

The new V8 with 48V ISG

Excitement on velvet paws

The top-of-the-range engine of the new Mercedes-Benz GLS is the M 176 in the GLS 580 4MATIC (combined fuel consumption: 10.1-9.8 l/100 km; combined CO₂ emissions: 230-223 g/km)¹ – a new electrified V8 petrol engine with a displacement of 3982 cc, 48-volt on-board electrical system and integrated starter-generator (ISG). ISG is responsible for hybrid functions such as EQ Boost or energy recovery, while allowing fuel savings that were previously reserved for high-voltage hybrid technology. The development focused on the long-term improvement of the consumption and emissions figures. At the same time, the displacement was to be reduced to adapt to the tax legislation in important target markets, while fulfilling the customers' expectations on performance. As a result, the engine produces an output of 360 kW (489 hp) and 700 Nm of torque. An additional 250 Nm of torque and 16 kW/22 hp output are available temporarily via EQ Boost.

The new twin-turbo is one of the most economical V8 petrol engines in the world. The special features of the V8 (internal code: M 176) include cylinder shut-off under partial load. The variable valve control system CAMTRONIC deactivates four cylinders at once. This reduces the gas exchange losses while improving the overall efficiency of the remaining four cylinders in combustion mode by shifting the operating point towards higher loads.

Cylinder shut-off is active in the DYNAMIC SELECT drive modes Comfort or ECO in the rev range from 900 – 3250 rpm. Above that engine speed or when the driver strongly presses the accelerator pedal, cylinders 2, 3, 5 and 8 are switched on within milliseconds. The transition between the two operating modes is seamless and with no loss of comfort for the occupants. A pendulum-type absorber reduces both fourth-order vibrations in eight-cylinder mode as well as second-order vibrations in four-cylinder mode.

¹ Figures for fuel consumption and CO₂ emissions are provisional and were determined by the Technical Service for the certification process in accordance with the WLTP test method and correlated into NEDC figures. EC type approval and a certificate of conformity with official figures are not yet available. Differences between the stated figures and the official figures are possible.