Panamera Turbo E-Hybrid with high electric performance

12/04/2024 Panamera Turbo E-Hybrid with high electric performance

Efficiency and performance are core values for Porsche. With the new generation of the Panamera, Porsche is once again heightening this focus. The Panamera Turbo E-Hybrid (Panamera Turbo E-Hybrid: Fuel consumption* combined (WLTP) 1.7 – 1.2 l/100 km, Fuel consumption with depleted battery combined 11.7 – 10.5 l/100 km, Electric power consumption* combined (WLTP) 29.9 – 27.6 kWh/100 km, CO emissions* combined (WLTP) 39 – 27 g/km, CO2 class B , CO2 class with depleted battery G) is one of a total of four variants with a plug-in hybrid drive that Porsche will launch successively for the third-generation car. With a total output of 500 kW (680 PS) and torque of 930 Nm, the Turbo E-Hybrid makes its debut at the top of the model line, succeeding the previous Panamera Turbo S in its range-topping role. The extensively revised 4.0-litre V8 twin-turbo engine and a newly developed electric motor enable impressive driving performance and long-lasting electric performance. The Panamera Turbo E-Hybrid reaches a top speed of up to 140 km/h in pure electric mode with an output of 140 kW/190 PS and torque of 450 Nm from the new electric motor. If the Panamera Turbo E-Hybrid taps into its full power, it can accelerate from 0 to 100 km/h in 3.2 seconds

and reach a top speed of 315 km/h.

The heart of the powertrain system remains a compelling combustion engine. Porsche's continually refined eight-cylinder engine meets demanding exhaust standards worldwide with further reductions in fuel consumption and emissions without losing any of its dynamic performance. The engine has new turbochargers that work according to the monoscroll principle. Compared to the twin-scroll chargers in the previous model, this shortens the warm-up phase of the catalytic converters. This allows them to work at full performance more quickly. It also raises the maximum permissible exhaust gas temperature. In addition, Porsche has increased the peak pressure in the combustion chambers to 140 bar. These measures substantially shorten the warm-up phase and increase efficiency during more vigorous use.

The upgraded powertrain dispenses with cylinder deactivation. Instead, it adjusts the valve lift to a low or high level with actuators on the intake camshafts. At low loads, the engine works with short opening times and minimal lift to achieve the highest possible efficiency. Under high loads, the valves open wide and for a long time in order to achieve a high cylinder charge and therefore achieve high torque levels combined with optimised CO2 emissions. Special magnetoresistant camshaft sensors determine the positions of the camshafts in real time and thereby enable the engine control system to set the valve lift and valve opening times in the best possible way. By optimising insulation, engineers were also able to reduce unwanted background noise and heighten the exhilarating character of the charismatic engine note.

Electric motor integrated into the transmission housing

Porsche combines the 4.0-litre V8 twin-turbo engine in the Panamera Turbo E-Hybrid with a new electric motor. Rather than being a supplementary component of the drive package, it is deeply integrated into the design of the gearbox. Dispensing with an independent electric motor housing and placing it in the housing of the transmission itself saves around five kilograms in weight. An internal rotor, an electric motor in which the stator surrounds the rotor, is used. This design promotes a more spontaneous and dynamic response.

The design of the powertrain prioritises the electric motor. The engine decoupler is now open in the initial position, so by default the electric motor alone drives the vehicle. It is only when the power of the eight-cylinder engine is required that the decoupler closes and engages the engine into the rest of the drivetrain.

The electric motor is now also more efficient. By switching from water to oil cooling and integrating this into the transmission's ail circuit, Porsche also optimises the heat output of the electric motor. This allows a higher power output and increases the recuperation capacity of the electric motor. The Panamera Turbo E-Hybrid recuperates up to 88 kW of power – an increase of 19 kW. When decelerating, the vehicle's energy recuperation operates down to a speed of just two km/h.

More electric performance

A new high-voltage battery powers the electric motor of the Panamera Turbo E-Hybrid. This compact module is integrated into the rear of the vehicle to save space and has a capacity of 25.9 kWh. It enables an electric range of up to 91 km in the combined WLTP cycle or 83 – 93 km in the city cycle. Despite this increase in range of about 45 per cent compared to its predecessor, the space the new battery takes up is comparable with that of the previous generation. This is because optimising cell chemistry has resulted in a higher power density. And yet despite the larger battery capacity, the charging time continues to reduce: all E-Hybrid models are equipped with an 11 kW AC charger as standard. At suitable charging stations and wall boxes, the battery can be charged in roughly two hours and 39 minutes.

Porsche is also further refining the E-Hybrid driving modes of the Panamera and linking them more closely to the navigation. In E-Charge mode, the drive system operates in hybrid mode in city traffic below 55 km/h. Only at higher speeds in out-of-town driving does it use the engine's power to charge the high-voltage battery. In the Sport and Sport Plus driving modes, the Panamera now charges the battery to 20 and 30 per cent respectively. In the previous model, it was 30 or 80 per cent. This increases efficiency without compromising performance.

The rear-wheel-drive Panamera (Panamera: Fuel consumption* combined (WLTP) 10.5 – 9.7 l/100 km, CO emissions* combined (WLTP) 239 – 219 g/km, CO2 class G) and the all-wheel-drive Panamera 4 (Panamera 4: Fuel consumption* combined (WLTP) 11.2 – 10.2 l/100 km, CO emissions* combined (WLTP) 253 – 230 g/km, CO2 class G) are equipped with optimised and performance-enhanced 2.9-litre twin-turbo engines. They have been prepared for the fulfilment of future emissions standards with extensive internal engine measures. With a power output of 260 kW (353 PS) and torque of 500 Nm, they outperform their equivalents in the previous car by 17 kW (23 PS) and 50 Nm. The performance upgrade shortens the sprint from 0 to 100 km/h to 5.3 seconds (5.1 sec. with the Sport Chrono package) for the Panamera and 5.0 seconds (4.8 sec. with the Sport Chrono package) for the Panamera 4. The top speed increases to 272 km/h in the Panamera and 270 km/h in the Panamera 4. A newly developed sports exhaust system optionally intensifies the charismatic sound of the six-cylinder engines.

All variants benefit from the new eight-speed Porsche Doppelkupplung (PDK), which has been further enhanced exclusively for the Panamera. It improves interaction with the engine and enables particularly fast shift times or particularly smooth gear changes depending on the driving mode selected. Its design also takes into account the significantly increased drive torque of the new Panamera. And it can handle a torque of more than 900 Nm with aplomb.

MEDIA ENQUIRIES

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Consumption data

Panamera 4
Fuel consumption / Emissions

WLTP*
Fuel consumption* combined (WLTP) 11.2 – 10.2 l/100 km
CO emissions* combined (WLTP) 253 – 230 g/km
CO2 class G Class

Panamera Turbo E-Hybrid
Fuel consumption / Emissions

WLTP*
Fuel consumption* combined (WLTP) 1.7 – 1.2 l/100 km
Fuel consumption with depleted battery combined 11.7 – 10.5 l/100 km
Electric power consumption* combined (WLTP) 29.9 – 27.6 kWh/100 km
CO emissions* combined (WLTP) 39 – 27 g/km
CO2 class B Class
CO2 class with depleted battery G Class

Panamera
Fuel consumption / Emissions

WLTP*
Fuel consumption* combined (WLTP) 10.5 – 9.7 l/100 km
CO emissions* combined (WLTP) 239 – 219 g/km
CO2 class G Class

Panamera E-Hybrid models
Fuel consumption / Emissions

WLTP*
Fuel consumption* combined (WLTP) 1.7 – 1.0 l/100 km
Fuel consumption with depleted battery combined 11.7 – 9.2 l/100 km
Electric power consumption* combined (WLTP) 29.9 – 25.4 kWh/100 km
CO emissions* combined (WLTP) 39 – 23 g/km
CO2 class B Class
CO2 class with depleted battery G Class

*Further information on the official fuel consumption and the official specific CO emissions of new passenger cars can be found in the "Leitfaden über den Kraftstoffverbrauch, die CO-Emissionen und den Stromverbrauch neuer Personenkraftwagen" (Fuel Consumption, COEmissions and Electricity Consumption Guide for New Passenger Cars), which is available free of charge at all sales outlets and from DAT (Deutsche Automobil Treuhand GmbH, Helmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen, www.dat.de).

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