911 Turbo: Combined fuel consumption 11.1 l/100 km; Combined CO_2 emissions 254 g/km
911 Turbo Cabriolet: Combined fuel consumption 11.3 l/100 km; Combined CO_2 emissions 257 g/km

Engine and drivetrain

Leap in performance thanks to enhanced turbocharger technology

The six-cylinder boxer engine in the 911 Turbo, with its increased output of 580 PS and displacement of 3,745 cm^3, now features symmetrical turbochargers with variable turbine geometry and electrically controlled bypass valves. In conjunction with the redesigned charge air cooling system and the use of piezo injectors, this improves responsiveness, performance, torque characteristic and revving ability.

The new six-cylinder engine is aspirated by an almost completely new intake system. For this purpose, the previous routing of process air and charge air cooling has been swapped round: part of the process air now flows through the characteristic Turbo air intakes in the rear side sections. In front of the air filters now situated in the rear wings, two other airflows through the rear lid grille have now also been incorporated. The new 911 Turbo thus has four air intakes with a larger overall cross section and lower resistance, which improves the engine's efficiency.

Two symmetrical turbochargers with variable turbine geometry and larger dimensions replace the previous identical parts. The impellers (compressor and turbine wheels) now rotate in opposite directions on the right and left sides of the vehicle. The diameter of the turbine wheels has been increased by five millimetres to 55 millimetres, while the 59 millimetre compressor wheel is now three millimetres larger. This increases potential air throughput on both the exhaust and fresh air sides, which in turn influences torque and power output. The wastegate flaps are electrically controlled with stepper motors. The advantage: active and complete opening of the wastegates after a cold start means that the catalytic converters light off earlier. Boost pressure control is also faster and more precise. Further downstream in the intake system, compressed air flows through two newly positioned charge air coolers that are now 14 percent larger. They are now located directly over the engine in a central position under the rear lid grille.

New sports exhaust system available as an option

For the first time, Porsche is offering an optional sports exhaust system for the 911 Turbo. Like the standard system, it features electric, continually adjustable exhaust flaps, solving the conflict between emotion, interior noise comfort and legal requirements. The

specially developed interior flow routing of the sports exhaust system creates a particularly distinctive sporty sound typical of Turbo models. Two oval tailpipes are a distinguishing visual feature. The standard exhaust system has two rectangular chrome-plated twin tailpipes.

New eight-speed dual-clutch transmission in Turbo specification

The torque of up to 750 Nm and power output of 427 kW (580 PS) place high demands on the drivetrain – particularly with an extremely dynamic driving style. The new 911 Turbo is ideally prepared for this. The PDK is based on the gearbox from the current 911 Carrera series and has been adapted for the power developed by the Turbo engine through the use of optimised steel plates and a reinforced gear set. Driving pleasure has also been increased: thanks to the new lightning gearshifts, the 911 Turbo reacts even faster and more spontaneously. These gearshifts are generally used at high engine speeds and loads, both in manual mode as well as when Sport Plus mode is activated. In addition, all gears have new ratios: the first gear is now shorter and eighth gear longer than the previous seventh gear. Compared with the seven-speed transmission in the previous models, the new eight-speed PDK offers a host of improvements. The driver can immediately feel the difference in terms of comfort, performance and efficiency.

Performance-enhanced all-wheel drive

Like the PDK transmission, the Porsche Traction Management (PTM) all-wheel drive has also been adapted to the increased power. With the additional water cooling and reinforced steel plates, the front-axle transmission can transmit significantly more torque. The transfer case in the new 911 Turbo can now distribute up to 500 Nm to the front wheels. A new prop shaft that is both lighter and more stable, with just one universal joint, transmits power to the front axle.

Sport Chrono package with the newly integrated Porsche Track Precision app

Driving pleasure can be enhanced even further with the Sport Chrono package. This package includes PSM Sport mode, dynamic engine mounts as well as a stop watch and the Porsche Track Precision app. Different driving profiles can be activated by means of a new mode switch with Sport Response button. The driver can also select the innovative Wet mode using the mode switch.

Innovative Wet mode provides assistance on wet road surfaces

The Porsche 911 leads the way with an innovative system for detecting significantly wet road surfaces. Wet mode uses acoustic sensors in the front wheel housings to detect swirled-up splash water, and in this way can assess how wet the road is. This makes it fundamentally different from rain sensors for controlling windscreen wipers, which only react optically to water droplets on the windscreen, entirely independent of road conditions. The response behaviour of the PSM and PTM systems is preconditioned if wet road conditions are detected. At the same time, the system informs the driver as to how wet the road is and recommends manually switching to Wet mode. This function is integrated in the mode switch. If the driver activates Wet mode, the PSM, PTM,

aerodynamics, PTV Plus and drive responsiveness are adapted for best possible driving stability. The PTM transfers more all-wheel torque to the front axle to increase traction and improve driving stability. The rear spoiler moves into the Wet mode position, the front spoiler is retracted, the accelerator pedal characteristics are flatter and PSM Off or Sport mode are deactivated.

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