



PORSCHE



# Press Information

Porsche Macan

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Porsche Macan**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 pavement and off road trails. The Macan combines the typical handling characteristics that Porsche has represented right from the start: highly competitive acceleration and braking figures, impressive engine power, extreme agility and optimum steering precision. What's more, all of these features are combined with a high level of comfort and everyday drivability. The sporty DNA of the Macan, as with all Porsche vehicles, is immediately recognizable in the design. This Sport Utility Vehicle is unrivalled in its flat and broad profile on the road. The wraparound hood 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 sports cars and enhanced for the Macan, making it clear at first glance that the Porsche Macan heralds the first sports car 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 just for this dramatic new vehicle. 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.

Two models comprise the Macan product range at market launch. The Macan S is equipped with a 3.0 liter V6 twin turbo engine delivering 340 hp and features active all-wheel drive with an electronically controlled, multi-plate clutch. This all-wheel drive system 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 60 mph in 5.2 seconds (or 5.0 seconds with the optional Sport Chrono package). The Macan S reaches a top track speed of 156 mph.

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 liter V6 twin turbo engine, which is being used in a Porsche model for the very first time, achieves an unrivalled 400 hp and catapults the vehicle from 0 to 60 mph in 4.6 seconds. With the Sport Chrono package, it is possible to achieve such a speed in 4.4 seconds. The Macan Turbo top track speed is 164 mph.

The name Macan 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. Porsche is one of the pioneers of all-wheel drive technology. The company's first implemented all-wheel drive in 1900 in the Lohner-Porsche racecar with its four electric wheel-hub motors. In 1947, Porsche developed the Type 360, better known as the Cisitalia Grand Prix racecar. 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 curves 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 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 staggered wheel and tire sizing front and rear. The engine, drive systems and seven speed Porsche Doppelkupplung (PDK) bring the vehicle's characteristics to life in dynamic and efficient fashion both on and off road, making for a true Porsche driving experience.

The range of equipment fitted on the Macan as standard is extensive, and includes allwheel drive, PDK, multi-function sport steering wheel with paddle shifters, 19-inch wheels, a high-performance audio system, and an electrically operated tailgate. The list of optional equipment offers further highlights, such as an air suspension system, which is exclusive to the Macan in its segment. The Porsche Torque Vectoring Plus (PTV Plus) system is also optional and 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 also includes 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 sports cars**

The sports car 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 summarized in two words typical of a sports car: 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 sports cars highlight what the Macan has to offer in terms of performance. For instance, the side view window silhouette and the sloping roof line at the rear, known at Porsche as the flyline, are a clear nod to the 911. The rear fenders also have the graceful 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 DNA; for instance, the basic shape of its headlights are based on that of the 918 Spyder, while the side blades 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 that of 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 hood creates an impressive design detail, enclosing the headlights and extending down to the wheel arches. The imposing size of the hood 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 hood presents a clean front to the vehicle. The Macan's stance 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 emphasizes the dynamic nature of the vehicle, while the design lines running to the rear of the vehicle accentuate the broad sculpted fenders. Together with what are known as the window silhouette – 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.

Further design highlights of the side view, and another means of customizing 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 the 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, the sideblades are painted in Lava Black as standard. The Macan Turbo features sideblades painted in the same color as the exterior (optional for Macan S). Sideblades in Carbon Fiber are available for all models as an option, which add extra emphasis to the sporty character of the Macan.

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

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 base of the rear windshield wiper arm, and the license plate holder is located in the lower rear fascia.

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

### **Sporty and high-quality interior**

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

From the front seats, the sloping center console through to the extensive range of customization 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 character familiar from Porsche sports cars. The eye is immediately drawn to the standard multi-function sports steering wheel, the design of which is completely new and based on that of the 918 Spyder. Additional multi-function buttons fitted as standard for the telephone, radio, and on-board computer, together with the ergonomically positioned paddle shifters, ensure that the driver's hands are free to stay on the steering wheel and their concentration remains on the road.

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

A forward-sloping center console with a high-set gear selector is typical of race cars and draws the driver even further into the cockpit. The buttons for the most important functions are clustered in logical groups on the center 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® center inserts conjures up a sense of sportiness and quality. The Macan Turbo is fitted with 18-way adaptive sport seats as standard, including 18-way power seats with memory package in leather and brushed aluminum interior trim. In addition, all models are available with the Dark Walnut and Carbon Fiber trim as an option.

Engine and drive

**Performance and efficiency**

Porsche is offering the Macan with two advanced engines. All combine rich torque with impressive power, ensuring each variant features trademark Porsche qualities.

The Macan Turbo is unrivaled in the compact SUV segment in terms of its driving performance. The 3.6 liter V6 twin turbo engine unleashes its maximum output of 400 hp at 6000 rpm. Twin turbochargers with a boost pressure of 17.4 psi result in acceleration from 0 to 60 mph in just 4.6 seconds and a top track speed of 164 mph. The Macan is the first Porsche to feature this engine. The engine is based on a 3.0 liter V6 twin turbo engine with stroke that has been increased by 14 millimeters to 83 millimeters. All of the dimensions and specifications are based on decades of Porsche experience in developing performance engines. The Macan S is powered by the new 3.0 liter V6 twin turbo engine from Porsche. The engine is particularly high-revving, thanks to its 96 millimeter bore and short 69 millimeter stroke. When tuning the new engine, the engineers focused on providing uniform performance 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 14.5 psi, exceptional performance values have been achieved: The engine reaches its maximum power of 340 hp between 5500 to 6500 rpm.

Sprinting from 0 to 60 mph takes just 5.2 seconds and the vehicle reaches a top track speed of 156 mph.

The Porsche VarioCam Plus variable valve system in both of the V6 twin turbo engines ensures that the variable intake and exhaust 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 2900 psi enables optimum fuel distribution. The jet and taper angles have been optimized with torque, power, fuel consumption, and emissions in mind. DFI also improves internal cooling within the combustion chamber as the fuel-air mixture is injected into 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 have been developed specifically for the engines destined for use in the Macan. These modifications enable optimum engine lubrication – even in extreme driving situations – and contribute to a particularly low center of gravity while allowing the ground clearance to be increased.

All Macan models feature an engine with sports car characteristics and they sound like a sports car too: The sound of the Macan 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 exhaust features an internal flap that 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 efficiency 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 Auto Start Stop function shuts off the engine as soon as the Macan brakes to a speed of 1.2 mph – even when the optional 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 coast freely and as soon as the accelerator pedal or brake is actuated again, the PDK selects the appropriate gear and engages the clutch.

Electro-mechanical power steering is another efficient technology used in the Macan: Thanks to this feature, the electric motor is only supplied with energy if steering takes place. Depending on the driving situation and cooling requirements, the radiator vent flaps on the Macan can also be closed – a function that is controlled by the engine management system.

Similarly, the underbody paneling keeps drag to a minimum by optimizing 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 reach ideal operating temperatures more quickly.

### **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, downshifting or upshifting is at your fingertips with the paddle shifters on the steering wheel and manual mode can be engaged by switching the gear selector to the left for full control. 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 underpins the sports car characteristics of the Macan. The rear axle is always driven, while 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 behavior for enhanced handling and better dynamism in the Macan.

### **Off-road mode at the touch of a button**

Off-road mode comes standard in the Macan, and the function is activated by pressing a button in the center console at a speed of between 0 and 50 mph. This function switches all the relevant systems to a traction-oriented off-road program: For example, the shift points 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 1.58 inches above its normal level thanks to the optional air suspension chassis, which gives a maximum ground clearance of 9.06 inches.

Another button in the center 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 2 and 18 mph.

**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 behavior 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 curves. 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 center 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 redline is set to a higher level and the engine dynamics take on a motorsport feel. In addition, the PDK enables the shift points to be moved towards the upper rpm 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 characterized by the analog and digital stopwatch on the dashboard, as well as the additional Sport Plus button in the center 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 with the optional Sport Chrono Package – this function enables a level of acceleration similar to that required in a standing start race environment. The time advantage gained in a standard sprint from 0 to 60 mph 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 city traffic and off-road driving**

The chassis of the Porsche Macan illustrates just how much effort has gone into making the vehicle impressive both on and off road. As a sports car, 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 sports car 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 center of gravity and the wheel base of 110.51 inches, plus the front track width of 65.16 inches and 65 inches at the rear provide enhanced driving stability, particularly when cornering.

The road performance of the Macan has also been enhanced by its off-road abilities. The ramp angle of 17.1 degrees (with air suspension at "High Level I": 19 degrees), a ground clearance of 7.8 inches (9.06 inches), 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 fulfill the exacting 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 fulfills the very highest of standards for performance, driving pleasure, off-roading capabilities and comfort. The consistent lightweight construction philosophy embodied by the aluminum 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. The separate arrangement of the springs and dampers on the rear axle 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. The PASM can be selected as an option for the Macan S. Combining the steel spring design and PASM allows the vehicle to fulfill 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 programs 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 reduce excessive body movement. Depending on their preferences and requirements, drivers can choose between three programs: "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 a leveling 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 .59 inches lower at Normal Level and, due to the associated lower center 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 1.58 inches above "Normal Level", with a maximum ground clearance of 9.06 inches. This option is activated via the off-road button and can be used at speeds between 0 and 50 mph.

Pressing the PASM button or the Sport Plus button lowers the vehicle by .39 inches to "Low Level". Doing so allows for a maximum ground clearance of 7.09 inches. Using the "Low Level" setting in combination with Sport Plus mode gets the maximum performance from the Macan, as the center of gravity is even lower and the PASM is optimized 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 1.97 inches below the normal level. Loading level is activated by pressing a button in the luggage compartment.

### **Powerful brakes offering a top performance**

The Porsche Macan is equipped with brakes that match the vehicle's exceptional performance level. In line with the usual high standard set by the brand, the Macan is equipped with a powerful braking system.

The Macan relies on six-piston aluminum monobloc fixed-caliper front brakes. In the Macan S, the brake calipers press on brake discs with a diameter of 13.78 inches, while the brake discs in the Turbo have a diameter of 14.17 inches. In all models, the braking action at the rear is provided by combined floating caliper with an integrated electric parking brake. The rear brake discs for the Macan S have a diameter of 12.99 inches and the rear brake discs of the Turbo have a diameter of 14.02 inches.

The electric parking brake offers greater comfort and safety when parking the vehicle. The parking brake is released automatically when moving off.

### **Staggered wheels and tires: Functional and visual benefits**

The use of wheels on the Macan is typical of a sports car: The vehicle is designed to use wheels and tires with different dimensions at the front and rear axle. The staggered sizing emphasize the sports car 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 tires on the rear axle increase traction and enhance driving stability. The narrower front tires enable sporty yet precise steering maneuvers, thereby



contributing to the agility of the vehicle, too. Overall, the staggered wheels play a key role in the excellent driving performance of the Macan.

235/55 R 19 (front) and 255/50 R 19 (rear) tires are standard equipment for the Macan S and Macan Turbo.

The wheels available for the Porsche Macan perfectly capture its character on and off 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 is fitted with the 19-inch Macan Design wheels as standard, while the 19-inch Macan Turbo wheels are standard on 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.

Sensors in all four of the drop-center rims constantly monitor the air pressure with the Tire Pressure Monitoring System (TPMS). The driver can check the pressure of all four tires on the 4.8-inch color 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. An important effect of the system is the fact that the Macan can be fitted with a lane keep assist that works with the electro-mechanical power steering and initiates the active steering interventions when they are necessary.

## Body

### **Developed for the sports car within the compact SUV segment**

A key consideration for the development of the body of the Porsche Macan SUV 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 sports car for this market segment. This aim has certainly been achieved as demonstrated by several of the vehicle's features: For example, the hood covers the wheel arches and encloses the headlights, making the front of the car look broad and robust. The crisp design lines on the hood that extend forwards emphasize the width of the vehicle even further.

The sports car 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 sports car derived chassis bracing, 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 center of gravity: The body platform and doors are manufactured from high and super-high strength lightweight steel sheets, and the hood and rear lid are made of aluminum.

With a width of 75.71 inches (without mirrors) and a height of 63.94 inches, the Macan is a compact and dynamic vehicle. The low center of gravity and wheel base of 110.51 inches provide enhanced driving stability, particularly when cornering.

These features, combined with a length of 184.29 inches (Macan Turbo: 185 inches), mean that the Macan has sporty proportions. Another distinctive feature of the Macan is the comparatively short overhangs of 36.38 inches at the front (Macan Turbo: 37.09 inches) and 37.40 inches at the rear, which also emphasize its sports car character. The luggage compartment volume is 17.7 cubic feet, which expands to 53 cubic feet when the back seats are fully folded down.

### **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 shade 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 sports car 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 and passenger side can be adjusted. Adaptive sports seats with 18-way adjustment for the driver and front passenger are also available as an option, and are 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 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**

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 help 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 brake system of the Porsche Macan automatically brakes the vehicle involved in a crash to reduce the residual kinetic energy inherent following the initial collision. The multi-collision brake function 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 helping to ensure 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 maneuver at an even higher rate of deceleration. As a general rule, the assistance system brakes until a residual vehicle speed of 6 mph 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 optional 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 keep assist 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 center 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 center console, with buttons located within easy reach to ensure quick, intuitive operation. As with all Porsche models, the ignition is positioned to the left of the steering wheel.

The instrumentation is also typical 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 color 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 center of the console, the CDR Plus audio system, which is fitted as standard and features a high-resolution, 7-inch color 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 devices, 11 speakers and a total output of 235 watts.

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

### **Burmester® sound system for exceptional 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, Boxster, 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 speakers, including an active subwoofer with a 10 inch diaphragm diameter and an integrated 300-watt Class D amplifier. The total system output is more than 1000 watts.

### **Bose® Surround Sound system**

The Bose Surround Sound system features 14 speakers, 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 auditory 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 iOS® and Android® devices. This app facilitates use of content such as online radio with personalized web-based music, news feeds, podcasts and audio magazines, as well as weather information and integrated social networks such as Facebook or Twitter. Search results from Google "Points of Interest" can also be implemented as a navigation destination.

### **Innovative 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 iOS® and Android® devices. Among 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.

### **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 keep assist and lane change assist system, both of which enhance the level of active safety and driving comfort. The reversing camera facilitates reverse parking and maneuvering and also assists with hitching a trailer. What's more, the Adaptive Cruise Control system together with Porsche Active Safe supports the driver by emitting visual and audible warnings in dangerous situations, and also initiates additional braking under certain circumstances.

**Providing support: lane departure warning and lane change assist systems**

The optional lane keep assist helps the driver 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 37 mph and above. The driver can also activate and deactivate the assist systems independently using a button on the center console.

A 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 18 mph 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: Adaptive Cruise Control and Porsche Active Safe**

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 on the front of the vehicle, used to monitor the road ahead of the vehicle. ACC maintains a speed-dependent distance from a vehicle travelling ahead over four pre-selectable stages, and automatically adjusts the driving speed, if necessary down to a halt.

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 sensitized. 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.



### **Excellent vision and clear signals: lighting systems in the Macan**

The lighting systems and design of the Porsche Macan deliver 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. Bi-Xenon™ headlights are fitted as standard on the Porsche Macan.

Bi-Xenon™ headlights with PDLS are also available as an option (fitted as standard in the Macan Turbo). These feature projector type technology, including static and dynamic cornering lights with the Porsche Dynamic Light System (PDLS).

The dynamic cornering light swivels the low beam headlights towards the inside of a corner, depending on the steering angle and driving speed; the static cornering light activates the auxiliary headlights to illuminate the corner.

The Macan S and Macan Turbo feature 4-point LED technology daytime running lights. Fog lights are also included as standard for all Macan models to improve visibility, even in poor weather conditions. The Macan S has round halogen fog lights integrated in the front end. On the Macan Turbo, these lights use LED technology.

The tail lights also use 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 sports car characteristics of the Macan. The sculpted design is particularly striking and makes the Macan unmistakable – by day and by night: The circular brake light emphasizes the slender details of the horizontal tail light, simultaneously accentuating the direction the sculpted light effect, which is just as impressive by day as it is by night and ensures that the vehicle is easily recognizable.

**The light comfort package**

An optional light comfort package provides pleasant illumination in the vehicle interior. All lights are implemented using LED technology. The package includes 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.

## Porsche Exclusive and Tequipment

### **Customizable and unique**

Porsche Exclusive and Porsche Tequipment offer customization solutions down to the last detail. The range of products for the Macan includes interior, exterior, performance packages and accessories. Including a SportDesign package, a sport exhaust system, dark-colored headlight surrounds, LED rear lights and additional wheel and tire combinations.

The SportDesign package emphasizes the dynamic nature of the Macan and includes parts that have been developed as stand-alone components, such as the front end, sideskirts, rear fascia, rear center panel and roof spoiler lip. The SportDesign package is available in the same color as the vehicle exterior or in High-Gloss Black paint to create color contrasts with the main body color.

The sport exhaust system from Porsche Exclusive and Tequipment features a modified rear muffler and quad tailpipes. The tailpipes are available in either black or silver chrome-plated high-gloss stainless steel making a visual and acoustic option.

The Bi-Xenon headlights in black feature the Porsche Dynamic Light System (PDLS) as standard. Another lighting option includes the LED rear lights are dark red, while some of the inner components of the lights are finished in black.

A highlight of the Porsche Exclusive and Tequipment range for the Macan are the Sport Classic 21-inch wheels. The design is a modern interpretation of the legendary “Fuchs wheel”. The wheel is made from forged aluminum, which reduces the unsprung weight to enhance driving performance. The Sport Classic wheel is available in High-Gloss Black, Platinum Satin Gloss and GT Silver Metallic.

The interior packages from Porsche Exclusive and Tequipment for the Macan are designed to add a special touch while behind the wheel. For example, the dashboard trim and the door panel trim can be fitted in the Exclusive White Washed Oak, exterior matching paint color or upholstered in leather. Other interior features can be painted exterior color or upholstered in leather such as the frame of the Porsche Communication Management (PCM) system.

The creativity and individuality of the customer determines how unique they will make their Macan. A vehicle given the Porsche Exclusive and Tequipment stamp will often be the only one of its kind in the world. The specialists from Porsche Exclusive and Tequipment rely on highly skilled workmanship, exclusive materials and great attention to detail to make all customer requests a reality. The same level of care and attention can be seen in the range of accessories. These products include child seats, roof racks and car care products, all of which are available from Porsche Dealers.

All Porsche Exclusive and Tequipment products are designed by the same highly qualified engineers and designers who are responsible for developing the Macan. All products undergo extensive quality and durability testing at the Porsche Development Center in Weissach, Germany.

## Production

### **Eco-friendly plant for Porsche Macan**

Porsche is manufacturing the Macan in one of the most innovative and sustainable automotive plants in the world. Situated approximately 124 miles south of Berlin in the German city of Leipzig, approximately USD 677 million has been invested to prepare for production of the fifth Porsche model line. The Porsche Cayenne and Panamera models are already manufactured in Leipzig, with 83,208 Cayenne and 27,056 Panamera vehicles produced in 2012. The addition of the Macan line represents a significant increase in production volume at the plant. Once production of the new SUV is fully up and running, up to 50,000 Macan will be manufactured in Leipzig every year. Porsche is more than doubling the workforce in Leipzig, increasing employee count from 1,150 to 2,550.

In preparation for production of the Macan, Porsche has newly constructed a 42 acre extension, while the assembly plant has been transformed into a full-scale production plant. The production area is three times the original size and features an energy-efficient body assembly facility as well as one of the world's most environmentally friendly paint shops.

### **Sustainable production**

Thanks to new and innovative technology, Porsche will reduce annual CO<sub>2</sub> emissions from the plant by almost 17,000 tons in comparison to conventional systems. Sustainable solutions are a common theme throughout the new body assembly facility and paint shop in particular.

Installation of solar panels on the roof, made from photovoltaic cells, are expected to generate up to 800,000 kWh of electricity per year. In the body assembly facility, an innovative cooling system for the robotic welding guns will reduce annual electricity consumption by over 365,000 kWh, equivalent to the annual electricity consumption of more than 70 four-person households in Western Europe.

A new filtering system has been developed for the paint shop that reduces paint particle emissions to an absolute minimum, while processing 2.3 million m<sup>3</sup> of air (intake, circulation and exhaust) every hour, with a wet-chemical purification process for the exhaust air. 80% of the heat required for the paint shop is supplied on a carbon neutral basis thanks to a sustainable alliance with a neighboring biomass power plant. As a result, CO<sub>2</sub> emissions are expected to be reduced by more than 8,000 tons per year. Also, surrounding the state-of-the-art plant, the 18 acres of land will have 1,100 new trees.

### **A detailed look at the plant expansion project**

The Leipzig site is the second most important production facility after Porsche's main plant in Stuttgart-Zuffenhausen. The Leipzig plant was originally opened in August 2002 for production of the first generation of the Cayenne and was expanded in 2007 for assembly of the Panamera. Located in Leipzig, Porsche is one of only a handful of automotive manufacturers around the world to have its own (FIA-certified) test track and road course.

Customers have the option for European Delivery onsite at the customer center and can receive instruction on specific features from an instructor with motorsport experience. The decision to produce the Macan model line at Leipzig was made in 2011. From then on, everything happened very quickly, the foundation for the plant expansion was laid in October of 2011. In June 2012, Porsche opened the body assembly facility and three months later the first machines were being installed. The first Macan preproduction bodies were ready for internal analysis 16 months after the groundbreaking ceremony. The Macan bodies are manufactured by 370 robots in an 8.5 acre area. The steel and aluminum pressed body parts are built in less than four hours with approximately 5,200 spot welds.

Construction of the new paint shop was completed at almost exactly the same time as the body assembly facility. The foundation construction for the 1,181 ft. long, 236 ft. wide and 98 ft. high building started in October 2011, while the shell construction started in March of 2012. The 14.8 acre complex was completed in November of 2012. By August 2013, less than a year and a half since the start of construction, new employees and 81 robots were able to paint the first Macan body.

In total, almost 660,000 Cayenne and Panamera models were manufactured by the end of September 2013 and have production has been uninterrupted during the Leipzig expansion. Since the start of Macan preproduction, the three Porsche model lines are assembled in parallel using a highly flexible production method known as mixed production. Meaning the same production line builds gasoline, diesel, hybrid (Cayenne S Hybrid) and parallel plug-in hybrid (Panamera S E-Hybrid) models.