
Audi S6 Avant and S7 with 3.0 V6 TDI

This takes the three-liter V6 TDI's total power output to 257 kW (349 hp). Power transmission is handled by the eight-speed tiptronic automatic transmission, which always operates in tandem with quattro permanent all-wheel drive.

The 3.0 TDI is notable for its power delivery and high efficiency. Its displacement of 2,967 cm³ develops 257 kW (349 hp) of power. Its specific output is 117.9 hp per liter of engine capacity, and its specific torque is 235.9 Nm (174.0 lb-ft) per liter.

The V6 TDI weighs only around 190 kilograms (418.9 lb) and has concentrated high tech to offer in every department. Its common rail system injects fuel at a pressure of up to 2,500 bar. Crankshaft, pistons, connecting rods and oil management meet high-performance requirements, and sophisticated measures have been taken to reduce friction in the crankshaft and camshaft drive. The cooling circuits of the crankcase and cylinder heads are kept separate so that the engine oil warms up rapidly from a cold start – the heads have dual-section water jackets. The coolant flow is directed to the oil cooler, the EPC, the BAS and the compressor case of the turbocharger as needed.

The exhaust turbocharger, with a turbine wheel measuring 50 millimeters (2.0 in) in diameter, generates a relative boost pressure of up to 2.4 bar. Its variable turbine geometry (VTG) is optimized for low-loss flow. The external low-pressure exhaust gas recirculation (EGR) only draws off the exhaust gas after the particulate filter so that the full mass flow can power the supercharger, significantly increasing its effectiveness. Operation of 3.0 TDI is ultra-refined.

“Clean power” - coasting for up to 40 seconds: the 48-volt mild-hybrid system

While the EPC boosts the performance, the mild-hybrid system (MHEV) helps to improve fuel efficiency. The 48-volt MHEV system comprises a belt alternator starter (BAS) and a lithium-ion battery with a capacity of 10 Ah housed in the vehicle floor beneath the luggage compartment. The BAS is connected to the crankshaft. During deceleration it can recover up to 8 kW of power, which it then stores in the lithium-ion battery. When the driver accelerates again, the BAS reacts instantly by restarting the engine.

MHEV technology allows for start/stop operation from a speed as low as 22 km/h (13.7 mph). Thanks in part to the integration of the mild-hybrid system and the vehicle sensors, the S models realize a fuel saving of up to 0.4 liters in real driving conditions and can coast for up to 40 seconds with the combustion engine deactivated.

On that basis, the S TDI models combine impressive driving dynamics with high efficiency, low fuel consumption and low emissions. All S TDI models have homologation to the Euro 6d temp emission standard. The WLTP values correlate to an NEDC fuel consumption for the Audi S6 sedan of 6.3 or rather 6.2 liters of diesel per 100 kilometers (37.3 or 37.9 US mpg) and CO₂ emissions of 165 or rather 164 grams per kilometer (265.5 – 263.9 g/mi), depending on the tires/wheels used. The figures for the S6 Avant are 6.5 liters per 100 kilometers (36.2 US mpg) and 171 g/km (275.2 g/mi), and 6.5 liters/100 km (36.2 US mpg) and 170 g/km (273.6 g/mi) for the S7 Sportback.

Status 4/2019

Audi S6 Sedan: Combined fuel consumption in l/100 km: 6.3 – 6.2 (37.3 – 37.9 US mpg)*;

Combined CO₂ emissions in g/km: 165 – 164 (265.5 – 263.9 g/mi)*

Audi S6 Avant: Combined fuel consumption in l/100 km: 6.5 (36.2 US mpg);

Combined CO₂ emissions in g/km: 171 (275.2 g/mi)

Audi S7 Sportback: Combined fuel consumption in l/100 km: 6.5 (36.2 US mpg);

Combined CO₂ emissions in g/km: 170 (273.6 g/mi)