



PORSCHE

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The Porsche Museum presents genuine electric vehicles from 1898

The first Porsche in the world – the return of the “P1”

Atlanta. The history of the Stuttgart-based sportscar manufacturer Porsche begins in 1948 with the “Type 356”, the first sportscar to bear the Porsche name, but the history behind the Porsche brand goes back much further in time. Ferdinand Porsche, a pioneer in the field of automotive construction, began working on the construction of motor vehicles as early as the end of the 19th century. As the chief designer at leading manufacturers Lohner, Austro-Daimler, Daimler-Benz and Steyr, Ferdinand Porsche was able to draw on over 30 years of experience in the automotive industry when he founded his own company in Stuttgart in 1931.

The collection belonging to the Porsche Museum in Stuttgart-Zuffenhausen is now able to boast a very special relict from the early years of Ferdinand Porsche's business venture: The original and unrestored “Egger-Lohner electric vehicle, C.2 Phaeton model”–known as the “P1” for short–from 1898. Although at first glance it may resemble an old horse-drawn carriage, this model actually represents the world’s very first Porsche. Constructed and built by Ferdinand Porsche himself. Parked in a warehouse in 1902 and since left untouched, this Porsche electric vehicle is a technological and historical sensation. As the centrepiece of the permanent exhibition at the Porsche Museum, the “P1” is able to bridge the gap between the past and present. The “P1” is also set to influence the future of the Porsche brand too – after all, this first construction by Ferdinand Porsche is not only a legacy for the Stuttgart-based sportscar



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manufacturer, but also provides the perfect stimulus for future, innovative vehicle concepts such as the new 918 Spyder.

The automotive pioneer Ferdinand Porsche

Ferdinand Porsche was born on September 3, 1875, in the North Bohemian district of Maffersdorf, now known as Vratislavice. As the third child of master tinsmith Anton Porsche and wife Anna, tradition dictated that Ferdinand Porsche was to follow in the footsteps of his father to become a craftsman. However, his true interest was in the field of electricity. In 1893, he went to Vienna to start work as an apprentice at electrical engineering firm “Béla Egger & Co.” (known from 1896 onwards as “Vereinigte Elektrizitäts-AG”). 18-year-old Ferdinand Porsche quickly made a name for himself in the testing department due to his extraordinary talents and strong work ethic. He expanded his theoretical knowledge by observing lectures at the technical University, and then immediately put this knowledge into practice. Ferdinand Porsche quickly carved out a career for himself through his ambition and determination to succeed. In just four years, he rose up the ranks to become head of the “Testing department” and the first assistant in the calculations office. It was in this position that Ferdinand Porsche came into contact with Viennese carriage manufacturer Ludwig Lohner, who dreamt of having his own electric vehicle.

The owner of “K.K. Hofwagenfabrik Jacob Lohner & Comp.” had a wide range of interests, and in the face of declining sales of his luxurious carriages had come to the logical conclusion that the age of the horse and carriage was coming to an end. During his travels in Europe and America, Lohner had developed a talent for predicting the social changes of his time, and wanted to combat these changes in an innovative way



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through new business fields. He came to the decision that he needed to start manufacturing petrol and electric vehicles. Lohner expected electric vehicles in particular to sell well, as the minimal disruption from noise and exhaust fumes would mean a higher level of acceptance from the general public. The electrical equipment for the vehicles was ordered from “Vereinigten Elektrizitäts-AG”, while the chassis and body were manufactured by Lohner's own company in Porzellangasse in Vienna and at the production site in Floridsdorf respectively.

The “Egger-Lohner C.2 electric vehicle”

The first Lohner electric vehicle developed with the help of Ferdinand Porsche was presented in 1898 at an exhibition for the newly founded □“Austrian Automobile Club”. With an electric motor installed transversely between the front wheels and steered rear wheels, this electric vehicle was still far from being ready for series production. The vehicle concept was discarded and other test vehicles were built – this time in line with the ideas developed by young Ferdinand Porsche, who favoured front wheel stub axle steering and the electric motor at the rear of a Lohner carriage. The result of Ferdinand Porsche's vision, the “Egger-Lohner C.2 electric vehicle”, rolled onto the streets of Vienna for the first time on June 26, 1898, and Ferdinand Porsche made sure that he would take credit for the vehicle's design in a most unusual manner: He engraved the code “P1” (P for Porsche, number 1) onto all of the key components, thus giving the vehicle its unofficial name.

The sheer volume of ideas realised within this vehicle is still something to be admired today: For the vehicle's drive, Ferdinand Porsche used one of his own inventions, the



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“octagon” electric motor, which took its name from the eight-sided design of the motor housing. Shock absorbers were used to protect the electric motor, which was suspended so that it oscillated around the vehicle axle. The highly compact drive, weighing just 130 kg, offered an output of 3 hp at 350 rpm. For short periods, up to 5 hp could be achieved in overloading mode, allowing the vehicle to reach up to 35 km/h. To transfer the power, Ferdinand Porsche used a single-speed differential gear (with a transmission ratio of 1:6.5) operated using a system of gear rings on internally toothed wheel hubs. The vehicle speed was regulated via a 12-speed controller, which offered six forward gears, two reverse gears and four braking gears. To enable this set-up, Ferdinand Porsche coupled the commutators of the electric motor both consecutively and in parallel. In addition, the electrical resistance in the electrical circuit could be changed and individual accumulator cells could be connected and disconnected. Thanks to the 500-kg “Tudor” batteries, the overall range of the vehicle could reach up to 80 kilometres, or 3–6 operating hours. The 1350-kg vehicle was braked using two different brake systems: Alongside a mechanical band brake, the driver could activate an electrical brake by pressing the steering wheel rim to interrupt the current flow. Another innovation was the Lohner alternating vehicle body with a closed Coupé-style design and an open Phaeton design, which allowed the vehicle to be used both in summer and winter.

The first Porsche race victory

Its first practical test awaited the “P1” in September 1899 at the international motor vehicle exhibition in the German capital of Berlin. At the time, the competition to produce the best drive systems was fierce, and the 120 exhibitors included no less than 19 electric vehicle manufacturers competing against a considerably higher number of



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petrol vehicles. To demonstrate to the public the performance and efficiency of the electric vehicles, a race for electric vehicles with a prize for the winner was announced for September 28. The race covered a distance of 40 kilometres, taking the drivers from Berlin to Zehlendorf and back. The route demanded a great amount of skill from the participants, who had to tackle challenges such as gradients, an 8.6-km high-speed section and a 7.8-km efficiency test. This first automotive race marked a great victory for Ferdinand Porsche, who took the gold medal with his “P1”. With three passengers on board, Porsche steered his electric vehicle across the finish line 18 minutes ahead of the next competitor. More than half the participants failed to reach the finish line due to technical difficulties, while others were not assessed because they had failed to meet the specified minimum speed. Ferdinand Porsche also came out on top in the efficiency test, as his “P1” recorded the lowest energy consumption in urban traffic.

The Lohner-Porsche vehicle

For Ferdinand Porsche, the “P1” was only the start of his career as a vehicle designer. In November 1899, he became the chief designer for the Lohner sites, where he was able to bring his next big idea to life: the electric wheel-hub motor. By 1900, an electric vehicle driven by steered wheel-hub motors known as the “Lohner-Porsche” was causing a stir at the Paris Exposition Universelle. There, Ferdinand Porsche demonstrated the true extent of his innovative energy in an even more impressive fashion: A sportscar fitted with four electric wheel-hub motors was showcased as the first all-wheel drive passenger vehicle in the world, and stole the show with its four-wheel brake system. Ferdinand Porsche's next idea was just as pioneering: In 1900, the same year as the Paris Exposition Universelle, Porsche combined his battery-powered wheel-hub drive with a petrol engine – and the idea behind the serial hybrid drive was



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born. Known as the “Lohner-Porsche Mixte”, these vehicles went into series production in 1902.

The “P1” in the Porsche Museum

Five years since it opened in January 2009, the Porsche Museum has decided to update its permanent exhibition. In addition to reorganising the “Product history” section as well as the individual thematic displays, the Porsche museum has added numerous new highlights to its exhibition. Located in the first section of the museum—the “prologue”—the “P1” now serves as the starting point of the exhibition. An extensive animated film explains the technological innovations embodied by the electric vehicle. A new film describes the work of Professor Ferdinand Porsche, covering everything up to the construction of the first Porsche sports car in 1948. The previous opening exhibit, the aluminium body of the Type 64 “Berlin-Rome car”, now takes its place in the correct chronological order and is featured in the “Porsche before 1948” section.

Further changes have also been made in the “Motorsport” section, which is now divided according to the eras of the various vehicle concepts, rather than primarily by racing events. For example, the racing vehicles from the time of the Type 356 or the era of the first GfK race vehicles in the 1960s are now presented together. In the “Product history” section, fans of the transaxle sports car can enjoy new additions to the museum relating to the 924 to 928 model lines.

Further innovative vehicle concepts

Today, Porsche is launching the future of the sports car with the 918 Spyder: As the first vehicle to boast global road homologation, the model has beaten the record of seven



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minutes set for a lap on the Nürburgring Nordschleife, achieving a time of 6:57 minutes. The maximum level of performance delivered by the vehicle—namely through its system output of 887 hp and minimal consumption figure of three litres per 100 kilometres (NEDC)—is the result of a unique plug-in hybrid concept. The 918 Spyder is the first production vehicle to have three independent power units that can be controlled separately. The combustion engine and rear electric motor are arranged in series on a common axle and drive the rear axle via the PDK. The second electric motor acts on the front wheels via a single-stage transmission and a decoupler.

To meet the driver's requirements, the 918 Spyder exhausts all possibilities offered by the combined drive of combustion engine and electric motor. The 918 Spyder embodies the traditional Porsche virtue, while providing impressive evidence of the potential provided by plug-in technology for maximum coverage between performance and efficiency. Porsche's future generations of sportscar will benefit from the pioneering achievements in this technology benchmark. In short, the 918 Spyder contains the genetic blueprint for the Porsche sportscar of the future – a blueprint created 115 years ago with the “P1”. In 2013, Porsche introduced the world's first luxury-class plug-in hybrid in the form of the Panamera S E-Hybrid. This grand tourer is the result of the systematic development of the parallel full hybrid, featuring a more powerful electric motor, a more efficient and higher-energy battery and the option to charge the battery via an external power supply. The Cayenne S Hybrid has also been available on the market since 2010 – a vehicle representing the true embodiment of the “Porsche Intelligent Performance” philosophy: more power at a lower fuel consumption level, enhanced efficiency and lower CO2 emissions..



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Technical Data “Egger-Lohner C.2 electric vehicle”	
Model year:	1898
Wheelbase:	1600 mm
Gross weight:	2,977 lbs.
Battery weight:	1,103 lbs.
Motor weight:	287 lbs.
Units:	approximately four units built
Octagon electric motor with differential gear	
Motor shaft pinion (phosphor bronze) engages with the system of gears rings on internally toothed wheel hubs (cast steel)	
Continuous power of 3 hp; can be overloaded to 5 hp (40–80 volts)	
“Tudor system” 44-cell accumulator battery; 120 amp hours	
Stub axle front wheel steering	
Rear wheel drive with differential gear (with a transmission ratio of 1:6.5)	
Mechanical band brake and electrical short circuit brake	
Wooden wheels with pneumatic tires	
Cruise control:	12-speed controller
Top speed:	21 mph
Travelling speed:	15 mph
Driving time:	3–5 hours
Range:	approx. 49 miles

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About Porsche Cars North America

Porsche Cars North America, Inc. (PCNA), based in Atlanta, Ga. is the exclusive U.S. importer of Porsche sports cars, including the Macan and Cayenne SUVs and the Panamera sports sedan. Established in 1984, it is a wholly-owned subsidiary of Porsche AG, which is headquartered in Stuttgart, Germany, and employs approximately 220 people who provide parts, service, marketing and training for 189 dealers. They, in turn, work to provide Porsche customers with a best-in-class experience that is in keeping with the brand’s 63-year history and leadership in the advancement of vehicle performance, safety and efficiency.

At the core of this success is Porsche’s proud racing heritage that boasts some 30,000 motorsport wins to date.

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Note: Photos and video footage are available to accredited journalists on the Porsche Press Database at <http://press.porsche.com/>