT3, GT3 RS, GT2 RS and GT3 RS4.0) and two models are only available with the seven-speed double-clutch unit (Turbo S and Speedster). Only five models are offered with a narrow body (Carrera and Carrera S — coupé and cabriolets — and the GT3) with the rest of the range all use the wider body first introduced with the four-wheel drive models. 12 coupés, seven cabriolets, two Targas and a Speedster body are available. Three different size of brakes are fitted, one of which is made from ceramic composite material, two suspension systems are available (passive and active — PASM), with five different front and rear track widths also used. Four different engines are offered.



991: 2012 — TO DATE

Two-door Coupé and Cabriolet, water-cooled and direct fuel injected flat-six, rear-engined, rear- and four-wheel drive. Seven-speed manual and PDK gearbox. New, longer wheelbase, new body and design and new interior. The seventh generation of the iconic 911 was as big a stepchange from the 997 as the 993 was to the water-cooled 996. The carry over parts were very few, the changes made were like nothing seen in the last 17 years.

The 911 has always innovated and the 991 was no different. There is the new seven-speed manual gearbox, a world first, dynamic chassis control (a first for the 911) and new, electronic power-steering. The latter causing some to declare the 911 as we know it to have passed away. We wouldn't go that far, although the effect it has on the car's character makes the 991 a very different 911 to all that have been before.

There is much to praise about the 991, however. Both engines are a delight to experience, full of zing and gutteral grunt. The more powerful, 400hp 3.8-litre has an epic performance reach, but it's the 355hp 3.4-litre that is the sweeter engine. For the first time we'd also consider PDK over the manual gearbox, the latter not as slick nor as precise as its predecessor. Although PDK only makes sense with the optional paddleshift controls.

If you opt for either the GT3 or Turbo models PDK is your only option. Many still haven't picked themselves up off the floor upon hearing that news. Porsche claims the double-clutch is not only quicker and more efficient, but it's what the customer wants. The problem many have is that the 911 was the last bastion of the truly wonderful manual gearbox, and now it's gone from the likes of the GT3 and the Turbo it feels like a chapter has closed when we were still left wanting for more.

and rear axles. Carbon-fibre bonnet – and front wings if you wish – help shed the kilos as do the plastic rear and rear quarter windows. Only 500 built, and all sold out within three-months. To mark its 25th Anniversary Porsche Exclusive builds 356 911 Speedsters. As with the Sport Classic it features the Carrera 4 body with rear-wheel drive running gear and the 408hp Powerkit 3.8-litre motor. PDK only transmission available, PCCB standard and Pure blue paint or white the only colours. Windscreen is 72mm lower than standard and roof is a manual-electric mix that hides under a traditional Speedster double bubble engine cover. First Porsche Speedster for 16 years. The final 997 series 911 could possibly be the best. Carrera GTS is available as either coupé of cabriolet and again mixes the Carrera 4 body with rear-drive running gear; again the 408hp 3.8-litre Powerkit engine does all the work. Six-speed manual or seven-speed PDK are both available, and PCCB is optional. 19-inch RS Spyder design wheels are standard and the GTs also features a SportDesign front bumper and deeper side sills. Inside is a mix of leather and Alcantara with a new SportDesign steering wheel also standard. Rear-seats are optional. 2011: Just when we thought Porsche was done with the 997 along came one more derivative. A 500hp, normally aspirated 4.0-litre flat-six engine with a crank lifted straight from a GT3 R. The car weighed 1360kg and had aero dynamic add-ons designed specifically for the Nürburgring. Everything about the 4.0RS was extreme. It cherry picked the very best bits from every 997 that had gone before it to produce the ultimate in rearengined driving thrills. It's unlikely we'll see anything of its kind again. 2012: Porsche had time for one last 997 swansong: the Carrera 4GTS. As its name suggests it was a four-wheel drive version of the Carrera GTS. This really was the last 997.

MODEL	TRACK	WEIGHT	ENGINE	Нр	TORQUE	0-62*	TOP SPEED
	(f/r mm)	kg	CC		(lb ft)	6sp/7sp	(mph)
Carrera	1486/1530	1415	3614	345	285	5.1*/4.2	179
Carrera S	1486/1516	1425	3800	385	310	4.3*/4.1	187
Carrera 4	1488/1548	1470	3614	345	285	5.0*	177
Carrera 4S	1488/1548	1480	3800	385	310	4.7*	184
Carrera GTS	1488/1548	1420	3800	408	310	4.6/4.2	190/189
Carrera 4GTS	1488/1548	1480	3800	408	310	4.6	188
Targa 4	1488/1548	1530	3614	345	285	5.2*	176
Targa 4S	1488/1548	1540	3800	385	310	4.9*	184
GT3	1497/1524	1395	3797	435	317	4.0*	194
GT3 RS	1509/1554	1370	3797	450	317	3.8*	193
GT3 RS4.0	1509/1554	1360	3996	500	339	3.9	193
Turbo	1490/1548	1570	3800	500	479	3.6* (3.2**)	194
Turbo S	1490/1548	1585	3800	530	516	2.9**	195
GT2 RS	1509/1558	1370	3600	620	516	3.5	205
Sport Classic	1492/1550	1425	3800	408	310	4.6	187
Speedster	1492/1550	1540	3800	408	310	4.4	190

\* 0-60mph: cars fitted with six-speed manual gearbox; \*\* cars fitted with Sports Chrono Plus and PDK

#### 991 (2012 –)

**2012:** 2012 Model Year – Wheelbase (mm): 2450; Length/Width (mm): 4491/1808; Height (mm) 1303/1295 (Carrera/Carrera S) - Significant developments: All new 911s featuring a longer wheelbase, a lighter body and more technology than a 911 has every seen. The direct fuel injection engines are carried over from the 997 generation of cars, so to is the seven-speed PDK gearbox. However, a new seven-speed manual gearbox – based on the PDK – was introduced to replace the slick-shifting six-speed manual. Other mechanical highlights include the option of Porsche Dynamic Chassis Control (PDCC) on a 911 for the first time, dynamic engine mounts and torque vectoring. Electric power steering replaced the previous car's hydraulic setup; not one of Porsche's most popular decisions. There was also a new look both inside and out, the new interior reagining the air of quality that some felt had been lacking in more recent 911 generations. The Carrera coupé and cabriolet models were fitted with a 355hp, 3.4-litre engine, the Carrera S models with a 400hp 3.8litre motor. 2013: The Carrera 4 and 4S coupé and cabriolet (width: 1852mm) joined the line-up at the end of 2012 as 2013 model year cars. Available with the same engine and gearboxes as the Carrera models, the four-wheel drive variants were equipped with a multi-plate, electronically controlled version of Porsche Traction Management. As with previous Carrera 4 models, the rear of the car was 44mm wider than the two-wheel drive derivatives. At the Geneva Motor Show in March Porsche revealed the new 911 GT3. Those who thought the 991 was a controversial 911 could barely speak when the specification of the new GT3 was announced. Out went the Hans Mezger 3.6-litre engine and in came a 475hp, 3.8-litre direct injection engine based loosely on the Carrera S's motor. This was just the beginning. No manual gearbox would be offered, instead only a heavily revised PDK unit would be fitted. There was also active rear-wheel steering, electric power steering and, for the first time the GT3 was no longer a narrow bodied car, its shell now taken from the wider Carrera 4. Soon after the GT3's announcement came the details for the new 911 Turbo. Well, two actually. The 991 will be available as either a 520hp Turbo or 560hp Turbo S, both fitted with a PDK gearbox only. Active rear-wheel steering, torque vectoring, PDDC, dynamic engine mounts are all available and, for the first time, the 911 Turbo features active aerodynamics for both the front and rear spoilers. The 911 Turbo's body is also 28mm wider than the Carrera 4 at 1880mm.

MODEL	MODEL	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	YEAR	kg	CC		(lb ft)		(mph)
Carrera	2012	1380	3436	350	287	4.8	179
Carrera 4	2012	1430	3436	350	287	4.9	175
Carrera S	2012	1395	3800	400	325	4.5	188
Carrera 4S	2012	1445	3800	400	325	4.5	185
GT3	2014	1430	3799	475	325	3.5	196
Turbo	2014	1595	3800	520	486	3.4	195
Turbo S	2014	1605	3800	550	516	3.1	197



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#### 912: 1965 – 1969: 1975

912: 1965 — 1969; 1975
Two-door Coupé and Targa, rear-engined four-cylinder aircooled 'boxer' engine. 'The poor man's Porsche' was
actually quite expensive, not that this stopped it from
building a strong following, especially in the States.
Sharing the 911's body, the 912 was fitted with a 2.0litre, four-cylinder engine and came with a spartan interior
that saw many of the 911's luxuries ditched. Developed
on a yearly basis, the 912 closely followed the 911 in
terms of new technology and very soon outsold its more
expensive brother, with over 30,000 delivered during its
first production run. Re-introduce in 1975, a further 2000
examples were built including a Targa Variant.



914: 1970 — 1976

Two-door Coupé with mid-mounted four- and six-cylinder air-cooled 'boxer' engines. Built by Karmann, Porsche's original mid-engined roadster was praised for its unrivalled dynamics, although its boxy looks and awkward gearbox were often criticised. The four-cylinder engines were sourced from VW, and the later six-cylinder Porsche units offered significant performance advantages — and even more of a challenge for the 'entertaining' dynamics. Sales were poor throughout the model's six-year lifespan.



#### 924: 1977 – 1988

924: 1977 — 1988
Two-door, two+two Coupé, front-engined, four-cylinder water-cooled engine, rear-wheel drive, five-speed gearbox. The 924 was Porsche's first front-engined sports car and production car fitted with a water-cooled engine. Originally conceived, designed and developed for Volkswagen, it was eventually launched as a Porsche, albeit still powered by a VW/Audi sourced engine. Performance wasn't earth-shattering, but its transaxle configuration provided the balance and handling worthy of the badge.

Continual development saw the 924 improve in the performance stakes, especially so when it received the 2.5-litre engine from the 944. Peak performance, however, came with the Turbo models, which delivered the much needed performance gain, ultimately reaching its peak with the Carrera GT, a homologation requirement in order for Porsche to race the car at Le Mans. A handful of more extreme, lighter Carrera GTS models were also built.

Sadly for the 924, with every evolution came a price increase and the coupé quickly went from the affordable entry level Porsche it set out to be, to becoming an expensive, out-dated car.

#### 912 (1965 – 1969; 1975)

**912 –** Wheelbase (mm): 2211 (1969 – 2268, 1976 – 2272) Length/Width (mm): 4163 (1976 – 4293)/1610. **Significant developments:** 356C four-cylinder engine, four- or five-speed gearbox, disc brakes, MacPherson front and semi-trailing rear suspension, low-spec interior. 1969: Larger wheelbase and 911 body introduced before production ends for six years. 1975: Re-introduced using the 914's VW 2.0-litre. Heavier than its predecessor, five-speed gearbox fitted as standard.

MODEL	MODEL	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	YEAR	kg	CC		(lb ft)		(mph)
912	1965 to '69	950	1582	90	86	11.6	115
912E	1975	1132	1971	90	98	13.0	110

#### 914 (1970 – 1976)

914 - Wheelbase (mm): 2459 - Length/Width (mm): 4050/1650 Significant developments: 1.7litre VW four-cylinder and de-tuned 911T 2.0-litre six-cylinder engines offered, MacPherson front and rear trailing link suspension, disc brakes all-round, five-speed gearbox and low-spec interior. 1972 -914-6 dropped due to poor sales. 1973 – 2.0-litre engine becomes an option. 1974 – Bore increase raises displacement to 1795cc

MODEL	MODEL YEAR	WEIGHT ka	ENGINE	HP	TORQUE (lb ft)	0-62	TOP SPEED (mph)
914 1.7	1970 to '73	970	1679	76	96	13	108
914 1.8	1974 to '76	970	1795	72	99	12	110
914 2.0	1973 to '76	970	1971	95	105	10.5	115
914/6	1970 to '72	940	1991	110	115	8.2	119

#### 924 (1977 – 1988)

**924** Wheelbase (mm): 2400; Length/Width (mm): 4213/1676; Track front/rear (mm) 1418/1372; Significant developments: Four-cylinder engine, four-speed transaxle gearbox, front MacPherson struts and rear semi-trailing arm suspension, four-stud 5.5x14-inch steel wheels and floating callipers. VW/Audi three-speed auto assembly but with ratios specific to the 924; 1977: Getrag five-speed dog-leg gearbox optional. Rubbing strips added. Martini 924 SE launched; 1978: Bodyshell now hotdipped zinc-coated. Oval tailpipe introduced; 1979: Separate air blowers improve ventilation; 1980: Five-speed Audi-derived gearbox introduced. Fuel tank capacity raised to 66-litres, second fuel pump fitted. Le Mans SE model offered; 1981: Carrera GT introduced. Kurzhals fuel pump introduced. 50th Jubilee SE model offered; 1982: Carrera GTS introduced. Limited-slip diff an option. Torque converter uprated on auto 'box. Ventilation system upgraded. 911 three-spoke steering wheel now standard; 1983: Turbo's spoiler becomes standard. Front anti-roll bar uprated to 21mm; 1984: 924 gets 944 tilt-slide roof mechanism; 1985: 924 replaced by 924S; 1986: 924S arrives in UK. 2.5-litre engine shared with 944 (as are gearbox, brakes and suspension) but de-tuned; 1987: Rear axle strengthened; 1988: 924 gets 944 engines. Power steering standard. Le Mans SE launched.

MODEL	MODEL	WEIGHT	ENGINE	Hp	TORQUE	0-62	TOP SPEED
	YEAR	kg	CC		(lb ft)		(mph)
924	1976 to '78	1080	1984	125	122	9.9	125
924	1979 to '85	1130	1984	125	122	9.9	125
924 Turbo	1979 to '81	1180	1984	170	181	7.8	140
924 Turbo	1982 to '84	1180	1984	177	185	7.7	140
Carrera GT	1981	1180	1984	210	203	6.9	150
Carrera GTS	1982	1121	1984	245	247	6.2	155
924S	1986 to '87	1190	2479	150	144	8.5	134
924S	1988	1195	2479	160	158	8.2	137

#### 928 (1978 – 1995)

**928** Wheelbase (mm): 2500; Length/Width (mm): 4524/1835; Track front/rear (mm): 1551mm -1552/1530 -1529mm. Significant developments: 1978: 90° V8, five-speed, rear-wheel drive, independent A arms at front, trailing arms at rear, discs all-round, automatic available, luxury interior 1983: Regular 928 and 'S' models replaced with by 928 S2 model; 1987: S4 introduced with 5.0-litre V8 and 316hp; 1989: 928GT loses 44 kilos and gains 14hp. 0-60mph drops below 6.0 seconds; 1993: Final 928 GTS sees V8's capacity grow to 5.4-litres and 350hp.

MODEL	MODEL	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	YEAR	kg	CC		(lb ft)	0-60*	(mph)
928	1978 to '82	1490	4474	240	268	7.5*	142
928 S	1980 to '82	1530	4664	300	284	6.8	146
928 S2	1983 to '86	1589	4664	310	295	6.5*	155
928 S4	1987 to '92	1600	4957	316	317	6.0	165
928 GT	1989 to '91	1566	4957	330	317	5.6	165
928 GTS	1992 to '95	1600	5397	350	362	5.2	169

#### 944 (1983 – 1991)

944 Wheelbase (mm): 2400, Length/Width (mm): 4213/1735. Track front/rear (mm): 1472/1451; Significant developments: Body based on the 924 Turbo, as was suspension, but used 2497cc engine. Brakes from the 924 Carrera GT; 1985: New dash, power steering becomes standard. RHD models have left parking wipers. Transmission casing revised. Cast alloy lower wishbones and semitrailing rear arms standard; 1986: Turbo launched with 2.5-litre engine, gas-filled shocks, anti-roll bars and four-pot brakes. Power steering standard, redesigned interior; 1987: LSD revised, ABS, driver and passenger airbags optional. 944 S 16-valve used gearbox and driveshafts from Turbo; 1988: Turbo SE offered with uprated engine, 7- and 9x16-inch alloys. 944's engine capacity increased to 2.7-litres with larger bore, new block. Celebration SE offered; 1989: 944 gets ABS as standard, discontinued at end of model year. Turbo gets Turbo S engine and new rear spoiler. S2



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(997) Turbo "Gen2" 3.8 pdk 27,000 miles, (10 - 2010), Basalt black with



(997) "4S" 3.8 "Gen2" pdk 41,000 miles, (09 - 2009), Basalt black with



48,000 miles, (59 - 2010), Basalt black with



35,000 miles, (09 - 2009), Red with black



46,000 miles, (58 - 2008), Silver with black £ 42,000 leather, sat nav



(997) Turbo 3.6 34,000 miles, (07 - 2007), Basalt black with black leather, sat nav ..£ 46,000



(997) Turbo 3.6 tip 40,000 miles, (56 - 2007), Silver with ocean blue leather, sat nav .£ 44,000



35,000 miles, (08 - 2008), Basalt black with black leather, sat nav



(997) "4S" 3.8 cab) 38,000 miles, (56 - 2006), Silver with ocean blue leather, sat nav .£ 33.000



(997) "4S" 3.8 34,000 miles, (06 - 2006), Silver with ocean £ 33,000



46.000 miles, (57 - 2007), Basalt black with £ 33,000



black leather, sat nav



44 000 miles (57 - 2008) Silver with black £ 33,000



40 000 miles (06 - 2006) Silver with black



(997) "2\$" 3.8 46.000 miles. (07 - 2007). Basalt black with .£ 32.000



43,000 miles, (06 - 2006), Basalt black with black leather, sat nav

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928: 1978 — 1995
Two-door, two+two Coupé, front-engined, water-cooled V8.
Built to succeed the 911, 928 went head-to-head with
Jaguar's XJS and Mercedes' SL. V8 engine offered stonking
performance and grew to a mighty 5.4-litres and a heady
360hp before stepping aside to allow the 911 to continue
its success story. Auto 'box most popular choice, although a
manual is the one to go for, and both choices offer
intergalactic cruising ability. Dynamically as sharp as any
Porsche, the 928's popularity is not without foundation.



#### 944: 1983 – 1991

Two-door, two+two Coupé and Convertible, front-engined, water-cooled. NA and turbocharged. The 944 was an unprecedented success, breaking all sales records and keeping Porsche afloat during the 1980s. The 924's body and turbo suspension formed the basis, but the 944 felt better. Turbo models offer good combination of performance and ability, although the last of the line 16-valve S2 models are probably the better option. If your budget doesn't stretch that far a good 2.7 will do. Cabriolet had sleek looks with Coupé's performance, though loss of rigidity takes shine off the driving experience. Considered to be the perfect introduction to Porsche ownership.



Two-door, two+two Coupé, flat-six, twin-turbocharged water/air-cooled flat-six. 197mph, 4WD, supercar. Based (lightly) around the 911, the 959 was Porsche's homologation special for Group B rallying. A technical tour de force for its time, the 959 boasted all-wheel drive with active torque split-drive, selectable traction settings (dry, wet and snow conditions), electronically-adjustable ride height and damper control, water-cooled cylinder heads and multistage turbocharging, and a 911 evolved composite body providing 'zero-lift'. All 283 959s built cost Porsche more than double the price the customer was as asked to pay than double the price the customer was as asked to pay



968: 1992 — 1995
Two-door, two+two Coupé and Cabriolet, front-engined, water-cooled. Porsche's last attempt at a front-engined Coupé resulted in its best effort to date. What the 944 derived 3.0-litre four-cylinder engine lacked in character, its chassis — especially in Club Sport spec — soon made up for. Regular car not as sharp as bare-to-the-bone Club Sport or semi-stripped Sport, but all offer one of the best front-engined/rear-drive experiences. Convertible lacks dynamics and looks a little frumpy, while limited edition Turbo S offer 911 levels of performance. Comparatively cheap to buy and run, 968 is one the safest Porsche ownership experiences.

production begins in Jan 1989, Cab in July; 1990: S2 Cabrio launched (70kg heavier than Coupé); 1991: Turbo Cab launched, airbags standard on European Turbo models.

MODEL	MODEL YEAR	WEIGHT kg	ENGINE cc	Нр	TORQUE (lb ft)	0-62	TOP SPEED (mph)
944	1982 to '87	1180	2497	163	151	8.4	131
944	1988 to '89	1260	2681	165	166	8.4	136
944 S	1987 to '88	1280	2497	190	170	7.9	142
944 S2	1989 to '91	1310	2990	211	207	6.9	149
944 Turbo	1985 to '88	1350	2497	220	243	6.3	152
944 Turbo	1989 to '91	1350	2497	250	258	5.9	162
944 Turbo S	1988	1350	2497	250	258	5.7	162

#### 959 (1988)

959 - Wheelbase (mm): 2272 - Length/Width (mm): 4260/1840 - Significant developments: Air-cooled six-cylinder engine, liquid-cooled heads, four-valves per cylinder, twin turbocharged. Allwheel drive, six-speed gearbox, active split-driver, double wishbone suspension front and rear with adjustable ride height. Aluminium and composite body panels, four shocks per 17-inch wheel, 322 and 308mm discs front/rear. Adjustable ride height and dampers.

MODEL	MODEL	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	YEAR	kg	CC		(lb ft)		(mph)
959	1988	1451	2847	450	370	3.7	197

#### 968 (1992 – 1995)

**968 –** Wheelbase (mm): 2400, Length/Width (mm): 4320/1735, Track front/rear (mm): 1477/1451 (1457/1445 with 17" wheels)- Significant developments: 3.0-litre four-cylinder S2derived engine, S2 suspension, four-pot fixed callipers, ABS and 7- and 8x16-inch alloys; 1993: Lower spec and stripped down Club Sport launched with 7.5x17-inch alloys (front) and 9x17-inch (rear), no driver's airbag and all 'unnecessary' equipment (electric windows, sunroof etc) removed. Turbo S launched with 8-valve Turbo head and 305hp. Similar spec to CS; 1994: 968 Sport introduced with same chassis tweaks as Club Sport but with a number of creature comforts (and weight) reinstated. Standard 968 dropped from line-up, Sport and Club Sport continue for further 12 months

MODEL	MODEL YEAR	WEIGHT ka	ENGINE	Нр	TORQUE (lb ft)	0-62	TOP SPEED (mph)
968	1992 –1994	1370	2990	240	225	6.5	156
968 Sport	1994 -1995	1400	2990	240	225	6.5	156
968 Club Sport	1993 -1995	1320	2990	240	225	6.3	160
968 Turbo S	1993 -1994	1300	2990	305	369	5.0	175

Boxster 986 (1997 – 2004); 987 (2005 – 2009;

#### 2009 - 2013); 981 (2013 - )

**BOXSTER -** Wheelbase (mm): 2400, Length/Width (mm): 4133/1740 Track front/rear (mm): 1465/1528 ('96-'03), 1455/1514 (03-04) - Significant developments: Introduced in 1997 with 2.5 'boxer' engine, five-speed manual transmission, four-pot callipers front and rear, ABS, dual and side airbags; 1999: Boxster S launched with 3.2-litre version of boxer engine and six-speed gearbox. White dials, titanium-trimmed windows and twin-centre exit exhaust pipes and larger 17-inch alloy wheels only exterior change to distinguish 'S' from standard model. Entry-level Boxster's engine capacity raised from 2.5- to 2.7-litres. resulting in healthy power hike to 220hp. Both models available with five-speed Tiptronic gearbox; 2003: Boxster's first face-lift. Both 2.7 and 3.2S models gain extra 8hp, raising power to 228hp and 252 respectively. S's torque also up by 3lb ft. Front and rear bumpers are new, and the air intakes are improved for both aerodynamics and cooling. New retractable rear spoiler also fitted. Clear indicators, upgraded interiors (cup holders), sportier exhaust note and lighter alloy wheels help differentiate the new from the old.

MODEL	MODEL	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	YEAR	kg	CC		(lb ft)		(mph)
Boxster 2.5	1997 to '99	1260	2480	205	180	7.0	155
Boxster 2.7	1999 to '02	1260	2687	220	192	6.6	156
Boxster S	1999 to '02	1295	3197	252	225	5.9	161
Boxster 2.7	2003 to '04	1275	2687	228	192	6.4	157
Boxster S	2003 to '04	1295	3179	260	228	5.7	164

BOXSTER 987 (2005MY -) Wheelbase (mm): 2415, Length/Width (mm): 4315/1780. Track front/rear (mm): 1490/1534 (2.7), 1486/1528 (3.2S) - Significant developments: 2005: 2.7 and S launched with subtly revamped exterior and new interior. 2.7 gains 12hp over old model, while 3.2-litre ups power by 20hp. Torque is also increased in both cars. PCCB, PASM and Sport Chrono pack are optional extras, variable ratio steering rack standard; 2006: 2007 Model Year – VarioCam Plus engines from the Cayman and Cayman S replace existing engines; power up to 245hp and 295hp respectively, revised Tiptronic S software; **2009:** 2009 Model Year – All-new flat-six engines: 255hp 2.9-litre is new entry model, 310hp 3.4-litre motor with direct-fuel injection for the S. Sixspeed manual gearbox standard, seven-speed PDK optional. Limited-slip differential, touchscreen sat-nav and Bluetooth phone are all optional extras. Both models get new front and rear bumpers. 2010: The lightest production Porsche money can buy goes on-sale in the form of the Boxster Spyder. Electric folding roof is replaced with a Lotus Elise style canvas rag, there's a new engine cover, aluminium doors and front luggage compartment lid and the radio, sat-nav and air-con have all been ditched. The standard seats are hip hugging sport bucket items and the doorcards and door pulls are inspired by the 911 GT3 RS. There is even a set of lighter alloy wheels and the ECU map from the Cayman S to extract a further 10hp from the 3.4-litre motor. Six-speed manual is standard, PDK optional with Sport Chrono Plus and Launch Control Porsche claim a 4.8-second 0-62mph time.

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#### BOXSTER (986): 1997 – 2004; BOXSTER (987): 2005 – 2012

BOXSTER (987): 2005 — 2012

Two-door, mid-engined, six-cylinder convertible. The saviour of Porsche after the recession-hit '90s, the Boxster offered true entry-level Porsche ownership. 911-esque looks drew criticism from press (and 911 owners!), but sublime chassis and instant responses more than made up for this. Early straight-line performance worries of original cars now totally forgotten thanks to 2.7 and 3.2 S engines. Boxster S is now serious contender for the only Porsche you'll ever need. Superb chassis dynamics provides Boxster with serious point-to-point ability and rewards are purer for some than current 911s. Image not the strongest, but crucially Boxster stimulates all the right senses and is a real mini-911 with down-to-earth running costs. Eight years after the first car's launch a heavily revised Boxster arrived. Both the 2.7 and 3.2 S feature slightly improved straight-line performance and a new exterior, but the real step forward is in cabin quality, which now mimics the 997's for layout and quality.

With the old Boxster still at the top of the roadster pack, Porsche needed to do little to the driving dynamics to keep the new model fresh. However, like it did with the 997, Porsche has achieved the impossible and made an almost perfect car even greater. S receives Cayman S's 3.4 engine, 2.7 gets 5hp boost.

2010 saw the introduction of the lightest Porsche road car: the Boxster Spyder. Weighing 80kg less than the Boxster S on which it is based it's been on a extreme diet. The electronic hood is replaced by a canvas rain cover saving 21kg. The doors and front luggage lid are aluminium and the interior has been comprehensively stripped with no radio, aircon, cup holders, door pulls and door bins. Even the wheels are lighter. The Boxster was already a dynamic masterpiece, but the Spyder takes things to the next level. Replacing the original Boxster was never going to be an easy task, but in the 981 it appears Porsche managed to do just that.



BOXSTER 981: 2012 —

Two-door, two-seat, mid-engined roadster. 2.7 or 3.4-litre water-cooled flat-six, rear-wheel drive, six-speed manual gearbox fitted as standard, seven—speed PDK double-clutch gearbox available as an option. How do you improve on perfection? In the Boxster's case we're not sure how but we're sure glad they had a go. What, on paper at least, looks like a collection of individual improvements and upgrades amount to a finished product that is one of Porsche's very best road cars.

The Boxster has always been inherently right and in the 981 Porsche improved on its mid-engined dynamics further still allowing you to maximise the performance on offer from either of its flat-six engines. That it also looks more honed and aggressive, has a far greater quality interior and now comes equipped as standard with those little bits of kit that should have always been so, makes for one of the best sports car packages you can buy.

The 2.7 needs enthusiasm to extract the most from it and if it was our money we'd go for a 3.4S straight-out-the-box with only a slippy diff the essential extra to take full advantage of the car's sublime chassis.

MODEL	MODEL	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	YEAR	kg	CC		(lb ft)	0-60*	(mph)
Boxster 2.7	2005 to '07	1295	2687	240	200	6.2	160
Boxster 3.2S	2005 to '07	1345	3179	280	237	5.5	168
Boxster 2.7	2007 to '09	1295	2687	245	201	6.1	160
Boxster 3.4S	2007 to '09	1345	3386	295	251	5.4	169
Boxster 2.9	2009 to '12	1335	2893	255	214	5.9	163
Boxster 3.4S	2009 to '12	1355	3436	310	265	5.3	170
Boxster Spyder	2010 to '12	1275	3436	320	273	5.1	166

BOXSTER 981 (2012MY -) Wheelbase (mm): 2475, Length/Width (mm): 4374/1801. Track front/rear (mm): 1526/1536 (2.7), 1526/1540 (3.4S) - Significant developments: 2012: Just like the 911 the Boxster came in for a major overhaul in 2012, its first since the original was launched in 1996. A longer wheelbase, lighter, wider track and cleaner, more efficient engines the Boxster had grown into a true thoroughbred. The range now started with a 265hp 2.7-litre engined Boxster, fitted with a six-speed manual as standard or available with the optional seven-speed PDK (which adds 30kg to the kerbweight). The Boxster came with the same transmission options but was powered by a 315hp 3.4-litre engine. PASM is optional on both models, so too are dynamic engine mounts and Porsche Torque Vectoring which also includes a mechanical locking differential. Electromechanical power steering is standard. Wheels sizes range from 18 through to 20s, and the brakes are more powerful, the S borrowing its discs and callipers from the 991 Carrera. An electric parking brake is now standard, PCB still optional. The 981 wears a completely new body and new roof and the interior takes its styling cues from the 991.

MODEL	MODEL	WEIGHT	ENGINE	Нр	TORQUE	0-62	TOP SPEED
	YEAR	kg	CC		(lb ft)		(mph)
Boxster 2.7	2012 -	1310	2706	265	206	5.8	164
Boxster 3.4S	2012 -	1320	3436	315	265	5.1	173

#### Cayman 987 (2005 - 2009; 2009 - 2013), 981 (2013 –

**Cayman S –** Wheelbase (mm): 2415, Length/Width (mm): 4315/1801, Track front/rear (mm): 1490/1534 (Cayman), 1486/1528 (Cayman S); **2006** – 3.4-litre water-cooled flat-six is enlarged Boxster S engine with 997 Carrera 2 internals producing 15hp and 14lb ft of torque over the midengined roadster. Six-speed manual gearbox is standard with first and second ratios shorter than those found in the Boxster S. Tiptronic S optional, variable rate steering also carried over from Boxster and Carrera models. Boxster S brakes standard fitment, but PCCB optional as is Porsche Active Suspension Management (PASM) and Sports Chrono pack. Body is 100 per cent stiffer than Boxster S, and is as stiff as a 997 Carrera 2 Coupé, Porsche Stability Management (PSM) comes as standard; 2006: 2007 Model Year – Entry-level Porsche coupé receives 2.7-litre flat-six éngine fitted with VarioCam Plus technology. Five-speed manual gearbox standard, six-speed manual and fivespeed Tiptronic S available as option. Steel springs and gas dampers standard, PASM optional; **2009:** 2009 Model Year – All-new flat-six engines with 265hp 2.9 replacing 2.7 engine, with a new 320hp 3.4-litre motor for the S, which also comes with direct-fuel injection as standard. Six-speed manual gearbox standard with seven-speed double clutch PDK an option. Optional limited-slip differential turns it into a genuine 911 alternative. Mild redesign includes new bumpers and head and tail-lamps. PCM3 is available with touchscreen sat-nav and Bluetooth phone capability. 2011: 2011 Model Year - Cayman R introduced; lighter more powerful version of Cayman S with 330hp and 1295kg kerb weight. Aluminium doors and front bonnet, 19-inch wheels and an Alcantara sport interior. First R model in 43 years. Series production car.

MODEL	MODEL YEAR	WEIGHT (kg)	ENGINE (cc)	BHP	TORQUE (lb ft)	0-62	MAX MPH
Cayman S	2005 - '09	1340	3386	295	251	5.4	171
Cayman 2.7	2007 – '09	1300	2687	245	201	6.1	162
Cayman 2.9	2009 – '12	1330	2893	265	221	5.8	164
Cayman S	2009 – '12	1350	3436	320	273	4.9	171
Cayman R	2011 –′12	1295	3436	330	273	5.0*	175
*manufacturer's c	laim						

**Cayman 981 –** Wheelbase (mm): 2475, Length/Width (mm): 4380/1801, Track front/rear (mm): 1526/1536 (Cayman), 1526/1540 (Cayman S); 2013 - 275hp, 2.7-litre and 325hp 3.4-litre DFI flat-six engines. Six-speed manual gearbox standard, seven-speed PDK optional (adds 30kg). New, lighter body and longer wheelbase; electromechanical power steering standard. PASM, Porsche Torque Vectoring and mechanical locking diff all optional as is the Sport Chrono pack and launch control and a sports exhaust. 18-20-inch wheels available, brakes carried over from the Boxster, including 991 Carrera stoppers for the Cayman S, PCCB optional. New interior as per 981 Boxster making the Cayman a serious alternative to a 911. As with all modern Porsches it is very spec sensitive and in our experience less always amounts to more.

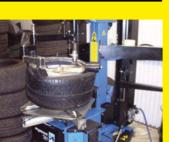
MODEL	MODEL YEAR	WEIGHT (kg)	ENGINE (cc)	BHP	TORQUE (lb ft)	0-62*	MAX MPH
Cayman 2.7	2013 -	1310	2706	275	213	5.7	165
Cayman 3.4S	2013 –	1320	3436	325	272	5.0	175

\*manufacturer's claim

#### Cayenne (2003 – 2007; 2007 – 2010; 2010-)

Cayenne - Wheelbase (mm): 2855, length/width (mm): 4782 (4786 Turbo)/1928, track front/rear (mm): 1655 - 1641/1670 - 1656 (17-20-inch wheels); Introduced in 2003 with choice of normallyaspirated or twin-turbocharged 4.5-litre V8. Six-speed manual gearbox for five- and six-speed Tiptronic S for Turbo (optional on S). Porsche Active Suspension Management (PASM), adjustable ride height, electronic damper control, differential locks, six-pot callipers, 18-inch alloys standard, 19and 20-inch optional. Porsche Traction Management, PSM, ABS, ABD and ASR all standard; 2004: Entry-level Cayenne is the first Porsche to sport V6 power. 24-valve engine produces 250hp and 228lb ft, transmitted through a six-speed manual transmission. Steel springs standard, PASM and air





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Two-door, mid-engined, six-cylinder coupé. Its near perfect weight distribution and mid-engined dynamic stability make the Cayman one of the finest drivers' cars ever made. This is something Porsche is acutely aware of, hence the model is not available with a limited-slip differential and, until further notice, we will only see smaller-engined variants of the Cayman to avoid any deflection for the company's headline sports car.

At the end of 2010 Porsche announced the Cayman R at the LA Auto Show. Following a similar development programme as the Boxster Spyder, the Cayman R is a lighter, more powerful version of the Cayman S. Power is up 10hp to 330hp, and the kerb weight drops 55kg to 1295kg. Aluminium for the bonnet and doors and a stripped interior and a smaller fuel tank are all contributing factors to the weight loss.



#### CAYMAN 981: 2013

CAYMAN 981: 2013

Two-door, mid-engined, six-cylinder coupé. Like its Boxster sibling the Cayman underwent a thorough overhaul in 2012, which must have been a thankless task for the engineers as the outgoing 987 was deemed one of the best sports cars money could buy.

Once again, though, Porsche's engineers came up trumps and produced a truly sensational car. Still sharing much with the Boxster – wheelbase, engines, gearbox, suspension and steering – the Cayman was finally let of its leash and allowed to show us just what it is capable of. Alert, precise, involving and dynamically astute, the 981 Cayman is one of the purest drivers cars and greatest sports cars to have come out of Stuttgart. It really is that good.

The 2.7-litre car needs working hard to maximise its performance, but the 3.45 is honey sweet providing the perfect blend of performance with precision to make it one of the quickest cross-country cars you can buy. The manual is still the slick six-speed car carried over from the 987 and is still the default option. Even the electric power steering doesn't seem to effect the Cayman like it does the Boxster and Carrera models. Porsche perfection? Possibly.



#### CAYENNE: 2003 - 2010; 2010 – TO DATE

Five-door, front-engined SUV. A Porsche SUV? Yes, Stuttgart's finest leaps off-road with the V8-engined Cayenne. Mid-level S model is the best all-rounder, the twin-turbocharged Turbo models are plain silly. Six-speed manual and six-speed Tiptronic S gearboxes available. Sophisticated air suspension is standard fitment on Turbo models, optional on S and V6, and allows driver to control ride height and damper settings. Off-road ability is impressive, but not as impressive as how the Cayenne manages to hide its near

suspension optional. V6 is also fitted with smaller brakes; **2006:** 2006 Model Year – Cayenne Turbo S gains an extra 72hp, 0-62mph in 5.2 seconds, 167mph and 2355 kilos; 2007: 2007 Model Year -Second generation Cayenne: V6, V8 S and Turbo all get direct fuel injection engines to improve performance, economy and emissions, while face-lift improves the looks. Porsche Dynamic Chassis Control active anti-roll bars available on cars with PASM; 2007: 2008 Model Year - GTS model introduced. Combines Turbo looks with V8 S running gear. Shorter ratios in both manual and Tiptronic gearbox fitted. Turbo brakes standard. New Turbo S model announced. Power up to 550hp, torque to 553lb ft, 174mph and a 0-60mph in 4.3 seconds; 2009: 2009 Model Year - Porsche does the dirty and introduces a Cavenne diesel. Three-litre Audi sourced V6 is available in entry-level trim only but comes with six-speed Tiptronic S as standard. 100-litre fuel tank capacity provides over 600 mile range and 30mpg. 2010 Cayenne - Wheelbase (mm): 2895, length/width (mm): 4846/1939, track front/rear: 1655 (1643 Turbo)/1669 (1657 Turbo); Introduced in 2010 this is the first all-new Cayenne since the original. Bigger in every dimension the new Cayenne's design does an amazing job of disguising the car's larger dimensions and its natural bulk. Engine range is carried over from the previous model but now includes Porsche's very first Hybrid powered vehicle with the Hybrid Drive model which sees a 3.0 supercharged V6 working in parallel with a 47hp electric motor. All but the entry level Cayenne V6 petrol are equipped with a new eight-speed Tiptronic automatic gearbox (the V6 gets a six-speed manual as standard). Porsche has also done away with the original Cayenne's heavy duty four-wheel drive system, replacing the low ratio gearbox with the latest development of Porsche Traction Management with the enhanced electronics of the new Tiptronic S transmission. Diesel and Hybrid models get permanent all-wheel drive, while the others get an active system. PASM, PDCC and PCCB are all optional extra. All Cayenne's also get a new interior based on the design first seen in the Panamera and provides a higher level of quality and refinement that was missing in the outgoing model. 2012: The line-up grows with the introduction of the GTS. Fitted with the same 4.8-litre V8 as the Cayenne S, the GTS engine receives a host of modifications and upgrade that push power to 420hp and torque to 380lb (up 20hp and 11lb ft respectively). Eight-speed Tiptronic S is the only gearbox fitted and the chassis combines steel springs with PASM. Air suspension is an option. The GTS rides 24mm lower than an S, has a wider front and rear track and 20-inch wheels are standard. Front bumper and lights are from the Cayenne Turbo, there is a new lower lip spoiler, side skirts and a bi-plane rear wing. The windows are framed with a black gloss trim. Leather and Alcantara trims the interior. 2013: Two new Cayenne's for the 2013 model year: the S Diesel and the Turbo S. The latter is a bell-and whistles Turbo with the boost wound up and the power increased 50hp to 550hp. Two-tone leather options are standard as is a host of standard equipment that is optional on the Turbo. The S Diesel takes a twin-turbo charged 4.8-litre Audi V8 diesel and creates the best Cayenne we've sampled. The spec is the same as the petrol engined S, but with enough torque to tear-up the book of torque cliches.

MODEL	MODEL YEAR		,	BHP	TORQUE (lb ft)	0-62/60*	MAX MPH
Cayenne S	2003 to '06	2245	4511	340	310	7.2	150
Cayenne Turbo	2003 to '06	2355	4511	450	457	5.6	165
Cayenne	2004 to '06	2160	3189	250	228	9.1	133
Cayenne Turbo S	2006 to '07	2355	4511	521	531	5.2	167
Cayenne	2007 to '10	2160	3598	290	283	8.1	141
Cayenne S	2007 to '10	2225	4806	385	369	6.5*	156
Cayenne Turbo	2007 to '10	2355	4806	500	516	5.0*	171
Cayenne GTS	2007 to '10	2225	4806	405	369	6.1	157
Cayenne Turbo S	2008 to '10	2355	4806	550	553	4.0	174
Cayenne Diesel	2009 to '10	2240	2967	240	405	8.3	133
Cayenne	2010 -	1995	3598	300	295	7.5	143
Cayenne Diesel	2010 -	2100	2967	240	405	7.8	135
Cayenne S	2010 -	2065	4806	400	369	5.9	160
Cayenne S Hybrid	2010 -	2240	2995	380¹	427¹	6.5	150
Cayenne Turbo	2010 -	2170	4806	500	516	4.7	172
Cayenne GTS	2012 -	2085	4806	420	379	5.7	162
Cayenne Turbo S	2013 -	2215	4806	550	553	4.5	175
Cayenne S Diesel	2013 -	2195	4134	382	627	5.7	156
1 when combined with electric motor	222bbp and 204lb ft without	est * 0 60 mmh timo					

Porsche Carrera GT (2003 - 2006)

Carrera GT – Wheelbase (mm): 2730, Length/Width (mm): 4613/1921, Track front/rear (mm): 1612/1587 Significant developments: All alloy, 40-valve V10 with titanium conrods, nickel/silicone liners, dry sump lubrication and VarioCam, revving to 8400rpm. Rear-wheel drive with six-speed manual gearbox. Carbon fibre monocoque with steel crash structures and carbon fibre bodywork. Double wishbone pushrod axles from and rear, 19-inch magnesium alloy wheels, 380mm ceramic composite discs front and rear with six-pot callipers. Built at Leipzig plant in Berlin, in left-hand drive only, over 1260 examples were built between November 2003 and May 2006.

MODEL	MODEL YEAR	WEIGHT (kg	) ENGINE (cc)	BHP	TORQUE (lb ft)	0-62	MAX MPH
Carrera GT	2003 to '06	1380	5733	612	435	3.9	205

#### Panamera: 2009 - 2013: 2014 - To Date

Panamera S, 4S, Turbo - Wheelbase (mm): 2920, Length/Width/Height (mm): 4970/1931/1418, Track front/rear (mm): 1658/1662 (1656/1646 Turbo); **2009** – 2010MY 400hp 4.8-litre watercooled eight-cylinder engine or 500hp 4.8-litre water-cooled twin-turbocharged eight-cylinder engine, both engines feature Direct Fuel Injection (DFI) and VarioCam Plus one-sided variable camshaft management with adjustable valve lift, both engines meet EuroV emissions; six-speed manual gearbox and rear-wheel drive for S model, seven-speed PDK optional; 4S and Turbo models feature electronically controlled four-wheel drive transmission with Porsche Traction Management and PDK fitted as standard along with Auto Stop-Start. Engines are adapted from Cayenne SUV, but PDK transmission is unique to Panamera and differs from the unit in the company's sports cars. Doublewishbone front suspension, multi-link at the rear with Porsche Active Suspension Management (PASM) standard on all models, self-levelling adaptive air-suspension standard on Turbo. Porsche



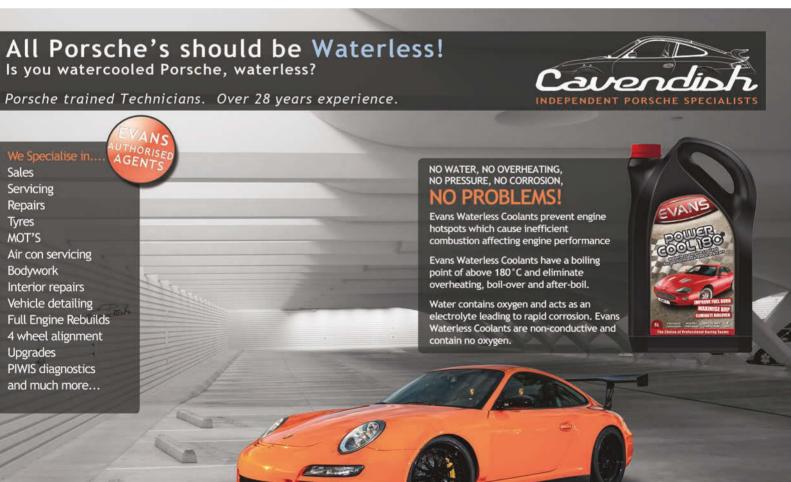
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2.5-ton bulk and drive like a well-sorted saloon car.

The face-lifted Cayenne arrived in 2007 with DFI engines and improved looks. 2008 marked the arrival of the GTS which combined the Turbo's looks with the normally aspirated V8 engine of the S model hooked up to a gearbox packed with shorter ratios. It went on to be the most popular model in the range, along with the first Porsche diesel production car which arrived in 2009; quickly followed (in more ways than one) by the 550hp Turbo S.

The all-new Cayenne arrived in 2010 with a new look and an improved interior design and is the first Porsche production car to offer Hybrid Drive. New eight-speed Tiptronic S gearbox and improved Porsche Traction Management replace heavy low-ratio transfer box. The new Cayenne is lighter, more efficient, better looking, equipped and built than its predecessor.

2013 saw the Cayenne range expand with a new petrolengined V8 GTS model and an even more powerful Turbo S variant. The best of the bunch, however, was the new S Diesel. Using a twin-turbo-charged, 4.8-litre turbo diesel engine in some eyes it renders ever other Cayenne model redundant with its mix of fuel sipping economy and mighty power and torque — on paper it's as quick as the GTS, on the road it's a similar story too.



#### CARRERA GT: 2003 – 2006

Two-door, mid-engined, V10 Roadster. Still born Le Mans racer evolves into the greatest supercar every built. Carbon-fibre tub, 612hp V10, 205mph maximum and a birch wood gear knob. Perfection!



PANAMERA: 2009 — 2013

Five-door, front-engined, rear-and four-wheel drive saloon-coupé; normally aspirate, turbocharged and supercharged V6 and V8 petrol, diesel and hybrid engines, six-speed manual and seven-speed PDK transmission. The last new Porsche to be launched while Dr. Wendelin Weideking was running the company, the Panamera is Porsche's fourth model line and, according to the company, a car that creates a new class. Powered by either a normally aspirated 4.8-litre V8 or a twin-turbo charged version of the same engine, Panamera is available in rear-wheel drive 'S' guise with a six-speed manual gearbox, or an all-wheel drive 4S or Turbo (both only available with the 7-speed PDK gearbox, which is also an option for the S).

3.6-litre V6 engine added to the line-up in 2010 with rear and four-wheel drive options. Rear-drive model gets six-speed manual as standard, Panamera 4 the seven-speed PDK and PASM suspension. V6 offer all the luxury and comfort of the V8 models. Only a four-seater, the Panamera's interior is the most striking Porsche has designed for decades, and as you'd expect of such a car there is very little in terms of luxury or convenience that has been omitted from the specification or options list.

Panamera range is extended further with the cracking diesel model in 2011, along with the S Hybrid and slightly bonkers Turbo S. The former two are rear-wheel drive only and come with the conventional eight-speed Tiptronic S gearbox. In early 2012 the range is topped off with the GTS — a breathed on Panamera 4S with more power, a Turbo look and sport inspired interior. It's no GT3 but it's a great way to hustle nearly two-tons.

Stability Management comes as standard featuring: ABS brakes; ASR anti-slip control; MSR engine drag force control; ABD automatic brake differential; Brake Assistant; and a pre-filling of the brake system, Porsche Dynamic Chassis Control (PDCC) and Porsche Ceramic Composite Brakes (PCCB) optional on all models. 18-inch wheels standard on S and 4S, 19-inch on Turbo; Variable rate steering standard, speed sensitive Servotronic steering optional. All models feature adaptive aerodynamics, with the S and 4S models utilising a two-way spoiler and the Turbo a four-way item. 4S and Turbo get 100-litre fuel tanks, the S has a 80-litre tank. Four individual seats for interior. Eight airbags fitted as standard; bi-xenon headlights standard across the range, adaptive light function for Turbo. Radar-based distance cruise control, four-zone air-conditioning, Porsche Entry & Drive (standard on Turbo) and Burmester High-End Sound system all feature on the options list. Sports Chrono Package Plus also optional and when combined with PDK offers Launch Control function. **2010** – 2010MY The first non-V8 engined Panamera arrives in the form of the 3.6-litre V6 petrol model. Panamera V6, is available a rear or four-wheel drive, the former available with either a sixspeed manual or optional seven-speed PDK, the later is PDK only. Engine produced 300hp and 295 Ib ft of torque. Standard specification is the same as a V8 engined S model, except for a tyre pressure monitoring system and a PASM suspension, which are optional. 2011 - 2012MY The Panamera many were waiting for (well, in Europe at least) arrived in time for the 2012 model year in the shape of the Panamera Diesel. The 3.0-litre V6 turbocharged engine is donated by Audi and produces 250hp and 405lb ft of torque through an eight-speed Tiptronic S gearbox and with drive only to the rear wheels. The specification is on par with a V6 petrol engined Panamera with steel springs and gas dampers standard, PASM and air both optional. An 80 litre fuel tank is standard, providing a 745-mile range, the optional 100-litre tank providing 894-miles before refills. Along with the Diesel Porsche also added another fuel miser to the Panamera range in the guise of the S Hybrid. Following the path of the Cayenne S Hybrid, it's fitted with a 3.0-litre supercharged petrol V6 engine that produces 333hp and 324lb ft of torque, this is then connected to a 47hp, 221lb ft electric motor. Energy for the electric motor is storied in batteries fitted under the boot floor and these are charged via the engine and regenerative sources such as braking. Drive is to the rearwheels only and via the eight-speed Tiptronic S gearbox. Standard spec is someway between an S and a Turbo model with both PASM and air-suspension both standard equipment; 19-inch wheels are standard. Full electric range is 1.2-miles and the electric motors have a 46mph maximum speed. The anecdote to Porsche two fuel sipping, CO2 friendly Panameras came in the form of the Turbo S – a Panamera Turbo would up to 11. The pair of turbo-chargers get lighter vanes made from a mix of titanium and aluminium allowing for a 30 percent reduction in spool-up time and the ECU has been remapped. Peak power climbs 50hp to 550hp and torque to 553lb ft in standard trim, or 590lb ft in Sport Plus mode via the standard Sport Chrono Package. 20 inch wheels are standard and the front and rear wheels are half and one inch wider. PDCC (Porsche Dynamic Chassis Control) and PTV+ (Porsche Torque Vectoring plus) are standard as is a electronic locking differential. Side skirts and a painted rear spoiler are standard and Agate grey exterior paint is exclusive to the model. Inside 14-way adjustable seats are standard. 2012 – 2012MY Take a Panamera 4S, fit a Porsche Exclusive bodykit and allow the engineers time with its 4.8-litre V8 on a dyno and you get the GTS. Active air intakes, reprofiled camshafts and a revised ECU extract a further 30hp from the bent-eight and an additional 15lb ft of torque. Turbo brakes are standard, as is air suspension and PASM – which is reprogrammed to be tauter. Porsche Sport Chrono Plus is also standard as is the Turbo's four-piece rear spoiler and the 19-inch alloy wheels. The chassis is 10mm lower and there 5mm spacers fitted to the rear axle. 18-way adjustable front seats and a sports steering with paddles are also standard. Four-wheel drive is the only configuration along with the seven-speed PDK.

MODEL	MODEL YEAR	WEIGHT (kg)	ENGINE (co	) BHP	TORQUE (lb ft)	0-62	MAX MPH
Panamera	2010 - 2013	1730	3605	300	295	6.8	162
Panamera 4	2010 - 2013	1820	3605	300	295	6.1	159
Panamera S	2009 - 2013	1770	4806	400	369	5.0	175
Panamera 4S	2009 - 2013	1860	4806	400	369	4.4	175
Panamera Turbo	2009 - 2013	1970	4806	500	516*	3.5**	188
Panamera Diesel	2011 - 2013	1880	2967	250	405	6.8	150
Panamera GTS	2012 - 2013	1920	4806	430	383	4.5	178
Panamera S Hybrid	2012 – 2013	1980	2995	380	427	6.0	167
Panamera Turbo S	2012 - 2013	1995	4806	550	553	3.8	190

\* 567lb ft when in Sport Plus Mode when Sport Chrono Package Plus fitted. \*\* 0-60mph time 2013- 2014MY The gen-2 Panamera gets a new front and rear bumper, new lights and side sills and a range of new engines. The interior is untouched. Out goes the 4.8-litre normally aspirated V8 for the S and 4S models and in comes a 3.0-litre biturbo V6 that's more powerful than the V8 it repalces. The big V8 stays for the GTS and the Turbo, and the 3.6-litre petrol V6 stil lprops up the range along with the 3.0-litre turbo diesel. The big change is to the hybrid model. Now called the S E-Hybrid, it mates the 3.0-litre supercharged V6 with an electric motor that's twice as powerful and battery pack that can store five times the energy. And if that's not enough, the E-HYbrid is also a plug-in hyrbid which means you can charge the car while you're at work, asleep or being dragged around the shops. Other mechanical changes include the dropping of the six-speed manual - it's PDK for all the models bar the Diesel and S E-hybrid, which get the Cayenne's eight-speed Tiptronic.

MODEL	MODEL YEAR	WEIGHT (kg)	ENGINE (cc)	BHP	TORQUE (lb ft)	0-62	MAX MPH
Panamera Diesel	2013 -	1880	2967	250	405	6.8	151
Panamera	2013 -	1770	3605	310	295	6.3	160
Panamera 4	2013 -	1820	3605	300	295	6.1	159
Panamera S	2013 -	1810	2997	420	383	5.1	178
Panamera 4S	2013 -	1870	2997	420	383	4.8	177
Panamera S E-Hybrid	d 2013 –	2095	2995	416	435	5.5	167
Panamera GTS	2013 -	1925	4806	440	383	4.4	178
Panamera Turbo	2013 -	1970	4806	520	516	4.1	189
Panamera Turbo S	2013 -	1995	4806	570	553	3.8	192

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918 SPYDER: 2014 —
Two-door, mid-engined, petrol-electic plug-in hybrid. The supercar has evolved into the hypercar, one that combines the thoroughbred engine from an LMP2 race car with the pioneering engineering of electric motors and lightweight(ish) batteries. The 918 signals the beginning of a new dawn for Porsche, one that provides the company with a halo product on which to hang its Cayenne, Panamera, Macan and, potentially 911 hybrids from. To help the 918 along the way its launch coincides with Porsche's return to top flight sports car racing, including Le Mans, with an all-new LMP1 race car. A petrol-electric hybrid race car. The 918 has a lot to deliver, but on the eve of its launch it made an impressive debut with a sensational 6 minute 57 second lap of the Nürburgring Nordschleife.



#### MACAN 2014 -

Five-door, front engined, permanent four-wheel drive compact SUV, six-cylinder turbocharged petrol and diesel engines; seven-speed PDK transmission. Built to fullfill Porsche's ambitions to build 200,000 cars by 2018 the Macan is the company's answer to Land Rover's Evoque, BMW's X3 and Mercedes GLA in the premium compact SUV sector. Porsche forcasts to build 50,000 Macans a year and will add to the range with another diesel engine – a four-cylinder this time – a petrol-hybrid and a four-clylinder petrol engine.

The Macan launches with two trim levels, the S and the Turbo. The former is available with either a twinturbocharged V6 petrol engine or single-turbo diesel V6. The Turbo is fitted with a 3.6-litre twin-turbocharged engine. A Turbo S and GTS trim-line is expected to join the line-up, along with a more basic trim level to sit below the S models; expect this to be offered with a four-cylinder engines, both petrol and diesel.

Sitting below the Cayenne in Porsche's SUV line-up, the Macan is lighter by over 100kgs, 16cm shorter in overal length, eight centimetres lower in height and sits on a wheelbase eight centimetres shorter than the Cayennes. The Macan is usefully quicker than its big brother, too, with the petrol S model faster to 62mph than the quickest normally aspirated Cayenne, the GTS. The Macan Turbo's sprinting prowess sits neatly between the Cayenne Turbo and Turbo S. The smaller SUV is also usefully more fuel efficient and cleaner than its big brother, too.

Porsche's decision to build the Macan is not just to piggy back into an established growing market, it is serious about its latest addition to the model range. How so? Rather than share production resources with other VW Group brands also building similar cars for the same market, the Macan will be built exclusivly at Porsche's Leipzig factory, which has undergone a €500 million investment and now includes a body press and paint shop, which has also led to the recruitement of 1000 new staff at the home of the Cayenne and Panamera. The Mac

#### 918 Spyder (2014 –)

918 Spyder – Wheelbase (mm): 2730, Length/Width (mm): 4643/1940, Track front/rear (mm): 1664/1612 Significant developments: 2013 – 2014MY Where to start with the most technologically advanced car Porsche has ever made? The engine is a 4.6-litre V8 that traces its routes back to the 2007 LMP2 RS Spyder race car, this alone develops 608hp and runs through a seven-speed PDK gearbox with drive to the rear axle. Then there is a 286hp electric motor fitted to the front axle complete with its own transmission. The 918 can be driven by the petrol engine, the electric motor or a combinaitn of the two, which results in a maximum power output of 887hp and 944lb ft of torque (the V8 produces 676lb ft on its own). The V8 screams to 9150rpm and produces 132hp/litre. There are five driving modes: E-Power, Hybrid, Sport-Hybrid, Race-Hybrid and Hot Lap, each mode determines which power source is required. The chassis is a carbon-fibre monocoque with the body made from the same material and includea a two-piece Targa roof. PCCB brakes are standard, there are 20-inch wheels at the front, 21s at the rear with Michelin Pilot Sport Cup 2 tyres. Avaiable in two trim levels, Spyder and Weissach Package, the latter reduces the car's weight by 41kgs – the magnesium wheels account for a 14 kilo saving. Other weight saving measures include ceramic wheels bearings, titanium chassis bolts and brake pad supporting plates. Other upgrades include additional aero parts includeing aeroblades positioned behind the rear wheels, thinner paint and exposed carbon-fibre body parts. All this tech, lightweight construction and 887hp results in a very quick Porsche indeed: 0-62mph on 2.6 seconds, 0-124mph in 7.3 (7.2 if you order the Weissach pack), 0-186mph in 20.9 (19.9 with the full Weissach) and a maximum speed of 214mph. Then there is that lap time of the Nürburgring - 6 minutes 57 seconds.

MODEL	MODEL YEAR	WEIGHT (kg)	ENGINE (cc	) BHP	TORQUE (lb ft)	0-62	MAX MPH
918 Spyder	2014	1674	4593	608/286	676/944	2.6	214
918 Spyder Weissac	h 2014	1634	4593	608/286	676/944	2.6	214

#### Macan (2014 –)

Macan - Wheelbase (mm): 2807; Length/Width (mm): 4681 (Turbo 4699mm)/1923; Track front/rear (mm): 1655/1651; Weight: 1865kg (S), 1880kg (S Diesel), 1925kg (Turbo) Significant developments: 2013 – 2014MY Built at Leipzig, the Macan is Porsche's first attempt at a Compact SUV and shares much of its running gear with Audi's Q5 on which it is loosely based and slots in below the Cayenne in Porsche's SUV line-up. The two petrol V6 engines are donated by the VW Group, as is the 4-cylinder, turbocharged petrol engine, so to is the V6 diesel although we've seen this before as it's the same unit that is used in the Cayenne. Macan S gets 340hp three-litre bitutbo V6, 157mph top speed and 5.4-seconds 0-62mph time; Turbo is equipped with 400hp, 3.6-litre biturbo V6, reaches 165mph and cracks 0-62mph in 4.8 seconds. S Diesel fitted with 3.0-litre single turbo V6 diesel engine reaches a 142mph maximum and 0-62mph in 6.3 seconds. All Macans feature the latest Porsche Traction Management (PTM) four wheel drive running gear, and the drivetrain is essentially rear-wheel drive, sending the required torque load to the front axle when it's required, which is similar to how the 991 Carrera 4's PTM system works. Porsche's seven-speed PDK transmission is standard across the range – there is no manual option – and an 'Off-road mode' can be selcted from the cockpit at speeds of up to 80kmh, this shortens the gear ratios to aid traction. Auto Start/Stop is standard on all models. The S model is fitted with a 65-litre fuel tank, S Diesel a 60-litre tank and the Turbo a 75-litre one. Both S models are available to order with a optional 75litre tank. Depending on tyres fitted, the S returns between 31 – 32mpg on the combined cycle, the Turbo 30.7 - 31.7mpg and th S Diesel 44.8 - 46.3mpg. Emmissions for the three range from 150 -157g/km for the S Diesel, 171 – 179g/km for the S and 176 – 184g/km for the Turbo. Steel springs and fixed rate dampers are standard on the S models, the Turbo comes with PASM as standard. All variants are avaiable with air-suspension with PASM at extra cost, providing an additional 40mm of ground clearance when driving off-road. A Sport button is fitted as standard – sharper throttle response, higher rev-limit, quicker PDK shift times – PTV Plus (Porsche Torque Vectoring Plus)is optional, as is Sport Chrono. S models fitted with 350mm front brake discs, the Turbo 360mm, rears are 330mm and 356mm respectively. Porsche Ceramic Composite Brakes were not offered at the time of the Macan's launch. All Macan models are fitted with different size tyres front-to-rear. the S models are fitted with 8x18s on the front axle with a 235/60R tyre and 9x18s on the rear with a 255/55R tyre; the Turbo has the same width wheel and tyre but a larger 19-inch diamter and runs a 55R and 50R profile front-to-rear. The narrower front tyres are to provide greater steering feel, the wider rear tyres for optimum grip. Six wheel designs measuring up to 21 inchs are available. All Macans are fitted with electromechanical power steering. Porsche Communication Management is fitted as standard (sat-nav is standard on UK models) and the three-dial instrument layout includes a TFT display. Bose and Bürmester sounds systems are optional and your Macan can be monitored using Aha Radio App. Porsche Car Connect (PCC) is also avaiable and allows you to access vehicle information and control certain functions via a smartphone. Other features available include a lane departure warning and Automatic Cruise Control (ACC). Turbo is fitted with biexnon headlights as standard, S models fitted with halogens. Porsche Dynamic Light System (PDLS) optional on all models, PDLS Plus offers high beam assist and a wider light spread at junctions. Interior is a further evolution of the design first seen in the Panamera with a transmission tunnel rising up to meet the centre console. The three-spoke multi-function steering wheel, which comes as standard with paddle shift controls for the gearbox, is a variaiton on the design used in the 918 Spyder. Full length panoramic glass sunroof available at extra cost and S models are trimmed in partial leather and alcantara, with a full leather interior a cost option. Macan offers 500 litres of luggage capacity (with the rear seats in their upright position and up to 1500 litres depending on the configuration in use).

MODEL YEAR	WEIGHT (kg)	ENGINE (CC)	BHP	TORQUE (lb ft)	0-62	MAX MPH
2014	1770	1984	237	258	6.9	138
2014	1865	2997	340	339	5.4	157
2014	1880	2967	258	427	6.3	142
2014	1925	3604	400	405	4.8	165
	2014 2014 2014	2014 1770 2014 1865 2014 1880	2014     1770     1984       2014     1865     2997       2014     1880     2967	2014         1770         1984         237           2014         1865         2997         340           2014         1880         2967         258	2014         1770         1984         237         258           2014         1865         2997         340         339           2014         1880         2967         258         427	2014         1770         1984         237         258         6.9           2014         1865         2997         340         339         5.4           2014         1880         2967         258         427         6.3





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Boxster S	£47,035	6cyl/3436cc	315hp	269lb ft	5.1secs	173mph	1340kg
Boxster GTS	£52,879	6cyl/3436cc	330hp	276lb ft	5.0secs	174mph	1345kg
CAYMAN							
Cayman 2.7	£39,694	6cyl/2706cc	275hp	213lb ft	5.7secs	165mph	1330kg
Cayman S	£48,783	6cyl/3436cc	325hp	272lb ft	5.0secs	175mph	1340kg
Cayman GTS	£55,397	6cyl/3436cc	340hp	279lb ft	4.9secs	177mph	1345kg
911 COUPÉ (991)							
911 Carrera	£71,449	6cyl/3436cc	350hp	287lb ft	4.8secs	179mph	1380kg
911 Carrera S	£81,242	6cyl/3800cc	400hp	325lb ft	4.5secs	188mph	1395kg
911 Carrera 4	£77,924	6cyl/3436cc	350hp	287lb ft	4.9secs	175mph	1430kg
911 Targa 4	£86,377	6cyl/3436cc	350hp	287lb ft	5.2secs	173mph	1540kg
911 Carrera 4S	£87,959	6cyl/3800cc	400hp	325lb ft	4.5secs	185mph	1445kg
911 Targa 4S	£96,413	6cyl/3800cc	400hp	325lb ft	4.8secs	182mph	1555kg
911 GT3	£100,540	6cyl/3799cc	475hp	325lb ft	3.5secs	196mph	1430kg
911 Turbo	£118,349	6cyl/3800cc	520hp	486lb ft	3.4secs	195mph	1595kg
911 Turbo S	£140,852	6cyl/3800cc	560hp	516lb ft	3.1secs	197mph	1605kg
911 CABRIOLET (991)							
911 Carrera	£79,947	6cyl/3436cc	350hp	287lb ft	5.0secs	177mph	1470kg
911 Carrera S	£89,740	6cyl/3800cc	400hp	325lb ft	4.7secs	187mph	1465kg
911 Carrera 4	£86,583	6cyl/3436cc	350hp	287lb ft	5.1secs	175mph	1500kg
911 Carrera 4S	£96,619	6cyl/3800cc	400hp	325lb ft	4.7secs	183mph	1515kg
911 Turbo	£126,689	6cyl/3800cc	520hp	486lb ft	3.5secs	195mph	1665kg
911 Turbo S	£149,511	6cyl/3800cc	560hp	516lb ft	3.2secs	197mph	1675kg
CAYENNE		,					
Cayenne	£44,397	6cyl/3598cc	290hp	283lb ft	8.1secs	141mph	1995kg
Cayenne Diesel	£47,390	6cyl/2967cc	240hp	405lb ft	8.3secs	133mph	2100kg
Cayenne S	£57,515	8cyl/4806cc	400hp	369lb ft	5.9secs	160mph	2065kg
Cayenne S Diesel	£59,053	8cyl/4134cc	382hp	627lb ft	5.7secs	156mph	2195kg
Cayenne S Hybrid	£61,882	6cyl/2995cc	380hp	427lb ft	6.5secs	150mph	2240kg
Cayenne GTS	£68,117	8cyl/4806cc	420hp	379lb ft	5.7secs	162mph	2085kg
Cayenne Turbo	£89,324	8cyl/4806cc	500hp	516lb ft	5.1secs	171mph	2170kg
Cayenne Turbo S	£107,784	8cyl/4806cc	550hp	553lb ft	4.5secs	175mph	2215kg
PANAMERA						,	- 0
Panamera Diesel	£65,289	6cyl/2967cc	300hp	479lb ft	6.0secs	160mph	1880kg
Panamera	£63,913	6cvl/3605cc	310hp	295lb ft	6.3secs	160mph	1770kg
Panamera 4	£67,454	6cyl/3605cc	310hp	295lb ft	6.1secs	159mph	1820kg
Panamera S V6	£82,439	6cyl/2997cc	420hp	383lb ft	5.1secs	178mph	1810kg
Panamera 4S V6	£86,080	6cyl/2997cc	420hp	383lb ft	4.8secs	177mph	1870kg
Panamera S E-Hybrid	£89,377	6cyl/2995cc	416hp	435lb ft	5.5secs	167mph	2095kg
Panamera GTS	£93,391	8cyl/4806cc	440hp	383lb ft	4.4secs	178mph	1925kg
Panamera Turbo	£108,006	8cyl/4806cc	520hp	516lb ft	4.1secs	189mph	1970kg
Panamera Turbo S	£131,152	8cyl/4806cc	570hp	553lb ft	3.8secs	192mph	1995kg
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Macan	£40,276	4cyl/1984cc	237hp	258lb ft	6.9secs	138mph	1770kg
Macan S	£43,300	6cyl/2997cc	340hp	339lb ft	5.4secs	157mph	1865kg
Macan S Diesel	£43,300	6cyl/2967cc	258hp	427lb ft	6.3secs	142mph	1880kg
Macan Turbo	£59,300	6cyl/3604cc	400hp	405lb ft	4.8secs	165mph	1925kg
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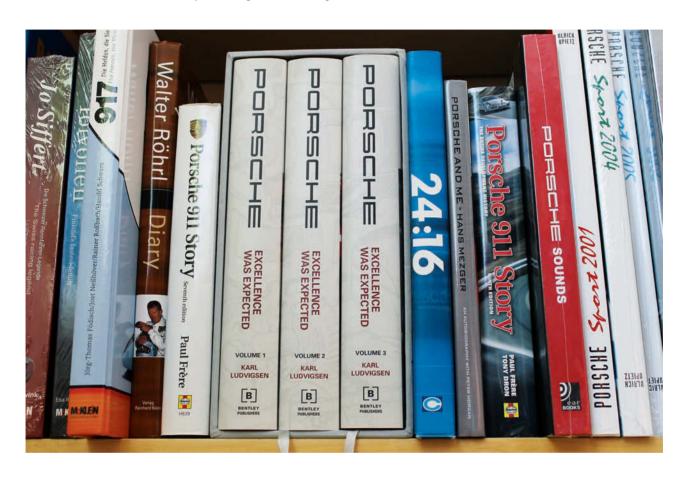
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## This encyclopaedia of Porsche has paid for itself a dozen times over



elcome to my office. It's in the attic and is a bit of a mess. In one corner there's a deflated lilo, in another a stack of framed racing photos including a corker of Jochen Rindt, an air rifle and an inlet valve from one of the engines from a P&O cruise liner (head diameter fiveinches). There's an untidy desk in the corner and along one wall my book collection. If you work from home there are two major distractions: the biscuit tin and anything else that provides a distraction, such as books.

Only motoring books (and aviation) are allowed on these shelves; Proust has to live downstairs. My particular passion is driver biographies and I've got a good selection. Two stand out as being particularly special: one is Peter Revson's biography called *Speed With Style* and the other is Adam Cooper's fantastic biography of Piers Courage. And, of course, there's a healthy collection of Porsche literature. A real treasure is *The Certain Sound*, the

autobiography of John Wyer of Gulf Porsche fame. A large chunk of the book covers Aston Martin and the Ford CT40 and Mirage eras but naturally the legendary 917 programme is also covered. Because Wyer led the whole effort his insight and opinion of not just the drivers, but the whole Porsche organisation and its *modus operandi* is fascinating. It's worth a few quid but I'd rather sell my testicles.

More books have been written on the Porsche 917 than on Elvis Presley and I've got a few of them. Peter Morgan has written a good one but my favourite is by Gordon Wingrove, who was a mechanic at JW Automotive in the '60s and '70s. It's well written and includes some fantastic factory photos of the cars being built. Another quite technical book is the autobiography of Mark Donohue titled The Unfair Advantage; Donohue (with co-author Paul Van Valkenburgh) runs through all the cars he drove in his career which includes a couple of chapters on the turbocharged 917s and the pornographically gorgeous 911 RSRs

raced in the International Race Of Champions series. Donohue goes into amazing detail about how the cars were setup, problems addressed and solutions found. Donohue, who died in a Penske-run March at the Austrian Grand Prix in 1975, was renown as not just a great driver but also as a great development engineer and car-sorter. Read this book and you'll see where that reputation came from. Fellow hack and friend Chris Harris bought me my copy and had it signed personally by Roger Penske.

The editor has been generous over the years and the last gift that arrived from Kent was a blinder. It's a massive tome on the career of Jo Siffert and includes hundreds of brilliant shots of 'Seppi' at the wheel of various Porsche sports cars. It's in English, French and German so you could use it to learn two languages. Perhaps.

Vic Elford's autobiography is a good read. Elford in the flesh tends to go on a bit but what he has to say in print is fascinating. One of the greatest allrounders the sport has ever seen,

Elford has done it all. There's a lot of Porsche anecdotery in his book, from winning the Monte in a 911 to Daytona in 908s and 917s.

The Holy Grail is my copy of Porsche: Excellence was Expected by Karl Ludvigsen. My wife bought me this for a birthday after I first met her. She might have been the girlfriend back then, and if you've got a girl who'll spend £160 on a car book then you should propose immediately. If the house caught fire this is the first thing I'd grab. This encyclopaedia of Porsche has paid for itself a dozen times over. Perhaps there are mistakes hidden within the three thick volumes but I doubt they are serious ones.

One book that isn't on my shelf is the biography of Brian Redman, Porsche works driver and the driest wit in motor racing. I haven't got it because it hasn't been written yet. It's amazing that no one has tackled this fantastic subject, I quite fancy spending a few weeks interviewing the great Redman at his house in Florida. Now there's a good winter project for someone  $\bigcirc$ 

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