

## Engine and performance

# Agility and efficiency

The new Macan has completely revamped drive systems. Porsche now equips the Macan S with a newly developed 6-cylinder V engine. The turbocharged engine with a displacement of three litres delivers 260 kW (354 hp) and develops a maximum torque of 480 Nm. This corresponds to an increase of 10 kW (14 hp) compared with the previous model. As a result, the acceleration time from standstill to 100 km/h is reduced by 0.1 second to 5.1 seconds with the Sport Chrono Package, the top speed is reached at 254 km/h.

There is a further developed four-cylinder turbocharged engine with a displacement of two litres under the bonnet of the Macan. This delivers 180 kW (245 hp) and has a maximum torque of 370 Nm. The Macan accelerates from zero to 100 km/h in 6.7 seconds and reaches a top speed of 225 km/h. The new petrol engines are equipped with a gasoline particulate filter in Europe and comply with the emission standard Euro 6d-Temp.

## **New V6 engine with central turbo layout**

The six-cylinder engine of the Macan S is a high-tech power unit. Used for the first time in the Panamera, the engine has been introduced for the Cayenne and now also for the Macan. The most conspicuous feature is the mono turbocharger located in the inner V in the so-called central turbo layout. The short exhaust gas paths between the combustion chambers and the turbocharger ensure outstanding and immediate responsiveness, which perfectly complements a dynamic driving style.

The new twin-scroll turbocharger provides high torque in the low engine speed range. At the same time, it contributes to enhanced responsiveness. With twin-scroll technology, the exhaust gas flows are continuously fed to the turbine wheel as separate streams. This significantly reduces any charge cycle disadvantages. The further-developed combustion chamber geometry with central injector facilitates efficient mixture preparation. In addition to the increase in the power output per litre from 113 to 118 hp, the exhaust emissions have also been improved. Up to three injections per working cycle optimise combustion and thus reduce the noxious constituents in the exhaust gas.

Both cylinder heads of the V engine have integrated exhaust manifolds. In addition to the reduction in weight and the number of components, this design has the advantage that the exhaust manifold can be integrated into the cooling circuit. This increases the efficiency at high loads, and the fuel consumption decreases.

## **Optimised inline four-cylinder engine**

The inline four-cylinder engine of the Macan is designed as an especially sporty and efficient power unit – with a boost pressure of one bar, charge air cooling, direct petrol injection and variable valve timing. VarioCam Plus continuously adjusts the intake and exhaust camshafts and additionally controls the exhaust valve lift. Thanks to the enhanced combustion chamber geometry, the Macan complies with all globally valid emission limits. In Europe, the combination with a particulate filter results in a slight reduction in the nominal power output from 185 kW (252 hp) to 180 kW (245 hp). The exhaust tract of the four-cylinder engine is equipped with one gasoline particulate filter (GPF), while two filters are used on the six-cylinder engine. The exhaust gas is routed into alternately closed channels downstream of the catalytic converter and flows through the particulate filter

walls. The filter is regenerated by active and passive measures and is designed to be maintenance-free for the service life of the vehicle. The thermal management of the engines has been optimised once more by demand-based coolant pump control. This means that the engine and catalytic converters reach their optimum operating temperature more quickly.

Spontaneous power development is one of the main characteristics of the Macan. The Porsche dual-clutch transmission (PDK) was adapted so that the potential of the new engines can be fully exploited. In Sport mode, the transmission is now even more responsive and allows very fast gear changes. In Normal mode, the PDK shifts rapidly and comfortably to higher gears. This saves fuel and increases comfort when driving long distances. In combination with the adaptive cruise control (ACC), the modified PDK now also offers coasting mode, which additionally reduces fuel consumption under real driving conditions. The optimised Auto Start Stop function also makes a further contribution to increased efficiency. This function now already switches off the engine when coasting to a stop at a traffic light. The Auto Start Stop function is automatically deactivated in Sport and Sport Plus driving modes.

### **New: Sport Chrono Package with mode switch**

The Sport Chrono Package is now also operated in the Macan by means of the mode switch integrated in the steering wheel. In addition to the Normal, Sport and Sport Plus driving modes, it is also possible to select an Individual mode. The driver can store an individual setup here and can activate it directly with the mode switch. The Sport Response button in the middle of the mode switch allows the driver to boost the responsiveness of the Macan for 20 seconds at the push of a button so that the maximum performance is immediately available. The sports car among compact SUVs then reacts to accelerator pedal commands much more spontaneously and achieves optimum acceleration values more quickly. The Sport Response function can be activated any number of times.

In combination with the optional Sport Chrono Package, the Porsche Stability Management (PSM) additionally offers the separately selectable mode PSM Sport. With this especially sport setup, ambitious drivers can get even closer to the limit range of the Macan. The PSM always remains active in the background. PSM Sport mode can be activated independently of the currently selected driving mode.