



# Mercedes-Benz S 63 AMG

**Press Information**

## Contents

Page

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### Short version

**New powertrain with the AMG 5.5-litre V8 biturbo engine** 2  
Higher performance, lower consumption – the new S 63 AMG with a power output of up to 420 kW (571 hp)

**At a glance:** technical highlights of the AMG V8 biturbo engine and the AMG SPEEDSHIFT MCT 7-speed sports transmission 11

### Long version

**Engine technology: development goals and design** 12  
Perfect combination of performance and efficiency

**Power transmission and start/stop function** 20  
Intelligent solutions for maximum driving pleasure and low fuel consumption

**AMG sports suspension and high-performance braking system** 24  
Driving dynamics and ride comfort at the highest level

**Active and passive safety** 28  
Unique combination provides consummate occupant protection

**Design and equipment** 31  
Stylish and effortless superiority in the typical AMG look

**Individualisation** 37  
AMG Performance Studio and designo reflect the owner's personal style

**History** 39  
A comparison between generations of a special kind

**S 65 AMG** 43  
The exclusive crowning glory for enthusiasts

**Technical data** 49

The descriptions and information in this press kit apply to the international Mercedes-Benz model range and may vary from country to country.

New powertrain with the AMG 5.5-litre V8 biturbo engine

## Higher performance, lower consumption – the new S 63 AMG with a power output of up to 420 kW (571 hp)

**Affalterbach – The top-of-the-range S-Class V8 model, the Mercedes-Benz S 63 AMG, is to benefit from a completely newly developed powertrain. The AMG 5.5-litre V8 biturbo engine with a peak output of up to 420 kW (571 hp) and a torque of up to 900 Nm, in combination with the unique AMG SPEEDSHIFT MCT 7–speed sports transmission, contributes towards a considerable reduction in consumption and emissions, while at the same time increasing maximum power and torque. With a fuel consumption of 10.5 litres per 100 kilometres (NEDC combined), the new high-performance Saloon not only undercuts its direct competitors – it is also more than 25 percent more economical in terms of its fuel consumption than the previous model with naturally aspirated V8 engine.**

The new S 63 AMG marks the start of a new chapter in the "AMG Performance 2015" drive strategy: Mercedes-AMG is continuing this impressive story and is meeting its promise to continuously reduce both the fuel consumption and emissions of new models with the new engine/transmission combination – while reaching new heights with the central AMG brand value of "performance".

According to Ola Källenius, head of Mercedes-AMG GmbH: "We are heading into a new era with the S 63 AMG: for the first time we have combined spray-guided direct petrol injection with biturbocharging and the start/stop system. Together with the AMG SPEEDSHIFT MCT 7-speed sports transmission, we have reduced both fuel consumption and emissions significantly – while at the same time increasing output and torque."

The new AMG 5.5-litre V8 biturbo engine will play a significant role in the Mercedes-AMG model strategy over the coming year. The unique AMG

SPEEDSHIFT MCT 7-speed sports transmission will also help to ensure that future high-performance AMG vehicles benefit from an exciting and at the same economical transmission of power too. The new engine/transmission combination marks a further milestone in the successful history of Mercedes-AMG, which began back in 1967.

### **Direct petrol injection with spray-guided combustion and twin turbocharging**

Designated internally as the M157, the new V8 engine is a prime example of efficiency and features a whole host of impressive technological highlights: for the first time AMG is taking advantage of direct petrol injection with spray-guided combustion and piezo injectors. This technology enables improved fuel economy thanks to higher thermodynamic efficiency, which in turns leads to lower exhaust emissions. AMG has combined the spray-guided combustion with biturbocharging. Other highlights of the innovative, original eight-cylinder engine from Affalterbach include full aluminium crankcase, four-valve technology with variable intake valve timing, air/water charge air cooling, generator management and also standard Controlled Efficiency start/stop function. Compared with the AMG 6.3-litre naturally aspirated V8 engine with a displacement of 6208 cc, the new AMG 5.5-litre V8 biturbo engine achieves all this with a displacement of 5461 cc.

This high-tech package leads to a high output and torque yield, together with fuel consumption figures that are unrivalled in the competitive lineup. The AMG 5.5-litre V8 biturbo engine develops a peak output of **400 kW** (544 hp) and maximum torque of 800 Nm. In conjunction with the AMG Performance package these figures are increased to **420 kW** (571 hp) and 900 Nm. A look at the performance diagrams shows that no other engine in this output class achieves the figures delivered by the new AMG biturbo. The major difference between the two performance classes is an increase in the maximum charge pressure from 1.0 to 1.3 bar. In addition, the engine cover of the S 63 AMG with the AMG Performance package comes in genuine carbon fibre.

## **Quantum leap: fuel consumption reduced by more than 25 percent**

Page 4

With an NEDC fuel consumption of only 10.5 litres per 100 kilometres, the new S 63 AMG is 3.9 litres more economical than the previous model powered by the naturally aspirated AMG 6.3-litre V8 – despite an increase in output of **14 kW** (19 hp) and **34 kW** (46 hp) respectively, and in torque of 170 and 270 Nm. Engine specialists consider this achieved fuel saving of more than 25 percent to be nothing less than a quantum leap. CO<sub>2</sub> emissions have likewise been significantly reduced: at 244 grams per kilometre, the figure is almost 30 percent lower than for the previous model. Both performance variants have identical fuel consumption and CO<sub>2</sub> figures.

With figures like these, the new S 63 AMG is not only considerably better than all its competitors, but also more fuel-efficient than much less powerful cars in this segment.

## **Sports car-level performance**

At the same time the S 63 AMG delivers superior performance at sports car level: the high-performance saloon accelerates from zero to 100 km/h in 4.5 seconds, and has an electronically limited top speed of 250 km/h. The 100 km/h mark is reached in just 4.4 seconds with the AMG Performance package, with the top speed increased to an electronically limited 300 km/h.

It is not only the unrivalled torque delivery of this turbocharged eight-cylinder that makes the heart beat faster, as the agile responsiveness with no irritating charger delay leads to an effortlessness and dynamism previously unknown in this output class. All perfectly matched by the powerful, sonorous engine note. Moreover, this AMG high-performance engine naturally meets all the requirements with respect to smooth, quiet running and the comfort on long journeys that is to be expected of a Mercedes.

Key data at a glance:

Page 5

	<b>S 63 AMG</b>
<b>Displacement</b>	5461 cc
<b>Bore x stroke</b>	98.0 x 90.5 mm
<b>Compression ratio</b>	10.0:1
<b>Output</b>	<b>400 kW (544 hp) at 5500 rpm</b> <b>420 kW (571 hp) at 5500 rpm*</b>
<b>Max. torque</b>	800 Nm at 2000 - 4500 rpm 900 Nm at 2250 - 3750 rpm*
<b>Engine weight (dry)</b>	204 kg
<b>Power/weight ratio</b>	0.41 kg/hp 0.39 kg/hp*
<b>Fuel consumption NEDC combined</b>	10.5 l/100 km
<b>CO<sub>2</sub> emissions</b>	244 g/km
<b>Acceleration 0 - 100 km/h</b>	4.5 s 4.4 s*
<b>Top speed**</b>	250 km/h 300 km/h*

\* with AMG Performance package; \*\* electronically limited

### **AMG SPEEDSHIFT MCT 7-speed sports transmission**

Power is transferred by the AMG SPEEDSHIFT MCT 7-speed sports transmission used exclusively by AMG, which is already familiar from the SL 63 AMG and E 63 AMG and combines high emotional appeal with outstanding driving dynamics, impressive comfort and a high level of efficiency. The wet start-up clutch replaces a conventional torque converter, and helps to save fuel. The exemplary fuel economy is also in large measure due to the standard start/stop function. This system is active in the transmission's Controlled Efficiency ("C") mode, and switches the eight-cylinder engine off when the car comes to a stop. In "C" mode the sports saloon always starts off in second gear, and the transmission

shifts to the next, higher gears at a decidedly early stage. With its high torque at low engine speeds, the V8 engine encourages a smooth, effortless driving style. Page 6

The eight-cylinder biturbo engine also features the generator management system familiar from the E 63 AMG: whenever the engine is on the overrun or when braking, kinetic energy is used to charge the battery rather than being wasted as heat in the usual way. In all other operating modes a combination of onboard network and generator management enables the generator to be kept at a low voltage. This reduces the load on the engine and makes for fuel savings of around 0.15 litres per 100 kilometres according to the NEDC standard, and up to 0.2 l/100 km in city traffic with its frequent overrun and braking phases.

### **Engine production – tradition of hand-built excellence**

Like all other AMG engines, the new eight-cylinder biturbo is assembled by hand in the AMG engine shop taken into commission in 2002. Highly-qualified technicians assemble the M157 according to the "one man, one engine" philosophy, maintaining the very strictest quality standards. This painstaking care is attested to by the signature on the characteristic AMG engine plate.

### **Long tradition of powerful AMG V8 engines**

Powerful eight-cylinder engines are an inseparable part of AMG's corporate history. Established in 1967, the company immediately caused a stir with the 300 SEL 6.8 AMG which succeeded in taking second place at the 24-hour races at Spa-Francorchamps (Belgium). The AMG racing saloon was technically based on the Mercedes-Benz 300 SEL 6.3. With an engine output of **184 kW** (250 hp) at 4000 rpm and a top speed of 220 km/h, this luxury V8 saloon was Germany's fastest regular production car at the time. Classic tuning as well as an enlarged displacement from 6330 to 6835 cc resulted in an increase in output to **315 kW** (428 hp) at 5500 rpm and in torque from 500 to 608 Nm.

A further milestone in the AMG engine story was the M117, the first eight-cylinder unit with four-valve technology. With a displacement of 5.6 litres,

**265 kW** (360 hp) and 510 Nm of torque, this V8 accelerated the Mercedes-Benz 300 CE 5.6 AMG to a top speed of 303 km/h in 1987. This made the coupé the fastest German car in series production, and American fans reverently christened it "The Hammer".

Another important engine in the history of AMG was the supercharged AMG 5.5-litre V8 introduced in 2001: the M113 K developed an output of up to **428 kW** (582 hp) and torque of 800 Nm. The supercharged AMG 5.5-litre V8 in the SLR McLaren of 2003 was even more powerful – the M155 developed up to **478 kW** (650 hp) and 820 Nm. 2005 saw the debut of the AMG 6.3-litre V8 engine; depending on the model, the naturally aspirated, high-revving M156 developed up to **386 kW** (525 hp) and 630 Nm. Exclusively reserved for the new SLS AMG, the likewise 6.3-litre M159 has a maximum output of **420 kW** (571 hp) and maximum torque of 650 Nm.

### **Numerous victories in the "International Engine of the Year Awards"**

The supercharged AMG 5.5-litre V8, the AMG 6.3-litre V8 and the AMG 6.0-litre V12 biturbo were all able to win the Best Performance Engine category in the International Engine of the Year Awards. The AMG 6.3-litre V8 also won in 2009 and 2010 in the "Above 4 litres" class.

### **New AMG triple-spoke light-alloy wheels**

In visual terms, the new S 63 AMG is distinguished by a number of subtle touches: "V8 Biturbo" lettering on the mudguards points to the new powertrain. Also new are the AMG triple-spoke light-alloy wheels, painted in titanium grey and with a high-sheen finish, and fitted with 255/40 or 275/40 R 19 tyres. In the interior, the S 63 AMG boasts a newly designed AMG instrument cluster with

"AMG V8 Biturbo" starting screen. The standard PASSION leather upholstery has been enhanced with new, contrasting colour stitching.

A new range of attractive optional appointments is now also available for the S 63 AMG: the Bang & Olufsen BeoSound AMG high-end sound system, developed especially for the S-Class, ensures an exceptional listening experience. With a total output of 1200 watts, 15 loudspeakers, acoustic lens tweeters in the A and B-pillars as well as a digital sound processor (DSP), it transforms the Saloon into a full-blown concert hall with perfect acoustics.

### **Active Lane Keeping Assist and Active Blind Spot Assist**

The unique combination of innovative camera and radar-based driver assistance systems has been enhanced even further with immediate effect with a view to perfecting the vehicle's active and passive safety. The new Active Lane Keeping Assist comes into play when the S 63 AMG unintentionally strays over a solid line on the right or left of a lane or on the outside of a bend. In such cases the Electronic Stability Program ESP<sup>®</sup> applies the brakes to the wheels on the opposite side of the vehicle to prevent it from unintentionally straying from its lane.

Also new is the Active Blind Spot Assist, which warns the driver by displaying a red warning in the glass of the relevant exterior mirror when it detects that changing lanes would be too dangerous. If the driver ignores the warning signal and a vehicle in an adjacent lane comes too close, the ESP<sup>®</sup> takes corrective action by applying the brakes to the wheels on the opposite side of the vehicle.

### **Crosswind stabilisation, Torque Vectoring Brake and Direct-Steer system**

The AMG sports suspension based on Active Body Control (ABC) provides crosswind stabilisation as standard equipment: thanks to this function, influences caused by crosswinds are compensated for, or – in the case of strong gusts – reduced to a minimum. ABC compensates against the effect of crosswinds by adjusting the wheel load distribution within milliseconds, using the yaw-rate and lateral acceleration sensors of the ESP<sup>®</sup>.

Also making up the standard equipment is the Torque Vectoring Brake: when cornering, brief direct application of the brakes has an effect on the vehicle's inner rear wheel so that the saloon corners precisely and under control at all times. The Torque Vectoring Brake is an additional feature of the Electronic Stability Program and not only noticeably improves responsiveness but also active handling safety in critical conditions. The driving experience is further heightened thanks to the Direct-Steer system: with its variable ratio depending on steering angle, it helps to ensure a more direct response when cornering, and therefore more responsive handling – in brief: enhanced driving pleasure at the wheel of the Mercedes-AMG S-Class.

### **AMG high-performance braking system with double floating brake caliper**

Based on the ADAPTIVE BRAKE system, the AMG high-performance braking system continues to provide optimum fade resistance, deceleration and sensitivity. The front axle features a double floating brake caliper. This exclusive technology combines the advantages of a sliding-caliper disc brake – reduced heat transfer to the brake fluid and clear advantages in terms of comfort thanks to the brake lining guide mechanism – with the efficiency of an extra large fixed caliper brake.

Exclusive optional extras are also available for the S 63 AMG from the AMG Performance Studio:

- AMG Performance package: increase in maximum power of 20 kW (27 hp) and maximum torque of 100 Nm, genuine carbon fibre AMG engine cover
- AMG double-spoke forged wheels, painted in black with a mirror finish and fitted with 255/35 R 20 front and 275/35 R 20 rear tyres
- AMG Performance steering wheel with Alcantara inserts in the grip areas
- AMG trim in black piano lacquer/carbon fibre

The S 63 AMG is available in short or long-wheelbase versions, and will celebrate its market launch at the end of September 2010. Prices at a glance:

- S 63 AMG (short wheelbase): 128,800 euros (excl. VAT) / 143,752 euros (incl. 19% VAT)
- S 63 AMG (long wheelbase): 127,200 euros (excl. VAT) / 151,368 euros (incl. 19% VAT)

The AMG Performance package costs 7900 euros (excl. VAT) / 9401 euros (incl. 19% VAT).

### **Top-of-the-range S-Class models from Mercedes-AMG appeal to customers worldwide**

Exclusivity and dynamism, effortless superiority and high tech: both the S 63 AMG and the top-of-the-line V12 model, the S 65 AMG, embody all of these characteristics. Since their market launch some four years ago, the S-Class models from AMG have won the hearts of more than 10,000 customers around the world – turning them into the clear market leaders in the small yet highly exclusive high-performance luxury saloon segment. The twelve-cylinder S 65 AMG model now produces **463 kW** (630 hp) and will also be celebrating its market launch in September. The vehicle has a sales price of 192,500 euros (excl. VAT) / 229,075 euros (incl. 19% VAT).

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## The highlights of the new AMG V8-biturbo engine and the AMG SPEEDSHIFT MCT 7-speed sports transmission



- Direct petrol injection with piezo-electric injectors and spray-guided combustion
- Twin turbochargers with air/water intercooling
- Sophisticated engine electronics with Controlled Efficiency start/stop function and generator management
- Aluminium crankcase with ventilation holes to reduce friction
- Continuous camshaft adjustment on the intake and exhaust sides
- Demand-controlled engine oil pump
- AMG SPEEDSHIFT MCT 7-speed sports transmission with compact start-up clutch and three drive modes

## Perfect combination of performance and efficiency

**Emotional peak performance and enormous torque, agile power delivery and a characteristic engine sound, comfort on long journeys and hallmark Mercedes reliability: expectations are high when Mercedes-AMG introduces a new high-performance engine – and its very first biturbo eight-cylinder is no exception. Two criteria are inexorably gaining in importance, namely efficiency and economy. Mercedes-AMG is confronting the challenges of the future, and demonstrating that dynamic performance can be perfectly combined with fuel economy.**

The new AMG 5.5-litre biturbo engine combines performance with efficiency to a previously unknown extent. This is made possible by a unique combination of innovative high-tech systems such as direct petrol injection, twin turbochargers, air/water intercooling and the Controlled Efficiency start/stop function.

Mercedes-AMG is systematically following the trend towards increasing efficiency with its new V8 biturbo engine: with a displacement of 5461 cubic centimetres it is precisely 747 cc below the 6208 cc of the naturally aspirated AMG 6.3-litre V8. Nonetheless it considerably betters it in terms of output and torque. It develops a peak output of **400 kW** (544 hp) and maximum torque of 800 Nm. In conjunction with the AMG Performance Package these figures increase to **420 kW** (571 hp) and 900 Nm. The torque curve in particular shows that no other engine in this output class is able to match the figures delivered by the new AMG biturbo unit.

Despite an increase in output of **14 kW** (19 hp) and **34 kW** (46 hp) respectively, and in torque of 170 and 270 Nm compared to the naturally aspirated V8, which develops 386 kW (525 hp) and 630 Nm, AMG engineers have been able to reduce

fuel consumption and CO<sub>2</sub> emissions considerably. With an NEDC fuel consumption of only 10.5 litres per 100 kilometres, the new S 63 AMG betters its predecessor by 3.9 litres. This equates to a fuel saving of more than 25 percent, which engine specialists consider to be nothing less than a quantum leap. CO<sub>2</sub> emissions have likewise been significantly reduced: at 244 grams per kilometre, the figure is almost 30 percent lower than for the previous model (344 g/km).

The achievement of these efficiency and environmental aims has no negative effects whatsoever on dynamic performance. On the contrary, as the new AMG 5.5-litre V8 biturbo fully lives up to AMG's brand commitment to "performance": the S 63 AMG accelerates from zero to 100 km/h in 4.5 seconds, and has a top speed of 250 km/h (electronically limited). With the AMG Performance package, the high-performance saloon reaches the 100 km/h mark in 4.4 seconds and reaches a top speed of 300 km/h (electronically limited).

Key data at a glance:

	<b>S 63 AMG</b>	<b>S 63 AMG with AMG Performance package</b>
<b>Cylinder arrangement</b>	V8	V8
<b>Cylinder angle</b>	90°	90°
<b>Valves per cylinder</b>	4	4
<b>Displacement</b>	5461 cc	5461 cc
<b>Bore x stroke</b>	98.0 x 90.5 mm	98.0 x 90.5 mm
<b>Cylinder spacing</b>	106 mm	106 mm
<b>Compression ratio</b>	10.0:1	10.0:1
<b>Output</b>	<b>400 kW (544 hp) at 5500 rpm</b>	<b>420 kW (571 hp) at 5500 rpm</b>
<b>Output per litre</b>	<b>73 kW (100 hp)</b>	<b>77 kW (104 hp)</b>

	<b>S 63 AMG</b>	<b>S 63 AMG with AMG Performance package</b>
<b>Max. torque</b>	800 Nm at 2000 - 4500 rpm	900 Nm at 2250 - 3750 rpm
<b>Torque per litre</b>	146 Nm	165 Nm
<b>Maximum engine speed</b>	6500 rpm	6500 rpm
<b>Mean pressure</b>	18.5 bar	20.8 bar
<b>Engine weight (dry)</b>	204 kg	204 kg
<b>Power/weight ratio</b>	0.37 kg/hp	0.36 kg/hp
<b>Fuel consumption NEDC combined</b>	10.5 l/100 km	10.5 l/100 km
<b>CO<sub>2</sub> emissions</b>	244 g/km	244 g/km
<b>Acceleration 0 - 100 km/h</b>	4.5 s	4.4 s
<b>Top speed</b>	250 km/h*	300 km/h*

\* electronically limited

### **Combination of twin turbocharging and direct petrol injection**

Mercedes-AMG is presenting an attractive high-tech package with its combination of biturbo charging and direct petrol injection with spray-guided combustion. The innovative injection technology brings decisive advantages with respect to fuel consumption and exhaust emissions, thanks to higher thermodynamic efficiency. Particularly fast and precise piezo-electric injectors spray the fuel into the combustion chambers, ensuring a homogenous fuel/air mixture and highly effective combustion.

A electric low-pressure pump delivers the fuel from the tank to a high-pressure pump in the boot with a pressure of six bar. The fuel pressure in the high-pressure rail is controlled between 100 and 200 bar on a fully variable and demand-related basis.

Two turbochargers located next to the cylinder banks supply the eight cylinders with fresh air. At their maximum speed of 185,000 rpm under full load, the two turbochargers force 1750 kg of air into the combustion chambers per hour. The maximum charge pressure is 1.0 bar, and 1.3 bar with the AMG Performance package. Thanks to their specific, compact construction – the turbine housings are welded to the exhaust manifold – there are significant space advantages and the catalytic converters also heat up more rapidly.

The new AMG V8 is the first turbocharged engine to dispense with the usual blow-off valve. This neat solution enabled the compressor housing to be made extremely compact. To ensure agile responsiveness with no time lag, all the air ducts in the intake tract are as short as possible. The wastegate valve, which reduces the pressure in the exhaust system during negative load changes, is vacuum-controlled via an electropneumatic converter. This allows dethrottling under partial loads, which in turn lowers the fuel consumption.

As was already the case in the AMG 6.0-litre V12 biturbo engine, the new eight-cylinder direct-injection unit uses particularly efficient air/water intercooling. The low-temperature cooler with its water circulation is space-savingly accommodated within the V of the cylinder banks. It effectively cools down the intake air compressed by the turbochargers before it enters the combustion chambers, and maintains a constantly low intake temperature under full load. A large radiator at the car's front end ensures defined cooling of the water circulating in the low-temperature circuit. This guarantees a high output and torque yield in all ambient temperatures and operating conditions. Extremely short charge air ducting makes for outstanding responsiveness. The stainless steel pressure pipes for the fresh and charge air are produced by the hydroforming process, have a wall thickness of only 0.8 millimetres and are designed for particularly low pressure loss.

## **Aluminium crankcase with Silitec cylinder liners**

Page 16

The crankcase of the new AMG 5.5-litre V8 biturbo engine is of diecast aluminium. The low (dry) engine weight of just 204 kilograms is the result of uncompromising lightweight construction methods, and leads to the car's very balanced weight distribution. The bearing cover for the main crankshaft bearings is of grey cast iron, and is bolted to the crankcase for high rigidity. Cast-in Silitec cylinder liners ensure that the eight pistons operate with low friction. Drilled pulsation holes in the crankcase lead to a higher output and fuel savings under partial load: above the bearing blocks there are longitudinally drilled holes which connect adjacent crankcase cavities. Normally the upward and downward movement of the pistons causes air to be forced into and extracted from the sump, which leads to increased internal friction losses and therefore a reduction in output. The pulsation holes prevent this by ensuring effective pressure compensation between the cavities.

The forged crankshaft of high-grade 38MnS6BY steel alloy rotates in five main bearings, has eight counterweights and has been optimised with respect to torsional rigidity, inertia, low rotating masses and a long operating life. A two-mass viscous damper mounted at the front reliably eliminates vibrations. Each connecting rod journal on the crankshaft carries two forged, cracked connecting rods. In the interests of low mechanical friction and high wear resistance, the lightweight pistons have a metallic contact surface. Pressure-controlled oil-spray nozzles in the crankcase ensure that the highly stressed piston crowns are efficiently cooled.

## **Four-valve technology with variable camshaft adjustment**

Perfect charging of the combustion chambers is ensured by large intake and exhaust valves, of which there are four per cylinder. The exhaust valves, which are subject to high thermal loads, are hollow and sodium-cooled. Four overhead camshafts operate the 32 valves via low-maintenance, low-friction cam followers. The infinitely variable camshaft adjustment within a range of 40 degrees on the intake and exhaust sides depends on the engine load and engine speed, leading to outstanding output and torque values. This also results in consistent idling at a

low speed. Depending on the engine speed, valve overlap can be varied for the best possible fuel/air supply to the combustion chambers and efficient removal of the exhaust gases. The variable camshaft adjustment is carried out electromagnetically via four pivoting actuators, and is controlled by the engine control unit. The camshafts are driven by three high-performance silent chains, which have considerable advantages in noise comfort compared to cylinder roller chains.

### **Efficient oil supply and water cooling**

Efficient oil delivery under all load and operating conditions is ensured by an oil pump with an electrically controlled compression stage. The oil pressure can be varied between two and four bar, which has advantages in terms of friction and fuel consumption. An extraction stage integrated into the oil pump for the two turbochargers prevents oil from being entrained into the charge air and exhaust gases, thereby helping to reduce emissions even further. Both the sump and the extraction point have been optimised for maximum lateral acceleration and efficient lubrication. The oil capacity is 10.5 litres.

The combined water/oil cooling system is a particularly clever solution: initially the engine oil only flows through the oil/water heat exchanger. If the cooling performance of the very compact cooler is insufficient, the flow is directed through the external engine oil/air cooler by an oil thermostat. The advantage of this system is that the engine oil warms up more rapidly, as the engine coolant warms up faster and the oil is later cooled by the coolant. A selectable water thermostat ensures rapid warming of the coolant when starting the engine and driving off.

The engine coolant is cooled on the particularly effective crossflow principle. There is a transverse flow of coolant through both the crankcase and the cylinder heads. Additional cooling slots in the cylinder head ensure more efficient cooling of the combustion chambers, which has advantages during combustion: it enables earlier ignition timings to be chosen without incurring the risk of knocking.

## **Highly efficient engine electronics for every function**

Page 18

All the engine functions are executed and controlled by a particularly efficient Bosch MED 17.7.3. control unit. This state-of-the-art engine computer not only controls the direct petrol injection, charge pressure, camshaft adjustment and variable oil supply, but also communicates with all the other onboard control units. The microprocessor has more than 30,000 different parameters and functions stored in its memory, and is able to perform up to 260 million individual operations per second. To reduce the load on the engine control unit, the eight individual ignition coils have an integral electronic module known as an ignition amplifier at each cylinder. These ensure a strong ignition spark at all engine speeds and under all load conditions. Eight high-voltage powerstages are responsible for highly precise fuel distribution to the piezo-electric injectors.

## **Effective emissions technology with new catalytic converter boxes**

Low exhaust emissions, compliance with country-specific standards and a characteristic AMG engine sound – the requirements for the exhaust system of the new AMG 5.5-litre V8 biturbo engine were manifold and complex. The S 63 AMG complies with all the current EU-5 emission standards, as well as meeting all the requirements of the US market (LEV-II standard, On-Board Diagnosis II and lambda sensor diagnosis).

The turbochargers are welded to the exhaust manifolds, while air gap-insulated manifolds with a wall thickness of only 1.0 millimetres ensure a rapid catalytic converter response. For efficiency and to save space, this concept has a tandem catalytic converter housing on each side of the vehicle: adjacent to the firewall, two thin-walled ceramic substrates are grouped into each housing. This solution makes the previous, additional underbody catalytic converters unnecessary. The two ceramic substrates differ to ensure rapid and efficient emissions control: the front one is coated with palladium, while the rear one has a bimetal coating of palladium and rhodium. One lambda sensor per row of cylinders is located in front of each catalytic converter housing, and there is a lambda diagnostic sensor between each of the two thin-walled substrates.

The lambda sensors are necessary for demand-related lambda control. In all operating conditions, the constituents of the intake mixture can be precisely controlled to avoid damaging the catalytic converters. This also benefits the fuel consumption under full load, as the mixture can be leaner than in engines without this control system.

### **Twin-pipe AMG sports exhaust system for a characteristic sound signature**

The twin-pipe AMG sports exhaust system has a pipe cross-section of 70 millimetres from the manifolds to the rear silencers. When designing the sound, the aim was to create a perfect synthesis of perceived dynamism and the comfort on long journeys that is the hallmark of a Mercedes. The goal of the developers was to achieve an emotional experience when accelerating and double-declutching, but unobtrusiveness at constant speeds. Unpleasant frequencies or droning noises were effectively eliminated during a series of painstaking tests. The sports exhaust system emits a sonorous eight-cylinder sound that is typical of AMG, while the striking chrome twin tailpipes feature a new design.

## Intelligent solutions for maximum driving pleasure and low fuel consumption

**Seven gears, three driving modes and a double-declutch function: the power transmission of the new S 63 AMG guarantees great emotional appeal and sheer driving pleasure. At the same time the AMG SPEEDSHIFT MCT 7-speed sports transmission makes a considerable contribution to fuel economy – and specifically in combination with the new Controlled Efficiency drive mode with start/stop function and generator management included as standard features. Accordingly the AMG MCT transmission impresses with a combination of unique functions which no other manufacturer offers in this form.**

The AMG SPEEDSHIFT MCT 7-speed sports transmission is an innovative power transfer system that made its debut in the high-performance SL 63 AMG Roadster in 2008, and has also been in use in the E 63 AMG since summer 2009. It combines the sporty, direct and agile feedback of a manual transmission with the maximum convenience of an automatic transmission. Featuring seven gears, three driving modes and a double-declutch function, the 7-speed sports transmission offers superb versatility. MCT stands for Multi-Clutch Technology and indicates that only clutch elements are employed to perform gearshifts.

A compact wet start-up clutch, which runs in an oil bath, replaces the conventional torque converter. Thanks to its low rotational inertia, the transmission responds instantaneously and dynamically without the losses typical of a torque converter transmission – thereby helping to save fuel. The AMG sports transmission also impresses with its low weight of just 80 kilograms, which has been made possible through the use of lightweight magnesium for the transmission housing. Vibrations are effectively eliminated by a new, two-stage torsion damper, with resulting benefits in perceived passenger comfort.

During its development and adaptation to the AMG 5.5-litre V8 biturbo engine, the AMG engineers paid special attention to the new driving mode Controlled Efficiency ("C"). The emphasis was on delivering minimum engine speed coupled with a reduced number of gearshifts in all driving situations. When moving off in "C", the MCT transmission always selects second gear and shifts decidedly early to the next higher gears if the driving style permits. At 60 km/h for instance, sixth gear will already be engaged – not only improving fuel consumption but also noise levels. Thanks to its powerful, readily available torque even at low engine speeds, the AMG V8 biturbo unit is absolutely ideal for this style of driving. Controlled Efficiency also means convenient gearshifts and a "soft" accelerator response set-up for outstandingly smooth power transfer.

### **Controlled Efficiency start/stop function as a new feature**

The Controlled Efficiency start/stop function is also being used in an AMG model for the first time. This system is standard equipment in the S 63 AMG, and permanently active in the fuel economy driving mode "C". Once the driver comes to a halt e.g. at a red traffic light, the engine is automatically switched off. Once the brake pedal is released or the accelerator is depressed, the engine is immediately restarted and the car is able to move off quickly. Intelligent technology guarantees a comfortable and immediate starting procedure: a crankshaft sensor which recognises the direction of rotation registers the resting position of all eight pistons. For an automatic engine start, the cylinder with the most favourable piston position receives an injection of fuel into its combustion chamber. The precise piezo-electric injectors greatly assist this process, as they make particularly fast starts possible.

The engine management ensures that the engine is only switched off if certain preconditions are met. The starter battery must have sufficient charge, for example, and the engine must be at the necessary operating temperature for efficient emissions control. The same applies to the interior temperature selected by the driver: if this has not yet been reached, the engine is not switched off when

the car comes to a stop. The onboard network management system makes sure that active audio, telephone or video functions are not interrupted by the start/stop function.

A green "ECO" symbol in the AMG main menu shows the driver that the Controlled Efficiency start/stop function is active. Should one of the above criteria be preventing activation of the system, this is shown in the central display by the message "Start/stop inactive" and a yellow "ECO" symbol. In the two more performance-oriented driving modes "S" (Sport) and "M" (Manual), the start/stop function is always deactivated. If required, the driver can also switch it off while in "C" mode as well.

The eight-cylinder biturbo engine also features the generator management system familiar from the E 63 AMG: whenever the engine is on the overrun or when braking, kinetic energy is used to charge the battery rather than being wasted as heat in the usual way. In all other operating modes a combination of onboard network and generator management enables the generator to be kept at a low voltage. This reduces the load on the engine and makes for fuel savings of around 0.15 litres per 100 kilometres according to the NEDC standard, and up to 0.2 l/100 km in city traffic with its frequent overrun and braking phases.

### **Drive modes "S" and "M" for even more driving pleasure and dynamism**

The engine and transmission come across as much more agile in the "S" (Sport) mode. Accelerator pedal movements trigger a more direct traction response, making the downshifts more spontaneous. The engine speed is allowed to reach a higher level in each gear, while the gearshifts are around 25 percent faster than in "C". In the manual shift mode "M", gearshifts at full throttle take just 100 milliseconds, a reduction of 50 percent compared to "C". In "S" and "M" modes, the engine management system partially suppresses the cylinders: interrupting ignition and injection under full load leads to even faster gearshifts than before. The highly emotional vocals are an appealing side effect of this lightning-fast process.

Ultra-fast, spontaneous multiple downshifts are another forte of the AMG SPEEDSHIFT MCT 7-speed sports transmission. For instance, kickdown allows gearshifts straight from seventh down to fourth gear, or from fifth to second. In the "S" and "M" driving modes the automatic double-declutching function is active. Every manual or automatic downshift is accompanied by precisely metered double-declutching – incrementally from "S" to "M". And this not only adds to the driver's emotional experience: the load-free downshift minimises load-change reactions, which pays particular dividends when braking into bends – and also enhances safety in the wet or on ice.

#### **No automatic downshifts in manual "M" mode**

In manual "M" mode the driver also benefits from the high torque of the V8 biturbo engine, as there is no automatic downshift under full load and kickdown; the transmission remains steadfastly in the selected gear. Moreover, the AMG MCT 7-speed sports transmission does not perform an automatic upshift in manual mode when the rev limit is reached. In "M" mode the AMG instrument cluster displays the current gear and alerts the driver to the need for an upshift just before the needle reaches the red zone. This means that a particularly sporty driver can use the superior performance potential to its fullest extent. When approaching the lower rev limit, e.g. when braking the vehicle, there is an automatic downshift to the next lower gear.

The gears can be shifted using the steering wheel shift paddles – whatever the driving mode. The electronic key for selection of the three driving models is located to the left of the COMAND controller. The powerful electronic transmission control unit with its integrated 80 MHz processor guarantees immediate downshifts – for example when approaching traffic lights or if the driver requires fast acceleration when overtaking.

## Driving dynamics and ride comfort at the highest level

**The AMG sports suspension and high-performance ADAPTIVE BRAKE braking system of the S 63 AMG are the perfect complement to the effortlessly superior drive package: the combination of unique high-tech systems results in driving dynamics and ride comfort at the highest level.**

Based on Active Body Control (ABC), the AMG sports suspension all but entirely eliminates the body movements that occur when moving off, cornering and braking. Bends are negotiated with far less roll; the body roll caused by fast evasive manoeuvring is effectively suppressed. Other notable features of Active Body Control are the variable roll moment distribution between the front and rear axles, which the system carries out automatically according to the speed. The computer uses various acceleration sensors to obtain information on the current driving situation and compares this data with those from the pressure sensors in the spring struts and the level sensors on the control arms. The system then computes the control signals that the servo-hydraulic valves at the front and rear axle transform into precisely metered flows of oil.

Briefly pressing the Sport button next to the AMG instrument cluster changes the characteristics of the AMG sports suspension: the roll angle through fast corners is reduced further, the shock absorbers and springs also respond firmer to promote agility. At speeds of between 65 and 100 km/h, ABC automatically lowers the body by as much as 15 millimetres to reduce wind resistance. If more ground clearance is needed when driving on poor road surfaces, the level of the vehicle can be raised by 40 millimetres at a speed up to 30 km/h by simply pressing a button.

A further improvement in driving dynamics as well as active handling safety comes courtesy of the Torque Vectoring Brake. If the Electronic Stability Program ESP® detects the onset of understeer, short one-sided braking intervention on the vehicle's inside rear wheel generates a specific yawing moment around the vehicle's vertical axis within a fraction of a second. Consequently, the AMG S-Class handles precisely and remains under control at all times as well as also bolstering active handling safety by reducing the tendency to understeer.

### **Automatic crosswind stabilisation as standard**

The AMG sports suspension also comes as standard with automatic crosswind stabilisation. The ABC control electronics vary the wheel load distribution so that the effect of crosswinds is virtually compensated or reduced to a minimum. If the S 63 AMG is affected by a crosswind, the ABC control unit utilises the yaw-rate, lateral acceleration, steering angle and speed sensors of the Electronic Stability Program ESP® to trigger diagonal wheel load distribution instantly – for instance on the left front and right rear wheel. The associated steering effect reduces the effect of the crosswind. Crosswind stabilisation is activated at speeds above 80 km/h while travelling in a straight line or on slight bends. The function is deactivated if the driver himself makes heavy, brusque steering corrections.

Thanks to so-called loading adjustment, the active suspension control also takes the current vehicle weight into account as part of its calculations. As such the S 63 AMG is able to achieve identical levels of driving dynamics when in a laden condition too.

### **Purely mechanical Direct-Steer system with a host of benefits**

Less steering effort, more agile handling with the same outstanding straight-line stability – the Direct-Steer system in a nutshell, which is now fitted as standard. A key feature of the Direct-Steer system is the variable-ratio steering rack that operates using purely mechanical means. While the power steering around the

central position utilises an indirect ratio to promote excellent straight-line stability, this alters from a steering angle of around five degrees: really small steering angles are all it takes to perform precise cornering, noticeably improving handling on winding country roads. The steering angle requirements have also been modified, enabling the driver to steer the Saloon far more easily, particularly on urban roads. Compared with a steering system with a constant ratio, the number of revolutions from lock to lock is reduced by around 25 percent with the Direct-Steer system.

Another advantage of the purely mechanical Direct-Steer system is the absence of any elaborate actuators and complex sensors – with associated benefits in terms of weight, installation space and susceptibility to faults. The constant steering response is also advantageous compared with other variable steering systems that sometimes require the driver to adapt quickly to what are fast changing situations on the road.

The Direct-Steer system is based on the familiar speed-sensitive power steering system which reduces the power assistance as the road speed increases. Easy manoeuvrability on urban roads where large steering angles and thus a great deal of power assistance is required, is coupled with reduced support at high speeds, say on the motorway – all of which improves straight-line stability and handling safety.

### **AMG high-performance braking system based on ADAPTIVE BRAKE**

Based on the ADAPTIVE BRAKE system, the AMG high-performance braking system continues to set the benchmark for stopping power, sensitivity and fade resistance. The front axle features a double floating brake calliper; this technology combines the advantages of a sliding-calliper disc brake – reduced heat transfer to the brake fluid and clear advantages in terms of comfort thanks to the brake lining guide mechanism – with the efficiency of an extra large fixed calliper brake. At the rear, braking is handled by a large sliding frame-type calliper. Internally ventilated, perforated composite brake discs at the front and rear with a diameter of 390 and 365 millimetres respectively ensure the shortest

stopping distances, remarkable resistance to fading and outstanding sensitivity. Page 27

The hydraulic dual-circuit braking system is controlled electronically, permitting the inclusion of numerous driver assistance functions that improve safety and comfort – such as "priming" the braking system in critical situations: if the driver suddenly switches from the accelerator to the brake pedal before emergency braking, ADAPTIVE BRAKE increases the pressure in the brake lines and applies the pads to the brake discs, so that they can grip instantly with full force when the brake pedal is pressed. In wet weather, the system injects regular, short brake impulses to ensure that the film of water on the brake discs is wiped off and the brakes can work as effectively as possible. This automatic brake-drying function is always activated when the windscreen wipers have been in operation for a certain time; the driver does not notice the finely metered braking impulses.

After the S 63 AMG has been braked to a standstill, briefly pressing the brake pedal a little further is all that is required to activate the HOLD function. The car is then held by the brakes, even if the driver's foot comes off the brake pedal. In this way ADAPTIVE BRAKE prevents the car from rolling forward inadvertently when stopped at traffic lights or stuck in stop-and-go traffic, and from rolling back when facing a slope. The HOLD function is deactivated automatically when the car moves off.

#### **Attractive light-alloy wheels featuring a new AMG triple-spoke design**

AMG light-alloy wheels featuring a new triple-spoke design and painted in titanium grey with a high-sheen finish provide the contact with the road. 255/40 ZR 19 tyres are fitted on 8.5 x 19 wheels at the front, while 275/40 R 19 tyres are combined with 9.5 x 19 wheels at the rear.

Exclusive optional extras from the AMG Performance Studio include AMG double-spoke forged wheels, painted in black and with a high-sheen finish. The dimensions are: 255/35 R 20 tyres on 8.5 x 20 wheels (front) and 275/30 R 20 tyres on 9.5 x 20 wheels (rear).

## Unique combination of trend-setting driver assistance systems

**Throughout the world the Mercedes-Benz S-Class is synonymous with the ultimate in active and passive safety systems. A significant part of such systems is also made up of the unique combination of trend-setting camera and radar-based driver assistance systems. The latest innovations are called Active Lane Keeping Assist and Active Blind Spot Assist, both of which are available as optional extras.**

The combination of state-of-the-art assistance and protection systems turn the AMG S-Class into an "intelligent" partner which is able to "see", "feel", to respond "instinctively" to detected dangers and to act "on its own initiative" in order to avoid accidents or to reduce the severity of accidents. The vehicle makes use of cameras radar sensors which look far ahead, observe the conditions around the vehicle, and are able to interpret typical critical situations.

When the S 63 AMG unintentionally drives over a solid line to the right or left of a lane or on the outside of a bend, the new Active Lane Keeping Assist intervenes and prevents the vehicle from unintentionally leaving the lane. In such cases it applies the brakes to the wheels on the opposite side of the vehicle, using the sensor system of the Electronic Stability Program ESP®.

Similarly, when the new Active Blind Spot Assist system detects that changing lanes would be dangerous, it the driver by displaying a red warning in the glass of the relevant exterior mirror. If the driver ignores the warning signal and a vehicle in an adjacent lane comes too close, the ESP® takes corrective action by applying the brakes to the wheels on the opposite side of the vehicle.

The Night View Assist Plus with infrared camera (optional extra) is equipped with a special pedestrian detection function: as soon as the system detects pedestrians on the road ahead, they are highlighted on the display to make them more readily noticeable.

The images supplied by the windscreen camera are also used by the Speed Limit Assist, which is available as an optional extra. It recognises speed limit signs in passing and shows the relevant speed limit in the central display.

### **Drowsiness detection on the basis of more than 70 parameters**

Thanks to an innovative technology the S-Class has a very sensitive antenna for the attention level of its driver, and can warn him in time when he becomes drowsy. The ATTENTION ASSIST drowsiness detection system continuously monitors more than 70 different parameters. Once the evaluation electronics recognise the steering behaviour pattern that typically indicates the onset of drowsiness on the basis of information from the highly sensitive steering angle sensor, a warning signal is sounded and "ATTENTION ASSIST. Break!" appears in the instrument cluster. ATTENTION ASSIST is fitted as standard.

### **"Electronic crumple zone" for maximum occupant protection**

In addition, Mercedes-Benz has enhanced the wide and intermediate range radars for the optional extras Brake Assist PLUS (BAS PLUS) and DISTRONIC PLUS proximity control. Mercedes-Benz also offers another radar based system for the S-Class in the form of the PRE-SAFE<sup>®</sup> brake. If the driver is distracted and fails to recognise the immediate danger of a rear-end collision, or the warning signal of an assistance system, this system can intervene and brake the vehicle independently. The S-Class makes use of the latest development stage of this safety system: if the driver fails to react even after automatic, partial braking action, the PRE-SAFE<sup>®</sup> Brake activates the maximum braking pressure around 0.6 seconds before what is now recognised as an unavoidable accident - an

emergency braking action that can significantly mitigate the severity of the impact. The PRE-SAFE<sup>®</sup> Brake therefore acts as something like an "electronic crumple zone".

Page 30

## Stylish and effortless superiority in the typical AMG look

**Dynamic, exclusive, self-confident and effortlessly superior – these are the very attributes embodied by the new S 63 AMG. Exterior and interior styling as well as the extensive standard-equipment package meet even the most discerning requirements. The first-class workmanship makes for a consummate feel-good atmosphere, while ensuring outstanding comfort on long journeys. A new highlight in the comprehensive range of exclusive optional equipment is the Bang & Olufsen BeoSound AMG high-end sound system.**

Externally, the new S 63 AMG features a number of subtle updates. Enthusiasts will recognise the reference to the new powertrain with the "V8 Biturbo" lettering on the mudguards. Also boasting a new design are the AMG light-alloy wheels, with their unmistakable triple-spoke design, painted in titanium grey and with a high-sheen finish. They are fitted with 255/40 R 19 tyres at the front, and 275/40 R 19 tyres at the rear.

Athletic, striking, confident: the AMG styling includes the characteristic front apron with large cooling air intakes, side air outlets and also AMG-specific daytime driving lights featuring LED technology. Special side sill panels continue the vehicle's line through to the rear, where the diffuser-look AMG rear apron painted in the same colour as the vehicle body creates an eye-catching feature. The AMG sports exhaust system with two newly designed chrome twin tailpipes makes for a further highlight.

### **New "AMG V8 BITURBO" greeting on start screen**

After opening the driver's door, the driver of the S 63 AMG is welcomed with the new "AMG V8 BITURBO" start screen in the AMG instrument cluster – a clear

invitation to start the V8 biturbo engine straightaway. The AMG sports steering wheel with silver-coloured aluminium shift paddles, specially shaped grip area and perforated nappa leather around the steering wheel spokes, enables perfect control of the vehicle. The multifunction buttons on the left and right enable the driver to select numerous settings and call up information, for example in the AMG main menu: the activated transmission mode is displayed in the middle of the instrument cluster – the currently engaged gear and recommended upshifts are also shown in "M" mode. A new feature is the Controlled Efficiency start/stop function: a green "ECO" symbol in the AMG main menu tells the driver that it is enabled, while a yellow "ECO" symbol indicates that the "start/stop function is disabled".

The AMG main menu also provides the driver with information about engine oil and coolant temperatures. With the RACETIMER, the driver can calculate lap times - on a private racing circuit, for instance. The RACETIMER records the time for the fastest lap, the average and maximum speeds and the lap distance. The AMG instrument cluster in the S 63 AMG comes with a 320 km/h speedometer scale. One of the most eye-catching features in the interior is the exclusive analogue clock with its "IWC Ingenieur" design in the centre console.

### **PASSION leather upholstery with new contrasting stitching**

Standard equipment on the S 63 AMG includes 12-way electrically adjustable AMG sports seats with Memory package, Seat Comfort package with front active multicontour seats including massage and dynamic handling function, with seat heating and ventilation, PRE-SAFE<sup>®</sup> positioning function and NECK-PRO luxury head restraints. The PASSION leather upholstery boasts sporty, AMG-specific seat fluting and natural leather in the seat side bolsters, and also – as a new addition – contrasting colour stitching. This feature is to be found not only on the AMG sports seats, but also on the dashboard, the centre console, the door panelling, the rear bench seat as well as the parcel shelf.

The exclusive interior appointments on the S 63 AMG and S 65 AMG are available in three colour combinations: black/black, alpaca grey/basalt grey and cashmere beige/savanna beige. A selection of three wood trim finishes - dark eucalyptus

wood, dark burr walnut with a high-sheen finish, and burr walnut with a high-sheen finish - provides ample opportunities for tailoring the vehicle to your own personal tastes.

The extensive standard specification of the S 63 AMG includes (selection):

- Adaptive brake lights
- AMG door entry sills
- AMG floor mats
- AMG sports pedal cluster
- ATTENTION ASSIST
- COMAND
- ISOFIX and automatic child seat recognition
- Tilting/sliding glass sunroof, electric, with PRE-SAFE<sup>®</sup> closure function

### **Optional Bang & Olufsen BeoSound AMG high-end surround sound system**

As with the SLS AMG, a Bang & Olufsen BeoSound AMG high-end sound system is now also available for the S 63 AMG as an exclusive optional extra. Newly developed especially for the S-Class by AMG together with renowned Danish hi-fi specialists Bang & Olufsen, the system promises a unique listening experience. With a total output of 1200 watts, 15 loudspeakers, acoustic lens tweeters in the A and B-pillars as well as a digital sound processor (DSP), it transforms the saloon into a full-blown concert hall with perfect acoustics.

A distinguishing visual feature of the system is the four illuminated soft dome acoustic lens tweeters which are integrated into the mirror triangles and B-pillars, and which light up as soon as the sound system is switched on. Their special design, which has built-in lenses beneath a special disc, enables a broad horizontal and narrow vertical sound distribution, which helps to create the typical virtual sound stage experience for the vehicle occupants. This Acoustic Lens Technology, together with the futuristic design, was adopted from the Bang & Olufsen BeoLab 5 home loudspeakers which are taken as the absolute reference models in specialist circles. A mid-range speaker and woofer are installed in each

of the front doors, and a woofer in each of the rear doors. Two sub-woofers and two surround loudspeakers are housed in a special box in the parcel shelf, and a further surround loudspeaker is also accommodated in the centre of the dashboard. Another special feature is the construction of the loudspeakers: they are integrated into enclosed housings, and as such the vehicle body is not used as a resonating cavity – and the sound is not emitted outside the vehicle. Confidential phone calls, for example, cannot therefore be overheard outside.

A specific characteristic of the Bang & Olufsen BeoSound AMG high-end sound system is the excellent quality of the materials and workmanship: the high-quality loudspeaker covers are made of aluminium and feature laser-etched Bang & Olufsen lettering.

### **Two amplifiers with a total power output of 1200 watts**

The ultra-compact 750-watt Bang & Olufsen ICEPower<sup>®</sup> amplifier converts over 90 percent of the energy fed in into output, unlike conventional car hi-fi amplifiers which manage around 30 percent. The 450-watt DSP amplifier converts the stereo sound and the Dolby Digital 5.1 signal into surround sound, and is really the "brain" of the Bang & Olufsen BeoSound AMG high-end sound system. DSP stands for **D**igital **S**ound **P**rocessor. All functions can be operated using the COMAND APS via a special Bang & Olufsen menu.

Whether the vehicle is stationary or in motion, the Bang & Olufsen BeoSound AMG high-end sound system delivers consummate listening pleasure. The precision sound reproduction guarantees that original recordings can be heard as clearly as if they were being heard live. In other words: in acoustic terms, nothing is added, amplified or taken away. The personal taste in music of the people sitting in the vehicle is of secondary importance here, as is the source of that music. The occupants of the S 63 AMG have a choice between the realistic high-end "reference" studio sound and voluminous surround sound. At the same time, the so-called "sweet spot" – described by hi-fi experts as being that point at which sound is optimally received – can be shifted from the front, via the centre to the rear.

Listening pleasure is also possible with the Bang & Olufsen BeoSound AMG high-end sound system on long journeys in the S-Class, without having a tiring effect. A significant part of the reason for this lies with the dynamic road noise compensation: a microphone built into the roof lining is constantly delivering data on the current level of interior noise. The digital sound processor analyses all the wavebands and increases the volume as required depending on the vehicle speed - and not just generally, but individually for each speaker and for the different frequencies. The reason for this is it makes a difference to the human ear whether background noise is diffuse, as it is when it comes from airflow or from the tyres; or direct, as it is, for example, from the exhaust system when the vehicle is accelerating.

The new Bang & Olufsen BeoSound AMG high-end sound system can also be combined with SPLITVIEW as well as the Rear Seat Entertainment System.

The wide range of optional extras also includes (selection):

- Ambient lighting, adjustable in three colours
- Brake Assist PLUS
- DAB - digital radio
- DISTRONIC PLUS
- Parking package (reversing camera and PARKTRONIC incl. Parking Guidance)
- Driving Assistance package
- Rear Seat Entertainment package
- KEYLESS-GO package
- Climate control for rear seats
- Refrigerated compartment in rear seat backrest
- LED Light package incl. Intelligent Light System
- Night View Assist Plus
- Navigation package incl. COMAND APS
- Panoramic sliding sunroof

- PRE-SAFE® Brake
- Tyre pressure monitoring system
- TV tuner

Page 36

## AMG Performance Studio and designo reflect the owner's personal style

**Optional extras from the AMG Performance Studio and from designo – two bywords for exclusive style, superb individuality and uncompromising sportiness. Customers with their very own style can choose from a wide range of exclusive equipment and appointments for the S-Class AMG models.**

The AMG Performance Studio, which opened its doors in Affalterbach in 2006, aims to meet even the most discerning customer requirements and supplies AMG trim elements in black piano lacquer/carbon fibre which are available ex factory for S-Class AMG models. While the dashboard and the door trim are adorned with dazzling, black wood trim, both the front centre console and the folding rear armrest are trimmed in genuine carbon fibre. The high-grade material mix lends the interior a definite dynamic touch as an option – and subtly alludes to AMG's eminently successful motorsport heritage. The AMG performance steering with Alcantara inserts in the grip area not only feels good but also makes a striking visual impact.

AMG forged wheels painted in black with a mirror finish are also available for the S 63 AMG. The eye-catching twin-spoke wheels are fitted with 255/35 R 20 (front) and 275/35 R 20 (rear) tyres.

### **Exclusive designo line-up with designo Selection**

The entire designo range is available to provide further individualisation options. Ten different designo paint finishes can be combined with ten designo aniline leather appointments options – with the result that there are practically unlimited possibilities for customers to turn their personal preferences into reality. Particular highlights come courtesy of the three matt paint finishes designo

magno platinum, designo magno allanite grey, designo magno cashmere white, the high-sheen designo mystic brown paintwork, not to mention the designo aniline leather in deep white. The designo aniline leather colours deep white, deep black and light brown provide customers with even more individualisation options. When it comes to designo the customer can choose from six different exclusive trim options: natural maple grain and matt natural oak grain as well as two high-sheen piano lacquer trim options in black or champagne white. The unique designo stone trim elements made from genuine granite are available in two versions for the S-Class: Labrador blue pearl and Star Galaxy. To highlight the exclusivity of the designo trim elements, customers can adorn the rear air conditioning unit cover with handmade designo lettering in 925 sterling silver.

Mercedes-Benz is offering a high-end equipment package for the S 63 AMG with a long wheelbase and the S 65 AMG – all in the shape of the designo Selection. Customers are able to configure their S-Class according to their personal preferences and taste from all the designo paint finishes, designo leather colours and designo wood trim options. Other components of the package include a black roof liner in nappa leather with special fluting, a matching designo wood/leather steering wheel and designo lettering in solid 18-carat gold – hand-finished exclusively for the designo Selection – on the rear air conditioning unit cover.

## A comparison between generations of a special kind

**Wide, spectacular and clad in an authentic racing car outfit - two very special S-Class saloon models from the AMG stable. One is the racing touring car of 1971, the 300 SEL 6.8 AMG, and the other is the S 63 AMG "Thirty-Five". With identical sponsoring and the memorable start number "35", the high-performance model is a reminder of a historic success: on 25 July 1971, the bright red four-door saloon crossed the finishing line in second place at the 24-hour race in Spa-Francorchamps. This triumph in the car's very first race made AMG world-famous overnight.**

The highly experienced Hans Heyer and Clemens Schickentanz took turns behind the wheel of the AMG touring car. AMG was anything but the favourite to win this classic Belgian long-distance race: it faced the mighty opposition of the Ford Capri RS, BMW 2800 CS, Chevrolet Camaro, Opel Commodore and Alfa Romeo GTA. Nobody expected that the large luxury saloon from Affalterbach in provincial Swabia would be able to keep pace with the well-established teams.

### **5th place in the starting lineup for AMG**

The red four-door saloon already showed its potential in training, when Clemens Schickentanz surprised everyone with the fifth-fastest training time. Indeed nobody at AMG had expected fifth place in a starting lineup of 60 cars. 80,000 spectators wondered about the fast, red saloon with its long wheelbase – the only Mercedes taking part in the race. Pole position was occupied by the favourite, the Chevrolet Camaro driven by Ivo Grauls and Peter Hoffmann, followed by the Alpina-BMW 2800 CS of Niki Lauda/G rard Larousse, then the first works Ford Capri with Dieter Glemser and Alex Soler-Roig, and the Schnitzer-BMW 2800 CS piloted by Rauno Aaltonen and Helmut Kelleners. All in all, 60 racing touring cars were seeking to beat the stopwatch on the then 14.1-kilometre course in the

Ardennes, driven by well-known names such as Hans-Joachim-Stuck, Jochen Mass, Toine Hezemans, Willy Kauhsen, Achim Warmbold and Rainer Braun.

On the first lap, driver Hans Heyer in the 300 SEL 6.8 AMG was able to manoeuvre into 3rd place right behind the Ford Capri (Glemser/Soler-Roig) and the Chevrolet Camaro (Grauls/Hoffmann). After a turbulent race with a rainstorm at midnight and numerous breakdowns, the "35" finally crossed the finishing line in second place behind the works Capri driven by Glemser/Soler-Roig. The AMG saloon had absolved exactly 308 laps in the 24 hours. Technical problems: none at all. A sensational result.

### **Top speed of 265 km/h and exotic wood trim in the cockpit**

Hans Heyer looks back fondly on this race: "We knew we could win, but the others did not know that yet!" The AMG saloon was unbeatable on the straight, however the braking system substantially adopted from the standard model had problems coping with the weight of the car (1635 kilograms). "But on the old Spa course the discs had plenty of time to cool down, and nobody was able to catch us on the long straights," the now 67 year-old reminisces. With a top speed of 265 km/h, the 300 SEL 6.8 AMG was tailor-made for the fast Belgian track. The interior had a luxurious atmosphere with its standard appointments such as power steering, air suspension, carpets, panelled doors and a dashboard with exotic wood trim. The spectators along the trackside enthusiastically cheered the large saloon with its unmistakable V8 sound. "The outsider quickly became the public's favourite," says Hans Heyer.

The AMG racing saloon was technically based on the Mercedes-Benz 300 SEL 6.3. With an engine output of **184 kW** (250 hp) at 4000 rpm and a top speed of 220 km/h, this luxury saloon was Germany's fastest regular production car at the time. It was not only an enlarged displacement from 6330 to 6835 cc that increased the output to **315 kW** (428 hp) at 5500 rpm, and torque from 500 to 608 Nm. AMG co-founder Erhard Melcher "tweaked" the eight-cylinder power unit using classic methods: high-precision camshafts and modified rocker arms, lighter connecting rods, new Mahle pistons, larger intake valves, modified

combustion chambers, polished intake and exhaust ducts, a new intake tract with two throttle flaps and a racing exhaust system ensured a better gas throughflow and made higher engine speeds possible. Endurance was improved by installing an additional oil cooler and finely balancing the crankshaft.

The wings were flared to make room for the lightweight size 10 x 15 and 12 x 15-inch magnesium wheels adopted from a C 111 test car. Aluminium doors helped to reduce the car's weight from the original 1830 to 1635 kilograms. Larger front wishbones, a more robust rear axle with a heavy-duty differential and smaller, stiffer suspension air bellows made the saloon fit for the racetrack.

### **Sensational success reported on German TV news**

The unexpected success in the 24-hour race at Spa-Francorchamps made AMG, which was founded in 1967, well-known overnight – and marked the start of an impressive success story. Even the German TV news "Tagesschau" reported on this sensational result. "It really was a sensation at the time," AMG founder Hans Werner Aufrecht remembers. The courage shown by Aufrecht and his partner Melcher in entering such a car in the classic 24-hour race had been well rewarded.

Afterwards the 300 SEL 6.8 AMG took part in the 2x6-hour race at Paul Ricard on 11 and 12 September 1971, accompanied by a privately entered 300 SEL 6.3 with an AMG engine. In March 1972, now repainted in yellow, the 300 SEL 6.8 AMG took part in the trials for the Le Mans 24-hour race, but did not take to the starting line for the June race. The car was however entered in the 24-hour race at the Nürburgring in June 1972, and in the Nuremberg 200-mile race at the Norisring on 6 August 1972, where Hans Heyer took first place in the "Standard and special touring cars above 2000 cc" category with the four-door saloon, which had meanwhile been painted red again. The success story of the 300 SEL 6.8 AMG came to an end there: a rule-change by the Fédération Internationale de l'Automobile (FIA) put the brakes on this muscular racer, as only cars with an engine displacement of up to five litres were permitted to enter European Touring Car Championship races in future. AMG sold its racing saloon to the French Matra group, where it was converted for high-speed tests on aircraft tyres. Its

subsequent fate is unknown. In spring 2006 Mercedes-AMG built a replica of the 300 SEL 6.8 AMG according to the original drawings, so as to keep this unique success story alive.

Page 42

### **Spectacular S 63 AMG "Thirty-Five" in the style of the racing touring car**

Like its historic predecessor, the new S 63 AMG "Thirty-Five" does not fail to attract attention. Eye-catching details include the imposing tyre sizes of 275/35 R 20 and 325/30 R 20 at the front/rear, and the 4.5 cm flare on each wing. The start number 35 and practically all the sponsoring stickers follow the original. Instead of fire-red non-metallic paintwork, the body of the showcar is finished in "AMG Le Mans red metallic", a colour available exclusively for the new SLS AMG. The functional interior is enhanced with black/carbon-fibre piano lacquer trim. A rollover cage, two AMG sports bucket seats with four-point seat belts and an AMG sports steering wheel lined in leather/Alcantara underline the racing touring car look.

## The exclusive crowning glory for enthusiasts

**Luxury, power and sound, all in perfect harmony – this is what the Mercedes-Benz S 65 AMG is all about. The unique twelve-cylinder Saloon from AMG has a small but loyal community of fans. Since its launch in 2003, the S 65 AMG has been seen as the epitome of exclusive and effortless superiority. The same can also be said of the latest model year variant, which features a number of subtle visual enhancements, an increase in power output to 463 kW (630 hp), as well as a reduction in fuel consumption and emissions.**

Among engine specialists and car enthusiasts, a twelve-cylinder engine has always represented the crowning glory of the engine builders' craft. A very special example of this luxurious engine series is the AMG 6.0-litre V12 biturbo engine, as used in the S 65 AMG. Just one glimpse of the engine specifications is enough to reveal why: with a displacement of 5980 cubic centimetres, the AMG V12 generates **463 kW (630 hp)** at engine speed of 4800 rpm. The maximum torque of 1000 Nm has been electronically limited - from a possible 1200 Nm - to make allowances for the powertrain, and remains constant between 2300 and 4300 rpm.

The performance of the vehicle is evidence of the exceptional power of the AMG twelve-cylinder engine: the S 65 AMG accelerates from 0 to 100 km/h in just 4.4 seconds, and is capable of hitting a top speed of 250 km/h (electronically limited).

Key data at a glance:

Page 44

	<b>S 65 AMG</b>
<b>Displacement</b>	5980 cc
<b>Bore x stroke</b>	82.6 x 93.0 mm
<b>Compression ratio</b>	9.0 : 1
<b>Output</b>	<b>463 kW</b> (630 hp) at 4800 rpm
<b>Max. torque</b>	1000 Nm at 2300 - 4300 rpm*
<b>Fuel consumption NEDC combined</b>	14.3 l/100 km
<b>CO<sub>2</sub> emissions</b>	334 g/km
<b>Acceleration 0 - 100 km/h</b>	4.4 s
<b>Top speed</b>	250 km/h*

\* electronically limited

AMG has made a number of additional detailed enhancements to the engine, which has been in production for the past seven years. The engine experts at AMG achieved the increase in output from the previous **450 kW** (612 hp) to **463 kW** (630 hp) thanks to new exhaust gas turbochargers. The inlet diameter of the compressor housing and also the exhaust gas ducts have been enlarged, and the resulting increase in air throughput, together with the new engine electronics, has resulted in an increase of **13 kW** (28 hp). The maximum charge-air pressure is 1.5 bars.

Despite the increase in output, it has still be possible to reduce fuel consumption and exhaust emissions: the NEDC combined fuel consumption of the S 65 AMG is now 14.3 litres per 100 kilometres, which equates to a reduction of 0.2 l/100 km. The CO<sub>2</sub> emissions of 334 grams per kilometre are 3.5 percent lower than those of the previous model (346 g/km).

The reduction in consumption is down to new engine electronics as well as generator management: the kinetic energy generated during each drive phase of

the engine and also when braking is used to charge the battery, and not just left to generate heat as would otherwise be the case. In all other operating areas, management of both the on-board electrical system and generator enables the generator to be maintained at a low voltage level.

New piston rings, a modified oil pump and use of a superior coating on the catalytic converters also contribute towards reducing raw exhaust emissions as part of the package of measures.

### **Unique driving experience, exceptional in-gear acceleration**

The unrivalled effortless superiority of the AMG twelve cylinder engine can be enjoyed by drivers of the S 65 AMG in all driving situations: the tremendous acceleration characteristics are another one of its strengths, along with relaxed cruising at low engine speeds. Manual drive mode "M" in particular enables the high level of available torque and the exceptional in-gear acceleration to be enjoyed to the full. The exciting engine sound emitted by the two chrome twin tailpipes of the AMG sports exhaust system changes according to the driving style and situation: the repertoire ranges from a smooth, refined tone, through to the sonorous AMG-typical twelve-cylinder sound, all of which adds to the intensity of what is a high-performance driving experience.

### **Know-how from the world of motorsport also with the AMG biturbo V12 engine**

Characteristic features of the AMG 6.0-litre V12 biturbo engine include the vast know-how amassed by AMG from the world of motor sport and applied to the engine's construction, and also the sophisticated air/water intercooler. It guarantees high power and torque output under all operating conditions, regardless of the outside temperature. Traditionally all engines are built by hand at Mercedes-AMG in Affalterbach – just as with the V12 engine. In line with the exceptional 1000 Nm torque, the S 65 AMG comes with a systematically reinforced powertrain. Power transfer is handled by the AMG SPEEDSHIFT five-speed automatic transmission, which has three different drive modes.

As is the case with the new S 63 AMG, the twelve-cylinder top-of-the-range model comes with the AMG sports suspension based on Active Body Control (ABC) with Torque Vectoring Brake, crosswind stabilisation and loading adjustment system. The characteristics of the AMG sports suspension can be changed by pressing the Sports button – for the driver, this translates into a noticeable reduction in the roll angle when cornering at speed, and also stiffer spring/damper tuning. The Direct-Steer system with speed-sensitive power steering, fitted as standard, guarantees high levels of maneuverability and smooth control in all driving situations.

Reliable deceleration performance comes courtesy of the AMG high-performance braking system based on the ADAPTIVE BRAKE system. Internally ventilated, perforated composite brake discs all round, with a diameter of 390 and 365 millimetres respectively, are combined with double floating brake callipers (front) and sliding frame-type callipers (rear) for maximum deceleration.

### **Subtle but effective distinguishing features in the case of the V12 model**

The S 65 AMG comes with AMG twin-spoke forged wheels, painted in titanium grey with a mirror finish, measuring 8.5 and 9.5 inches wide. 255/35 R 20 tyres are fitted at the front, while 275/35 R 20 tyres feature at the rear. When it comes to appearance, the V12 model differs from the S 63 AMG in terms of the exclusive radiator grille with twin chromed louvres, the LED Light package including Intelligent Light System, and also the "V12 Biturbo" lettering on the front mudguards. In the interior, the AMG instrument panel features the "AMG V12 BITURBO" start screen as well as exquisite Exclusive PASSION leather upholstery: the entire instrument panel and door linings, and also the seatback panels are finished in leather, as are the magazine pockets and the parcel shelf. Alcantara is also used on the roof liner and on the A, B and C-pillars. Another new touch is the contrasting colour stitching.

The 12-way electrically adjustable AMG sports seats come with the Memory package, distinctive seat fluting and leather upholstery in the AMG V12 diamond pattern design, which also extends over the rear seats and all four door centre panels. Also fitted as standard is the Seat Comfort package, which includes front

active multicontour seats with massage and dynamic handling function and NECK-PRO luxury head restraints and rear multicontour seats with massage function. All seats feature active ventilation and heating as well as the PRE-SAFE® positioning function.

Also fitted as standard is the Bang & Olufsen BeoSound AMG high-end sound system, including SPLITVIEW and Front Entertainment package. Newly developed especially for the S-Class by AMG together with renowned Danish hi-fi specialists Bang & Olufsen, the system promises a unique listening experience. With a total output of 1200 watts, 15 loudspeakers, acoustic lens tweeters in the A and B-pillars as well as a digital sound processor (DSP), it transforms the V12 saloon into a full-blown concert hall with perfect acoustics.

The extensive standard specification also includes (selection):

- Ambient lighting, adjustable in three colours
- Analogue clock featuring "IWC Ingenieur" design
- AMG door entry sills
- AMG floor mats
- AMG sports steering wheel
- AMG sports pedal cluster
- ATTENTION ASSIST
- KEYLESS-GO package
- ISOFIX and automatic child seat recognition
- Convenience telephony
- LED Light package incl. Intelligent Light System
- Media interface
- Navigation package
- Electrically operated blind for rear window and rear doors
- Tilting/sliding glass sunroof, electric, with PRE-SAFE® closure function
- Door power closing

As with the S 63 AMG, Active Lane Keeping Assist and Active Blind Spot Assist (optional extras) are now also available for the S 65 AMG. Page 48

The S 65 AMG is available in a long-wheelbase version only and costs 192,500 euros (excl. VAT) / 229,075 euros (incl. 19% VAT).

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**Mercedes-Benz S 63 AMG**


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**Engine**

Number of cylinders/arrangement		8/V, 4 valves per cylinder
Displacement	cc	5461
Bore x stroke	mm	98.0 x 90.5
Rated output	kW/hp	400/544 at 5500 rpm
Rated torque	Nm	800 at 2000 - 4500 rpm
Compression ratio		10.0:1
Mixture formation		Microprocessor-controlled direct petrol injection, bi-turbocharging

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**Power transmission**

Drive system		Standard drive system
Transmission		AMG SPEEDSHIFT MCT 7-speed sports transmission
Ratios	Final drive	2.65
	1st gear	4.38
	2nd gear	2.86
	3rd gear	1.92
	4th gear	1.37
	5th gear	1.00
	6th gear	0.82
	7th gear	0.73
	Reverse	-3.42

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**Chassis and suspension**

Front axle	Four-link suspension, Active Body Control (active suspension system)
Rear axle	Multi-link independent suspension, Active Body Control (active suspension system)
Braking system	Hydraulic dual-circuit brakes ADAPTIVE BRAKE with brake booster and Brake Assist, internally ventilated and perforated composite disc brakes all-round, electric parking brake, ABS, ESP®
Steering	Rack-and-pinion with speed-sensitive power assistance, steering damper
Wheels	Front: 8.5 J x 19; rear: 9.5 J x 19
Tyres	Front: 255/40 R 19; rear: 275/40 R 19

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**Dimensions and weights**

		<u>Short wheelbase</u>	<u>Long wheelbase</u>
Wheelbase	mm	3035	3165
Track, front/rear	mm	1600/1606	1600/1606
Overall length	mm	5122	5252
Overall width	mm	1871	1871
Overall height	mm	1488	1488
Turning circle	m	11.8	12.2
Boot capacity*	l	560	560
Kerb weight (EC)**	kg	2120	2170
Payload (basis: ready-to-drive state as defined by EC)	kg	555	525
Perm. GVW	kg	2670	2695
Tank capacity/incl. reserve	l	90/14	90/14

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**Performance and fuel consumption**

Acceleration 0 - 100 km/h	s	4.5	4.5
Top speed	km/h	250***	250***
Fuel consumption, NEDC comb.	l/100 km	10.5	10.5
CO <sub>2</sub> emissions	g/km	244	244

\* acc. to VDA measuring method; \*\* incl. 75 kg for driver and luggage; \*\*\* electronically limited

## Mercedes-Benz S 63 AMG with Performance package

<b>Engine</b>		
Number of cylinders/arrangement		8/V, 4 valves per cylinder
Displacement	cc	5461
Bore x stroke	mm	98.0 x 90.5
Rated output	kW/hp	420/571 at 5550 rpm
Rated torque	Nm	900 at 2250 - 3750 rpm
Compression ratio		10.0:1
Mixture formation		Microprocessor-controlled direct petrol injection, bi-turbocharging

<b>Power transmission</b>		
Drive system		Standard drive system
Transmission		AMG SPEEDSHIFT MCT 7-speed sports transmission
Ratios	Final drive	2.65
	1st gear	4.38
	2nd gear	2.86
	3rd gear	1.92
	4th gear	1.37
	5th gear	1.00
	6th gear	0.82
	7th gear	0.73
	Reverse	-3.42

<b>Chassis and suspension</b>	
Front axle	Four-link suspension, Active Body Control (active suspension system)
Rear axle	Multi-link independent suspension, Active Body Control (active suspension system)
Braking system	Hydraulic dual-circuit brakes ADAPTIVE BRAKE with brake booster and Brake Assist, internally ventilated and perforated composite disc brakes all-round, electric parking brake, ABS, ESP®
Steering	Rack-and-pinion with speed-sensitive power assistance, steering damper
Wheels	Front: 8.5 J x 19; rear: 9.5 J x 19
Tyres	Front: 255/40 R 19; rear: 275/40 R 19

<b>Dimensions and weights</b>			
		<u>Short wheelbase</u>	<u>Long wheelbase</u>
Wheelbase	mm	3035	3165
Track, front/rear	mm	1600/1606	1600/1606
Overall length	mm	5122	5252
Overall width	mm	1871	1871
Overall height	mm	1488	1488
Turning circle	m	11.8	12.2
Boot capacity*	l	560	560
Kerb weight (EC)**	kg	2120	2170
Payload (basis: ready-to-drive state as defined by EC)	kg	555	525
Perm. GVW	kg	2670	2695
Tank capacity/incl. reserve	l	90/14	90/14

<b>Performance and fuel consumption</b>			
Acceleration 0 - 100 km/h	s	4.4	4.4
Top speed	km/h	250***	250***
Fuel consumption, NEDC comb.	l/100 km	10.5	10.5
CO <sub>2</sub> emissions	g/km	244	244

\* acc. to VDA measuring method; \*\* incl. 75 kg for driver and luggage; \*\*\* electronically limited

## Mercedes-Benz S 65 AMG

Page 51

### Engine

Number of cylinders/arrangement		12/V, 3 valves per cylinder
Displacement	cc	5980
Bore x stroke	mm	82.6 x 93.0
Rated output	kW/hp	463/630 at 4800 rpm
Rated torque	Nm	1000*** at 2300 - 4300 rpm
Compression ratio		9.0 : 1
Mixture formation		Microprocessor-controlled injection system, biturbo system

### Power transmission

Drive system		Standard drive system
Transmission		AMG SPEEDSHIFT 5-speed automatic
Ratios	Final drive	2.65
	1st gear	3.60
	2nd gear	2.19
	3rd gear	1.41
	4th gear	1.00
	5th gear	0.83
	Reverse	-3.17

### Chassis and suspension

Front axle		Four-link suspension, Active Body Control (active suspension system)
Rear axle		Multi-link independent suspension, Active Body Control (active suspension system)
Braking system		Hydraulic dual-circuit brakes ADAPTIVE BRAKE with brake booster and Brake Assist, internally ventilated and perforated composite disc brakes all-round, electric parking brake, ABS, ESP®
Steering		Rack-and-pinion with speed-sensitive power assistance, steering damper
Wheels		Front: 8.5 J x 20; rear: 9.5 J x 20
Tyres		Front: 255/35 R 20; rear: 275/35 R 20

### Dimensions and weights

Wheelbase	mm	3165
Track, front/rear	mm	1600/1606
Overall length	mm	5252
Overall width	mm	1871
Overall height	mm	1490
Turning circle	m	12.2
Boot capacity*	l	560
Kerb weight (EC)**	kg	2275
Payload (basis: ready-to-drive state as defined by EC)	kg	435
Perm. GVW	kg	2710
Tank capacity/incl. reserve	l	90/14

### Performance and fuel consumption

Acceleration 0 - 100 km/h	s	4.4
Top speed	km/h	250***
Fuel consumption, NEDC comb.	l/100 km	14.3
CO <sub>2</sub> emissions	g/km	334

\* acc. to VDA measuring method; \*\* incl. 75 kg for driver and luggage; \*\*\* electronically limited