



PORSCHE

Press Information

Los Angeles Auto Show 2013

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Porsche at the 2013 Los Angeles Auto Show

The world premiere of the Macan and two further debuts

Porsche is celebrating the world premiere of the Macan at the 2013 Los Angeles Auto Show, a model that sees the brand expanding its range to include a whole new vehicle class. The Macan falls under the compact sports utility vehicle (SUV) segment – and is making a striking impression from the very outset: maximum acceleration and braking values, vast engine power, extreme agility and optimum steering precision. What's more, all of these features are teamed with a high level of comfort and everyday suitability. Alongside the Macan, Porsche is celebrating premieres of the new open-top models from the 911 model line, the 911 Turbo Cabriolet and the 911 Turbo S Cabriolet, as well as the spearhead of the Gran Turismo, the new Panamera Turbo S.

The first Porsche in the compact SUV segment: the Macan

As the first Porsche in the compact SUV segment, the Macan will set new standards in terms of dynamic performance, on both paved streets and uneven terrain. This is because the Macan combines the typical handling characteristics that Porsche has represented right from the outset. The sporty DNA of the Macan, as with all Porsche vehicles, is immediately recognisable in the design, with several design elements being taken from other Porsche sportscars and then enhanced for the Macan. It is therefore clear to see from the very first glance: The Porsche Macan is the first compact SUV that is also a sportscar.

The vehicle is already available in three versions. Common features include standard active all-wheel drive and Porsche PDK double-clutch transmission. The body conceals highly efficient six-cylinder engines, which provide powerful propulsion while achieving favourable fuel consumption figures: The Macan S is powered by a 3.0-litre V6 biturbo engine that delivers 340 bhp (250 kW), accelerates from 0 to 100 km/h in 5.2 seconds and consumes 9.0 to 8.7 litres of fuel per 100 kilometres. The 3.6-litre V6 biturbo engine in the Macan Turbo produces 400 bhp (294 kW) and accelerates the vehicle to 100 km/h in 4.8 seconds, with an average fuel consumption of 9.2 to 8.9 litres per 100 kilometres. With its 3.0-litre V6 turbo diesel engine and 258 bhp (190 kW), the Macan S Diesel is the long-distance sportscar: The engine accelerates the vehicle from 0 to 100 km/h in 6.3 seconds and consumes an average of only 6.3 to 6.1 litres of fuel over 100 kilometres.

**Powerful, efficient and wonderfully open:
the 911 Turbo Cabriolet and 911 Turbo S Cabriolet**

The dynamic range of the new 911 Turbo models multiplied by the driving pleasure offered by an open-top sports car: This is the succinct formula behind the two new leading 911 Cabriolet models. To mark the 40th anniversary of the 911 Turbo, its open-top descendants are having their world premiere at the Auto Show in Los Angeles – 50 years after the 911 made its debut. By adding the two new leading 911 models into the mix, Porsche is doubling its offering of the top-of-the-range models to four versions.

In supplementing the range, the 911 Turbo Cabriolet and 911 Turbo S Cabriolet deliver the same blend of dynamism, performance and efficiency offered by the Coupé model unveiled a few months ago. The two new models boast impressive figures: The turbocharged 3.8-litre six-cylinder engine delivers 520 bhp (383 kW) in the open-top 911 Turbo and 560 bhp (412 kW) in the S model. The vehicles accelerate from zero to 100 km/h in 3.5 and 3.2 seconds respectively, reaching a top speed of up to 318 km/h. And all this while achieving fuel consumption figures below the ten-litre limit: Both of the new top-of-the-range Cabriolet models rest assured in the New European Driving Cycle (NEDC), boasting figures of 9.9 litres per 100 kilometres. When compared against the respective predecessor models, the new vehicles deliver 30 bhp more power and are 0.2 seconds faster in terms of their standard acceleration. They are also up to 15% more efficient.

New top model in the Gran Turismo line: the Panamera Turbo S

Porsche is placing its fastest, most powerful and most luxurious Panamera at the peak of its Gran Turismo series: With a power output of 570 bhp and a top speed of 310 km/h, two different wheelbases and a particularly extensive and top-quality range of features, the Panamera Turbo S is guaranteed a special status in its market segment. For the first time ever, an Executive version of the Panamera Turbo S is also available with a wheelbase that has been extended by 15 centimetres. As a result, the Panamera Turbo S Executive offers significantly more space and even more comfort, particularly at the rear. Thermal and noise-insulated windows, which include privacy glazing, the interior lighting package designed especially for the rear and a large centre console at the rear are just some of the extensive equipment options that belong to this series.

A unique combination of performance and efficiency: the 918 Spyder

Another top attraction at the L.A. Motor Show will be the 918 Spyder. The super sports car with plug-in hybrid drive marks the beginning of a new era for sports car manufacturing. Never before has a super sports car designed for everyday use offered such an impressive dynamic performance combined with the fuel consumption of a compact car. The 918 Spyder is the continuation of the traditional Porsche DNA in a ground-breaking sports car concept. Designed from the start to be a high-performance hybrid, the 918 Spyder boasts an unprecedented combination of performance (offering the 887-bhp output of a super sports car) and the virtually silent, emission-free locomotion of an electric vehicle.

World premiere for the compact SUV from Porsche

The Macan is a Porsche through and through

Porsche is expanding its range to include a whole new class of vehicle. The Macan is the first Porsche model to break into the compact SUV segment and is poised to set new standards in the field of driving dynamics and enjoyment – on both paved streets uneven terrain. The Macan combines the typical handling characteristics that Porsche has represented right from the outset: maximum acceleration and braking values, vast engine power, extreme agility and optimum steering precision. What's more, all of these features are teamed with a high level of comfort and everyday suitability. The sporty DNA of the Macan, as with all Porsche vehicles, is also immediately recognisable in the design. The Sports Utility Vehicle is unrivalled in its flat and broad profile on the road. The wraparound bonnet and gently sloping roof line accentuate the overall impression of sporty elegance and powerful dynamics. Many of the design elements have been taken from other Porsche sportscars and enhanced for the Macan, making it clear to see from the very first glance that the Porsche Macan heralds the first sportscar in the compact SUV segment. The Macan is "Made in Germany", produced at the Leipzig plant. Porsche has invested 500 million euro in the plant and has established an entire production line there. The line is set up to produce around 50,000 vehicles per year – all manufactured with the utmost precision and to the highest level of quality. Just what you would expect from Porsche.

Three models comprise the Macan product range at market launch. The Macan S is equipped with a 3.0-litre V6 biturbo engine delivering 340 bhp (250 kW) and also features an active all-wheel drive with an electronically controlled, map-controlled multi-plate clutch. This all-wheel drive is fitted on all Macan models. A seven-speed double-clutch transmission transfers power as required and almost without any interruption in tractive force, enabling the vehicle to accelerate from 0 to 100 km/h in 5.4 seconds (or 5.2 seconds with the optional Sport Chrono package fitted). The vehicle reaches a top speed of 254 km/h, and its NEDC fuel consumption figures are between 9.0 and 8.7 litres/100 km, which corresponds to a CO₂ emissions level of between 212 and 204 g/km.

The Macan S Diesel is the economical long-distance runner of the three Macan models. Its 3.0-litre V6 turbo diesel engine achieves NEDC fuel consumption figures of between just 6.3 and 6.1 litres/100 km, which corresponds to a CO₂ value of between 164 and 159 g/km. Nevertheless, the Macan S Diesel accelerates from 0 to 100 km in just 6.3 seconds (or 6.1 seconds with the Sport Chrono package fitted) thanks to its 258-bhp (190-kW) engine, and achieves a top speed of 230 km/h.

As the top model in the Macan model line, the Macan Turbo is set to be the most powerful vehicle in the compact SUV segment. The 3.6-litre V6 biturbo engine, which is being used in a Porsche model for the very first time, achieves an unrivalled 400 bhp (294 kW) and catapults the vehicle from 0 to 100 km/h in 4.8 seconds. With the Sport Chrono package fitted, it is even possible to achieve such a speed in 4.6 seconds. Although the top speed is 266 km/h, the Macan Turbo delivers NEDC fuel consumption figures of between just 9.2 and 8.9 litres/100 km, which equates to a CO₂ value of between 216 and 208 g/km.

Its name comes from the Indonesian word for tiger. And the Macan really does live up to its name: powerful and ready to pounce at any time, yet light-footed and tenacious on off-road terrain. The sporty all-wheel drive is ultimately a Porsche invention, designed and first implemented by Ferdinand Porsche in 1900 in the Lohner-Porsche racing car with its four electric wheel-hub motors. In 1947, Porsche developed the Type 360, better known as the Cisitalia Grand Prix racing car. The car became a true driving legend, not only as a result of its supercharged 12-cylinder engine and consistent lightweight construction, but also thanks to its permanent all-wheel drive. The design was based on the idea that drive power around bends or on roads with low frictional values can be converted into propulsion more fully and more reliably.

The latest stage of evolution of the all-wheel drive – known as Porsche Traction Management (PTM) – has produced one of the world's most powerful drive systems. In launching the Macan, Porsche now offers sporty all-wheel-drive vehicles across an unprecedented range.

A glance at the performance specifications reveals that the Macan has been designed with agility in mind. Further unmistakable hallmarks of the vehicle include its proportions, design and the mixed tyres on large wheels. The engines, drive systems and seven-speed Porsche Doppelkupplung (PDK) bring the vehicle's characteristics to bear in dynamic and efficient fashion both on and off road, making for a true Porsche driving experience. The driver and passenger seats feature the low position typical of sportscars.

The range of equipment fitted on the Macan as standard is extensive, and includes the all-wheel drive, PDK, multi-function sport steering wheel with shift paddles, large wheels, high-performance audio system and an electrically operated tailgate. The list of optional special equipment offers further highlights, such as the air suspension system, which the Macan features as the only vehicle in its segment. There is also the Porsche Torque Vectoring Plus (PTV Plus) system, which has been specially tailored to the Macan. This system distributes varying levels of drive torque to the rear wheels and works in conjunction with an electronically controlled rear-axle differential lock. The list of Porsche options includes the much sought-after dynamic high beam forming part of the Porsche Dynamic Light System Plus (PDLS Plus), which continuously adjusts the headlight level in keeping with the traffic ahead and any oncoming traffic.

Design

Deeply rooted in Porsche's legacy of sportscars

The sportscar heritage of the Macan is evident in many details of its design. The designers have pulled out all the stops to ensure the model's proportions and lines live up to this claim. The result can be summarised in two words typical of a sportscar: broad and low. The design embodies sportiness, dynamism and precision, together with elegance and lightweight construction. Round lines are combined with strategically positioned precision edges. With its harmonious proportions, the Macan appears compact, powerful and close to the road.

Even when stationary, design details taken from Porsche sportscars highlight what the Macan has to offer in terms of performance. For instance, the side view window graphics and the sloping roof line at the rear end, known at Porsche as the flyline, are a clear nod to the 911. The rear wings also have the soft profile of the 911.

The 918 Spyder is already regarded as a vehicle that propelled the Porsche design DNA further forward. The Macan adopts this current DNA, for instance the basic shape of its main headlights is based on that of the 918 Spyder, while the sideblades at the bottom of the front and rear doors are reminiscent of the lower door seams on the hybrid super sports-car inside, the Macan is fitted with a multi-function sports steering wheel as standard, the design of which is completely new and based on the 918 Spyder.

A true Porsche from all angles

The impressive, assertive front of the Macan is a distinctive component of the design. The large air intakes are typical of Porsche and highlight the performance class to which the brand's vehicles typically belong. In the Macan Turbo, stylistic elements known as C-blades fitted in the air intakes on the right and left of the vehicle accentuate the sporty look and provide a sophisticated aerodynamic response.

The wraparound bonnet creates an impressive design detail, enclosing the headlights and extending down to the wheel arches. The imposing size of the bonnet and its precision lines running to the front of the vehicle give the Macan a broad and powerful appearance, while the seamless surface of the bonnet presents a clean front to the vehicle. The Macan's concentration on the road is particularly evident when viewed from the front.

The side view with its sporty sloping roof line creates a sharp profile and emphasises the dynamic nature of the vehicle, while the design lines running to the rear of the vehicle accentuate the broad, sculpted wings. Together with what are known as the window graphics – the edges of all lateral glass surfaces – and the shape of the D-pillar, these design lines are a nod to the design of the 911.

A further design highlight of the side view, and another means of customising the vehicle, are the sideblades at the bottom of the front and rear doors – dynamically formed inserts that are available in different materials as an option. The design of these sideblades is reminiscent of the lower door seams on the 918 Spyder, as is the front door entry guard. Combined with the sophisticated door handles, this makes the doors appear narrower and the sides significantly more sporty and streamlined.

On the Macan S and Macan S Diesel, the sideblades are painted in Lava Black as standard. The Macan Turbo features sideblades painted in the same colour as the exterior (optional for Macan S and Macan S Diesel), adding to the classic elegance of its look. Sideblades in Genuine Carbon, available for all models as an option, add extra emphasis to the Macan's sporty character.

A further striking design detail of the Macan is its continuous side sill. Together with the long black roof spoiler, this feature adds to the vehicle's flowing design. The mixed tyres are up to 265 mm wide on the front axle and 295 mm wide on the rear axle. Alongside wheels of up to 21 inches, the tyres also underline the Macan's sporty intentions.

With its subtle lines and harmonious curves, the rear end is a fusion of sportiness and elegance. It has been consciously designed as a large, mainly undisturbed area to give the vehicle a broader look. To maintain this clean look, the switch for the powerlift tailgate has been concealed at the foot of the windscreen wiper arm, and the numberplate is located in the lower rear area.

The rear lights on the Macan are another striking feature, boasting an extremely compact three-dimensional design and LED technology – a further reference to the 918 Spyder. On all models, the rear diffuser is flanked on both sides by twin tailpipes – round on the Macan S and Macan S Diesel and square on the Turbo. All models are available with sport tailpipes made from chrome-plated stainless steel as an option.

Sporty and high-quality interior

The focus on agility and breadth continues into the Porsche Macan's interior. Sophisticated lines, precise transitions and high-quality workmanship create a harmonious fusion of sportiness, quality and elegance.

From the low front seats, the sloping centre console and the display and operation concept through to the extensive range of customisation options, the interior offers both a sense of familiarity and striking new features, such as the new multi-function sports steering wheel.

The cockpit features all the character familiar from a sports car. The eye is immediately drawn to the standard multi-function sports steering wheel, the design of which is completely new and based on the 918 Spyder. Additional multi-function buttons fitted as standard for the telephone, radio and on-board computer, together with the ergonomically positioned shift paddles, ensure that drivers' hands are free to stay on the steering wheel and their concentration remains on the road.

Three round dials with a centrally positioned tachometer combine to form the instrument cluster. The right-hand tube is home to the high-resolution, 4.8-inch colour display. As you would expect, the ignition lock is positioned to the left of the steering wheel – as is customary on Porsche models.

The forward-sloping centre console with the high-set gear selector typical of racing cars draws the driver even further into the cockpit. The buttons for the most important functions are clustered in logical groups on the centre console, allowing for simple and intuitive operation of individual functions.

Even the standard equipment on the Macan S with the Piano Black interior package and the comfort seats with Alcantara seat centre conjures up a sense of sportiness and quality. The Macan Turbo is fitted with adaptive sports seats as standard, including the 18-way power seats with memory package in leather and the brushed aluminium interior package. In addition, all models are available with the Dark Burl Walnut and Carbon décors as an option.

Engine and drive

Performance and efficiency

Porsche is offering the Macan with three advanced engines. All combine rich torque with impressive power, ensuring each variant features trademark Porsche qualities. The engines are also highly efficient and environmentally friendly, with all three versions of the Macan meeting the Euro 6 emissions standard. The NEDC fuel consumption figures range from 9.2 l/100 km (Macan Turbo) to 6.1 l/100 km (Macan S-Diesel).

The Macan Turbo is unrivalled in the compact SUV segment in terms of its driving performance. The 3.6-litre V6 biturbo engine unleashes its maximum output of 400 bhp (294 kW) at 6000 rpm. Two turbochargers with a boost pressure of 1.2 bar ensure powerful ventilation. This power results in acceleration from 0 to 100 km/h in just 4.8 seconds and a top speed of 266 km/h. The Macan is the first Porsche to feature this engine. The engine is based on a 3.0-litre V6 biturbo engine with stroke that has been increased by 83 millimetres. All of the dimensions and specifications are based on decades of Porsche experience in developing sport engines.

The Macan S is powered by the new 3.0-litre V6 biturbo engine from Porsche. The engine is particularly high-revving, thanks to its 96-millimetre bore and short 69-millimetre stroke. When tuning the new engine, the engineers focused on providing uniform performance development and an even torque curve. By combining two turbochargers, positioned in a compact format on the left and the right, which together deliver a boost pressure of 1.0 bar, exceptional performance values have been achieved: The engine reaches its maximum power of 340 bhp (250 kW) at between 5500 to 6500 rpm. Sprinting from 0 to 100 km/h takes just 5.4 seconds and the vehicle reaches a top speed of around 254 km/h.

The Porsche VarioCam Plus valve stroke variable system in both of the V6 biturbo engines ensures that the variable inlet and outlet camshaft control is continuously and infinitely adjusted and allows the engine to respond in a flexible manner to the relevant performance requirements. The result is spontaneous acceleration and exceptionally smooth running. The revised direct fuel injection (DFI) concept with multi-hole injectors and a high pressure

of 200 bar enables optimum fuel distribution. The jet and taper angles have been optimised with torque, power, fuel consumption and emissions in mind. DFI also improves internal cooling within the combustion chamber as the fuel-air mixture is generated in the cylinder directly. The resulting higher compression ratio provides greater engine power and better engine efficiency. The turbochargers have been specially tailored to the engines and are capable of building up the boost pressure very quickly in response to power requirements.

Integrated dry-sump lubrication and a modified oil sump shape have been developed for the petrol engines destined for use in the Macan. These modifications enable optimum engine lubrication – even in extreme driving situations – and contribute to a particularly low centre of gravity while allowing the ground clearance to be increased. The diesel engine relies on a pressure-fed lubrication concept with a wet sump.

With its 3.0-litre V6 turbo diesel engine, the Macan S Diesel is a true long-distance sports car that combines an excellent performance level with minimum fuel consumption. The 258-bhp (190-kW) engine, taken from the Cayenne and subsequently enhanced, has been specially designed for the Macan. It also works perfectly alongside the PDK transmission and is consistent with the vehicle's sportscar characteristics. The high torque of 580 Nm at between 1750 and 2500 rpm allows confident acceleration in every driving situation. The vehicle reaches a top speed of 230 km/h, accelerating from 0 to 100 km/h in 6.3 seconds (or 6.1 seconds with the Sport Chrono package fitted). The optimised common rail fuel injection system enables quiet combustion development while also allowing high turbine speeds within the turbocharger, even at a low engine speed, thereby creates a higher boost pressure. Some of the results of this set-up include better volumetric efficiency, increased power and more torque. The advanced diesel engine is equipped with a Selective Catalytic Reduction (SCR) system for lower emissions. This system injects a urea solution (AdBlue) into the exhaust gas, and the resulting chemical reaction transforms nitrogen oxides into nitrogen and water.

All Macan models feature an engine with sportscar characteristics and they sound like a sportscar too: The sound of the Macan engines is robust and emotive, indicating that the vehicle is always ready to demonstrate its capabilities on any terrain. As part of the sound design, the petrol models include an exhaust flap, in addition to various other components. The flap is map-controlled and load-dependent, which dictates when it opens and shuts.

Power and efficiency in perfect harmony

Performance is not the only attribute of the Macan – maximum efficiency is another one of its defining features. Multiple technologies contribute to the vehicle's low fuel consumption level alongside the standard PDK and the intelligent mix of materials used to construct the Macan. Together, all of these measures result in fuel consumption figures that speak for themselves. The standard automatic Start Stop function shuts off the engine as soon as the Macan brakes to a speed of 2 km/h – even when the Adaptive Cruise Control (ACC) is activated. When the brake is released, the engine is restarted quickly and smoothly by the system. When drivers lift their foot off the accelerator pedal, the coasting function decouples the engine to allow the vehicle to roll over a longer distance than if the engine was engaged. As soon as the accelerator pedal or brake is actuated again, the PDK selects the appropriate gear and engages the clutch. Up to 1.0 litre of fuel can be saved per 100 kilometres in everyday driving situations.

Electro-mechanical power steering is another of the efficiency technologies in use in the Macan: Thanks to this feature, the electric motor is only supplied with energy if steering intervention takes place – the advantage for fuel consumption being a saving up to 0.1 litres per 100 kilometres. Depending on the driving situation and cooling requirements, the radiator shutters on the Macan can also be closed – a function that is controlled by the engine management system. Similarly, the underbody shield keeps drag to a minimum by optimising the air flow under the vehicle and reducing turbulence. Electrical system recuperation is another of the efficiency measures featured by the Macan: This concept charges the battery more intensely during the braking and overrun phases. Restricting the charging current of the generator when the battery is fully charged in turn reduces the load on the combustion engine during acceleration phases because the engine does not have to use as much power to charge the battery. In addition, the intelligent thermal management system in the Macan manages the temperature of the engine and transmission to reduce friction losses during the warm-up phase following a cold start. To do this, the thermal flows are managed in a targeted manner and the different coolant circuits are switched on gradually when needed, allowing the engine and transmission to heat up faster.

Porsche Doppelkupplung (PDK) as standard

For the first time in a new Porsche model range, all variants of the Macan feature the high-performance seven-speed Porsche Doppelkupplung (PDK) as standard. The advantages of this transmission design include excellent start-up performance, extremely fast gear changes without any interruption in tractive force, short reaction times, low fuel consumption and outstanding shift comfort. As in virtually all Porsche vehicles that feature the PDK, there are two shifting gates: On the right, the required switching level is engaged via a typical Porsche gear selector, while the left-hand gate can be engaged manually, or with the standard shift paddles on the steering wheel.

In every Macan model, the PDK enables the vehicle to “coast”: When drivers lift their foot off the accelerator, the PDK automatically decouples the engaged gear and the vehicles coasts in idle until the required speed is reached. When the accelerator pedal or brake is actuated, the PDK selects the appropriate gear once again and engages the clutch. The PDK contributes to minimum fuel consumption in every Macan and adapts the required driving profile with the help of an intelligent management system.

Active all-wheel drive and Porsche Traction Management (PTM)

Active all-wheel drive is part of the Porsche Traction Management (PTM) system and comes as standard for all Macan models. Together with the other elements of the system – the electronically controlled, map-controlled multi-plate clutch, the Automatic Brake Differential (ABD) and Anti-Slip Regulation (ASR) – the all-wheel drive looks after traction and safety.

The all-wheel drive system is one of the systems with the fastest response times on the market and its design underpins the sportscar characteristics of the Macan. The rear axle is always driven, The front axle receives its drive torque from the rear axle, and the torque is dependent on the locking ratio of the electronically controlled multi-plate clutch.

For situations in which the rear axle wheels are on a surface with a significantly lower friction coefficient in comparison to the front axle wheels (for example on ice) which would cause the rear axle wheels to spin when moving off, up to 100% of the necessary torque can be transferred to the front axle. However, the rear axle is never uncoupled in these situations – instead, 100% of the torque from the rear axle is transferred to the front axle via the multi-plate clutch.

The ASR also reduces wheel spin. Exactly the right amount of propulsion force is transferred to the front wheels on corners to achieve optimum lateral support.

Working with the newly developed Porsche Stability Management (PSM) system, the PTM interacts with all systems to secure the appropriate distribution of power for excellent propulsion in every driving situation: on long straights, around tight corners or on surfaces with different friction coefficients. Traction is also improved by the ABD on surfaces with different friction coefficients. If a wheel is in danger of spinning, the PTM brakes the relevant wheel via the ABD and in doing so transfers more drive torque to the other wheel on the same axle.

As a result, the new PTM system not only offers advantages in terms of traction and safety, but it also supports agile driving behaviour for enhanced handling and better dynamism in the Macan.

Off-road mode at the touch of a button

Off-road mode comes as standard in the Macan, and the function is activated by pressing a button in the centre console at a speed of between 0 and 80 km/h. This function switches all the relevant systems to a traction-oriented off-road programme: For example, the shift revolutions and speeds are geared towards a greater level of traction, the clutch is pre-tensioned to a greater degree in order to provide the front axle with the appropriate drive torque more rapidly, and the standard torque split between the front and rear axle as well as the accelerator pedal response are adapted to off-road conditions. What's more, the ground clearance can be increased by 40 millimetres above its normal level thanks to the optional air suspension chassis, which gives a maximum ground clearance of 230 millimetres.

Another button in the centre console activates downhill assistance from the Porsche Hill Control (PHC) system. The PHC keeps the vehicle speed constant during descents, and can be adjusted to between 3 and 30 km/h.

Option: Porsche Torque Vectoring Plus (PTV Plus)

The Porsche Torque Vectoring Plus (PTV Plus) system has been specially tailored to the Macan in order to improve driving dynamics and driving stability. The PTV Plus uses a variable standard torque split at the rear wheels combined with an electronically controlled rear-axle differential lock. In response to the steering angle, steering speed, accelerator pedal position, yaw rate and vehicle speed, the PTV Plus improves steering behaviour and steering precision through targeted brake interventions on the inside rear wheel to enhance agility. This gives the outside rear wheel a greater propulsion force and enables an additional turning impulse in the steered direction. The result is direct and dynamic steering into the bend. The PTV Plus also makes a positive impact when the Macan is taken off-road: On loose ground, rear wheel spin is reduced through targeted locking and braking interventions.

Sport button as standard

All Macan models are fitted with a Sport button as standard, which can be found on the centre console to the left of the gear selector. When the Sport button is pressed, the electronic engine management system makes the engine even more responsive: A touch on the accelerator pedal results in a noticeably more direct response from the engine, the rev-limiter is set to a more specific level and the engine dynamics take on a motorsport feel. In addition, the PDK enables the shift points to be moved towards the upper speed range, adding an even sportier touch. The response times are shorter, while the gear changes are tighter and instantaneous, particularly for double-clutch downshifts. The engine sound is also adapted to sound even more robust. In addition, the Porsche Active Suspension Management (PASM) chassis control system (part of the standard equipment in the Macan Turbo) is set to sport mode to achieve a sportier feel for the suspension and direct steering, therefore offering even more agile handling characteristics.

Option: Sport Chrono package

The optional Sport Chrono package offers improved performance at the push of a button. The Sport Chrono package enables the chassis, engine and transmission to be tuned to an even sportier level, accompanied by a sound that is even more emotive. The Sport Chrono package is characterised by the analogue and digital stopwatch on the dashboard, as well as the additional Sport Plus button in the centre console. Another element of the package is the performance display on the optional Porsche Communication Management (PCM) system, which provides information on the total driving time, distance travelled around the current lap or the time taken for each lap, for instance. “Launch Control” is also included – this function enables a level of acceleration similar to that required in a race when moving off. The time advantage gained in a standard sprint from 0 to 100 km/h is 0.2 seconds for all models. “Launch Control” enables improved lap times and a better spread between comfort and sportiness when it comes to the vehicle handling to achieve a significant boost in driving pleasure.

Chassis, brakes, steering and control systems

An all-rounder for urban traffic and off-road driving

The complex chassis of the Porsche Macan illustrates just how much effort has gone into making the vehicle an imposing figure both on and off road. As a sportscar, the Macan sets completely new benchmarks for compact SUVs on asphalt. The chassis components, tuning, weight distribution and brakes allow the Macan to take on an exclusive position as the sportscar in its class. No other vehicle in this market segment can drive on asphalt with such precision and stability, and especially not at high speeds.

The basic geometry of the Macan creates the best conditions for achieving these benchmarks. The low centre of gravity and the wheel base of 2807 millimetres, plus the front track width of 1655 millimetres and 1651 millimetres at the rear provide enhanced driving stability, particularly when cornering.

The road performance of the Macan has also been enhanced by its outstanding off-road abilities. The ramp angle of 17.1 degrees (with air suspension at "High Level I": 19 degrees), a ground clearance of 198 millimetres (230 millimetres), a front overhang angle of 24.8 degrees (26.6 degrees) and a rear overhang angle of 23.6 degrees (25.3 degrees) also present a consistent message: Overall, the features of the Macan fulfil the exact requirements of many SUV customers, i.e. the perfect performance on the road plus the special reserve capabilities embodied by all-wheel drive and off-road performance.

Three chassis versions for the Macan

There are three chassis versions available for the Macan. The steel spring design fulfils the very highest of standards for performance, driving pleasure, off-roading capabilities and comfort. The consistent lightweight construction philosophy embodied by the aluminium axles and chassis components contributes to driving dynamics and comfort. The front axle is based on a five-link design while the rear axle is formed by a trapezoidal-link design. At the rear axle, the separate arrangement of the springs and dampers on the wheel carrier improves ride comfort and the handling response of the dampers. This arrangement is also responsible for the large loading width of luggage compartment.

The second version of the Macan chassis is a combination of the steel spring design and the PASM system, which comes as standard in the Macan Turbo top model. The PASM can be selected as an option for the Macan S and the Macan S Diesel. Combining the steel spring design and PASM allows the vehicle to fulfil high standards for long-distance comfort, performance and agility even more successfully. This chassis variant also offers a considerably better spread of the suspension damping across the three PASM programmes of “Comfort”, “Sport” and “Sport Plus” at the touch of a button.

PASM (Porsche Active Suspension Management)

The electronically controlled PASM adjustable shock absorber system increases driving pleasure, safety and comfort and is part of the standard equipment for the Macan Turbo. The system actively and continuously regulates the damper force on the front and rear axles. Vehicles normally demonstrate noticeable body movement in response to a very dynamic driving style involving sharp acceleration and brake phases or when off-roading. The PASM is designed to intervene and reduce body movement. Depending on their preferences and requirements, drivers can choose between three programmes: “Comfort”, “Sport” and “Sport Plus”.

Air suspension: Unique in the market segment

The third version of the Porsche Macan chassis, and exclusive in this vehicle segment, is the optional air suspension including levelling system, height adjustment and PASM. This chassis variant also satisfies the highest demands for comfort, sportiness and performance, and puts the vehicle in pole position in comparison to every other chassis design.

In comparison to the steel spring design, the Macan with air suspension sits 15 millimetres lower at Normal Level and, due to the associated lower centre of gravity, it offers both increased driving dynamics and improved comfort. The air suspension maintains a consistent vehicle position automatically, regardless of the load distribution. The ground clearance can be adjusted to three different levels as required: “High Level I”, “Normal Level” and “Low Level”. In “High Level I”, the vehicle sits 40 millimetres above “Normal Level”, with a maximum ground clearance of 230 millimetres. This option is activated via the off-road button and can be used at speeds between 0 and 80 km/h.

Pressing the PASM button or the Sport Plus button lowers the vehicle by 10 millimetres to “Low Level”. Doing so allows for a maximum ground clearance of 180 millimetres. Using the “Low Level” setting in combination with Sport Plus mode gets the maximum performance from the Macan, as the centre of gravity is even lower and the PASM is optimised for these conditions.

To allow the luggage compartment to be loaded easily, vehicles fitted with air suspension can be set to loading level, which lowers the rear end to 50 millimetres below the normal level. Loading level is activated by pressing a button in the luggage compartment.

Powerful brakes offering a top-class performance level

The brakes of the Porsche Macan match the vehicle’s exceptional performance level. In line with the usual high standard set by the brand, the Macan is leading the way with the most powerful braking system in its market segment.

The Macan relies on six-piston fixed-calliper front brakes with aluminium monobloc brake callipers. In the Macan S and the Macan S Diesel, the brake callipers press on brake discs with a diameter of 350 millimetres, while the brake discs in the Turbo have a diameter of 360 millimetres. In all models, the braking action at the rear is provided by combined floating calliper brakes with an integrated electric parking brake. The rear brake discs for the Macan S and Macan S Diesel have a diameter of 330 millimetres and the rear brake discs of the Turbo have a diameter of 356 millimetres.

The electric parking brake offers greater comfort and safety when parking the vehicle. The parking brake is released automatically when moving off. Another feature making its debut is the hold function.

Mixed tyres: Functional and visual benefits

The use of tyres on the Macan is typical of a sportscar: The vehicle is designed to use mixed tyres with different dimensions at the front and rear axle. The mixed tyres emphasise the sportscar look of the Porsche Macan and also offer some functional advantages: In combination with the all-wheel drive system designed for tail-heavy vehicles, the wide tyres on the rear axle increase traction and enhance driving stability. The narrower front tyres enable sporty yet precise steering manoeuvres, thereby contributing to the agility of the vehicle, too. Overall, the mixed tyres play a key role in the excellent driving performance of the Macan.

235/60 R 18 (front) and 255/55 R 18 (rear) tyres are standard equipment for the Macan S and Macan S Diesel, while the Macan Turbo features 235/55 R 19 (front) and 255/50 R 19 (rear) tyres.

The wheels available for the Porsche Macan perfectly capture its character. And on the road. There is a vast range of wheels in attractive designs to choose from. The range includes wheels of up to 21 inches in size, which are available for all Macan models.

The Macan S and the Macan S Diesel are fitted with the 18-inch Macan S wheel as standard, while the 19-inch Macan Turbo wheel is available as standard for the Macan Turbo. In addition to these options there are six other wheel designs to choose from, ranging from 18 to 21 inches in size. The 18-inch wheels are lightweight forged wheels, while the 19 and 20-inch wheels are produced using flow forming lightweight design technology. The 21-inch wheel is a lightweight forged wheel.

The roll resistance, typical Porsche performance in terms of handling and braking distance, and weight of all the standard tyres have been optimised.

All Porsche Macan models come with Tyre Pressure Monitoring (TPM) as standard. The TPM system increases driving safety and comfort by warning the driver when the tyre pressure is too low or if it detects any rapid drops in pressure. Sensors in all four of the drop-centre rims constantly monitor the air pressure. The driver can check the pressure of all four tyres on the 4.8-inch colour monitor in the central instrument cluster.

Electromechanical power steering

The electromechanical power steering system – the first to be found in a Porsche SUV – allows the Macan to be driven precisely and more directly with the responsiveness typical of the Porsche brand in all driving situations. The steering system also offers a number of fuel consumption benefits: In comparison to conventional hydraulic steering systems, electro-mechanical steering saves up to 0.1 litres of fuel per 100 kilometres because the system only requires energy for steering. An important effect of the system is the fact that the Macan can be fitted with a lane departure warning system that works with the electro-mechanical power steering and controls the active steering interventions when they are necessary.

Body

Developed for the sportscar within the compact SUV segment

A key consideration for the development of the Macan body was the aim to create a vehicle that immediately stood out as a Porsche in comparison to other compact SUVs, i.e. to create a sportscar for this market segment. This aim has certainly been achieved, as demonstrated by several of the vehicle's features:

For example, the bonnet covers the wheel arches and encloses the main headlights, making the front of the car look broad and robust. The crisp design lines on the bonnet that extend forward emphasise the width of the vehicle even further. The body is manufactured completely from aluminium, leading to a reduction in weight and therefore contributing to efficiency and dynamism.

The sportscar requirements of the Macan played a significant role in the design of the body. The rigidity of the front end is based on the high standards set by the 911 and the Cayman. Thanks to the addition of more bars, this level of rigidity enables optimum driving agility and stability. Another good example is provided by the selective use of materials to achieve a lower centre of gravity: The body platform and doors are manufactured from high and super-high strength lightweight steel sheets, and the bonnet and rear lid are made of aluminium.

With a width of 1923 millimetres (excluding the exterior mirrors) and a height of 1624 millimetres, the Macan is a compact and dynamic vehicle. The low centre of gravity and wheel-base of 2807 millimetres provide enhanced driving stability, particularly when cornering. These features, combined with a length of 4681 millimetres (Macan Turbo: 4699 millimetres), mean that the Macan has the sportiest proportions in its segment. Another distinctive feature of the Macan is the comparatively short overhangs of 924 millimetres at the front (Macan Turbo: 942 millimetres) and 950 millimetres at the rear, which also emphasise its sportscar character. The luggage compartment volume is 500 litres, which expands to 1500 litres when the back seats are folded down fully.

No compromises were allowed when it came to the downforce values either: The value at the rear axle is 0.01 negative – guaranteeing high lateral stability even when changing lanes quickly.

Light and wide: The panoramic roof system

As important as it is for the driver to focus on the road, every passenger appreciates being able to glance up to the sky. This is particularly true thanks to the optional, two-part Panoramic Roof System on the Macan, as the front glass element can be uncovered and opened electrically and an electrical roll-up blind dims the entire pane of glass when required.

A sporty seat position

For an SUV, the Macan has a sporty seat position and a more steeply inclined steering column to give it a sportscar feel as a special feature, the front headrests can be adjusted both vertically and longitudinally, while the seat height, seat cushion, backrest angle and the longitudinal position of the standard electrical 8-way comfort seat on the driver's side can be adjusted. Adaptive sports seats with 18-way adjustment for the driver and front passenger are also available as an option, and as standard for the Macan Turbo. Optional front seat ventilation is available for even greater seating comfort, with three-stage control of the ventilation for the seat surfaces and backrests, independently adjustable for both the right and the left seat.

The rear seat system provides space for up to three passengers. The rear seat backrests are split 40:20:40 and can be folded down separately, providing plenty of room for all items of luggage in the luggage compartment.

High level of passive safety

By delivering ideal body rigidity values, the consistent lightweight steel construction makes a key contribution to safety. All elements of the vehicle body shell are designed and connected in such a way that, in the event of a crash, the vehicle structure deforms in a defined manner, thus absorbing the energy from the crash. In addition, super-high-strength steel reinforcements protect occupants in the event of a side impact. High strength and clearly defined deformability are two properties that also come together in the multi-phase steels used.

Multi-collision brake to dissipate kinetic energy

Around a quarter of all accidents resulting in personal injury are “multi-collision accidents”, where a second collision follows the first. The multi-collision brake system automatically brakes the vehicle involved in a crash to reduce the residual kinetic energy inherent following the initial collision. The multi-collision brake is triggered when the airbag sensors detect a primary collision, at which point the system initiates maximum braking. The Porsche Stability Management (PSM) system limits this action to a maximum negative acceleration of 0.6 g, thereby ensuring that the driver can maintain control of the vehicle even in the event of automatic braking.

The driver can override the multi-collision brake system at any time. If the system detects that the driver is accelerating, the automatic multi-collision brake is deactivated. The same applies if the driver initiates a full braking manoeuvre at an even higher rate of deceleration. As a general rule, the assistance system brakes until a residual vehicle speed of 10 km/h is reached. This residual speed can then be used to drive to a safe location after the braking action.

Interior and equipment

Outstanding, high-quality equipment

The passenger compartment of the Porsche Macan picks up on the current Porsche sports-car design, delivering a premium look. Among the equipment on offer in the interior is the Burmester® High-End Surround Sound system, available for the first time in a vehicle of this class. Other new equipment options include the lane departure warning system and lane change assist system. Features such as the Adaptive Cruise Control (ACC) with Porsche Active Safe (PAS) deliver a further boost to comfort and safety.

Ergonomics support sporty driving: The forward-sloping centre console and the driver's seat position ensure a very short distance between the steering wheel and gear selector, while the driver is now even more closely integrated within the interior thanks to the high-set gear selector typical of racing cars. Controls for all the key functions and settings are clustered in logical groups on the centre console, with buttons located within easy reach to ensure quick, intuitive operation. As with all Porsche models, the ignition lock is positioned to the left of the steering wheel.

The instrumentation is also typically Porsche, offering three conventional round dials with a centrally positioned tachometer. A gear indicator within the tachometer tells the driver which gear has been engaged by the Porsche Doppelkupplungsgetriebe (PDK).

A high-resolution, 4.8-inch colour display is contained in the right-hand dial. In addition to the most important on-board computer functions, this feature also displays the maps for the optional Porsche Communication Management (PCM) system with navigation module.

Audio systems and Porsche Communication Management (PCM)

Located high up and in the centre of the console, the CDR Plus audio system, which is fitted as standard and features a high-resolution, 7-inch colour touchscreen display, is clearly visible and offers convenient access to a whole host of functions. Features include a universal USB interface for connecting external storage media and end devices, 11 loudspeakers and a total output of 235 watts.

The Porsche Communication Management (PCM) system, which is included as standard in the Macan Turbo, comprises all of the stated CDR Plus functions. In addition, it offers a navigation module with a hard drive, which boasts a capacity of 40 gigabytes, enough for up to 5000 MP3 files, as well as map data for most European countries, including a perspective map view and 3D navigation map.

Burmester® sound system for perfect sound

As the top-of-the-range option when it comes to sound systems, Porsche is also offering a special sound system in the Macan that was developed and made in Germany in cooperation with Burmester®. Building on the feedback acquired from the systems featured in the Panamera, Cayenne, 911 and Cayman models, this sound system achieves a total output and sound quality that are unparalleled in this class of vehicle. The system comprises 16 individually controlled loudspeakers, including an active subwoofer with a 250-millimetre diaphragm diameter and an integrated 300-watt Class D amplifier. The total system output is more than 1000 watts.

The Bose Surround Sound system features 14 loudspeakers, including a 200-watt active subwoofer, a total of nine amplifier channels and a total output of 545 watts. The system taps into the sound spectrum of 5.1 digital surround sound recordings. AudioPilot noise compensation technology guarantees a consistent, balanced aural experience, whatever the driving conditions.

Online connection for the PCM via the Aha Radio app

Online features can be accessed in the PCM using the Aha Radio app, available free of charge for Apple and Android devices. This app facilitates use of content such as online radio with personalised web-based music, news feeds, podcasts and audio magazines, as well as weather information and integrated social networks such as Facebook or Twitter. The results of a Google “Points of Interest” search can also be adopted as the navigation destination.

Perfect connection: Porsche Car Connect (PCC)

Porsche Car Connect (PCC) makes it possible to access information and control individual vehicle functions remotely using a smartphone. Corresponding apps are available for both Apple and Android devices. Amongst other functions, the PCC can be used to call up vehicle data and display the vehicle's position, as well as lock the vehicle by activating the central locking system.

If stolen, a vehicle can be located with the help of the Porsche Vehicle Tracking System (PVTs). A separate contract with a service provider recommended by the relevant Porsche partner is required to use Porsche Car Connect. Porsche Car Connect can be supplemented to include the Porsche Vehicle Tracking System Plus (PVTs Plus). This system delivers additional safety measures for the PVTs, such as a plated mounting, shear bolts and two driver authentication keys.

Comfort and safety: assistance systems for the Macan

There is a wide range of assistance systems available for the Porsche Macan. These include the lane departure warning system and lane change assist system, both of which enhance the level of active safety and driving comfort. The reversing camera facilitates reverse parking and manoeuvring and also assists with hitching a trailer. What's more, the ACC system together with PAS supports the driver by emitting visual and audible warnings in dangerous situations, and also initiates an additional brake jolt if required.

Providing support: lane departure warning and lane change assist system

The optional lane change assist system helps the driver to stay in lane by monitoring the lane markings on both sides of the vehicle by means of a camera. If the vehicle threatens to leave the lane, active steering interventions guide it back on course. The function is activated from speeds of 60 km/h and above, and is temporarily deactivated by switching on the indicator. The driver can also activate and deactivate the assist system independently using a button on the centre console.

The lane change assist system is also available as an option and aids the driver when changing lanes. The system monitors the area behind the vehicle and the blind spot using radar sensors. At speeds of 30 km/h or above, the system informs the driver of vehicles approaching quickly from behind or located in the blind spot by providing a visual signal in the exterior mirrors. However, the system does not intervene in the controlling of the vehicle. The function can be activated and deactivated by pressing a button in the driver's door.

Greater comfort and safety: ACC with PAS

To enhance driving comfort and safety in the Macan, Porsche offers ACC with PAS safety function. The ACC function is based on a radar sensor located in the vehicle front end, used to monitor the road up to 200 metres ahead of the vehicle. ACC maintains a speed-dependant distance from a vehicle travelling ahead over four pre-selectable stages, and automatically adjusts the driving speed, if necessary down to a halt. This relieves the pressure on the driver, particularly in traffic jams and slow-moving traffic.

PAS builds on this system and can help avoid bumper-to-bumper collisions – even when ACC is switched off. To deliver this function, the front radar system monitors traffic on an on-going basis, looking for vehicles travelling much more slowly up ahead. If the system detects an impending hazard situation, the brake system is preconditioned and the brake assistant is sensitised. If the situation becomes more critical, PAS emits visual and audible warnings, and the driver is alerted to the need to intervene by a jolt in the brake pedal. If the driver responds with an inadequate braking action, the system can increase the brake pressure up to full braking, depending on the situation in question.

Always in view: The speed limit display

The speed limit display is available as an option in conjunction with the PCM system. This information system uses a camera to detect speed limits, no overtaking zones and the ends of these zones. The speed limit is displayed to the driver on an on-going basis via the colour screen in the instrument cluster and the PCM screen. When entering a no overtaking zone, information to this effect is also displayed to the driver. If the camera's view is restricted, the system uses the speed information present in the navigation data.

Perfect vision and signals: lighting systems in the Macan

The lighting systems and design of the Porsche Macan form a unified whole, delivering exceptional functionality. The distinctive features at the front of the Macan include the generously proportioned main headlight modules, the daytime running lights and the arrangement of the fog lights. The tail lights with their slim design underscore the vehicle's sports-car character, making the Macan unmistakable even in the dark.

Projector-beam halogen main headlights are fitted as standard on the Porsche Macan. Bi-Xenon main headlights are also available as an option (fitted as standard in the Macan Turbo). Also featuring projector type technology, these lights include static and dynamic cornering lights (Porsche Dynamic Light System [PDLS]).

The dynamic cornering light swivels the main headlights towards the inside of a bend, depending on the steering angle and driving speed; the static cornering light activates the auxiliary headlights to illuminate the bend, for example when performing turning manoeuvres.

Control of the driving light is speed-sensitive. This light adjusts the range and contour of the dipped beam at higher speeds for enhanced illumination of the road, for example when travelling on motorways. By turning off the upper light beam in conditions where there is poor visibility, such as fog, the bad weather light can reduce reflection, meaning oncoming drivers are less likely to be dazzled.

The Porsche Dynamic Light System Plus (PDLS Plus) can enhance lighting technology, offering two additional functions: The dynamic high beam variably and continuously adjusts the lighting range in keeping with oncoming traffic and vehicles travelling ahead. When approaching a crossing, the junction assistant activates the static cornering light on the left and right-hand sides, making the beam of light broader. This improves illumination of the area directly surrounding the vehicle, thereby enhancing safety for both the driver and other road users.

The Macan S and Macan S Diesel feature halogen daytime running lights, while the Macan Turbo is equipped with 4-point LED technology. Fog lights are also included as standard for all Macan models to ensure safety on the road, even in poor weather conditions. The Macan S and Macan S Diesel have round halogen fog lights integrated in the front end. On the Macan Turbo, these lights are drawn on LED technology.

The tail lights are implemented in full using LED technology, and are similar in design to those in the Porsche 918 Spyder. The lights give a highly sophisticated and broad appearance, further reinforcing the sportscar characteristics of the Macan. The 3D design is particularly striking and makes the Macan unmistakable – by day and by night: The circular brake light emphasises the slender details of the horizontal tail light, simultaneously accentuating the direction the 3D light effect, which is just as impressive by day as it is by night, ensures that the vehicle is easily recognisable.

The light comfort package

The optional light comfort package provides pleasant illumination in the vehicle interior. All lights are implemented using LED technology. The package comprises dimmable ambient lighting in the door panels and overhead console, front and back footwell lighting, reading lights in the rear of the vehicle, plus ambient lighting in the exterior mirrors. The make-up mirrors in the sun visors on both the driver's and passenger's side are also illuminated.

911 Turbo Cabriolet and 911 Turbo S Cabriolet

More performance, more efficiency, more driving pleasure: World premiere of the open-top Turbo 911 models

The dynamic range of the new 911 Turbo models multiplied by the driving pleasure offered by an open-top sports car: This is the succinct formula behind the two new leading 911 Cabriolet models. To mark the 40th anniversary of the 911 Turbo, its open-top descendants are having their world premiere at the Auto Show in Los Angeles on November 20 – 50 years after the 911 made its debut. By adding the two new leading 911 models into the mix, Porsche is doubling its offering of the top-of-the-range models to four versions.

In supplementing the range, the 911 Turbo Cabriolet and 911 Turbo S Cabriolet deliver the same blend of dynamism, performance and efficiency offered by the Coupé model unveiled a few months ago. The two new models boast impressive figures: The turbocharged 3.8-litre six-cylinder engine delivers 520 bhp (383 kW) in the open-top 911 Turbo and 560 bhp (412 kW) in the S model. The cars accelerate from zero to 100 km/h in 3.5 and 3.2 seconds respectively, reaching a top speed of up to 318 km/h. And all this while achieving fuel consumption figures below the ten-litre limit: Both of the new top-of-the-range Cabriolet models rest assured in the New European Driving Cycle (NEDC), boasting figures of 9.9 litres/100 km (equivalent to 231 g/km CO₂). When compared against the respective predecessor models, the new vehicles deliver 30 bhp more power and are 0.2 seconds faster in terms of their standard acceleration. They are also up to 15% more efficient.

Developed in unison, the Coupé and Cabriolet 911 Turbo models only differ in terms of a few key details – apart, of course, from the roof structure. Ten distinct moulded parts turn the closed lightweight body featuring an intelligent mixed aluminium-steel construction into an open-top body; the chassis is specifically designed for the 911 Turbo Cabriolet and the adaptive aerodynamics adapt to the different flow conditions depending on whether the hood is open or closed.

World's first open-top sports car with active rear-axle steering and adaptive aerodynamics

With the 911 Turbo Cabriolet, Porsche is now also introducing driving dynamics and technology from super sports cars into the high-performance Cabriolet segment. Boasting PDK double-clutch transmission as standard and the new PTM all-wheel drive, as well as featuring active rear-axle steering and active aerodynamics, both new top Cabriolet models are achieving top marks in all disciplines. While the rear-axle steering has an immensely positive impact on handling for the two new super sports cars, both on the racetrack and during everyday use, the active aerodynamics can be tuned to offer optimum efficiency or driving dynamics at the touch of a button, depending on the driver's wishes. The 911 Turbo S claims the top position in terms of driving dynamics with Porsche Dynamic Chassis Control (PDCC), dynamic engine mounts, Porsche Ceramic Composite Brake (PCCB) and full LED headlights.

Active rear-axle steering improves agility and stability simultaneously

The active rear-axle steering design consists of two electromechanical actuators, which are used on the left and right of the rear axle instead of the conventional track steering units. Using these actuators, the steering angle of the rear wheels can be varied according to the vehicle speed. Two effects can be achieved by varying the directions in which the two axles are turned: When the front and rear wheels are steered in opposite directions at a speed of 50 km/h, the sports car drives like a model with a significantly shorter wheelbase – significantly shorter again than the previous model. The other effect is achieved when the front and rear wheels are steered in the same direction: The perceived wheelbase of the sports car is lengthened, giving the driver better stability when changing lanes and therefore providing enhanced driving stability overall, especially at high speeds. Both axles are steered in the same direction when the vehicle reaches a speed of 80 km/h.

Adaptive aerodynamics: The precise art of tackling air resistance

The Porsche 911 Turbo is the first sports car in the world to feature adaptive aerodynamics, allowing it to revolutionise the interaction between everyday suitability, efficiency and performance, and set new benchmarks in each of these three areas. The unique combination of the retractable, multi-stage front spoiler and a slotted wing with height and tilt adjustment means that the aerodynamics of both new 911 Turbo Cabriolet models can be adapted to the current situation and the driver's preferences at the touch of a button and as often as required.

The Porsche Active Aerodynamics (PAA) system features three basic modes with which to control the front spoiler and rear wing. In addition, PAA takes into account whether the roof is open or closed. Both aerodynamic elements are fully retracted when the vehicle is started up. When the front spoiler is folded back, it provides a significantly larger approach angle than the previous model. “Speed” mode is activated at 120 km/h: The two outer segments of the three-part front spoiler extend. At the same time, the rear wing is extended upwards by 30 mm. When the hood is open, the extended height of the slotted wing is 80 millimetres. Lift at the front and rear axles as well as aerodynamic drag are therefore reduced, while the balance between the front and rear axle remains constant.

“Performance” mode offers an entirely new dimension of aerodynamics for the top 911 model, demonstrated in particular by the aerodynamic forces at work: At 300 km/h, the sports car generates 132 kg of downforce in “Performance” mode. This means that the maximum possible lateral acceleration increases by 10% at this speed – just as a result of the downforce. To achieve this, the middle part of the front spoiler and the rear wing are further extended to a height of 80 millimetres simultaneously and angled by seven degrees to the front. The aerodynamic airflow changes when the hood is down; the rear wing is then extended to 120 mm and tilted by 15 degrees.

Elegant design coupled with impressive width effect

The sleek lines of the 911 Cabriolet combined with the powerful proportions of the top 911 model make for an impressive whole: Four millimetres flatter than the Coupé, the impressive width effect of the 911 Turbo Cabriolet is accentuated in spectacular fashion when the hood is down. With its body spanning 1880 millimetres from one wheel arch edge to the other in a practically flat arch, the new generation of 911 Turbo models has broader shoulders than any other 911.

Another eye-catching feature of the 911 Turbo Cabriolet is the exclusive Porsche panel bow hood with its lightweight magnesium frame. This innovative technology enables the Coupé-like arch to the roof to be achieved when the hood is closed. This arch, which also offers advantages in terms of aerodynamics, is not feasible using conventional construction techniques. As with predecessor models, the roof opens and closes in around 13 seconds, at speeds of up to 50 km/h.

Premium furnishings in the interior

The interior of the new Cabriolet models follows that of the 911 Turbo Coupé. The S-model boasts a particularly extensive range of furnishings, with features including an exclusive interior in Black/Carrera Red and adaptive Sport Seat Plus seats with 18-way adjustment and memory. In addition, the backrest shells of the seats are trimmed with leather and feature double cap seams, and various elements are achieved in a carbon look. As with the predecessor models, the Bose sound system is fitted as standard; furthermore, for the first time, a Burmester® High-End Surround Sound system is also available on request. What's more, the radar-controlled adaptive Cruise Control system, camera-based road sign and speed limit recognition function and reversing camera are also available as options.

New top model in the Gran Turismo model range: The Porsche Panamera Turbo S

Performance and luxury for discerning drivers

Porsche is placing its fastest, most powerful and most luxurious Panamera at the peak of its Gran Turismo series: With a power output of 570 bhp and a top speed of 310 km/h plus a particularly extensive and top-quality range of features, the Panamera Turbo S is guaranteed a special status in its market segment. For the first time ever, an Executive version of the Panamera Turbo S is also available with a wheel-base that has been extended by 15 centimetres. As a result, the Panamera Turbo S Executive offers significantly more space and even more comfort, particularly at the rear. Thermal and noise-insulated windows, which include privacy glazing, the interior lighting package designed especially for the rear and a large centre console at the rear are just some of the extensive equipment options that belong to this series. The new top model in the Panamera model line will be celebrating its world premiere at the Tokyo Motor Show.

The sporty, luxurious character of the new Panamera Turbo S is evident not only in its driving performance but also in the key distinguishing features of its appearance. The Palladium, metallic exterior colour, which is available solely for the new Panamera Turbo S, gives the top model an especially exclusive look and enhances the classy, elegant contours. An indication of the vehicle's outstanding driving dynamics is provided by the 20-inch 911 Turbo II wheels, which are not only larger but also significantly wider than the standard wheels belonging to other Gran Turismo models. The four-way rear spoiler, painted in the same colour as the exterior, is another unique feature.

The new top Panamera model from Porsche features an exceptionally extensive range of equipment appropriate for a top model in the luxury class. It features all of the driving dynamics control systems available for the model range as standard. The Porsche Dynamic Chassis Control (PDCC), an active roll stabilisation system, starts reducing the vehicle's lateral inclination as it approaches bends, thereby increasing agility and comfort in equal measure. The Porsche Torque Vectoring Plus (PTV Plus) system works with a variable standard torque split at the rear wheels in combination with an electronically controlled rear-axle differential lock to provide improved traction in any driving situation. Thanks to

the Porsche Ceramic Composite Brake (PCCB), the Panamera Turbo S benefits from a high-performance brake system that is particularly resistant to brake fading and wear. The speed-sensitive Power Steering Plus represents the steering system. The chassis of the Panamera Turbo S of course features the Porsche Active Suspension Management (PASM) adaptive damper control and adaptive air suspension with additional air volume.

Some 50 bhp more power thanks to new turbochargers and a higher injection pressure

A 50 bhp increase in power compared to the Panamera Turbo engine has been achieved through specific revision work on a number of components. Porsche is now using two new turbochargers with larger compressors in the Panamera Turbo S model. The new compressors increase the air flow and the charger injects more oxygen into the combustion chambers at high loads and speeds. In addition, the injection pressure has been increased by 20 bar to 140 bar. Together, both of these measures also enable higher component loads, which are absorbed by pistons made from a new aluminium alloy and specially coated piston rings.

This concept has two further advantages: By preparing the air-fuel mixture in the combustion chambers more effectively, the torque also increases by 50 Nm to 750 Nm at between 2250 and 5000 rpm, with the overboost increasing to 800 Nm. The extra torque makes overtaking even easier and faster, for instance. The second enhancement is the fact that the New European Driving Cycle (NEDC) fuel consumption figures for the new model are the same as those of the Panamera Turbo at 10.2 litres per 100 km, which is more than 11% less than the predecessor model.

Thanks to the optional sports exhaust system, the Panamera Turbo S offers drivers the opportunity to revel in the sound of motorsport whenever they wish. This unique sound experience is achieved by means of an acoustic channel that can be switched at the push of a button; this channel directs the engine sound straight into the interior. In addition, individual cylinders are skipped when switching up a gear, allowing the engine speed to fall faster and the clutch to engage quickly – This offers an acoustic side effect reminiscent of the characteristic babble of an eight-cylinder engine.

Sport Chrono package enhances sporty handling characteristics

The new Panamera Turbo S is also perfectly equipped to effectively convert its increased level of power and torque into sporty driving dynamics. One of the requirements for this effective conversion of power is the optimum power transmission concept, which the Porsche Traction Management (PTM) all-wheel drive system offers in the ideal format, even in difficult driving conditions. The Sport Chrono package comes as standard, and coordinates the drive power and chassis at the touch of a button to guarantee a consistently sporty response. What's more, the overboost function is activated in "Sport" and "Sport Plus" mode as well as during kickdown in "Normal" mode; the overboost function temporarily increases the boost pressure to enable even more powerful acceleration and sprint capability. The "Launch Control" race start function guarantees the best possible acceleration when moving off by optimally coordinating the responses of the engine control system and the Porsche Doppelkupplung gearshift programme. Thanks to the reworked gear shifting strategy, the Porsche Doppelkupplung changes between its seven gears even more rapidly, accelerating the new Gran Turismo top model from 0 to 100 km/h in 3.8 seconds.

Chassis with all Panamera assistance systems

The chassis features all of the active systems that Porsche has developed and introduced for the sporty Gran Turismo range as standard. The Porsche Active Suspension Management (PASM) system is the centrepiece, combining adaptive air suspension and adaptive damper control. The PASM continuously adjusts the damper forces and adapts them to suit road conditions and driving style. Using the PASM chassis button on the centre console, the driver can choose between three performance maps – Comfort, Sport and Sport Plus. Similarly, the adaptive air suspension offers the ability to activate different spring rates to open up an even greater range of chassis characteristics, giving drivers the choice between a very high level of driving comfort and very sporty driving dynamics.

The combination of the PDCC and PTV Plus means that the Panamera Turbo S features the most advanced version of the Panamera chassis as standard. The PDCC prevents the vehicle body from rolling on its longitudinal axis by applying a counter torque using active stabilisers on the front and rear axles. This system also improves vehicle balance via dyna-

mic roll moment distribution, resulting in excellent agility in every speed range driven as well as optimum steering performance and balanced load alteration behaviour. Increased agility is achieved because the tyres constantly maintain the ideal position on the road, allowing optimised lateral forces to build up and act upon each tyre. Variable roll moment distribution also directly influences the vehicle's self-steering properties.

The PDCC, PASM and air suspension are always controlled together when one of the three chassis programmes is selected. When the "Comfort" setting is selected, the systems provide a relaxed journey on uneven roads. In "Sport" and "Sport plus" modes, active intervention by the systems influence steering behaviour, maximum roll support, self-steering properties and traction in order to secure maximum performance and agility.

PTV Plus for even better cornering: Race-tested ceramic brakes

The advantages offered by the PDCC in terms of driving dynamics are enhanced still further by the Porsche Torque Vectoring Plus system and the electronically controlled rear-axle differential lock with variable locking effect. The system optimises steering behaviour and traction for a sporty driving experience.

The Panamera Turbo S comes with the PCCB as standard. These super powerful, race-tested ceramic brakes with yellow brake callipers offer clear advantages over conventional grey cast iron brake discs. A reduction in mass of approx. 50%, a faster handling response and the corrosion resistance of the brake calliper rings guarantee maximum performance.

Interior: Two-tone-leather interior and comfort seats

The synthesis between exclusivity and sportiness is upheld in the interior by the two-tone leather furnishings which come as standard. One particular highlight is the new interior package in Dark Burl Walnut. The new decor includes a hint of red, providing a slightly cooler effect, and the interior of the Panamera Turbo S is completed by the embossed Porsche crests on the front headrests.

The 14-way power seats at the front are available as standard and can be combined with the memory package for excellent travel comfort. The memory package comprises seat surface extension as well as lumbar support and electrical steering column adjustment. Both the front and rear seats feature seat heating as standard; seat ventilation is also available as standard in the Panamera Turbo S Executive. The adaptive sport seats build on this seating system to include the comfort memory package with raised seat side bolsters and electronic, 18-way adjustment as an option for the Panamera Turbo S. At the rear, two single seats with a folding central arm rest offer generous leg and head room, even for tall passengers. Passengers at the rear of the Panamera Turbo S Executive travel in even greater luxury: The single seats have an extra twelve centimetres of space in the footwell, all seats offer active ventilation and the electronic roll-up sunblind enables greater privacy. Both rear passengers are protected by side air bags.

US premiere: Porsche 918 Spyder

A unique combination of performance and efficiency

The 918 Spyder embodies the essence of the Porsche idea, combining pedigree motor racing technology with excellent everyday suitability, and maximum performance with minimum consumption. The debut of the 918 Spyder at the IAA 2013 marked the start of a new chapter in the future of the hybrid drive.

And the technology pioneers are not the only ones who are excited by this flagship project, as the 918 Spyder demonstrates the potential of the hybrid drive to a degree never seen before, achieving a parallel improvement in both fuel efficiency and performance without compromising on either. This is the idea that has made the Porsche 911 the most successful sports car in the world for the past 50 years. In short, the 918 Spyder contains the genetic blueprint for the Porsche sports car of the future.

The 918 Spyder has been greatly influenced by its affiliations with motorsport. A number of the developments to the Porsche race car for the 24 Hours of Le Mans 2014 were used in the 918 Spyder – and vice versa. The structural concept, which is based on a rolling chassis (i.e. a chassis without bodywork), is standard for Porsche race cars. The design of the V8 engine is based on that of the Le Mans Prototype 2 (LMP2) race car, the RS Spyder, and the supporting monocoque structures and unit carriers are made from carbon fibre reinforced plastic (CFRP). More importantly, however, the 918 Spyder is considerably more fuel efficient than any of its competitors. In fact, this plug-in hybrid combines the performance of a race car with an output of over 880 bhp with an NEDC fuel consumption of just three litres per 100 km, which is lower than the majority of today's compact cars. Drivers can therefore enjoy maximum driving pleasure and minimum fuel consumption.

Specifications of the Porsche Macan S*

Body:	Self-supporting lightweight body; two-stage driver and front passenger airbags; side and knee airbags for driver and front passenger; head airbags (curtain airbags) at the front and rear; five seats.																				
Aerodynamics:	<table> <tr> <td>Drag coefficient C_d:</td> <td>0.36</td> </tr> <tr> <td>Frontal area A:</td> <td>2.61 m²</td> </tr> </table>	Drag coefficient C_d :	0.36	Frontal area A:	2.61 m ²																
Drag coefficient C_d :	0.36																				
Frontal area A:	2.61 m ²																				
Engine:	<p>Water-cooled 3.0-litre V6 biturbo engine; aluminium engine block and cylinder heads; four camshafts; four valves per cylinder; continuous intake camshaft and valve-lift adjustment (VarioCam Plus); hydraulic valve clearance compensation; direct fuel injection; two turbochargers; integrated dry-sump lubrication; engine oil capacity of 9.5 litres; two three-way catalytic converters each with two oxygen sensors per cylinder bank; electronic ignition with six individual ignition coils; thermal management system for engine and transmission cooling circuit; variable deceleration fuel cutoff; auto Start Stop function.</p> <table> <tr> <td>Bore:</td> <td>96.0 mm</td> </tr> <tr> <td>Stroke:</td> <td>69.0 mm</td> </tr> <tr> <td>Displacement:</td> <td>2997 cm³</td> </tr> <tr> <td>Compression ratio:</td> <td>9.8:1</td> </tr> <tr> <td>Engine power:</td> <td>340 bhp (250 kW) at 5500 to 6500 rpm</td> </tr> <tr> <td>Max. torque:</td> <td>460 Nm at 1450 to 5000 rpm</td> </tr> <tr> <td>Power output per litre:</td> <td>113.4 bhp/l (83.4 kW/l)</td> </tr> <tr> <td>Maximum revs:</td> <td>6700 rpm</td> </tr> <tr> <td>Fuel type:</td> <td>Super Plus</td> </tr> <tr> <td>Electrical system:</td> <td>12 volts; 3000 W three-phase generator; battery capacity 92 Ah; electrical system recuperation</td> </tr> </table>	Bore:	96.0 mm	Stroke:	69.0 mm	Displacement:	2997 cm ³	Compression ratio:	9.8:1	Engine power:	340 bhp (250 kW) at 5500 to 6500 rpm	Max. torque:	460 Nm at 1450 to 5000 rpm	Power output per litre:	113.4 bhp/l (83.4 kW/l)	Maximum revs:	6700 rpm	Fuel type:	Super Plus	Electrical system:	12 volts; 3000 W three-phase generator; battery capacity 92 Ah; electrical system recuperation
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*Specifications may vary according to markets

Power transmission: Engine and transmission bolted to form one drive unit; active all-wheel drive with electronically controlled, map-controlled multi-plate clutch; seven-speed double-clutch transmission.

Gear ratios:

1 st gear	3.69
2 nd gear	2.15
3 rd gear	1.41
4 th gear	1.03
5 th gear	0.79
6 th gear	0.63
7 th gear	0.52
R gear	2.94
Front axle final drive ratio	3.88
Rear axle final drive ratio	4.40

Chassis: Front axle: aluminium five-arm wishbone axle; cylindrical coil springs with internal, hydraulic, twin-tube, gas-filled shock absorbers.

Rear axle: aluminium trapezoidal-wishbone axle; cylindrical coil springs with internal, hydraulic, twin-tube, gas-filled shock absorbers.

Brakes: Dual-circuit brake system with axle distribution.

Front: six-piston aluminium monobloc brake callipers; vented brake discs with a diameter of 350 mm and thickness of 34 mm.

Rear: combined floating calliper brakes with integrated electric parking brake; vented brake discs with a diameter of 330 mm and thickness of 22 mm.

Porsche Stability Management (PSM); vacuum brake booster; brake assistant.

Wheels and tyres:	Front	8J x 18	with	235/60 R 18 103W
	Rear	9J x 18	with	255/55 R 18 105W
Weight:	DIN weight empty			1865 kg
	Permissible gross weight			2550 kg
Dimensions:	Length			4681 mm
	Width			1923 mm
	Width with exterior mirrors			2098 mm
	Height			1624 mm
	Wheelbase			2807 mm
	Track width		Front	1655 mm
			Rear	1651 mm
	Luggage compartment volume			500 to 1500 l
	Tank capacity			65 l
Performance:	Top speed:			254 km/h
	Acceleration:			
	0 – 100 km/h:			5.4 secs (5.2 secs*)
	0 – 160 km/h:			13.2 secs (13.0 secs*)
	0 – 1000 m:			25.7 secs (25.4 secs*)

*with optional Sport Chrono package

Fuel consumption: (NEDC)	Overall:	9.0 – 8.7 l/100 km*
	Urban traffic:	11.6 – 11.3 l/100 km*
	Extra-urban traffic:	7.6 – 7.3 l/100 km*
CO₂ emissions:	Overall:	212 – 204 g/km
	Urban traffic:	272 – 264 g/km
	Extra-urban traffic:	179 – 171 g/km
Emissions class:		Euro 6

*Versatility depending on the tyre set used

Specifications of the Porsche Macan Turbo*

Body:	Self-supporting lightweight body; two-stage driver and front passenger airbags; side and knee airbags for driver and front passenger; head airbags (curtain airbags) at the front and rear; five seats.
Aerodynamics:	Drag coefficient C_d : 0.37 Frontal area A: 2.61 m ²
Engine:	Water-cooled 3.6-litre V6 biturbo engine; aluminium engine block and cylinder heads; four camshafts; four valves per cylinder; continuous intake camshaft and valve-lift adjustment (VarioCam Plus); hydraulic valve clearance compensation; direct fuel injection; two turbochargers; integrated dry-sump lubrication; engine oil capacity of 9.5 litres; two three-way catalytic converters each with two oxygen sensors per cylinder bank; electronic ignition with six individual ignition coils; thermal management system for engine and transmission cooling circuit; variable deceleration fuel cutoff; auto Start Stop function. Bore: 96.0 mm Stroke: 83.0 mm Displacement: 3604 cm ³ Compression ratio: 10.5:1 Engine power: 400 bhp (294 kW) at 6000 rpm Max. torque: 550 Nm at 1350 to 4500 rpm Power output per litre: 110.9 bhp/l (81.6 kW/l) Maximum revs: 6700 rpm Fuel type: Super Plus Electrical system: 12 volts; 3000 W three-phase generator; battery capacity 92 Ah; electrical system recuperation

*Specifications may vary according to markets

Power transmission: Engine and transmission bolted to form one drive unit; active all-wheel drive with electronically controlled, map-controlled multi-plate clutch; seven-speed double-clutch transmission.

Gear ratios:

1 st gear	3.69
2 nd gear	2.15
3 rd gear	1.41
4 th gear	1.03
5 th gear	0.79
6 th gear	0.63
7 th gear	0.52
R gear	2.94
Front axle final drive ratio	4.13
Rear axle final drive ratio	4.67

Chassis: Front axle: aluminium five-arm wishbone axle; cylindrical coil springs with internal, hydraulic, twin-tube, gas-filled shock absorbers.

Rear axle: aluminium trapezoidal-wishbone axle; cylindrical coil springs with internal, hydraulic, twin-tube, gas-filled shock absorbers.

Brakes: Dual-circuit brake system with axle distribution.

Front: six-piston aluminium monobloc brake callipers; vented brake discs with a diameter of 360 mm and thickness of 36 mm.

Rear: combined floating calliper brakes with integrated electric parking brake; vented brake discs with a diameter of 356 mm and thickness of 28 mm.

Porsche Stability Management (PSM); vacuum brake booster; brake assistant.

Wheels and tyres:	Front	8J x 19	with	235/55 R 19 101Y
	Rear	9J x 19	with	255/50 R 19 103Y
Weight:	DIN weight empty			1925 kg
	Permissible gross weight			2550 kg
Dimensions:	Length			4699 mm
	Width			1923 mm
	Width with exterior mirrors			2098 mm
	Height			1624 mm
	Wheelbase			2807 mm
	Track width		Front	1655 mm
			Rear	1651 mm
	Luggage compartment volume			500 to 1500 l
	Tank capacity			75 l
Performance:	Top speed:			266 km/h
	Acceleration:			
	0 – 100 km/h:			4.8 secs (4.6 secs*)
	0 – 160 km/h:			11.1 secs (10.9 secs*)
	0 – 1000 m:			24.2 secs (23.9 secs*)

*with optional Sport Chrono package

Fuel consumption: (NEDC)	Overall:	9.2 – 8.9 l/100 km*
	Urban traffic:	11.8 – 11.5 l/100 km*
	Extra-urban traffic:	7.8 – 7.5 l/100 km*
CO₂ emissions:	Overall:	216 – 208 g/km
	Urban traffic:	277 – 269 g/km
	Extra-urban traffic:	184 – 176 g/km
Emissions class:		Euro 6

*Versatility depending on the tyre set used

Specifications of the Porsche Macan S Diesel*

Body:	Self-supporting lightweight body; two-stage driver and front passenger airbags; side airbags for driver and front passenger; head airbags (curtain airbags) at the front and rear; five seats.
Aerodynamics:	Drag coefficient C_d : 0.35 Frontal area A: 2.61 m ²
Engine:	Water-cooled, 3.0-litre V6 turbo diesel engine; grey cast iron crankcase; aluminium cylinder head; four camshafts; four valves per cylinder; hydraulic valve clearance compensation; common rail diesel direct injection (2000 bar) via piezo injectors; one turbocharger; one charge-air cooler; controlled exhaust gas recirculation with radiator; intake system with map-controlled swirl flap; engine oil capacity of 8.0 litres; emission control system with oxidation catalytic converter, diesel particle filter and Selective Catalytic Reduction (SCR) system; thermal management system; auto Start Stop function. Bore: 83.0 mm Stroke: 91.4 mm Displacement: 2967 cm ³ Compression ratio: 16.8:1 Engine power: 258 bhp (190 kW) at 4000 – 4250 rpm Max. torque: 580 Nm at 1750 – 2500 rpm Power output per litre: 87.1 bhp/l (64.0 kW/l) Maximum revs: 5200 rpm Fuel type: Diesel Electrical system: 12 volts; 2400 W three-phase generator; battery capacity 105 Ah; electrical system recuperation

* Specifications may vary according to markets

Power transmission: Engine and transmission bolted to form one drive unit; active all-wheel drive with electronically controlled, map-controlled multi-plate clutch; seven-speed double-clutch transmission.

Gear ratios:

1 st gear	3.69
2 nd gear	2.15
3 rd gear	1.34
4 th gear	0.97
5 th gear	0.74
6 th gear	0.57
7 th gear	0.46
R gear	2.94
Front axle final drive ratio	4.13
Rear axle final drive ratio	4.67

Chassis: Front axle: aluminium five-arm wishbone axle; cylindrical coil springs with internal, hydraulic, twin-tube, gas-filled shock absorbers.

Rear axle: aluminium trapezoidal-wishbone axle; cylindrical coil springs with internal, hydraulic, twin-tube, gas-filled shock absorbers.

Brakes: Dual-circuit brake system with axle distribution.

Front: six-piston aluminium monobloc brake callipers; vented brake discs with a diameter of 350 mm and thickness of 34 mm.

Rear: combined floating calliper brakes with integrated electric parking brake; vented brake discs with a diameter of 330 mm and thickness of 22 mm.

Porsche Stability Management (PSM); vacuum brake booster; brake assistant.

Wheels and tyres:	Front	8J x 18	with	235/60 R 18 103W
	Rear	9J x 18	with	255/55 R 18 105W
Weight:	DIN weight empty			1880 kg
	Permissible gross weight			2575 kg
Dimensions:	Length			4681 mm
	Width			1923 mm
	Width with exterior mirrors			2098 mm
	Height			1624 mm
	Wheelbase			2807 mm
	Track width		Front	1655 mm
			Rear	1651 mm
Luggage compartment volume			500 to 1500 l	
Tank capacity			60 l	
Performance:	Top speed:			230 km/h
	Acceleration:			
	0 – 100 km/h:			6.3 secs (6.1 secs*)
	0 – 160 km/h:			16.7 secs (16.5 secs*)
0 – 1000 m:			27.2 secs (26.8 secs*)	

*with optional Sport Chrono package

Fuel consumption: (NEDC)	Overall:	6.3 – 6.1 l/100 km*
	Urban traffic:	6.9 – 6.7 l/100 km*
	Extra-urban traffic:	5.9 – 5.7 l/100 km*
CO₂ emissions:	Overall:	164 – 159 g/km
	Urban:	183 – 176 g/km
	Extra urban:	157 – 150 g/km
Emissions class:		Euro 6

*Versatility depending on the tyre set used

Specifications of the Porsche 911 Turbo Cabriolet*

Body:	Two-plus-two seat Cabriolet; lightweight body featuring an intelligent mixed aluminium-steel construction; wings, doors, luggage compartment lid and engine compartment lid made from aluminium; two-stage driver and front passenger airbags; side and head airbags for driver and front passenger.
Aerodynamics:	Drag coefficient C_d : 0.31 Frontal area A: 2.07 m ²
Engine:	Water-cooled flat-six cylinder engine; aluminium engine block and cylinder heads; four overhead camshafts; four valves per cylinder; variable inlet valve timing and valve-lift adjustment (VarioCam Plus); hydraulic valve clearance compensation; direct fuel injection; one three-way catalytic converter per cylinder bank, each with two oxygen sensors; bi-turbo charging with variable turbine geometry (VTG); engine oil capacity of 10.4 litres; electronic ignition with solid-state ignition distribution (six active ignition modules); thermal management system for coolant circulation; auto Start Stop function. Bore: 102.0 mm Stroke: 77.5 mm Displacement: 3800 cm ³ Compression ratio: 9.8:1 Engine power: 520 bhp (383 kW) at 6000 – 6500/min Max. torque: 660 Nm at 1950 – 5000/min (710 Nm at 2100 – 4250/min**) Power output per litre: 136.8 bhp/l (100.8 kW/l) Maximum revs: 7000/min Fuel type: Super Plus Electrical system: 12 volts; three-phase generator, 2100 W; battery, 95 Ah; electrical system recuperation.

*Specifications may vary according to markets

**Overboost with Sport Plus (optional Sport Chrono package)

Power transmission: Engine and transmission bolted to form one drive unit; active all-wheel drive with electro-hydraulically controlled, map-controlled multi-plate clutch (PTM); seven-speed double-clutch transmission (PDK) with controlled rear-axle differential lock and Porsche Torque Vectoring Plus (PTV+).

Gear ratios

1 st gear	3.91
2 nd gear	2.29
3 rd gear	1.58
4 th gear	1.18
5 th gear	0.94
6 th gear	0.79
7 th gear	0.62
R gear	3.55
Rear final drive ratio	3.44
Front final drive ratio	3.33
Clutch diameter	220 mm/163.5 mm

Chassis:

Front axle: spring strut axle (MacPherson type, Porsche optimised) with wheels independently suspended by wishbones, longitudinal links and spring struts; cylindrical coil springs with internal vibration dampers; electromechanical power steering.

Rear axle: multi-link suspension with wheels independently suspended on five links; cylindrical coil springs with coaxial internal vibration dampers; active rear-axle steering.

Porsche Active Suspension Management (PASM) system with electronically controlled vibration dampers; two manually selectable maps.

Brakes: Dual-circuit brake system with axle distribution; Porsche Stability Management (PSM) system; vacuum brake booster; brake assistant; electric duo-servo parking brake; auto-hold function.

Front axle: six-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with a diameter of 380 mm and thickness of 34 mm.

Rear axle: four-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with a diameter of 380 mm and thickness of 30 mm.

Wheels and tyres:	Front	8.5 J x 20	with	245/35 ZR 20
	Rear	11 J x 20	with	305/30 ZR 20

Weight:	DIN weight empty	1665 kg
	Permissible gross weight	2045 kg

Dimensions:	Length	4506 mm
	Width	1880 mm
	Width with exterior mirrors	1978 mm
	Height	1292 mm
	Wheelbase	2450 mm

Track width	Front	1541 mm
	Rear	1590 mm

Luggage compartment volume	Front	115 l
	Rear	160 l

Tank capacity	68 l
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Performance:	Top speed	315 km/h
	Acceleration:	
	0 – 100 km/h	3.5 s
	With Sport Plus*	3.3 s
	0 – 200 km/h	11.6 s
	With Sport Plus*	11.3 s
Consumption: (NEDC)	Overall	9.9 l/100 km
	Urban traffic	13.4 l/100 km
	Extra-urban traffic	7.8 l/100 km
CO₂ emissions:		231 g/km
Emissions class:		Euro 6

*In conjunction with the optional Sport Chrono package.

Specifications of the Porsche 911 Turbo S Cabriolet*

Body:	Two-plus-two seat Cabriolet; lightweight body featuring an intelligent mixed aluminium-steel construction; wings, doors, luggage compartment lid and engine compartment lid made from aluminium; two-stage driver and front passenger airbags; side and head airbags for driver and front passenger.
Aerodynamics:	Drag coefficient C_d : 0.31 Frontal area A: 2.07 m ²
Engine:	Water-cooled flat-six cylinder engine; aluminium engine block and cylinder heads; four overhead camshafts; four valves per cylinder; variable inlet valve timing and valve-lift adjustment (VarioCam Plus); hydraulic valve clearance compensation; direct fuel injection; one three-way catalytic converter per cylinder bank, each with two oxygen sensors; bi-turbo charging with variable turbine geometry (VTG); engine oil capacity of 10.4 litres; electronic ignition with solid-state ignition distribution (six active ignition modules); thermal management system for coolant circulation; auto Start Stop function. Bore: 102.0 mm Stroke: 77.5 mm Displacement: 3800 cm ³ Compression ratio: 9.8:1 Engine power: 560 bhp (412 kW) at 6500 – 6750/min Max. torque: 700 Nm at 2100 – 4250/min (750 Nm at 2200 – 4000/min**) Power output per litre: 147.4 bhp/l (108.4 kW/l) Maximum revs: 7200/min Fuel type: Super Plus Electrical system: 12 volts; three-phase generator, 2100 W; battery, 95 Ah; electrical system recuperation.

*Specifications may vary according to markets

**Overboost with Sport Plus (standard)

Power transmission: Engine and transmission bolted to form one drive unit; active all-wheel drive with electro-hydraulically controlled, map-controlled multi-plate clutch (PTM); seven-speed double-clutch transmission (PDK) with controlled rear-axle differential lock and Porsche Torque Vectoring Plus (PTV+).

Gear ratios

1 st gear	3.91
2 nd gear	2.29
3 rd gear	1.58
4 th gear	1.18
5 th gear	0.94
6 th gear	0.79
7 th gear	0.62
R gear	3.55
Rear final drive ratio	3.44
Front final drive ratio	3.33
Clutch diameter	220 mm/163.5 mm

Chassis:

Front axle: spring strut axle (MacPherson type, Porsche optimised) with wheels independently suspended by wishbones, longitudinal links and spring struts; cylindrical coil springs with internal vibration dampers; electromechanical power steering.

Rear axle: multi-link suspension with wheels independently suspended on five links; cylindrical coil springs with coaxial internal vibration dampers; active rear-axle steering.

Porsche Active Suspension Management (PASM) with electronically controlled vibration dampers; two manually selectable maps; Porsche Dynamic Chassis Control (PDCC).

Brakes: Porsche Ceramic Composite Brake (PCCB); dual-circuit brake system with axle distribution; Porsche Stability Management (PSM) system; vacuum brake booster; brake assistant; electric duo-servo parking brake; auto-hold function.

Front axle: six-piston aluminium monobloc brake callipers, perforated and internally ventilated ceramic brake discs with a diameter of 410 mm and thickness of 36 mm.

Rear axle: four-piston aluminium monobloc brake callipers, perforated and internally ventilated ceramic brake discs with a diameter of 390 mm and thickness of 32 mm.

Wheels and tyres:	Front	9 J x 20	with	245/35 ZR 20
	Rear	11.5 J x 20	with	305/30 ZR 20

Weight:	DIN weight empty	1675 kg
	Permissible gross weight	2045 kg

Dimensions:	Length	4506 mm
	Width	1880 mm
	Width with exterior mirrors	1978 mm
	Height	1292 mm
	Wheelbase	2450 mm

Track width	Front	1539 mm
	Rear	1590 mm

Luggage compartment volume	Front	115 l
	Rear	160 l

Tank capacity	68 l
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Performance:	Top speed	318 km/h
	Acceleration:	
	0 – 100 km/h	3.2 s
	0 – 200 km/h	10.8 s
Consumption (NEDC):	Overall	9.9 l/100 km
	Urban traffic	13.4 l/100 km
	Extra-urban traffic	7.8 l/100 km
CO₂ emissions:		231 g/km
Emissions class:		Euro 6

Specifications of the Porsche Panamera Turbo S*

Body:	Self-supporting lightweight body in mixed aluminium-steel-magnesium construction; two-stage driver and front passenger airbags; side and knee airbags for driver and front passenger; head airbags (curtain airbags) for all four passengers; active bonnet system for pedestrian protection; four seats.
Aerodynamics:	Drag coefficient C_d : 0.32 Frontal area A: 2.34 m ²
Engine:	Water-cooled eight cylinder V-engine; aluminium crankcase and cylinder heads; four overhead camshafts; four valves per cylinder; variable inlet valve timing and valve-lift adjustment (VarioCam Plus); hydraulic valve clearance compensation; bi-turbo charging; direct fuel injection; two three-way catalytic converters per cylinder bank, each with two oxygen sensors; engine oil capacity of 10.85 litres; electronic ignition with solid-state ignition distribution (eight ignition modules); thermal management system; auto Start Stop function. Bore: 96.0 mm Stroke: 83.0 mm Displacement: 4,806 cm ³ Compression ratio: 10.5:1 Engine power: 570 bhp (419 kW) at 6000/min Max. torque: 750 Nm at 2250 – 5000/min (800 Nm at 2250 – 4500/min**) Power output per litre: 118.5 bhp/l (87.2 kW/l) Maximum revs: 6700/min Fuel type: Super Plus Electrical system: 12 volts; three-phase generator, 2660 W; battery capacity, 92 Ah

*Specifications may vary according to markets

**Overboost with Sport Plus (standard)

Power transmission: Engine and transmission bolted to form one drive unit; active all-wheel drive with electronically controlled, map-controlled multi-plate clutch (Porsche Traction Management PTM); seven-speed double-clutch transmission (PDK) with controlled rear-axle differential lock and Porsche Torque Vectoring Plus (PTV+).

Gear ratios:

1 st gear	5.97
2 nd gear	3.31
3 rd gear	2.01
4 th gear	1.37
5 th gear	1.00
6 th gear	0.81
7 th gear	0.59
R gear	4.57
Final drive ratio:	3.15
Clutch diameter:	165.5 mm/220 mm

Chassis: Front axle: aluminium-double-wishbone suspension; air suspension; hydraulic twin-tube gas-filled shock absorbers.

Rear axle: aluminium multi-link suspension with chassis sub-frame; wheels independently suspended on four links; air suspension with optional additional volume; hydraulic, twin-tube, gas-filled shock absorbers.

Porsche Active Suspension Management (PASM) with electronically controlled vibration dampers; three manually selectable maps; Porsche Dynamic Chassis Control (PDCC).

Brakes: Porsche Ceramic Composite Brake (PCCB); dual-circuit brake system with axle distribution; Porsche Stability Management (PSM) system; vacuum brake booster; brake assistant; electric parking brake.

Front axle: six-piston aluminium monobloc brake callipers; perforated and internally ventilated ceramic brake discs with a diameter of 420 mm and thickness of 40 mm.

Rear axle: four-piston aluminium monobloc brake callipers, internally ventilated brake discs with a diameter of 350 mm and thickness of 28 mm.

Wheels and tyres:	Front	9.5 J x 20	with	255/40 ZR 20
	Rear	11 J x 20	with	295/35 ZR 20
Weight:	DIN unladen weight			1995 kg
	Permissible gross weight			2500 kg
	Permissible roof load			75 kg
Dimensions:	Length			5015 mm
	Width			1931 mm
	Width with exterior mirrors			2114 mm
	Height			1418 mm
	Wheelbase			2920 mm
	Track width		Front	1646 mm
			Rear	1642 mm
Luggage compartment volume			432 – 1250 l	
Tank capacity:			100 l	

Performance:	Top speed	310 km/h
	Acceleration:	
	0 – 100 km/h	3.8 s
	0 – 160 km/h	8.2 s
	0 – 200 km/h	12.8 s
	0 – 1000 m	21,5 s
Fuel consumption: (NEDC)	Overall	10.2 l/100 km
	Urban traffic	14.7 l/100 km
	Extra-urban traffic:	7.7 l/100 km
CO₂ emissions:	Overall	239 g/km
Emissions class:		Euro 5

Specifications of the Porsche Panamera Turbo S Executive*

Body:	Self-supporting lightweight body in mixed aluminium-steel-magnesium construction; two-stage driver and front passenger airbags; knee airbags for driver and front passenger; side and head airbags (curtain airbags) for all four passengers; active bonnet system for pedestrian protection; four seats.
Aerodynamics:	Drag coefficient C_d : 0.30 Frontal area A: 2.33 m ²
Engine:	Water-cooled eight-cylinder V-engine; aluminium crankcase and cylinder heads; four overhead camshafts; four valves per cylinder; variable inlet valve timing and valve-lift adjustment (VarioCam Plus); hydraulic valve clearance compensation; bi-turbo charging; direct fuel injection; two three-way catalytic converter per cylinder bank, each with two oxygen sensors; engine oil capacity of 10.85 litres; electronic ignition with solid-state ignition distribution (eight ignition modules); thermal management system; auto Start Stop function. Bore: 96.0 mm Stroke: 83.0 mm Displacement: 4806 cm ³ Compression ratio: 10.5:1 Engine power: 570 bhp (419 kW) at 6000/min Max. torque: 750 Nm at 2250 – 5000/min (800 Nm at 2250 – 4500/min**) Power output per litre: 118.5 bhp/l (87.2 kW/l) Maximum revs: 6700/min Fuel type: Super Plus Electrical system: 12 volts; three-phase generator, 2660 W; battery capacity, 92 Ah

*Specifications may vary according to markets

**Overboost with Sport Plus (standard)

Power transmission: Engine and transmission bolted to form one drive unit; active all-wheel drive with electronically controlled, map-controlled multi-plate clutch (Porsche Traction Management PTM); seven-speed double-clutch transmission (PDK) with controlled rear-axle differential lock and Porsche Torque Vectoring Plus (PTV+).

Gear ratios:

1 st gear	5.97
2 nd gear	3.31
3 rd gear	2.01
4 th gear	1.37
5 th gear	1.00
6 th gear	0.81
7 th gear	0.59
R gear	4.57
Final drive ratio:	3.15
Clutch diameter:	165.5 mm/220 mm

Chassis: Front axle: aluminium-double-wishbone suspension; air suspension; hydraulic twin-tube, gas-filled shock absorbers.

Rear axle: aluminium multi-link suspension with chassis sub-frame; wheels independently suspended on four links; air suspension with optional additional volume; hydraulic, twin-tube, gas-filled shock absorbers.

Porsche Active Suspension Management (PASM) with electronically controlled vibration dampers; three manually selectable maps; Porsche Dynamic Chassis Control (PDCC).

Brakes: Porsche Ceramic Composite Brake (PCCB); dual-circuit brake system with axle distribution; Porsche Stability Management (PSM) system; vacuum brake booster; brake assistant; electric parking brake.

Front axle: six-piston aluminium monobloc brake callipers, perforated and internally ventilated ceramic brake discs with a diameter of 420 mm and thickness of 40 mm.

Rear: four-piston aluminium monobloc brake callipers, internally ventilated brake discs with a diameter of 350 mm and thickness of 28 mm.

Wheels and tyres:	Front	9.5 J x 20	with	255/40 ZR 20
	Rear	11 J x 20	with	295/35 ZR 20
Weight:	DIN unladen weight			2080 kg
	Permissible gross weight			2560 kg
Dimensions:	Length			5165 mm
	Width			1931 mm
	Width with exterior mirrors			2114 mm
	Height			1425 mm
	Wheelbase			3070 mm
	Track width		Front	1646 mm
			Rear	1642 mm
Luggage compartment volume			432 – 1250 l	
Tank capacity:			100 l	

Performance:	Top speed	310 km/h
	Acceleration:	
	0 – 100 km/h	3.9 s
	0 – 160 km/h	8.4 s
	0 – 200 km/h	13.2 s
	0 – 1000 m	21,7 s
Fuel consumption: (NEDC)	Overall	10.3 l/100 km
	Urban traffic	14.9 l/100 km
	Extra-urban traffic	7.8 l/100 km
CO₂ emissions:	Overall	242 g/km
Emissions class:		Euro 5