



PORSCHE



## **Production anniversary of the 911**

Press Kit

# Contents

<b>Porsche milestone: One-millionth 911 rolls off the production line</b>	<b>3</b>
<b>Zuffenhausen sports car icon is a millionaire</b>	<b>5</b>
<b>The Porsche 911</b>	<b>9</b>
<b>From zero to 1,000,000: Seven generations of the Porsche 911</b>	<b>13</b>
<b>The design of the 911</b>	<b>18</b>
<b>The innovations of the 911</b>	<b>20</b>
<b>Family ties: the 911 and its brothers</b>	<b>32</b>
<b>Porsche Classic: Everything a classic sports car needs</b>	<b>35</b>
<b>Porsche 911 production figures</b>	<b>38</b>
<b>Fuel consumption and emissions</b>	<b>40</b>

05/2017

---

Zuffenhausen celebrates the original sports car and style icon

## **Porsche milestone: One-millionth 911 rolls off the production line**

**Stuttgart.** It is the archetypal sports car for everyday driving, and a style icon that is unmistakable as both the face and heart of the Porsche brand: the 911. In Zuffenhausen today, the one-millionth model rolled off the production line – a Carrera S in the special colour “Irish Green”, with numerous exclusive features to emulate the first 911 F-models from 1963. The two-door car remains the most strategically important model in the product range and makes a huge contribution to maintaining Porsche’s position as one of the most profitable car manufacturers in the world.

Dr Wolfgang Porsche, Chairman of the Supervisory Board at Porsche AG, has been a part of the development of the 911 since day one: “54 years ago, I was able to take my first trips over the Grossglockner High Alpine Road with my father. The feeling of being in a 911 is just as enjoyable now as it was then. That’s because the 911 has ensured that the core values of our brand are as visionary today as they were in the first Porsche 356/1 from 1948”.

The Porsche 911 established a new category and remains at the pinnacle of the premium sports car segment. In 2016 alone, 32,365 vehicles were delivered worldwide. Nevertheless, it has maintained its exclusivity over the decades and has become a coveted collector’s item. The quality of the 911 is legendary. Over 70 per cent of all 911s ever built are still ready to drive today. In addition, it can consistently be found at the top of quality rankings such as the “Initial Quality Study” from the US market research institute J.D. Power.

Its mythology has been cultivated by countless motorsport successes. Designed for both the road and track, no other sports car embodies this recipe for success quite like the 911. Over half of Porsche’s 30,000 race wins can be credited to the iconic car. It thrills private motor sport enthusiasts around the world in numerous racing series.

Uniquely, Porsche has never strayed from the founding concept of the original 911. “But we have continued to enhance the technology of the 911, refining and perfecting the sports car”, says Oliver Blume, Chairman of the Executive Board of Porsche AG, “that’s why it remains a state-of-the-art and technically innovative vehicle. We have also been able to expand the model line very successfully through derivatives”.

One significant factor in this success is the production site at the headquarters in Zuffenhausen, where all 911s are manufactured. Today, all two-door cars – 911, 718 Boxster and 718 Cayman – and their various derivatives are handled on one assembly line thanks to a sophisticated production approach. The assembly workers are experts in up to 200 different tasks and, with their passion and knowledge, they ensure that each Porsche is delivered in the quality that is typical of the brand. Uwe Hück, Chair of the Group Works Council of Porsche AG, says: “I cannot imagine the success story of the 911 without our Porsche employees, who are truly out of this world. The construction of the Mission E at the Zuffenhausen site underlines Porsche’s viability for the future, and it is clear that if we are to make it a success, we will need our highly qualified and motivated employees”.

The one-millionth 911 is still being held by Porsche AG. Before it moves on to enrich the collection at the Porsche Museum, it will embark on a world tour and will take road trips in the Scottish Highlands and around the Nürburgring, and in the USA, China and beyond.

Porsche 911 celebrates production milestone

## **Zuffenhausen sports car icon is a millionaire**

New record for the Porsche 911: On May 11, 2017, the sports car icon marked the production of the one millionth vehicle. For nearly 54 years, the Porsche 911 has been at the heart of the Porsche brand and has played a major role in its current success. There are very few other cars in the world that can look back on such a long history of tradition and continuity or that have achieved as many race victories. Manufactured in Zuffenhausen right from the start, each generation sets new standards in terms of driving dynamics, efficiency and everyday convenience.

The one millionth 911 is a one-off piece. Built at the Porsche headquarters and intricately refined by Porsche Exclusive, which has been responsible for adding details to limited and exclusive small-scale series at Porsche for over 30 years. The anniversary Coupé contains the quintessence of over half a century of 911s: Sporty, yet suitable for everyday driving; powerful, yet efficient; exclusive, yet timeless. The sports car model is based on the 911 Carrera S, with a power-boosted 331-kW (450-hp) flat engine and a seven-speed manual transmission.

### **A one-off with historical accents**

Painted in the special colour “Irish Green” and individually equipped with leather seats whose centres feature the original pepita pattern from 1964, this unique car is reminiscent of Ferry Porsche’s first official 911. The company founder had one of the first series cars with the chassis number 300.003 painted green, his favourite colour. He was presented with the car on October 19, 1964. In the 1965 model year, Irish Green was finally included as a new paint colour in the colour scheme, and can still be ordered as an individual colour at Porsche today.

The anniversary vehicle features exclusive handmade seat covers as well as numerous other individual details. The instrument cluster will feature the lettering “1,000,000 911” and the numbers and lighting appear a shimmering green. The circular instruments have a silver surround, just as in the 1964 archetype, as does the Sport Chrono clock. Another unique finishing touch is the sports steering wheel with a Porsche crest from 1964 on the hub. The handmade ma-

hogany rim is reminiscent of the wooden steering wheels that were still a must for sports cars in the 1960s. The crest on the bonnet is the same crest that featured on the original 911. The wheel hub covers feature the “911” label. The PORSCHE logo appears in white on the black-painted brake callipers and in gold on the rear lid. Badges with the “1,000,000” logo (on the B-pillar on the exterior, on the dashboard trim strip in the interior) indicate the special status of the anniversary model.

Further refinements emphasise the timeless sporty elegance and exclusivity of the sports car icon. The outer shell of the Sport Design exterior mirrors, the exterior door handles and the slats of the air intake grill on the rear lid shimmer in Galvano Silver. The strips around the side windows are made from matching aluminium. As a homage to the legendary Fuchs rims that characterised the image of the 911 for decades, the unique model is equipped with 20-inch Carrera sports tyres in the classic design. In the interior, the experts from the Porsche Exclusive workshop have used all of the leather options that are available for the 911. The switch panel has mahogany accents. These distinguished details are also a tribute to the very first 911.

### **911 Carrera S with power-boosted engine**

When it comes to technology, the anniversary model represents the leading position of this best-selling sports car. Outstanding product features and quality guarantee that the almost proverbial customer satisfaction will apply to the new generation too. At the heart of the 911 Carrera S is a three-litre flat engine with turbocharging. With the performance kit installed, the engine now achieves 331 kW (450 hp). The package includes such features as larger turbochargers, the Sport Chrono package including dynamic engine mountings, a modified brake cooling system and the sports exhaust system with two central tailpipes in a unique design. This allows the 911 Carrera S to accelerate from 0 to 100 km/h in 4.1 seconds and reach a top speed of 312 km/h. The combined fuel consumption is 9.4 l/100 km.

The 911 Carrera is the benchmark for all-round sports cars in terms of driving dynamics. With each new generation, Porsche continues to refine the exemplary combination of everyday comfort and racing performance. The PASM standard chassis with ten millimetre lowering provides outstanding cornering stability thanks to the highly developed damper generation combined with relaxing long-distance comfort.

The 911 was and always will be contemporary. This is due in part to a constantly growing range of functions from Porsche Connect Plus. The Porsche Communication Management System (PCM), including online navigation module and voice control, is standard in the 911 Carrera models. Mobile phones and smartphones can be connected via W-LAN.

### **One-off model finished by Porsche Exclusive**

The one-millionth 911 is not just one of a kind because of its production number; its finish is also unique. The experts at Porsche Exclusive have made sure of this. The in-house workshop specialises in bespoke Porsche modifications. Its range of services includes advising customers who wish to customise their new vehicle, developing special equipment options for each model range, and producing special vehicles and limited small-scale series.

Porsche Exclusive has decades of experience in building individualised sports cars. The first small-scale series was the 911 Turbo “slant nose”, which was built between 1982 and 1989. Its design was based on the 935 racing car. Many of the subsequent projects have become coveted legends. In 1993, for example, only 15 Turbo-bodied Carrera 2 Speedsters were built to special request by Porsche Exclusive. The 911 Carrera 3.6 Speedster of the type 993 is one of the rarest Porsche sports cars ever. Just two units of this model were built, in 1995 and 2000.

The concept behind small-scale series, limited editions and one-off models is a love of detail and craftsmanship in the manufacture and installation of the components. Porsche Exclusive has put together a selection of popular refinements. The Porsche Car Configurator offers more than 600 customisable features across a range of models. Colour and material options are also available. Among the favourite variations are exterior aerokits, sports design packages and modified front and tail lights. Inside, customers prefer leather combined with wood, carbon,

aluminium or stainless steel. The Porsche Centres also provide advice on the range and options offered by Porsche Exclusive. Special requests can be taken care of by one of the international Porsche Exclusive Flagship Dealers or a specialised customer adviser at the Porsche plants in Zuffenhausen and Leipzig. Almost any customer requirement can be fulfilled. The only prerequisite is technical, legal and qualitative feasibility.

### **The anniversary watch: “One Millionth 911” Datetimer by Porsche Design**

In special tribute to the anniversary, Porsche Design has produced the “One Millionth 911” Datetimer. This unique watch, which has typical design features of the 911, is part of the exclusive lifestyle brand’s 1919 collection. The second hand pointer shimmers in the same shade of green as the sports car’s instrument cluster. The “Porsche Design” icon on the instrument dial is gold-plated like the crest on the front of the vehicle. The strap of the anniversary watch is made of the same leather as that used in the original vehicle. Even the stitching features the same yarn as originally used in the sports car interior.

The titanium case and instrument dial are in anti-reflective matte black. A design that harks back to the Chronograph I from 1972: The first product designed by Professor Ferdinand Alexander Porsche for his newly founded design company was modelled on the non-reflective, matte black style of the fittings of the motorsport vehicles at the time. The timeless design of the 911 was also the brainchild of F.A. Porsche.

## The Porsche 911

The Porsche 911 has been regarded as an automotive icon and sports car par excellence for over five decades. It has been inspiring car enthusiasts the world over since its debut as the 901 at the International Motor Show (IAA) in 1963. Today it is considered the quintessential sports car, the benchmark for all others. The 911 is also the central point of reference for all other Porsche series. Every Porsche is the sportiest car in its category, and each one carries a piece of the 911 philosophy.

The model line has been continually enhanced since its debut in 1963. However, the unique character of the model, renamed 911 in 1964, has always been preserved. Now, the modern classic has reached a new milestone: since 1963, more than one million units of the 911 have been produced in Stuttgart-Zuffenhausen. This might sound a lot, but in reality it is very little: many premium manufacturers produce more than twice as many vehicles in a single year. In other words, the Porsche 911 was, is and shall remain an exclusive sports car.

The distinctive character of the 911 is also reflected in its customer base. Numerous well-known artists, actors, fashion designers, sportsmen/women and entrepreneurs throughout the world have become enthusiastic 911 drivers, some of whom have remained faithful to the sports car series for many decades. And the Porsche 911 has also made many appearances in films and on TV. As leading actor and co-producer, Steve McQueen paid a resounding tribute to the 911 in his 1970 film masterpiece "Le Mans". For the first few minutes of the film, the actor's dark green 911 S takes centre stage.

The secret to the success of the Porsche 911 has been much discussed. More than 300 books have been written on the subject, with new titles being added each year. The answer is actually quite simple: the Porsche 911 is unique in the automotive world. Like no other vehicle, it combines apparent opposites such as sportiness and everyday usability, tradition and innovation, exclusivity and social acceptance, design and functionality. Ferry Porsche described the exceptional versatility of his masterpiece to a tee: "The 911 is the only car that you can drive from an African safari to Le Mans, then to the theatre and onto the streets of New York."

## **Blueprint of a best-seller: How the 911 came about**

The Porsche 911 did not have an easy legacy to fulfil. After all, by the beginning of the 1960s, its predecessor, the 356, was already a legend against which the new sports car had to be measured. The aim of the 911 was to continue the success of the 356, of which almost 78,000 units were sold, whilst featuring state-of-the-art technology or, even better, being ahead of its time. And it was to be bigger, so it could accommodate a golf bag in the luggage compartment as well as having a 2 + 2 interior concept.

The Porsche engineers therefore ventured to come up with a new design, and in so doing created the basis for the success that was to come. The frame and chassis of the 901, the internal type number, were completely redesigned. To incorporate the luggage compartment, the car was fitted with space-saving MacPherson suspension at the front and semi-trailing arm suspension at the rear.

When it came to designing the engine, it was clear from the outset that the successor to the 356 should have a rear engine. Ferdinand Piëch, the nephew of Ferry Porsche, oversaw the development of an air-cooled six-cylinder flat engine with axial fan and, due to the higher speed reserves and improved engine smoothness, a top-mounted camshaft on each side. The camshaft was driven by chains, after the use of vertical shafts and toothed belts was dropped. The initial displacement was 2 litres, with a possible increase to up to 2.7 litres planned from the start. This type of engine was continued in its basic form until 1998 and eventually featured 3.8 litre displacement.

## **The design of the 911: The shining hour of automotive design**

An important aspect of the 911 legend is, without doubt, the timeless design of the series. A Porsche 911 is immediately recognisable from every perspective and can be identified without the Porsche crest or nameplate. However, during the early development phase, there was a great deal of uncertainty at Porsche about the design of the future successor to the 356. Only after several internal and external studies did Ferry Porsche's 27-year old son Ferdinand Alexander complete his historic design.

F.A. Porsche, as he was called by his colleagues, joined the design office of what was then Dr. Ing. h.c. F. Porsche KG in 1958. He was soon able to prove his vast creative talent when, in 1959, he sculpted a pioneering model of a successor to the 356 series out of plasticine. In 1959, the 754 “T7” prototype was created on the basis of his designs. It was an extremely promising study of a four-seater car, however its rear end did not yet meet with Ferry Porsche’s approval. He decided against developing the four-seater “T7” in favour of the “T8”, a fastback coupé with 2+2 seating arrangement that was developed from 1962 onwards under the project name “Type 901”.

In the early 1960s, the emotional yet functional shape united automotive and product design for the first time – the two had been kept strictly separate in the design world until this point. In the original 911, F.A. Porsche distilled the Porsche design DNA into a concentrated masterpiece. He created an unmistakable brand design that, to this day, still gives all Porsche series their identity and forms the basis for their success.

### **How the 911 got its name**

When naming the new model, Porsche first used Volkswagen’s range of spare part numbers as a guide. Because a possible collaboration with the VW plant was in the pipeline, it was thought that the new Porsche should already be compatible with VW’s number ranges. As the 900 numbers were not yet in use in Wolfsburg, it was decided in Zuffenhausen to name the project 901 for the six-cylinder variant and 902 for a later four-cylinder variant. The big day finally arrived on September 12, 1963, when Porsche presented the prototype of the 901 at the International Motor Show in Frankfurt/Main; the market launch was planned for one year later.

However, in early October 1964, the Porsche management team received an objection from the French car manufacturer Peugeot, indicating that the 901 type designation was an infringement of French copyright and trademark protection. Peugeot claimed it had been using three-digit numerical sequences with a zero in the middle since 1929, and therefore owned the legal rights to all similar number sequences in France.

Porsche therefore had no choice but to rename the 901 right in the middle of the model launch phase. After considering many different options, including using an affix such as “GT”, Ferry Porsche decided to rename the vehicle Type 911 on November 22, 1964. The reason for this was entirely pragmatic: brochures, price lists and driver’s manuals, as well as the type designation on the rear end and glove compartment cover, were already being finalised, and so the double use of the existing font for “One” was the easiest solution. There was simply no time to produce a new number font or new name lettering. No one could have known in 1964 that this on-the-fly emergency solution would produce the world famous “nine-eleven”.

---

## **From zero to 1,000,000: Seven generations of the Porsche 911**

### **1963: The original 911**

As the successor to the Porsche 356, the 911 won the hearts of sports car enthusiasts from the outset. The prototype was first unveiled at the Frankfurt IAA Motor Show in 1963 as the 901, and was renamed the 911 for its market launch in 1964. Its air-cooled six-cylinder flat engine with two-litre displacement delivered 130 hp, giving it an impressive top speed of 210 km per hour. If you wanted to take things a little slower, you could also opt for the four-cylinder Porsche 912 from 1965. In 1966, Porsche presented the 160 hp 911 S, which was the first to feature forged alloy wheels from Fuchs. The 911 Targa, with its distinctive stainless steel roll-over bar, made its debut in late 1966 as the world's first ever safety cabriolet. The semi-automatic Sportomatic four-speed transmission joined the line-up in 1967. And with the 911 T, and the later E and S variants, Porsche became the first German manufacturer to comply with strict US exhaust emission control regulations. The Porsche 911 became more and more powerful as displacement increased, initially to 2.2 litres (1969) and later to 2.4 (1971). The 911 Carrera RS 2.7 of 1972 with a 210 hp engine and weighing less than 1000 kg remains the epitome of a dream car to this day. Its characteristic "ducktail" was the world's first rear spoiler on a production vehicle.

Number of vehicles produced: 81,100

### **1973: The G series is a success**

A best-seller goes into production: Ten years after its premiere, the engineers at Porsche gave the 911 its first thorough makeover. The "G model" was produced from 1973 to 1989, longer than any other 911 generation. It featured prominent bellows bumpers, an innovation designed to meet the latest crash test standards in the United States. Occupant protection was further improved by three-point safety belts as standard equipment, as well as integrated headrests. One of the most important milestones in the 911 saga was the 1974 unveiling of the first Porsche 911 Turbo with a three-litre 260 hp engine and enormous rear spoiler. With its unique

blend of luxury and performance, the Turbo became synonymous with the Porsche mystique. The next performance jump came in 1977 with the 911 Turbo 3.3 equipped with charge-air cooler. At 300 hp it was the best in its class. In 1983, the naturally aspirated 911 Carrera superseded the SC; with a 3.2 litre 231 hp engine, it became a favourite collectors' item. From 1982, lovers of fresh air could also order the 911 as a Cabriolet. The 911 Carrera Speedster, launched in 1989, was evocative of previous legendary Porsche vehicles.

Number of vehicles produced: 198,414

### **1988: The 964 introduces all-wheel drive**

Just when automotive experts were predicting the imminent end of an era, in 1988 Porsche came out with the 911 Carrera 4 (964). After fifteen years of production, the 911 platform was radically revised with 85 per cent new components, giving Porsche a modern and sustainable vehicle. Its air-cooled 3.6 litre flat engine delivered 250 hp. Externally, the 964 differed only slightly from its predecessors – in its aerodynamic polyurethane bumpers and automatically extending rear spoiler – but technically it was almost entirely different. The new model was designed to captivate drivers, not only with sporty performance but also with enhanced comfort. It came with ABS, Tiptronic, power steering and airbags, and rode on a completely redesigned chassis with light alloy control arms and coil springs instead of the previous torsion-bar suspension. A revolutionary member of the new 911 line right from the start was the all-wheel drive Carrera 4 model. The rear-wheel-drive Carrera 2 came on the market just six months later. In addition to the Carrera Coupé, Cabriolet and Targa versions, starting in 1990 customers could also order the 964 Turbo. Initially powered by the proven 3.3 litre flat engine, in 1992 the Turbo was upgraded to include a more powerful 360 hp 3.6 litre power unit. Today, the 911 Carrera RS, 911 Turbo S, and 911 Carrera 2 Speedster are particularly in demand among collectors.

Number of vehicles produced: 74,008

### **1993: The 993 – the first version with a biturbo engine**

The 911 with the internal design number 993 remains the one true love of many a Porsche driver. The remarkably pleasing design has much to do with this. The integrated bumpers underscore the smooth elegance of its styling. The front section is lower-slung than on the earlier models, made possible by a switch from round to polyellipsoidal headlights. The 993 quickly gained a reputation for exceptional dependability and reliability. It was also agile, as the first 911 with a newly designed aluminium chassis. The Turbo version was the first to have a biturbo engine, giving it the lowest-emission standard automotive powertrain in the world in 1995. The hollow-spoke aluminium wheels, never before used on any car, were yet another innovation of the all-wheel drive Turbo version. The Porsche 911 GT2 was aimed at the sports car purist who cherished the thrill of high speeds. An electric glass roof that slid under the rear window was one of the innovations of the 911 Targa. But the real reason why dyed-in-the-wool Porsche enthusiasts still revere the 993 is that this model, produced from 1993 to 1998, was the last 911 with an air-cooled engine.

Number of vehicles produced: 67,535

### **1997: The 996 with water cooling**

The 996, which rolled off the assembly line from 1997 to 2005, represented a major turning point in the history of the 911. It retained all the character of its classic heritage, but was an entirely new car. This comprehensively redesigned generation was the first to be driven by a water-cooled flat engine. Thanks to its four-valve cylinder heads it achieved 300 hp and broke new ground in terms of reduced emissions, noise, and fuel consumption. The exterior design was a reinterpretation of the 911's classic line, but with a lower drag coefficient (cd value) of 0.30. The lines of the 996 were also a result of component sharing with Porsche's successful Boxster model. Its most obvious exterior feature were the headlights with integrated direction indicators – at first controversial but later copied by many other manufacturers. On the inside, drivers experienced an entirely new cockpit. Driving comfort now also played a greater role alongside the typical sporty characteristics. With the 996, Porsche launched an unprecedented product offensive with a whole series of new variations. The 911 GT3 became one of the highlights of

the model range in 1999, keeping the tradition of the Carrera RS alive. The 911 GT2, the first car equipped with ceramic brakes as standard, was marketed as an extreme sports vehicle from the autumn of 2000.

Number of vehicles produced: 179,163

### **2004: The 997 caters extensively to individual preferences**

In July 2004, Porsche unveiled the new generation 911 Carrera and 911 Carrera S models, referred to internally as the 997. The clear oval headlights with separate blinkers in the front end were a visual return to older 911 models, but the 997 offered more than just style. It was a high-performance vehicle, with a 3.6 litre flat engine that turned out 325 hp, while the new 3.8 litre engine of the Carrera S managed an incredible 355 hp. The chassis was also substantially reworked, and the Carrera S came with Porsche Active Suspension Management as standard. In 2006, Porsche introduced the 911 Turbo, the first petrol-operated series-produced car to include a turbocharger with variable turbine geometry. Model improvements in the autumn of 2008 made the 997 even more efficient thanks to direct fuel injection and a double-clutch transmission. Never before had the 911 series made such extensive allowances to suit drivers' individual preferences, and with Carrera, Targa, Cabriolet, rear or all-wheel drive, Turbo, GTS, special models, and road versions of GT racing cars, the 911 family ultimately comprised 24 model variants.

Number of vehicles produced: 215,092

### **2011: The 991 sets technological standards**

Internally known as the 991, this sports car embodied the greatest engineering leap in the history of the 911. For generations the benchmark in its class, this 911 generation set the bar yet another notch higher in terms both of performance and efficiency. A completely new chassis with modified wheelbase, greater track width and beefier tyres, plus an ergonomically optimised interior produced an even sportier and more comfortable driving sensation. In engineering terms this 911 was all about Porsche Intelligent Performance: even lower fuel consumption and even more power – created, for instance, by reducing the engine size to 3.4 litres on the base

Carrera model (yet still delivering 5 hp more than the 997/II) and using a hybrid construction method (steel/aluminium), which led to a considerable reduction in weight. Also new: Porsche Dynamic Chassis Control and the manual 7-speed transmission. The design of the 991 likewise met with high critical acclaim. With its low, stretched silhouette, its bristling surfaces and precisely shaped details, the Porsche 911 Carrera – in the seventh generation as before – continued to be unmistakably a 911 and was thus once more setting new standards in automotive design.

In 2013, the new Targa was added to the 911 family. The latest generation of this extravagant 911 variant combined the classic Targa idea with advanced roof convenience. Just like the legendary original Targa, it featured the distinctive wide bar in place of B-pillars, a removable front roof section and a wraparound rear window without a C-pillar. But unlike the classic 911 Targa, the roof segment could open and close at the push of a button. The fully automatic roof system stowed the Targa top behind the rear seat in spectacular fashion.

The new 2015 Porsche 911 cemented its position as the best in its class in terms of performance and efficiency. The development of a turbocharged flat engine gave the world's best-selling sports car a significant boost in power as well as considerably lower fuel consumption. The new 3.0-litre biturbo charged six-cylinder flat engine developed 370 hp (272 kW) in the 911 Carrera and 420 hp (309 kW) in the 911 Carrera S. In both cases, this represented a power boost of 20 hp over the prior model, with just under twelve per cent less fuel consumption. The 911 Carrera represented a quantum leap in innovation, featuring a sharp new look outside and Porsche Communication Management with multi-touch screen inside. Above all, however, the new 911 raised the benchmark considerably in the sports car world: more power, the enhanced Porsche Active Suspension Management (PASM) chassis and optional rear axle steering improved the best time of the 911 on the Nürburgring-Nordschleife to 7.30 minutes. Ten seconds faster than its predecessor and with an even greater lead over the competition.

Number of vehicles produced until the end of the 2016 model year: 152,659

## The design of the 911

The continuity of the 911 design is unique in automotive history. No other vehicle has maintained its uniqueness for anywhere near as long. The first 911 set down the basic layout that is still evident today. For example, the lateral lines, the design of the fastback, the shape of the side windows, the free-standing front wings with the flat front bonnet in between – these are some core features of its design.

The 911 has a unique iconography that has even found its way into the collective memory and consciousness. Only a few vehicle models have managed to become such an automotive icon. People need time to perceive new things, to accept them and finally to covet them. If the product is redesigned at this point, it cannot become an icon. Throughout its five decades of evolution, the 911 has succeeded in this. It is not only a benchmark for other sports cars in terms of its driving dynamics: an important part of the 911 legend is undoubtedly the timeless design of the model line. Many people even consider it to be the “perfectly proportioned sports car”, as one design critic once put it. Without a doubt, Ferdinand Alexander Porsche was onto something special when he designed the 911. In so doing he established a design culture that continues to characterise sports car construction to this day.

During all seven model generations, the 911 was always modern but never fashionable. Which is to be expected for a true classic. This is what the designers are trying to achieve in designing all current and future Porsche sports cars. Their work is characterised by the search for the essence of a design history, the roots of which date back to the 1930s. With the Volkswagen “Beetle”, the Porsche design office introduced a streamlined shape to the masses. In 1939, the Type 64 was developed, the forerunner of all Porsche sports cars. It went into production as the Porsche 356 in 1948.

But with all due respect to the past, designers must not lose sight of the future. The solution lies in making modern enhancements to the shape. This might sound easy, but it is a big challenge for a designer. Although the silhouette of a 911 is unlikely to present a problem, the details are extremely difficult. The design is extremely sensitive to the slightest change, perhaps precisely because the basic shape is so well-proportioned.

In designing the current 911, the designers therefore studied the design history of the model line and looked at where changes were introduced. The 911 underwent its first major change in 1993, with the interplay of convex and concave lines in the 993. The 996, the first Porsche to switch from air to water-cooling for the engine, featured new, impactful headlights and different dimensions. The very soft look of the 996 was then tightened a little in 2004 with the arrival of the 997. In the 991, this analysis of its predecessors resulted in an extended wheelbase, a wider track and a lower roof line. The design of the headlights, rear lights, front mask and rear window was then based on these altered proportions.

The interplay of these elements gives the 991 its characteristic visual message, which is so important for the entire brand identity of Porsche. The 911 is also the central point of reference for all other Porsche series. Whether it is the Boxster, the Cayenne or the Panamera, every Porsche is the most sporting car in its category, and each one carries a piece of the 911 philosophy.

This applies not only to the exterior of our current and future Porsche sports cars, but also – and especially – to the interior. Unlike in the past, nowadays the interior of a vehicle is a key purchase factor, and one to which manufacturers pay great attention. The Porsche brand message must also be clearly recognisable in the car, and not limited to the classic round instruments or the left-hand position of the ignition key. Porsche's interior philosophy applies to the entire product range and is characterised by brand-specific style elements such as the rising centre console.

## The innovations of the 911

For five decades, the Porsche 911 has been the class benchmark in terms of performance and efficiency. With every generation, the Porsche 911 has raised the bar to a new level. Time and again, the Porsche engineers from Zuffenhausen and Weissach reinvented the 911, demonstrating beyond doubt the innovative power of the Porsche brand. Although the 911 always led the way in terms of sportiness too, driving performance was never the developers' sole focus. The 911 has always been characterised by intelligent ideas and technologies that combine performance, everyday convenience, safety and lasting quality.

### **1963: Three-part safety steering safety system**

For its launch in 1963, the Porsche 911 was fitted with rack-and-pinion steering, which had already been praised for its precise and very direct mode of operation in previous test reports. This steering system was also part of the vehicle's safety concept. The linkage had a three-part design and the steering gear was positioned in the centre of the vehicle. This meant that the steering wheel did not move directly towards the driver in the event of frontal impact but, due to the steering rod angle, moved away from the driver via the impact tubes and the release elements. Porsche continued to improve the safety steering system. Subsequent generations also featured a mesh tube as the crumple element, the so-called muffler skirt. And from 1991, Porsche was the first car manufacturer to equip all its models with driver and front passenger airbags as standard.

### **1965: Targa roll-over bar**

"The first standard safety cabriolet in the world" – this was the headline when Porsche presented the first 911 Targa at the IAA in September 1965. The innovation in the new sports car model was the fixed Targa bar, derived from the roll-over bar which had proven itself in motor racing events and guaranteed a high level of protection for the occupants. With its removable folding roof and the plastic rear window that could be folded down, the 911 Targa was also extremely flexible and offered its occupants no fewer than four different options for open-top or closed-top driving. And the hood concept, patented in August 1965, also had other advantages.

It solved the problem of the fabric hood bulging unattractively at speed on motorways just as reliably as it did the issue of body distortion, which was common with convertibles at that time. However, the main concept behind the 911 Targa was clearly its high standard of passive safety, which was appreciated by many customers. As early as the beginning of the 1970s, the Targa had an approximately 40 per cent share of the 911 series.

### **1966: Internally ventilated disc brakes**

Effective cooling of the brakes is important in a high-performance vehicle – only then can they stably and repeatedly brake the car at high speeds. For this reason, Porsche introduced internally ventilated discs to the 911 S as early as 1966. These discs are double-walled so that air can circulate and frictional heat is reduced. Furthermore, the perforations also have the advantage that water spray is conducted away from the discs very quickly. To improve cooling even more, the disc brake systems on later 911 types also have ram air ducts that guide fresh air through channels onto the brake discs from the front – from openings in the spoiler. No other manufacturer invests so much expertise into the brake systems on their series production cars as Porsche. This is because no other manufacturer has as much experience from motor racing as Porsche. The reason being that Porsche has always developed the brake systems for its racing cars itself. The rewards for all this effort are not only brake systems that are extremely stable and therefore play their part in high-precision driving, the Porsche series production vehicles also always boast the shortest braking distances in their class – a significant safety benefit on public roads.

### **1972: Front and rear spoilers**

The Porsche engineers worked unceasingly to make the entire 911 package even better. This included improved aerodynamics – which was taken into account in 1971 with the first front spoiler, based on knowledge taken directly from the field of motor racing. It was used on the 911 S and later on the 911 E. The spoiler guided the air away to the side, thus reducing the lift on the front section. It improved directional stability and made the car easier to handle. The 911 T was also fitted with the front spoiler one year later. The 911 Carrera RS 2.7 introduced the rear spoiler – it featured the distinctive “ducktail” and was one of the reasons why this type became a cult car. The next rear spoiler that could genuinely be called “historic” was that on

the 911 Turbo. Its large, flat design adorned the vehicle and, in addition to its reliable function, it was also a statement about the power and the speed of the Turbo. To briefly explain the technical principle: spoilers at the front and rear enhance the vehicle's aerodynamics and improve directional stability, braking and steering characteristics, cornering behaviour and the car's response to cross winds, especially at high speeds. They guide the air around the outside of the vehicle (front spoiler) and prevent too much air underneath the car which would result in unnecessary lift and significant turbulence on the underside of the vehicle, especially if it is not lined and therefore has clefts. The role of the rear spoiler is to discharge the air flowing around the vehicle at the right place – the spoiler lip – with as little turbulence as possible. The rear spoiler being designed as a wing in the form of an upside-down aeroplane wing makes it possible to increase the contact pressure on the rear wheels and therefore generate downforce. The vehicle's even air flow and the controlled negative lift increase the top speed and reduce fuel consumption.

### **1973: Turbocharging**

The search on the part of automotive engineers for the “ideal charge” – optimum combustion of the air-fuel mixture – is almost as old as the combustion engine itself. The technicians' aim is to get as much air as possible into the cylinders so that when it is compressed and mixed with fuel, it can create a high operating pressure and therefore high output by means of combustion. The 911 Turbo, presented in 1973, was a forward-looking study as its 3-litre turbo engine boasted charge pressure control on the exhaust side which had previously been thoroughly tested in the motor racing sector. With the 911 Turbo, which was ready for series production in 1974, Porsche was the first car manufacturer to successfully adapt the turbocharger to the various driving states. Instead of the conventional intake-side control, the company developed exhaust-side charge pressure control. This prevented unwanted excess pressure during partial load or overrun by guiding excess exhaust gases via a bypass instead of through the exhaust gas turbine. When charge pressure was needed again during an acceleration phase, the bypass valve closed and the turbine could work to its full capacity in the exhaust stream.

## 1975: Hot-dip galvanised body

In 1975, Porsche responded to the issue of corrosion with emphatic success. The 911 was the first series production car to be given a body that was hot-dip galvanised on both sides – allowing Porsche to offer a six-year corrosion guarantee, which was extended to seven years for the 1981 model year and then later to as much as ten years. The treated body-in-white not only improved the service life but also vehicle safety, as the process preserved the overall rigidity and the crash safety characteristics of the body, despite vehicle ageing. It played a part in the reputation of the 911 as being an extremely durable vehicle – two thirds of all the 911 cars ever built are still licensed for road use today. Extensive tests were carried out before the body was launched for series production. This included trials with stainless steel as the body material – three shiny silver prototypes were made from this material, one of which can be seen today at the Deutsches Museum in Munich. However, the engineers decided not to use stainless steel but rather to galvanise the body-in-white, as this was easier to produce. Driving the prototypes through a bath of salty water to test resistance to corrosion is a legendary part of the test course in Weissach.

## 1977: Charge-air cooling

One of the secrets to the success of the 911 series is its constant and systematic enhancement. Each year, many small details on the 911 have been improved, making it closer and closer to Ferry Porsche's ideal image of the perfect sports car. This philosophy was also applied to the 911 Turbo. The main features of the 911 Turbo, reworked in 1977, were an increased displacement of 3.3 litres and a charge-air cooler positioned underneath the rear spoiler. Derived from the field of motor racing, it was a world first in a series production car. The charge-air cooler reduces the intake air temperature by up to 100 degrees Celsius, thus enabling the engine to achieve higher output and torque in all engine speed ranges – cooler gases are denser and therefore charge the engine more effectively. The result was a stable 300 hp at 5,500 rpm and a maximum torque of 412 Newton metres. Furthermore, charge-air cooling also reduces the thermal load on the engine. The exhaust gas temperatures fall, as do the emissions, and fuel consumption is reduced. Another advantage is the improvement in antiknock properties – excess temperatures causing the mixture to self-ignite is virtually ruled out.

### **1983: Digital engine electronics**

Digital engine electronics (DEE) celebrated its debut in 1983 with the new naturally aspirated engine with 3.2-litre displacement. Its most important advantages were better fuel consumption, cleaner combustion and therefore maximum power output. The system worked with a shared control unit into which all the engine's operating states were programmed. The correct injection quantity and the exact ignition point were assigned to each engine speed, each accelerator pedal position and temperature. The overrun fuel cut-off, i.e. no fuel was consumed when the engine was overrunning, and electronic idle speed control when auxiliary components were activated were useful additions provided by the digital engine electronics. The knock control system ensured "healthy" engine operating conditions. DEE is combined with various injection systems, depending on the engine.

### **1988: All-wheel drive**

Porsche gained extensive experience of using all-wheel drive in a sports car with the Type 959, a technology demonstrator in every respect. Produced in low numbers as a special series, its influence could be seen in its successor, Porsche's first series production all-wheel drive sports car, the 911 Carrera 4, which was introduced in 1988. For excellent driving dynamics, the 959 had an electronic, infinitely variable centre-differential lock, and torque was distributed to the two axles depending on the wheel-load distribution and the friction coefficients of the wheels on the road. For the same purpose, the engineers then set up the Carrera 4 with a basic torque distribution of 31 to 69 per cent (front axle to rear axle) via a planetary transfer gear. The car also featured a hydraulically operated centre and axle differential lock for virtually infinite adjustment of the distribution ratio. Their function was controlled by an electronics system integrated into the ABS control unit. The next Carrera 4, introduced in 1994, represented the next evolutionary stage of the Porsche all-wheel drive. For example, it was fitted with an optimally adapted, very light viscous multi-plate clutch as the axle clutch.

## **1989: Tiptronic**

From 1989, Porsche offered an innovative gearbox in the 964 series 911 – the Tiptronic, the perfect synthesis of comfort and sportiness. The driving data was only marginally lower than that of the same vehicles with manual 5 or 6-speed gearboxes. The Tiptronic was an automatic gearbox with intelligent shift programmes and the option for individual manual intervention. In addition to the conventional selector lever positions, it also featured a second parallel gate in which simply tapping on the selector lever changed the gear immediately. “Tapping” the lever forwards shifted up a gear and “tapping” it backwards shifted down, as long as the engine speed limits were not exceeded. If you forgot to shift up, the gearbox automatically shifted to the next gear up when the permitted maximum engine speed was reached. The electronics system had five shift programmes. The programme with the most favourable shifting points was activated, depending on the temperament of the driver and the traffic situation. The engine speed was reduced temporarily by retarding the ignition point to facilitate smoother gear changes.

## **1993: LSA aluminium chassis**

The new chassis designed in accordance with the “LSA” concept (Light, Stable, Agile) in the 993 series finally put an end to the capriciousness of the rear engine-powered 911. It mainly affected the rear axle, which was based on a multi-link suspension tested in motor races and which facilitated excellent driving dynamics. The axle kinematics are designed to ensure that the vehicle’s suspension compresses significantly less when accelerating and driving round bends. This stabilises the overall handling. Furthermore, lightweight spring struts with aluminium dampers improve agility. The principle of systematic lightweight design was also applied in order to keep the gross weight and the unsprung weight down. The result of all these measures was that the chassis made it possible to change lanes quickly and safely, even at high speeds. Rolling noises and vibrations were also reduced.

## **1995: Bi-turbocharging**

The 993 series 911 Turbo, presented in 1995, was given a 3.6-litre engine fitted with two small turbochargers. The engine's performance curve was not dissimilar to a high-displacement naturally aspirated engine. From as low as 2,000 rpm, the engine generated plenty of thrust which changed into impressive, rousing velocity as of 3,500 rpm, pressing the occupants into their seats. In addition to the output that increased to 300 kW (408 hp) and the rise in the maximum torque to 540 Newton metres, the Weissach engineers also aimed to reduce the engine's acceleration turbo lag to a previously unknown minimum. They achieved this by using two small turbochargers instead of one large one, whereby the low moment of inertia of the smaller blades had the most significant effect. The two regulated turbines with integrated bypass flap generated a boost pressure of 0.8 bar. The impressive increase in output and engine speed was also due to optimisation of the charge cycle, the high level of efficiency of the two charge-air coolers and the knock control system that facilitated running the engine at optimum efficiency.

## **1995: OBD II emissions control system**

Another technical highlight of the six-cylinder car was the new OBD (on-board diagnostics) II emissions monitoring system, which was used for the first time by a series production manufacturer. It facilitated early detection of faults or defects in the exhaust and fuel system. The extensive measures for reducing emissions were very effective on the 911 Turbo. To the great surprise of the experts, the turbo engine turned out to be the lowest emission series production engine in the world. The supercharged 993 was also the first biturbo with air mass control in automotive history. The OBD continually monitored the operation of the entire exhaust system with catalytic converters and oxygen sensors, the functioning of the tank ventilation system with activated charcoal filters, the air injection system and the fuel system. Misfiring was also recorded. At the time it was launched, OBD II was already mandatory in the USA, and other markets soon followed. OBD required a great deal of development work and an extremely complex engine management system.

## 2001: Ceramic brake disc

In 2000, Porsche presented the 911 Turbo model line 996. On request, it could be equipped with ceramic composite brake discs; these were standard on the 911 GT2. The new brake, known as the Porsche Ceramic Composite Brake (PCCB), was a significant technological advancement that set new standards, in particular in terms of decisive criteria, such as responsiveness, fading stability, weight and service life. Porsche was the first car manufacturer in the world to develop a ceramic composite brake disc with an involute cooling channel for efficient interior cooling.

The ceramic composite brake discs were perforated like metal brake discs but weighed around 50 per cent less. Firstly, this reduced the weight of the vehicle by 20 kilograms, which saves fuel; secondly, they also reduced the unsprung weight, which is another contributing factor in improving the responsiveness of the shock absorbers. Ceramic brake discs offer other benefits: their friction coefficient is always constant, and emergency braking with PCCB requires neither considerable pedal pressure nor any technical aids to assist in increasing the maximum brake force in fractions of a second. PCCB produces maximum deceleration immediately and without pressure being applied to the brake pedal. Wet responsiveness is excellent because the brake pads – which have also been redeveloped – take on less water than conventional brake pads. The ceramic brake disc handles even extreme loads without complaint – which can occur frequently, particularly when adopting a sporty driving style.

## 2006: VTG charger for petrol engines

In 2006, the 911 Turbo surprised the motoring world by featuring variable turbine geometry, a world first for a turbocharged petrol engine. Variable turbine geometry uses guide blades to simulate the cross-section of a turbocharger always optimised in size. At low engine speeds, the blades angle to form small air-flow openings. The exhaust gas flowing through a smaller cross-section is accelerated accordingly, hitting the turbine wheel with a high level of energy and therefore acting as a small turbocharger. This blade angle is maintained until the system has built up the required boost pressure.

With the flow of exhaust gas continuing to increase as a function of higher engine speed, the VTG guide blades open up and regulate the boost pressure accordingly. The electronic management and the electrically driven control mechanism – the control of which are integrated into the engine's Motronic management system – are set up to give the blades an adjustment period from "open" to "closed" of approximately 100 milliseconds. Furthermore, the variable turbine geometry of the turbocharger is able to handle even the maximum conceivable flow of exhaust gas. This eliminates the need for a bypass valve.

The principle of variable turbine geometry (VTG) has been applied to diesel engines on a large scale for nearly ten years. However, the systems used on diesel engines could not be transferred readily to petrol engines, mostly for thermal reasons. For example, exhaust gas temperatures at the point leading into the turbine on a diesel engine are between 700 and 800°C. The exhaust gas on Porsche's turbocharged power units, on the other hand, has a temperature of 1000°C. This creates a significantly higher load and extra strain on the adjustable guide blades, demanding the utmost of the materials and construction method applied. Only the development of materials that are extremely resistant to high temperatures allowed the production of VTG turbochargers with the long-term performance and life expectancy required. Porsche's engineers also developed a two-stage oil cooling system including a follow-up pump, as well as a water cooling system for the bearing housing, to help reduce the high temperatures.

### **2008: Porsche double-clutch transmission (PDK)**

The optionally available Porsche double-clutch transmission (PDK) was featured in a series production sports car for the very first time when it was fitted into the 997 series of the 911 in 2008. It had seven forward gears and one reverse gear and was initially available in the Carrera and Carrera S. Its main advantages were faster gear changes in comparison with manual gearboxes and automatic converter gearboxes. The gears were already engaged when the driver changed gear and drive was not lost during the process. The PDK also provided weight benefits – despite two additional gears in comparison with the manual gearboxes prevalent at that time, it weighs approximately ten kilogrammes less than the Tiptronic S gearbox.

In the 1980s, Porsche was the first manufacturer in the world to use this gearbox technology successfully in motor racing in the 956/962, and therefore it had the most experience with dual-clutch gearboxes for high-performance sports cars. The Porsche Doppelkupplung combined the driving dynamics and the good mechanical efficiency of a manual gearbox with the shifting and ride comfort of an automatic gearbox. The PDK was therefore designed in line with the requirements of a 911 driver, in terms of both sportiness and comfort. The first six of the seven forward gears had a sporty set-up, whereas the seventh gear had a long ratio for maximum fuel economy.

### **2011: Intelligent aluminium-steel construction**

In the 991 series of the 911, which was introduced in 2011, Porsche further perfected the lightweight design for sports cars. This achieved a number of goals: improving vehicle dynamics while reducing fuel consumption, as well as enhancing safety and raising levels of comfort in comparison with earlier vehicles. The engineers chose a concept that puts the right material in the right place, using the right construction method. For the first time, this has meant that the current vehicle generation is lighter than its direct predecessor – by approximately 40 kilograms. And this is despite the additional weight originally expected due to the longer wheelbase, the more stringent safety requirements and the enhancements to the overall package.

The largest proportion of the weight saved (around 80 kilograms) was due to the new body-in-white with mixed aluminium-steel construction. With the exception of local reinforcement parts, the front body section and large parts of the floor and rear section are made of aluminium. This is also true of the lids, wings and the door structure. The coupé is 44 per cent aluminium and the cabriolet 43 per cent. A significantly larger proportion of the steel parts are made of super high-strength and ultra high-strength materials. The hot forged, press hardened steels provide an extremely high degree of occupant protection.

### **2011: Seven-speed manual gearbox**

The world's first seven-speed manual gearbox is used in series production of the 911 – again in the 991 series. It gives the 911 a new, crisp shift characteristic. The new gearbox was designed on the basis of the seven-speed double-clutch transmission and provides excellent shift-

ing comfort and sporty shifting forces. The new 911 cars reach their top speed in sixth gear. The seventh gear has a long ratio and helps to save fuel – a high cruising speed is attained at a lower engine speed. The high level of efficiency and the optimised weight of the gearbox help to make the vehicle more fuel efficient. It is also combined with an automatic start/stop function as standard.

As the seven-speed double-clutch transmission is designed as a modular system, many of the same parts were able to be used for the construction of the seven-speed manual gearbox. However, one particular challenge had to be overcome – due to the concept of the Doppelkupplung, the gears are arranged differently than with a normal “H” shift pattern. For this reason, converted shift actuators were developed especially for the manual gearbox version. They enable the traditional “H” shift pattern to be achieved with the Doppelkupplung gear sets too. A patented system prevents the wrong gear from being engaged. For example, the seventh gear can only be engaged directly after the fifth or sixth gear.

### **2013: Adaptive aerodynamics**

In 2013, Porsche introduced the world’s first sports car with adaptive aerodynamics, the new 911 Turbo. The system consists of an extendible front spoiler and adjustable rear wing. It offers drivers a unique combination of everyday convenience, efficiency and performance. While the system automatically adjusts to maximum ground clearance or minimum drag depending on the speed, the 911 is track-ready at the push of a button. For the first time ever, the 911 Turbo achieved a downforce in this performance mode that was close to that of thoroughbred racing 911s. Porsche underlined yet again that its roots lie in racing and continued to transfer experiences gained on the track to series-production sports cars.

### **2014: Automatic Targa roof**

With the 911 Targa of the 991 generation, Porsche returned to its original concept, with the characteristic fixed Targa bar. The innovative roof system consists of two moving parts: a soft top and a glass rear window. At the press of a button, the glass rear window opens to the rear and tilts. It is joined to the convertible top compartment lid. At the same time, two flaps in the Targa bar open and release the soft top kinematics. The soft top is unlatched, folds to the rear

into a Z-shape during the opening movement and stows behind the rear seats. A panel running across the car behind the rear seats integrates the soft top. Finally, the flaps in the bar and the rear window close. While the car is stationary, the roof can be opened or closed in about 19 seconds using controls in the centre console.

## **2015: Biturbo engines**

In the new generation of the 911, Porsche is making a consistent advancement by introducing biturbo engines in all 911 Carrera and 911 Targa models. This is a clear enhancement: Over the decades, Porsche has cultivated the turbo engine so that it offers a unique combination of power and efficiency that conventional naturally aspirated engines cannot. The higher specific power of the turbo engines enables the displacement to be reduced. In both engine variants, Porsche is therefore reducing the displacement to three litres. The higher power of the 911 Carrera S comes from the turbochargers with modified compressors, a specific exhaust system and a specially calibrated engine control unit. The rear of the 911 Carrera now delivers 370 hp (272 kW), ready to be converted into dynamic power, while the charged six-cylinder engine of the 911 Carrera S provides 420 hp (309 kW). In both cases, this represents an increase of 20 hp (15 kW). The improvement in the torque is even more obvious: The 911 Carrera offers 450 Nm and the 911 Carrera S 500 Nm, meaning both drives offer 60 Nm more. It is not just these maximum values that benefit drivers; they can also convert the full torque into acceleration over more than half of the speed range. At the same time, the new generation of engines is much more economical, with fuel consumption reduced by up to one litre per 100 kilometres depending on the version.

---

## Family ties: the 911 and its brothers

The 911 serves as a template and shining example for the other model lines of the Porsche brand too. 50 years of success have long since made the original into the genetic model. There is something of the 911 in every Porsche. In design and technology, sportiness and everyday practicality, every Porsche model and line without exception orients itself on the iconic 911. Externally, the family lineage can be seen in unique design traits that are instantly recognisable, while under the hood, it is efficient engineering solutions that the 911 pioneered. And, of course, the sporty driving experience and extraordinary spectrum of great suitability ranging from track to road, which is found in different measure in every Porsche and yet is always authentically true to the brand.

One of the globally unique special features of the 911 is the constancy with which it exemplifies the Porsche brand values: not provocative aggression, but sporting fairness, on the racetrack and in everyday motoring. A reputation that has earned it widespread popularity across society. Porsche takes great care to build on this popularity with every new product. The result is vehicles that occupy individual positions within their markets and further convey the Porsche idea.

The 911 was unmistakably the influence behind every Porsche in today's model range. One shared detail, for instance, is the low front sections of all Porsche models, with the wings always higher than the bonnet. Instead of a radiator grille there are air inlets. The muscular wing contours with the 'Coke bottle line' seen from above is common to all models, as are the V-shaped, tapering joints at the front and rear, plus the design of the rear light cluster, which emphasises the shape of the rear wing. The way in which the surfaces are formed, the interplay between concave and convex areas, for which Porsche is known and which is also one of the characteristic identifying features of a Porsche, is individually developed on every vehicle and often pushed to the very limit of what can technically be achieved. Without having to attempt any short-lived, fashionable features, the design of the Porsche vehicles appeals the observer at the very first moment of eye contact in a highly emotional, but fully unique way: cars that you desperately want to wash by hand even though they are already clean, just to be able to experience the shape more intensely.

## **The engineering genes: fit for racing and everyday driving**

Equally unique are the engineering genes of the 911, which reappear in all other Porsche vehicles. Over the 50 years of its development, the 911 has cultivated its extreme breadth between racetrack capability on the one hand and everyday motoring suitability on the other like no other sports car on earth. It has always remained exemplary in its efficiency and established engineering solutions in the automotive market that have stood the test of time.

## **Components and concepts: the 911 points the way**

Above all else, the 911 is for all Porsche vehicles the key influence behind numerous concepts and components. Rather than relying on short-term effects, Porsche puts its faith in long-term technologies – when they are ready to do the job. No other car manufacturer, for instance, has worked for so long or so consistently on supercharging by exhaust turbocharger. Anyone who said ‘turbo’ in the 1970s or ‘80s meant the Porsche 911 Turbo. From this emerged a prime example of downsizing in engine construction – the 2.8-litre engine of the Porsche 959. Today, turbo-charging is seen as the ideal way to cut down weight and reduce fuel consumption. This example also shows that efficiency improvements at Porsche are always performance improvements as well. Turbo engines, with the expertise gathered from the 911, power, for instance, the 718 Boxster and 718 Cayman two-seaters as well as the top Macan, Cayenne and Panamera models, setting new standards in their respective market segments.

What gave the 911 a success story spanning well over 50 years is carried on today in parallel fashion and in their own independent ways by the other Porsche model lines. Sporting flair and everyday practicality, innovation and efficiency are the characteristics that have carried the Cayenne into the SUV segment and the Panamera into the GT class. Like the 911, they offer the right solution at the right time. The Cayenne S Hybrid, for example, may not have been the first hybrid vehicle in this segment, but the Porsche with its two engines continued to far outsell all the rest for a long time. The Panamera Turbo S E-Hybrid is also setting new standards: the PS Gran Turismo is the first plug-in hybrid to be positioned as the top model of a model line by a premium manufacturer. Its design, profile and silhouette secure a unique position for the

Panamera in its market segment. Designed as a four-door touring sports car, it combines many talents in typical Porsche style: sporty handling, a spacious, variable interior and on top of that, the supremely comfortable ride of a typical Gran Turismo.

And there is one more thing that all Porsche vehicles have inherited from the 911: the clear, well-developed ergonomics of a sports car; a Porsche driver instantly and instinctively feels at home in every model of every range. This guarantees the ideal basis for the Porsche driving experience, regardless of this being provided in such individual style by the different model lines – with one special shared feature that has been a Porsche trademark since day one: the ignition lock is always to the left of the steering column. This detail too reappears in every Porsche.

---

## **Porsche Classic: Everything a classic sports car needs**

The history of Porsche lives on the road. More than 70 per cent of all Porsche vehicles ever built are still around today, and the overwhelming majority of them are ready to drive at any time. This is down to Porsche Classic: From genuine parts to complete restorations, the company's Classic division provides a comprehensive service for past model ranges of its sports cars. This service offering sees Porsche integrate the maintenance and value retention of modern and older classic cars into a single innovative service concept, which closely interlinks the innovation and tradition of Porsche.

Porsche Classic is committed to two major areas of work. Its focus is on supplying genuine parts for more than 650,000 sports cars owned by customers all over the world. This includes all model ranges for which production ceased more than ten years ago. All parts can be ordered via the Porsche retail organisation. In addition, a network of specially trained and outfitted Porsche Centres and service centres has been established under the name Porsche Classic Partners. They dedicate their enthusiasm and expertise to Porsche classic vehicles and their owners. The Porsche Classic division's second focus area is the in-house workshop.

### **Supplies for all Porsche classic vehicles**

52,000 items, and the number is growing: Whether it's washers or reverse levers, Porsche Classic can offer immediate delivery of a large proportion of genuine parts for past model ranges. Most of these parts come from former series suppliers or new certified partners. In total, Porsche collaborates with more than 1,000 highly qualified suppliers. They use original drawings, detailed descriptions, a comprehensive stock of prototype parts and, last but not least, the expertise of Porsche Classic. These standards ensure that all Porsche requirements are met in terms of technology, safety and quality, including when reissuing parts. Porsche Classic also takes care of the technical literature, with over 800 manuals available along with guarantee and maintenance booklets.

## **Porsche Classic Partners**

For optimum support and reconditioning of classic vehicles, Porsche is continuously expanding its international dealership and service network. This expansion is focused on Porsche Centres and Porsche service centres, which are responsible for looking after sports cars from earlier eras as well as the latest vehicles and are certified as Porsche Classic Partners. Customers and enthusiasts alike can find the full range of services from Porsche Classic waiting for them at these centres. They include supplying classic vehicles with 52,000 genuine spare parts, complete and partial restorations and repair and maintenance work.

## **Porsche Classic Centres for classic sports cars only**

Since 2015, Porsche has been expanding its network with specially designed Porsche Classic Centres. The Porsche Classic Centre Gelderland situated just outside Arnheim in the Netherlands, as well as the Porsche Classic Centre Rouen in France and the Porsche Classic Centre Son in Norway, dedicate all of their time and attention to vintage cars and modern classics from Zuffenhausen, all in one place. For the first time, the Porsche Classic Centres bring the areas of service, workshop and sales exclusively for classic sports cars together under one roof. As a next step, a small number of additional certified Porsche Classic Centres will be built around the world.

## **Truly original**

Produced by Porsche, reproduced by Porsche: Around ten times a year, the Porsche Classic workshop awards its unique seal of approval. Each time, a completely restored classic sports car rolls out of the factory restoration facility in Freiberg am Neckar. In 2007, the sports car manufacturer relocated its competence centre for all Porsche vehicles affected by patina to just a few minutes' drive away from its headquarters in Zuffenhausen. The company had always had a department for repairing classic customer vehicles, until the space required for production meant that it had to be relocated. Around 30 specialists service, repair and restore customer vehicles, ranging from the 356 to the 964, right through to the 959 super sports car. The 1,500-square-metre workshop accommodates all areas of maintenance, including body work, paint shop, engine and transmission construction and upholstery. At the forefront, however, is

the unique infrastructure within which the Porsche experts work. As an integral division within Porsche AG, they only use methods – during body work repairs, for example – that Porsche engineers would have used during the original production process. Original instruments from Porsche's past are perfectly supplemented by a combination of historic archive material and the most up-to-date technology. For example, the workshop makes use of the latest generation of chassis straightening benches and computer-controlled laser measuring systems.

## Porsche 911 production figures

1965 model year	3,300
1966 model year	1,708
1967 model year	4,152
1968 model year (A series)	6,957
1969 model year (B series)	10,118
1970 model year (C series)	14,381
1971 model year (D series)	12,164
1972 model year (E series)	12,882
1973 model year (F series)	15,438
1974 model year (G series)	11,642
1975 model year (H series)	8,189
1976 model year (J series)	10,677
1977 model year (K series)	13,793
1978 model year (L series)	10,684
1979 model year (M series)	11,543
1980 model year (A programme)	9,874
1981 model year (B programme)	8,698
1982 model year (C programme)	10,735
1983 model year (D programme)	13,229
1984 model year (E programme)	13,669
1985 model year (F programme)	12,348
1986 model year (G programme)	17,074
1987 model year (H programme)	16,441
1988 model year (J programme)	14,380
1989 model year (K programme)	16,488
1990 model year (L programme)	17,768
1991 model year (M programme)	20,072

---

1992 model year (N programme)	12,415
1993 model year (P programme)	7,265
1994 model year (R programme)	12,128
1995 model year (S programme)	17,833
1996 model year (T programme)	21,602
1997 model year (V programme)	15,972
1998 model year (W programme)	13,783
1999 model year (X programme)	28,040
2000 model year (Y programme)	20,979
2001 model year (1 programme)	27,275
2002 model year (2 programme)	33,013
2003 model year (3 programme)	29,547
2004 model year (4 programme)	26,526
2005 model year (5 programme)	28,608
2006 model year (6 programme)	36,504
2007 model year (7 programme)	38,922
2008 model year (8 programme)	34,270
2009 model year (9 programme)	27,767
2010 model year (A model)	20,136
2010 R model year (B model)	7,161
2011 model year (C model)	21,724
2012 model year (D model)	28,398
2013 model year (E model)	29,710
2014 model year (F model)	31,580
2015 model year (G model)	31,360
2016 model year (H model)	31,611
2017 model year (I model)	47,467
<b>Total 911 units model years 1965 to 2017:</b>	<b>1,000,000</b>

---

## Fuel consumption and emissions

### **Porsche 911 Carrera S Kit:**

Fuel consumption combined 9.4–8.3 l/100 km; CO<sub>2</sub>-emissions 214–188 g/km

### **911 Carrera:**

Fuel consumption combined 8.3 l/100 km; CO<sub>2</sub>-emissions 190 g/km

### **Model Range 911 (Typ 991):**

Fuel consumption combined 13.3–12.7 l/100 km; CO<sub>2</sub>-emissions 308–296 g/km

### **718 Boxster:**

Fuel consumption combined 7.4 l/100 km; CO<sub>2</sub>-emissions 168 g/km

### **718 Cayman:**

Fuel consumption combined 7.4 l/100 km; CO<sub>2</sub>-emissions 168 g/km

### **Panamera:**

Fuel consumption combined 7.6–7.5 l/100 km; CO<sub>2</sub>-emissions 173–171 g/km

### **Macan:**

Fuel consumption combined 7.4–7.2 l/100 km; CO<sub>2</sub>-emissions 172–167 g/km

### **Cayenne Diesel:**

Fuel consumption combined 6.8–6.6 l/100 km; CO<sub>2</sub>-emissions 179–173 g/km

*Range depends on tyre set used*