



Mercedes-Benz



The new Mercedes-AMG A 45 4MATIC+ and CLA 45 4MATIC+

Press Information

The super-sportscars in the compact class

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Affalterbach. Outstanding performance, the ultimate driving dynamics, expressive design - the new Mercedes-AMG compact A 45 4MATIC+/ A 45 S 4MATIC+ sports cars (combined fuel consumption 8.4-8.3 l/100 km; combined CO<sub>2</sub> emissions 192-189 g/km)<sup>1</sup> and CLA 45 4MATIC+/ CLA 45 S 4MATIC+ (combined fuel consumption 8.3-8.1 l/100 km; combined CO<sub>2</sub> emissions 189-185 g/km)<sup>1</sup> reassert their leading positions in their segments. They seamlessly continue the success story of their predecessors, while setting numerous new standards. Available in two output and torque variants, the completely newly developed 2.0-litre engine is the world's most powerful turbocharged four-cylinder engine in manufactured for series production. Even the basic model with 285 kW (387 hp) is more powerful than its predecessor. The S-variant with 310 kW (421 hp) jostles with considerably higher vehicle classes. Perfect sequences in all driving situations, and fast gearshifts measured in milliseconds, are guaranteed by the new AMG SPEEDSHIFT DCT-8G dual-clutch transmission with eight gears. The active, fully-variable AMG Performance 4MATIC+ all-wheel drive distributes the power to the rear axle wheel-selectively by AMG TORQUE CONTROL – for top traction and the spectacular Drift mode. This is made possible by a new rear axle differential featuring two multidisc clutches – one for each rear wheel.

With its new compact sports models Mercedes-AMG is demonstrating its high competence in development once again: "We have completely redesigned our "45" models – from the engine and transmission through the chassis, the elaborately constructed drivetrain to the body structure and of course the design

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<sup>1</sup> The stated figures were determined in accordance with the prescribed measuring method. These are the "NEDC CO<sub>2</sub> figures" according to Article 2 No. 1 Implementing Regulation (EU) 2017/1153. The fuel consumption figures were calculated based on these figures.

itself – all with one goal: to raise vehicle dynamics and the sporty driving experience to a level previously unimaginable in the compact class. With the presentation of this, our most powerful and most dynamic compact sports car, we are also reinforcing the significance of this segment for our growth strategy", says Tobias Moers, Chairman of the Management Board of Mercedes-AMG GmbH.

### **Exterior design: AMG family membership even more apparent**

The new Mercedes-AMG A 45 4MATIC+ and CLA 45 4MATIC+ models are even more distinctive than their predecessors. The exterior conveys sheer driving pleasure even at standstill. For the first time, the compact class now also features the AMG-specific radiator grille with a wider lower contour and twelve vertical louvres – as a clear indicator of AMG Performance family membership. At the same time, the pronounced "shark nose", the slim, deeply contoured headlamps and the flat, aerodynamically favourable bonnet with powerdomes visually lower the front section to create the impression of extremely dynamic forward thrust.

The imposing presence is also accentuated by the wider front wings with flared wheel arches. These create space for the wider front axle, and underline the athletic appearance. This muscular impression is even stronger with the A 45 4MATIC+ than with the CLA 45 4MATIC+, as the basic CLA already has a wider front track and the wings could be flared to a lesser extent.

#### Individual details as distinguishing features

The front apron is also a distinguishing feature. In the A 45 4MATIC+ it is in a jet-wing design. Horizontal fins in the outer air inlets and the stretched lower air inlet emphasise the impression of width. The

CLA 45 4MATIC+ has an even more expressive appearance with its jet-like external air inlets, showing its close family relationship with the AMG GT 4-door Coupé. The front splitter transitions seamlessly into the side air curtains ahead of the front wheels, which optimise the airflow to improve aerodynamic performance and the Cd figure.

Viewed from the side, the wider AMG side skirts visually lower these compact sportscars so that they appear to hug the road more closely. If the Silver Chrome package is specified, the inserts are in silver chrome, and with the AMG Night package they are in high-gloss black.

The exterior mirrors are mounted on the door muscle, echoing the look of Mercedes-AMG coupés and sportscars. This not only looks very sporty, but also improves the aerodynamics.

As standard the basic variants feature 8.5 J x 18-inch light alloy wheels in a 10-spoke design, aerodynamically optimised and painted in tantalum grey with size 245/40 R 18 tyres.

The S-models are equipped with 19-inch light alloy wheels in a 5-twin-spoke design - with a width of 8.5 inches for the A 45 S 4MATIC+ and nine inches for the CLA 45 S 4MATIC+. The attractive aluminium rims are aerodynamically optimised and painted in tantalum grey with a high-sheen finish, and shod with tyres in size 245/35 R 19 and 255/35 R 19 (CLA 45) respectively. In the basic models the AMG high-performance braking system features grey-painted brake callipers with white AMG lettering. The S-versions are recognisable by their larger, red-painted 6-piston brake callipers with black AMG lettering.

Round twin exhaust tailpipes for the Performance compact cars

The rear view is characterised by two round twin tailpipes (82 mm diameter) and the wide rear apron. The S-models are distinguished by their larger, 90 mm exhaust tailpipes with internal fluting and AMG lettering. The impression of width at the rear is emphasised further by the slim two-piece rear light clusters. The diffuser with two vertical twin fins contributes to better aero-performance (CLA 45: four individual fins) - it is extended forward at the centre of the vehicle, making it work more effectively. The effect is rounded off by the spoiler lip in the vehicle colour on the roof spoiler, or on the boot lid (CLA 45).

The most important optional exterior features:

- AMG Aerodynamic package for optimised aerodynamic balance, included a modified front splitter and additional flics on the front apron, an additional diffuser blade, side spoiler lips on the rear apron and rear spoiler (A 45) or larger spoiler lip (CLA 45) in high-gloss black. These features increase the downforce, and therefore handling stability at the physical limits
- 19-inch light-alloy wheels in a 5-twin-spoke design, aerodynamically optimised, painted either in tantalum grey with a high-sheen finish or in matt black with high-sheen rim flange

- 19-inch forged wheels in a cross-spoke design, painted either in titanium grey with high-sheen finish or in matt black with high-sheen rim flange, with simulated central wheel lock in aluminium
- AMG Night package with design features in high-gloss black - for example the front splitter or inserts in the sideskirts - and black chromed exhaust tailpipes
- Silver Chrome package with front splitter and inserts in the sideskirts in silver chrome

### **Bodyshell: extensively reinforced**

The AMG developers extensively reinforced the bodyshell, as it provides the basis for the precise self-steering characteristics, as well as track and camber stability, also when driving at high speed. A lightweight aluminium plate bolted underneath the engine - the "shearing plate" - increases the torsional rigidity at the vehicle's front end. This is supplemented by a strut tower brace between the front suspension struts and pistol-shaped "shotguns" - these are additional reinforcing plates connecting the side members to the A-pillars to minimise movements of the front section. Diagonal struts at the front and rear of the underbody further improve rigidity. As a result the entire suspension system responds highly precisely even at the physical limits, giving the driver clearly defined feedback – with considerably reduced body torsion around the longitudinal and transverse axis, and less rolling and pitching on bends, when braking and during load cycles.

### **Drive system: new turbocharged four-cylinder with ample power**

With an output of up to 310 kW (421 hp), the completely newly developed 2.0-litre engine is the world's most powerful turbocharged four-cylinder manufactured for series production. Mercedes-AMG has bettered the output of the preceding engine by 30 kW (40 hp). Maximum torque has also increased from 475 to up to 500 newton metres. With an output per litre of up to 155 kW (211 hp), the new Mercedes-AMG high-performance turbo engine even ranks ahead of many well-known super-sports car engines. The new, highly efficient powerpack is produced on an innovative production line in Affalterbach, on the "One Man, One Engine" principle.

In the 45 models, the four-cylinder ensures extremely agile performance in two output classes: with 310 kW (421 hp) as the S-model and with 285 kW (387 hp) in the basic version.

This positioning logic has already proved successful for the AMG Performance models with a V8 engine, and meets individual customer wishes even better. The new compact sportscars absolve the sprint from zero to 100 km/h in record time: the A 45 S 4MATIC+ requires only 3.9 seconds (CLA 45 S 4MATIC+: 4.0 seconds), while the basic A 45 4MATIC+ model absolves this discipline in 4.0 seconds (CLA 45 4 MATIC+ in 4.1 seconds). The top speed of the basic models is electronically limited to 250 km/h, while the S-models are capable of up to 270 km/h ex factory. With the optional AMG Driver's Package, the top speed can also be increased to 270 km/h for the basic variants.

Apart from its performance figures, the new engine impresses with its immediate response. To this end the torque curve was carefully balanced ("torque shaping"): The maximum torque of 500 Nm (480 Nm in the basic variants) is available within a range of 5000-5250 rpm (4750-5000 rpm in the basic variants). With this configuration the AMG engineers have achieved a power delivery akin to a naturally aspirated engine. The engine developers were able to realise a dynamically increasing torque curve in the lower engine speed range, thereby improving throttle response. The increasing torque at higher rpm makes the engine more free-revving. Moreover, the high maximum engine speed (up to 7200 rpm) emphasises the engine's sporty character.

#### Engine design: intelligent details

The new engine excels with numerous intelligent design features. Unlike the likewise transversely installed four-cylinder in the 35 models or the preceding model, the new engine is rotated around its vertical axis by 180 degrees. This means that the turbocharger and the exhaust manifold are now positioned at the rear, on the side of the firewall when viewed from behind. The intake system is therefore positioned at the front. This configuration allows the flattest possible and aerodynamically advantageous front section design. Furthermore, the new arrangement allows much improved air ducting with shorter distances and fewer diversions - both on the intake and exhaust side.

#### Turbocharger: roller bearings reduce mechanical friction

The new twin-scroll turbocharger combines optimum responsiveness at low engine speeds with a high power in the upper rpm range. In addition to this, the turbine housing is divided into two flow passages which run parallel to one another.

Together with the likewise divided ducts in the exhaust manifold, this makes it possible to feed the exhaust flow to the turbine separately. The aim is to prevent the individual cylinders from influencing each other negatively during load cycles, and to improve the gas cycle. The result is higher torque at lower engine speeds, and extremely good responsiveness.

Furthermore, the shafts of the compressor and turbine have roller bearings for the first time - as in the top output variant of the AMG 4.0-litre V8 engine in the AMG GT 4-door Coupé. The roller bearings reduce mechanical friction within the turbocharger to a minimum. The charger therefore responds more readily and reaches its maximum speed of up to 169,000 rpm more rapidly.

Charge pressure: electronically controlled for optimum responsiveness

With a maximum charge pressure of 2.1 bar, the 2.0-litre four-cylinder turbo engine is also the leader in its segment in this respect. The electronically controlled wastegate (exhaust relief valve) allows the charge pressure to be controlled even more precisely and flexibly while optimising responsiveness, especially when accelerating from partial load. Numerous parameters are taken into account in this process. The main input signals for the wastegate control unit are the charge pressure, throttle flap position and the knocking tendency. The modifying signals include the intake air temperature, engine temperature, engine speed and atmospheric pressure. This also makes temporary boosting of the charge pressure (overboost) possible under acceleration.

Fresh air is used in addition to oil and water to cool the turbocharger. This is directed specifically to the charger from the radiator grille, via the engine cover designed as an air deflector and ducts beneath the bonnet. The concept is based on the principles and experience gained with the cooling for the internally mounted turbochargers of the current AMG 4.0-litre V8 engines, starting with the AMG GT in 2014. In addition the turbine housing has integral insulation.

Crankcase: all-aluminium with outstanding properties

The all-aluminium crankcase is a chill-cast unit which excels with outstanding material properties. In this process the molten aluminium is poured into the metallic mould using the effect of gravity.

Thanks to its good thermal conductivity, the water-cooled mould allows rapid cooling and solidification of the melt. The result is a fine-grained, dense structure

that guarantees very high strength. Complex interior geometries can be realised with the help of enclosed sand cores.

The so-called closed-deck construction – a design taken from motorsport - ensures maximum rigidity with low weight and allows peak combustion pressures of up to 160 bar. The areas around the cylinders are mostly solid, and the cover plate is only penetrated by smaller ducts for the coolant and engine oil. The crank assembly with a lightweight, forged steel crankshaft and forged aluminium pistons with optimised piston rings combines low friction with high strength. The maximum engine speed is 7200 rpm, and peak output is developed at 6750 rpm. The sump features baffle plates so that despite the larger sump, and even under high lateral acceleration forces, there is always sufficient engine oil to lubricate all the relevant components.

Cylinder liners: coated with NANOSLIDE

To reduce friction between the pistons and cylinders, the linings are coated using patented NANOSLIDE technology. This gives the linings a mirror-like surface for minimal friction, is twice as hard as conventional grey cast-iron liners and therefore makes them much more durable. NANOSLIDE was developed by Daimler AG, and is protected by more than 90 patent families and more than 40 patents. This coating was first used in AMG's M 156 V8 engine, has enhanced other AMG engines for many years and can also be found in the Formula 1 engine of Mercedes AMG Petronas Motorsport.

Exhaust valves: larger dimensions for faster gas cycles

In the cylinder head, the repositioned and slightly angled injection nozzles and spark plug system have allowed much larger exhaust valves than in the preceding engine. The larger exhaust cross-sections allow the gases to stream out of the combustion chambers with low losses, and reduce the overall piston venting action.

Two overhead camshafts control the 16 valves via weight-optimised roller cam followers. Camshaft adjustment on the inlet and outlet side allows an excellent response and optimises the gas cycle for each operating point.

Variable CAMTRONIC valve control on the exhaust side is another feature, with two cams per valve. The cams have different geometries, so that depending on the cam setting to suit the driving situation, the exhaust valves can be opened for

short or long periods – for even better responsiveness at low engine speeds, comfortable and fuel-efficient driving at medium rpm and full power delivery in the upper rpm range.

Petrol injection: two stages for optimised power

Turbocharging and direct injection with a spray guided combustion process not only allow a high power yield, but also improve thermodynamic efficiency and therefore reduce both fuel consumption and exhaust emissions.

For the first time, the new high-performance four-cylinder has two-stage fuel injection. In the first stage the particularly fast and precisely operating piezo injectors supply fuel to the combustion chambers at a pressure of up to 200 bar. This is a multiple process at times, and is controlled by the engine management system as required.

In the second stage there is additional intake manifold injection using solenoid valves. This is needed to achieve the engine's high specific output. The electronically controlled fuel supply has an operating pressure of 6.7 bar.

### **Cooling: sophisticated system for the engine, turbocharger and charge air**

The high output requires an intelligently conceived cooling system. This is so designed that the cylinder head and crankcase can be cooled to different temperature levels. This innovative measure allows a cold cylinder head for maximum output with efficient ignition timing, and a warm crankcase to reduce in-engine friction.

The coolant to the cylinder head is supplied by a mechanical high-performance water pump, while cooling of the crankcase is via a second, electrically driven water pump. After a cold start, this pump remains passive until the engine has warmed up. In operation it is regulated by the engine control unit so that the crankcase is always cooled according to need.

Moreover, the pump can be switched on or off as required when less output is needed, or at low engine speeds. Furthermore, the electric water pump ensures the full engine output and optimum heat dissipation over the entire engine speed



range. It also protects against thermal damage when idling in very high ambient temperatures.

In addition the engine has an oil temperature management function which controls the warm-up phase and flexibly regulates the engine oil temperature. This brings the engine to its operating temperature more rapidly, reducing friction and wear. This is accompanied by the environmentally friendly ancillary effect that fuel consumption and cold start emissions are also reduced.

The engine's high degree of supercharging calls for a high-performance intercooler. So that the charge air can be cooled close to the ambient temperature despite the extreme quantities of heat, for the first time a 2-stage, indirect intercooler has been developed. It works in conjunction with the air conditioning system, and is used in the S-models where it has been integrated into the low-temperature circuit. For this was necessary to completely redesign the configuration of the condenser in the front end. One condenser is located in the wheel arch, and a second one is positioned in first row of the central cooling module. The separate condenser and radiator configuration and thermal management specifically designed to meet (everyday) requirements and (racetrack) performance enable efficient and coordinated cooling performance.

Functions such as alternator management, the ECO start/stop function with fast restarting, the gliding function and a petrol particulate filter are also part of the technology package for the new AMG four-cylinder.

Digital and smart hand assembly: "One man, one engine"

The new engine is entirely assembled by hand. To this end a completely newly designed production line was constructed in the AMG engine manufactory in Affalterbach, where Mercedes-AMG has raised the "One Man, One Engine" principle and Industry 4.0 processes to an innovative level reflecting the latest findings in ergonomics, material flows, quality assurance, sustainability and efficiency. On the road to implementing Industry 4.0, AMG's hand assembly operation likewise follows the vision of "smart production".

This excels with maximum flexibility, and is transparent and highly efficient. It safeguards and improves the quality of the engines and production processes using innovative and digital technologies.

## **AMG SPEEDSHIFT DCT 8G dual-clutch transmission: agile and responsive**

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The 8-speed AMG SPEEDSHIFT DCT 8G dual-clutch transmission likewise contributes to the agile and dynamic character. The gear ratios have been configured so that the driver experiences very spontaneous acceleration in all speed ranges, combined with fast shifting and optimum connections when shifting up. Depending on the selected AMG DYNAMIC SELECT driving mode, the driver receives a specific drive configuration with different accelerator and gearshift characteristics.

Anyone who prefers to change gear for themselves can select the manual transmission mode in every drive program. Using the temporary M-mode, this is possible very rapidly merely by operating a steering wheel shift paddle.

The standard RACE-START function allows maximum acceleration from stationary, a highly emotional experience. This also applies to the drive sound with partial ignition interruption when changing up a gear, and the automatic double-declutching function when changing down. Neither is efficiency neglected: in "Comfort" mode the ECO start/stop function is active; the "gliding" function can be selected in the "Individual" driving mode.

## **AMG Performance 4MATIC+ all-wheel drive with AMG TORQUE CONTROL**

The extremely dynamic driving experience in a completely new dimension is greatly assisted by the fully variable all-wheel drive included as standard. The secret is AMG TORQUE CONTROL in the new rear axle differential: This has two electronically controlled multidisc clutches, each of which is connected to a rear axle drive shaft. In this way the drive power can not only be completely variably distributed between the front and rear wheels, but also selectively between the left and right rear wheel. This means that depending on the driving mode and situation, the drive torque can be separately distributed to both rear wheels.

The result is consistently optimum traction, even in adverse road conditions and during extreme cornering manoeuvres, for example on the racetrack. Furthermore, this sophisticated solution allows Drift mode (standard in the S-models, included

in the optional AMG DYNAMIC PLUS package for the basic models), which makes "powersliding" possible for even more driving pleasure.

Drift mode can be called up in the "RACE" driving mode using the shift paddles, provided that ESP® is deactivated and the transmission is in manual mode.

Electro-mechanical control: fast response irrespective of engine speed

Control of the drive torque to the front and rear axle, and between the two rear wheels, is electro-mechanical. The influencing factors for torque distribution are not only the driving speed, the lateral and longitudinal acceleration and the steering angle, but also the difference in rotational speed between the individual wheels, the gear selected and the accelerator position.

The main advantages of electro-mechanical control over an electro-hydraulic system relate to more refined driving dynamics – primarily due to the significantly faster response and speed-independent actuation of the discs over the entire adjustment range.

The all-wheel drive control is dependent on the selected driving mode and the AMG DYNAMICS setting. In "Basic" and "Advanced", the 4MATIC system is in "Comfort" mode. In "Pro" and "Master" (standard for S-models, included in the optional AMG DYNAMIC PLUS package for basic models) the 4MATIC system switches to "Sport" mode - for even more agile handling and an even higher threshold for the critical limits.

Before the system intervenes, 3-stage ESP® with individual control strategies in SPORT HANDLING MODE allows greater drift angles for a sporty driving style. When entering bends, the "45" models have an even more agile response thanks to braking intervention at the inner rear wheel - depending on the selected AMG DYNAMICS mode or driving mode

### **Suspension: specific components for highly dynamic handling**

The new AMG suspension with specific spring elements and the new, frequency-selective shock absorbers provides the basis for high directional stability and highly dynamic cornering characteristics with low body roll. At the same time comfort has been improved compared to the preceding model. The longitudinal and transverse dynamics are perfectly coordinated.

All suspension components have been thoroughly revised in order to achieve a higher maximum lateral acceleration together with easy vehicle control at the limits.

A McPherson strut design is used at the front axle. Suspension is taken care of by one wishbone below the wheel centre, one spring strut and one tie rod respectively. The special axle geometry reduces the influence of the drive on the steering – for high comfort and agile handling. The new wishbone in aluminium reduces the unsprung masses enabling a more sensitive response from the springs. The brake callipers at the front axle are radially bolted – a technology from motorsport for more stability. The front axle carrier is rigidly attached and thus additionally stiffens the front section.

The 4-link rear suspension is likewise rigidly connected to the body via a rear axle carrier, and therefore very torsionally rigid. There are three transverse control arms and one trailing arm plus specific bearings per rear wheel. This design ensures maximum driving stability and agility.

### **AMG RIDE CONTROL adaptively adjustable damping: with three modes**

The optional AMG RIDE CONTROL adaptive damping system enables the driver to choose between three different suspension control modes. The spectrum ranges from comfort-focused to sporty. The system operates fully automatically, adapting the damping forces for each wheel according to the driving situation and road conditions. This happens within milliseconds and is infinitely variable, with a wide spread of damping characteristics. The result is that ride comfort and agility are enhanced in equal measure.

### **High-performance braking system: fade-resistant and reliable**

The high-performance braking system ensures fade-resistant deceleration and short braking distances. In the basic models, the 4-piston monobloc fixed front callipers act on 350 x 34 millimetre brake discs, while at the rear axle, 1-piston floating callipers act on 330 x 22 millimetre brake discs. The discs are internally ventilated and perforated to better dissipate heat and prevent brake fading, even with extreme use. The grey-painted brake callipers have white AMG lettering.

The S-models and the basic models with the optional AMG DYNAMIC PLUS package are decelerated by an even larger braking system equipped with 6-piston fixed callipers and 360 x 36 millimetre brake discs at the front. In this case the brake callipers are painted red and bear a black AMG logo.

### **Steering: with special steering rack and variable ratio**

The speed-sensitive, electro-mechanical sports power steering supports a sporty driving style with its direct turn-in ability. It has a special rack with variable transmission ratio and two characteristic curves: depending on which drive program the driver has selected, it provides taut and sporty or more comfort-biased steering feedback. The rigid mounting in the integral carrier connects the steering even better with the body and thus increases steering precision.

### **AMG exhaust system: with exhaust flap for sound modulation**

As standard the exhaust system has an exhaust flap which is automatically controlled depending on the engine speed and load. Depending on the drive program selected it modulates the sound from harmoniously discreet (in the programs Slippery, Comfort and Sport) to emotively sporty (in Sport+).

### **Six driving modes: vehicle characteristics with wide spread**

The six AMG DYNAMIC SELECT driving modes "Slippery", "Comfort", "Sport", "Sport +", "Individual" and "RACE" (standard for S-models, included in the optional AMG DYNAMIC PLUS package for basic models) allow a wide spread of vehicle characteristics, from comfortable to dynamic.

Numerous relevant parameters are modified:

- Powertrain: accelerator characteristics, shift times and timing, sound characteristics with the options of Reduced, Moderate, Sport or Dynamic
- Transmission: automatic or manual

- **AMG DYNAMICS:** Agility functions such as all-wheel control, steering characteristics and additional ESP® functions in Basic, Advanced, Pro or Master versions (standard for S-models, included in the optional AMG DYNAMIC PLUS package for basic models)
- **Exhaust system:** Sound and nature of the sound functions, Balanced or Powerful
- **Chassis (with optional AMG RIDE CONTROL suspension):** in Comfort, Sport, Sport+

The individual drive programs offer an individual driving experience, precisely tailored to different driving conditions and driver requirements.

- **"Slippery":** Optimum adaptation to suit slippery and icy road surface conditions, with reduced power requirement and flat torque curve. Smooth gear changes and earlier upshifting support the driving impression characterised by stability.
- **"Comfort":** comfortable and fuel-efficient driving, e.g. thanks to very early upshifts. Suspension and steering are set up for an emphasis on comfort. In addition, the ECO start/stop function is active here.
- **"Sport":** sporty characteristics thanks to a more agile response to the driver's accelerator pedal input, shorter shift times, earlier downshifts and significantly more emotive gearshifts owing to double de-clutching. A more dynamic suspension and steering set-up.
- **"Sport+":** extremely sporty characteristics thanks to an even more agile throttle response, increased acoustic emphasis on double de-clutching during downshifts as well as selective torque control on upshifts with cylinder suppression for optimal shift times. Increased idle speed for faster pulling away. An even more dynamic set-up for suspension, steering and drivetrain.
- **"RACE":** For highly dynamic driving on enclosed racetracks. In this program, all of the parameters are configured for maximum performance.
- **"Individual":** Makes it possible to select and store individual parameters according to personal preferences. In addition, the gliding function is available in the "Reduced" and "Moderate" drive settings.

### **AMG DYNAMICS: more agility with high stability**

As a feature of the AMG DYNAMIC SELECT driving modes, the new 45 models have AMG DYNAMICS. This integrated vehicle dynamics control extends the stabilising functions of ESP® with agility-enhancing intervention in the all-wheel control, steering characteristics and additional ESP® functions. When cornering at speed, for example, brief braking intervention at the inner rear wheel generates a defined yawing motion around the vertical axis for responsive and precise entry into the bend.

The spectrum ranges from extremely stable to highly dynamic. On the multimedia display, when a drive program is selected, the new AMG DYNAMICS symbol is displayed together with the corresponding additional information.

- "Basic" is assigned to the "Slippery" and "Comfort" drive programs. In this case the compact sportscars exhibit very stable handling with a high level of yaw damping.
- "Advanced" is activated in the "Sport" program. The 45 models remain neutrally balanced. The lower yaw damping, lower steering angle requirement and enhanced agility support dynamic manoeuvres such as driving on winding country roads.
- "Pro" (short for "Professional") belongs to the "Sport+" program. In "Pro" the driver receives even more assistance for dynamic driving manoeuvres while agility and feedback from the road when cornering are further enhanced.
- "Master" is linked to the "RACE" driving mode (standard for S-models, included in the optional AMG DYNAMIC PLUS package for basic models). "Master" mode is aimed at drivers who want to experience dynamism and the driving enjoyment on closed-off circuits. "Master" offers a vehicle balance with slight oversteer, a low steering angle requirement and more agile steering.

In this way, "Master" ensures maximum agility and fully exploits the dynamic potential. To activate "Master" mode, the driver must use the separate button in the centre console to switch the ESP® to ESP® SPORT Handling Mode or ESP® OFF.

In the "Individual" drive program, the driver can set the AMG DYNAMICS levels "Basic", "Advanced", "Pro" and "Master" themselves.

### **Interior: close symbiosis between man and machine**

With its sporty appointments and the MBUX infotainment system, the high-quality interior creates a close, personal connection between man and machine. The driver and front passenger are seated in an active position on contoured sport seats with firm lateral support. The standard upholstery as a combination of black ARTICO man-made leather and DINAMICA microfibre is timeless, and creates typical AMG highlights with double topstitching in red. The colour scheme is echoed by the red designo seat belts and the dashboard support trim in black DINAMICA microfibre with a red border. The chromed air vents are likewise upgraded with a red ring. As an alternative an upholstery in ARTICO man-made leather in neva grey/black with mid-grey double topstitching and light-longitudinal-grain aluminium trim is available.

S-models: yellow highlights to emphasised the motor racing heritage

The A 45 S and CLA 45 S even go a step further: yellow highlights reoccur throughout the interior to emphasise the motor racing character of the more powerful models. Also included in the standard equipment are the AMG Performance steering wheel in nappa leather/DINAMICA microfibre with contrasting yellow topstitching, a yellow 12 o'clock marking, AMG steering wheel buttons and AMG logo, plus ambience lighting.

In all models, the centre console in high-gloss black with a touchpad as standard has a further control array with additional switches controlling the 3-stage ESP<sup>®</sup>, the manual transmission mode and the optional adaptive damping system AMG RIDE CONTROL. In combination with the optional leather package, it features a silver chrome console surround.

The characteristic, sporty AMG ambience is also enhanced by the sports pedal cluster of brushed stainless steel with rubber studs, black floor mats with AMG lettering and a surround in a nubuck leather look, the black fabric roof liner and AMG front entry sills in brushed stainless steel with "AMG" lettering.

### **MBUX infotainment system: with AMG-specific displays**



The combination of sporty design and sophisticated details is also featured in the MBUX infotainment system with its innovative operating and display concept. MBUX creates an even closer connection between the vehicle, driver and passengers. Emotionally appealing presentations underline the clear control structure and feature brilliant maximum-resolution 3D graphics. Visually, the two displays under one shared glass cover blend into a Widescreen Cockpit and as a central element consequently emphasise the horizontal orientation of the interior design.

The customer can choose between the three AMG display styles "Classic", "Sport" and "Supersport" for the instrument cluster. The "Supersport" mode is particularly striking with a central, round rev counter and additional information presented in the form of bars to the left and right of the rev counter: with a three-dimensional perspective, they reach far into the background to an artificial horizon.

Via the AMG menu the driver can call up various special displays:

- Gear display - with yellow "M" symbol in manual mode
- Warm-Up menu - engine and transmission oil temperature
- Set-Up menu - AMG DYNAMIC SELECT settings
- G-Meter – longitudinal and lateral acceleration forces
- Race-Timer – stopwatch, lap and sector times
- Engine data – output and torque, engine oil and transmission oil temperature

The touchscreen multimedia display also emphasises the dynamic character with individual AMG displays such as visualisation of the driving programs, AMG TRACK PACE and telemetry data.

And needless to say, the trailblazing voice control activated with the words "Hey Mercedes" is also on-board. Thanks to artificial intelligence, MBUX recognises and understands nearly all sentences from the fields of infotainment and vehicle operation, even if they are expressed indirectly.

### **AMG Performance steering wheel: with optional control buttons**

A perfect symbiosis between the driver and vehicle is ensured by the multifunction sport steering wheel in nappa leather with flattened steering wheel rim and perforated grip area, and depending on the upholstery, red, yellow or

black topstitching and a facing in silver chrome. The galvanised steering wheel gearshift paddles allow an even sportier driving style with manual gear shifting.

The active distance assistant DISTRONIC and the TEMPOMAT cruise control can be adjusted on the control panels on the left. The control panels on the right are used to activate the voice control and telephone, and to regulate the sound volume, music selection and other functions of the infotainment system.

As standard the S-models are equipped with the AMG Performance steering wheel in nappa leather/DINAMICA microfibre (optional for basic model).

The AMG steering wheel buttons (standard for S-models, optional for the basic variants in conjunction with the Performance steering wheel) allow the AMG driving modes to be accessed directly, and other AMG functions to be conveniently operated directly at the steering wheel.

Individual optional equipment: even more intensive driver involvement

Numerous options are available to suit the new 45 models to individual customer wishes. They include the following

- Leather package and AMG leather package with 2-tone upholstery, for example classic red / black, plus instrument panel in ARTICO man-made leather
- AMG Performance steering wheel in nappa leather
- AMG Performance steering wheel in nappa leather / DINAMICA microfibre (standard for S-models)
- AMG Performance steering wheel in DINAMICA microfibre incl. AMG steering wheel buttons
- Door sills in brushed stainless steel with "AMG" lettering, illuminated
- AMG Performance Seat Package
- AMG Performance Seat package Advanced
- AMG Performance Seat package High-End
- AMG DYNAMIC PLUS package for the basic variants, with AMG RIDE CONTROL suspension, larger AMG high-performance braking system with red-painted 6-piston fixed callipers and 360 x 36 mm brake discs at the front, AMG steering wheel buttons, "RACE" driving mode and Drift mode

AMG TRACK PACE: Data logger for use on the race track

AMG TRACK PACE, the virtual race engineer, is standard equipment for the S-models, and otherwise optionally available in conjunction with HDD navigation and the media display: The software is part of the MBUX infotainment system, and when negotiating a race circuit it continuously monitors more than 80 vehicle-specific data (e.g. speed, acceleration). On top of this, lap and sector times are displayed, as well as the respective difference from a reference time. Because specific display elements are shown in green or red, the driver is able to see at a glance without reading numbers whether they are currently faster or slower than the best time.

After putting in some fast laps, the driver can use the data to analyse and, if necessary, improve their driving skills. In addition, acceleration and deceleration values (e.g. 0-100 km/h, ¼ mile, 100-0 km/h) can be measured and saved. Thanks to a newly developed algorithm which determines the vehicle position as precisely as possible, AMG TRACK PACE even detects when the circuit has been left or it has been shortened. This is done using GPS data as well as the sensors available in the vehicle (acceleration, gyroscope, steering angle, wheel speeds).

The data are displayed on the multimedia display, in the instrument cluster and on the optional head-up display. Well-known race tracks like, for example, the Nürburgring or Spa Francorchamps, are already stored. Furthermore, it is also possible to record your own circuits. The map display can be switched from 2D to 3D and updated online.

The MBUX Augmented Reality function also allows the ideal line of a stored race track to be displayed on the multimedia display or optional head-up display, allowing the driver to improve lap times with a virtual instructor on board.

#### Technical data at a glance

	Mercedes-AMG A 45 4MATIC+	Mercedes-AMG A 45 S 4MATIC+
Engine	2.0-litre 4 in-line with roller bearing twincscroll turbocharger	2.0-litre 4 in-line with roller bearing twincscroll turbocharger
Displacement	1991 cc	1991 cc
Max. output	<b>285 kW</b> (387 hp) at 6500 rpm	<b>310 kW</b> (421 hp) at 6750 rpm
Peak torque	480 Nm at 4750-5000 rpm	500 Nm at 5000-5250 rpm

Drive system	AMG Performance 4MATIC+ fully variable all-wheel drive with AMG TORQUE CONTROL	AMG Performance 4MATIC+ fully variable all-wheel drive with AMG TORQUE CONTROL
Transmission	AMG SPEEDSHIFT DCT 8G dual-clutch transmission	AMG SPEEDSHIFT DCT 8G dual-clutch transmission
Combined fuel consumption	8.4-8.3 l/100 km*	8.4-8.3 l/100 km*
Combined CO <sub>2</sub> emissions	192-189 g/km*	192-189 g/km*
Efficiency class	E	E
Acceleration 0-100 km/h	4.0 s	3.9 s
Top speed	250 km/h**	270 km/h***

\* The stated figures were determined in accordance with the prescribed measuring method. These are the "NEDC CO<sub>2</sub> figures" according to Article 2 No. 1 Implementing Regulation (EU) 2017/1153. The fuel consumption figures were calculated based on these figures.

\*\* electronically limited, with AMG Driver's Package 270 km/h; \*\*\* electronically limited

	Mercedes-AMG CLA 45 4MATIC+	Mercedes-AMG CLA 45 S 4MATIC+
Engine	2.0-litre 4 in-line with roller bearing twinscroll turbocharger	2.0-litre 4 in-line with roller bearing twinscroll turbocharger
Displacement	1991 cc	1991 cc
Max. output	<b>285 kW</b> (387 hp) at 6500 rpm	<b>310 kW</b> (421 hp) at 6750 rpm
Peak torque	480 Nm at 4750-5000 rpm	500 Nm at 5000-5250 rpm
Drive system	AMG Performance 4MATIC+ fully variable all-wheel drive with AMG TORQUE CONTROL	AMG Performance 4MATIC+ fully variable all-wheel drive with AMG TORQUE CONTROL
Transmission	AMG SPEEDSHIFT DCT 8G dual-clutch transmission	AMG SPEEDSHIFT DCT 8G dual-clutch transmission
Combined fuel consumption	8.2-8.1 l/100 km*	8.3-8.1 l/100 km*
Combined CO <sub>2</sub> emissions	188-185 g/km*	189-186 g/km*
Efficiency class	E	E
Acceleration 0-100 km/h	4.1 s	4.0 s
Top speed	250 km/h**	270 km/h***

\* The stated figures were determined in accordance with the prescribed measuring method. These are the "NEDC CO<sub>2</sub> figures" according to Article 2 No. 1 Implementing Regulation (EU) 2017/1153. The fuel consumption figures were calculated based on these figures.

\*\* electronically limited, with AMG Driver's Package 270 km/h; \*\*\* electronically limited

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