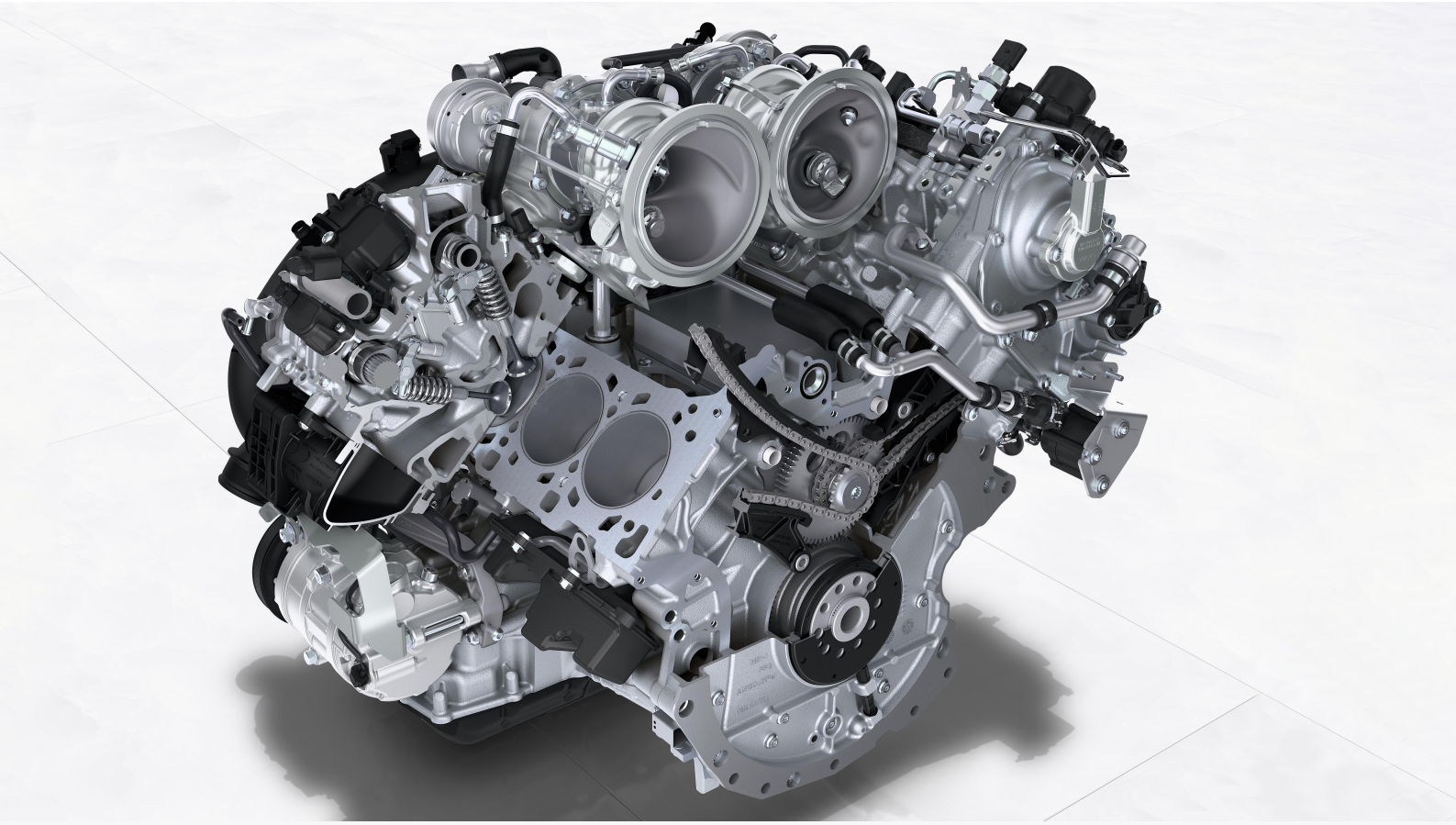


Powerful biturbo engine with central turbo layout

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19/07/2019 The Macan Turbo

Macan Turbo: Fuel consumption combined 9.8 l/100 km; CO2 emissions combined 224 g/km

The 2.9 litre engine that powers the new Macan Turbo is currently Porsche's highest performing V6 engine and is already used in the Cayenne and Panamera models. In particular, the combustion process with central injector, charge cycle and charging have all been optimised on the gasoline particulate filter-equipped biturbo powerplant. As with all Porsche vee engines, it has been designed with a central turbo layout where the turbochargers are arranged inside the vee of the cylinders. The very short exhaust gas paths between the combustion chambers and the turbochargers thereby ensure outstanding and immediate responsiveness, which will be especially appreciated when the car is being driven dynamically.

A comparison with the previous engine clearly demonstrates the major step forward in development: output has increased from 294 kW (400 PS) to 324 kW (440 PS) and displacement has been reduced from 3.6 to 2.9 litres. This is equivalent to a 37 per cent increase in output per litre from 111 PS to 152 PS. The maximum torque of 550 Nm is available between 1,800 and 5,500 rpm, while the NEDC fuel consumption is 9.8 l/100 km.

Better connection between engine and chassis

Both cylinder heads 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 efficiency under high loads and fuel consumptions decreases. It also practically eliminates the need for full-load enrichment for component protection because the temperature level is lowered.

A new engine mount with a driving dynamics support ensures an even better connection between engine and chassis. The steering is more direct and agile on turn-in and stability is improved when accelerating out of bends due to the cornering forces of the outer tyres being used in a more controlled manner.

A seven-speed PDK dual-clutch transmission and Porsche Traction Management (PTM) including intelligent all-wheel drive continue to be tasked with power delivery. The new Macan Turbo with optional Sport Chrono Package accelerates from a standstill to 100 km/h in 4.3 seconds – three tenths faster than the previous Turbo. Without the Sport Chrono Package, the new Turbo does it in 4.5 seconds. Top speed increases by 4 km/h to 270 km/h.

Normal, Sport, Sport Plus and Individual driving modes

The PDK gearbox has also been re-engineered to improve acceleration. In Sport mode, the transmission is even more responsive, with very fast gear changes. In Normal mode, the PDK shifts up rapidly and comfortably, saving fuel and increasing comfort when long distances are being driven. In combination with the adaptive cruise control (ACC), the modified PDK now also offers a coasting mode, which further reduces fuel consumption in real-world driving conditions. The optimised Auto Start Stop function makes a further contribution to increased efficiency, switching off the engine when the car is coasting to a stop. The Auto Start Stop function is automatically deactivated in Sport and Sport Plus driving modes.

The all-wheel drive PTM optimally distributes power to the wheels in every dynamic driving situation. As well as in dynamic driving situations, this also has advantages when towing. For example: with a towing capacity of 2.4 tonnes and a towbar load of 96 kg, most leisure activities are no problem for the new Macan Turbo.

The Sport Chrono Package is now operated via a steering wheel-mounted mode switch. In addition to Normal, Sport and Sport Plus driving modes, it is also possible to select Individual mode, where the driver can store an individual setup and activate it directly via the mode switch. The Sport Response button in the middle of the mode switch allows the driver to boost the responsiveness of the Macan Turbo for 20 seconds, making maximum performance immediately available. The sports car among compact SUVs then reacts to throttle pedal commands with more immediacy and achieves optimum acceleration values more quickly. In combination with the optional Sport Chrono Package, Porsche Stability Management (PSM) additionally offers a separately selectable mode called PSM Sport. With this dynamically focussed set-up, keen drivers can take the Macan Turbo closer to the limit. PSM always remains active in the background and PSM Sport mode can be enabled regardless of the selected driving mode

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