



Press Information

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The new Mercedes-AMG GT Black Series

Affalterbach. The most powerful AMG V8 series engine of all time, the most elaborate aerodynamics, the most intelligent material mix, the most expressive design, the most distinctive driving dynamics: For the new Mercedes-AMG GT Black Series, Affalterbach's engineers have raised the bar in the art of vehicle design. This new super sports car perfectly embodies the brand's rich tradition in motorsport, as well as its expertise in developing complete vehicles which impress in every respect. The result is an awe-inspiring vehicle with 720 hp from a Handcrafted AMG V8 engine with a flat-plane crankshaft, combined with active aerodynamics and a design stemming directly from the current AMG GT3 racing car.

At Mercedes-AMG, the Black Series has been synonymous with a very special type of car since 2006: uncompromisingly sporty, with an expressive design and the most direct technology transfer from motorsport to series production. Black Series models are exclusive automotive rarities. They are not developed to gather dust in collectors' garages, but for high-speed use on race tracks, despite being approved for road usage. The AMG GT Black Series represents a new highlight in this tradition: It features the most powerful Mercedes-AMG V8 series engine of all time.

In order to redefine the super sports car, the engine specialists in Affalterbach have once again extensively redeveloped the tried-and-tested 4.0-liter V8 biturbo unit – despite it already being renowned for excellent drivability, power delivery and torque. The specifications were clear: Significantly more power than the previous flagship model of the AMG GT family, an even more agile throttle response, maximum torque – all of which meant that a radical change was needed in the form of a new, flat-plane crankshaft.

"The new GT Black Series is our latest automotive highlight and continues a tradition established in 2006. The sixth iteration of its kind is another AMG milestone and impressive proof of the incredible development expertise in Affalterbach. I am proud of the team who have created this unique super sports car, which now represents the absolute peak of our successful GT family. The performance, appearance and driving dynamics of the GT Black Series are second to none. This project was a fantastic end to my work at AMG, for which I am truly thankful," says Tobias Moers, Chairman of the Board at Mercedes-AMG GmbH.

Mercedes-Benz AG, 70546 Stuttgart, Germany

Phone +49 711 17 - 0, Fax +49 711 17 - 22244, dialog.mb@daimler.com, www.mercedes-benz.com

Domicile and Court of Registry: Stuttgart; Commercial Register No. 762873

Chairman of the Supervisory Board: Manfred Bischoff

Board of Management: Ola Källenius (Chairman), Jörg Burzer, Renata Jungo Brüngger, Sajjad Khan, Sabine Kohleisen, Markus Schäfer, Britta Seeger, Harald Wilhelm



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Distinctive V8 engine design

The design of a V8 engine gives designers plenty of room to play with in one key element: the crank arrangement on the crankshaft. This influences the characteristics of the engine. There are usually two variants in V8 engines: the 'cross plane' where the crankpins of the four pairs of cylinders are at 90-degree angles to each other, which AMG has used in all previous V8 engines, or the 'flat-plane crankshaft', where all crankpins are on the same plane with a 180-degree offset ('flat-plane').

If you look at the front of a cross-plane crankshaft, you will be able to identify the cross that gives it its name. The benefits of these crankshafts are superb smoothness and high torque at low rotational speeds. The characteristic sound is another hallmark feature of the cross-plane V8 engine. In order to make optimal use of the displacement and the performance potential in the 4.0-liter V8 biturbo engine, AMG engineers have essentially moved the exhaust side into the hot internal V of the two cylinder banks in the V8 engine.

Uniformly oscillating gas columns for even more power

Another way of increasing performance is by utilizing a flat-plane crankshaft. In the flat-plane V8 engine, it looks like an inline four-cylinder model – except for the wider crankpins, which have two connecting rods each in the V8. Ignition in the flat-plane V8 jumps from one cylinder bank to the next, which further improves the gas cycle. The characteristic firing order with a 180-degree crankshaft angle offset is 1-8-2-7 4-5-3-6. This creates uniformly oscillating gas columns in the exhaust tract and on the intake side, whose resonance can easily be used to increase performance. An even greater advantage is a more agile throttle response.

The most powerful V8 engine from Mercedes-AMG

Although the new GT Black Series engine is based on the AMG 4.0-liter V8 biturbo with dry sump lubrication, it has been given the new internal code of M178 LS2, due to its numerous modifications. It achieves 720 hp at 6,700-6,900 rpm and delivers a maximum torque of 590 lb-ft at 2,000-6,000 rpm. New camshafts and exhaust manifolds are adapted to the new firing order and further improve the gas cycle.

Both twin-scroll exhaust turbochargers are mounted in anti-friction bearings, as in the top-of-the-range four-door AMG GT Coupe, which optimizes their throttle response even further. However, in the GT Black Series, the turbochargers have been given a larger compressor wheel, meaning that both can deliver a total of 24.6 psi. By way of comparison: The figure is 19.6 psi for the AMG GT R. 7,000 rpm is not critical as a continuous speed, so the redline instead tops out at 7,200 rpm. The larger intercoolers guarantee they always keep the charge-air temperature within the best possible range. The unique aspects of the new engine are also reflected in the distinctive engine badge, which is rendered in black.

0-124 mph in under nine seconds

The new Handcrafted AMG engine in the GT Black Series gives it a completely unique character, which is not only reflected in the power delivery, but also in its very distinctive sound. The new engine also enables highly impressive driving performance: The Black Series shoots from 0 to 60 mph in 3.1 seconds, and to 124 mph (200 km/h) in under nine seconds. The top speed is 202 mph, although this is only sensible on closed-off racetracks.

Modified AMG SPEEDSHIFT DCT 7-speed transmission

Power is transferred to the rear wheels via the AMG SPEEDSHIFT DCT 7-speed dual clutch transmission, which is located on the rear axle in a transaxle arrangement for optimal weight distribution, as is the case for all AMG GT 2-door models. It has been specially modified for use in the AMG GT Black Series and adapted to the increased torque of 590 lb-ft. The previous limits governing shift performance and response time have been extended, making them more suitable for racetracks.

This all contributes to new and unique characteristics, as not only are the accelerator and engine response more agile – the drive programs, start-up characteristics and gear changes are, too. The Race Start function is now even more impressive, thanks to the increased starting revs, the more sensitive wheel slip control and the high-performance tires fit for the racetrack. Furthermore, the transmission cooling has been adapted to the tougher requirements, and the transmission ratios have also been slightly modified.

The 'torque tube' creates the connection between the engine and the transmission. It is made of carbon fiber and, at just 30.6 lbs, is around 40 percent lighter than its already weight-optimized aluminum counterpart in the AMG GT. As a structural component of the transaxle drivetrain, it creates an extremely torsionally stiff connection between the engine and the transmission. It allows for a direct connection of the drivetrain that is favorable to the driving dynamics and also plays a role in the vehicle's balanced weight distribution. The drive shaft which rotates inside is also made from lightweight carbon fiber.

Sophisticated aerodynamics for incredibly high driving dynamics

The sophisticated and optimized aerodynamics make a significant contribution to agile driving dynamics and stability on fast circuits. As with the AMG GT R and AMG GT R PRO, aerodynamics experts and designers have worked in close collaboration to enhance the aerodynamic characteristics of the GT Black Series. 'Form follows function' applies more than ever in the case of the new Black Series.

The similarity to the AMG GT3 and AMG GT4 racing cars is visually and technically stronger than ever before. It starts with the new, significantly larger radiator air inlet, which stems directly from the AMG GT3 racing car. The radiator trim has vertical slats in dark chrome, and now that the wheel arch coolers are also fed with air directly via the central inlet, there is no need for two additional outer air inlets in the front bumper. Semicircular flics optimize the flow of air, which not only increases downforce at the front axle, but also improves brake cooling. The 'air curtains' control and direct the flow towards the wheels. Together with the flics in front of the wheels, these enhancements reduce the drag coefficient and increase downforce. The new design language therefore combines maximum cool-air efficiency with lower air resistance and an increased level of downforce at the front.

The carbon-fiber front splitter has two manually adjustable settings (Street and Race – Race exclusively for use on racetracks), and can be adapted to meet various track requirements. When extended forward (Race position), a front diffuser in the shape of a reversed wing profile is created under the front section. Depending on the driving speed, this element is lowered even further by the rising negative pressure, which significantly accelerates the air flow on the underbody, creating a 'Venturi effect', which also draws the car closer to the road and increases downforce on the front axle. The driver can feel the benefits in the steering: The Black Series can be steered even more precisely when cornering at high speed and exhibits exceptional directional stability. Especially during fast cornering and under high lateral acceleration, the vehicle delivers an agile response with clear steering wheel feedback – while remaining easily controllable at all times. If the front diffuser is in the Race position, the downforce at the rear axle can also be increased further by the new rear spoiler design.

Hood with two large exhaust air openings to improve aero-performance

Another direct derivative from motorsport is the new carbon-fiber hood, with two large exhaust air outlets made from black finished carbon-fiber surfaces. The large outlets guide the warm air, which is fed from the diagonally positioned cooling pack, out of the engine compartment. This technology is also directly derived from motorsport and increases the overall downforce. At the same time the air resistance is reduced, and the air mass flow for cooling the engine is optimized. The air is also specifically guided around the A-pillars and side windows to the rear, where it increases the efficiency of the new rear spoiler design. The seamlessly integrated front fender vents, with five fins in body color and exhaust air openings behind the wheels in the front carbon-fiber fenders, help to increase downforce at the front axle by means of effective wheel arch ventilation. The air flowing around the vehicle is also optimized by the new, significantly larger and wider side sill panels with black carbon-fiber elements, which merge into vertical blades at the front and rear. Additional cooling air ducts are integrated into the side sill panels for brake cooling at the rear axle.

Two-stage rear spoiler concept

The rear view is characterized by the new rear bumper with a large diffuser, two rounded twin-tailpipe trims on the outside left and right, side wheel arch ventilation, and the innovative rear spoiler design. Both spoiler blades are made from carbon fiber, can be mechanically adjusted and therefore adapted to various track conditions. The second, lower positioned blade was made particularly small and narrow because this is ideal for the air arriving from the front of the car. The light yet robust carbon-fiber spoiler supports, painted matte black and specially designed with extensive simulations, also increase aerodynamic efficiency. They are bolted to the carbon-fiber rear hatch, which is also black.

Another fascinating detail: the adjustable flap in the upper blade. This active aerodynamic element is electronically adjusted by 20 degrees, to suit the driving situation and selected AMG DYNAMICS mode, while improving longitudinal and transverse dynamics. In a flat position, it reduces the air resistance, to help reach top speed more quickly. In the inclined position, the flap improves braking performance and cornering stability thanks to increased downforce at the rear axle.

Four different activation strategies can be run, depending on whether AMG DYNAMICS Basic, Advanced, Pro or Master has been selected. Some of these strategies also involve driving dynamics recognition, for example, Master: The flap is permanently inclined and extended up to 155 mph. When the speed exceeds 155 mph, it retracts in order to reduce the air resistance and thus reach top speed more quickly. However, if the driver brakes suddenly or steers into a corner, the flap immediately returns to its extended position in order to optimize braking and cornering, thanks to increased downforce and air resistance. The flap can also be retracted or extended by the driver using a separate button in the center console.

Extensive paneling on the underbody

The detailed aerodynamic work also includes the now almost fully paneled underbody, which must not only meet aerodynamic requirements, but thermal ones as well (heat dissipation). The flat underbody is equipped with specially designed longitudinal fins. These air channels have been meticulously optimized to ensure optimal air flow to the rear diffuser. The entire package accelerates air flow, significantly increasing downforce. All measures are coordinated and interact with the new rear spoiler design. The result of all these measures is a downforce level of well over 882 lbs at 155 mph.

Lightweight and robust carbon-fiber, as far as the eye can see

The lightweight carbon-fiber roof, with a lowered center, as well as the carbon-fiber rear hatch with small spoiler lip and larger rear windshield made from lightweight glass, are all key components of the 'intelligent material mix' and 'lightweight construction'. Moving to the front of the car, the glass used to make the laminated front windshield is also lightweight. The coiled carbon-fiber transmission mount is another exclusive Black Series component. Additional carbon-fiber shear panels in the front section, underbody and rear stiffen the entire aluminum body shell structure, together with the lightweight integral carrier and the carbon-fiber cross tunnel, making the body shell even more stable. The elements form a connected network and increase the high driving precision of the Black Series in all driving maneuvers. The carbon-fiber shear panel under the engine is connected to the integral carrier and stiffens the entire front section and steering system, making the steering noticeably more precise and further stabilizing the front axle. The integral carrier at the front axle is exclusively made for the Black Series using a lightweight aluminum construction.

The standard ceramic high-performance compound brake system with black painted brake calipers and white lettering is also characterized by low weight and high performance. Special brake pads and rotors together with modified brake cooling guarantee optimal and non-fading deceleration as well as high-precision brake-application. The standard light-alloy forged wheels also contribute to weight reduction.

AMG coil-over suspension with adaptive adjustable damping

A double wishbone design enhances the wheel with high camber and toe-in stability. This enables high cornering speeds and gives the driver optimized road feel when cornering at the extreme limits. Wishbones, steering knuckles and hub

carriers on the front and rear axle are made entirely from forged aluminum in order to reduce the unsprung mass. The spherical bearings on the upper and lower wishbones of the rear axle come straight from motorsport. Their design means they have no play, which means toe-in and camber do not change even under high loads. The GT Black Series therefore allows for precise steering, provides clear steering feedback and thus delivers better cornering performance.

As with the AMG GT R, an AMG coil-over suspension with adjustable spring preload is used in the Black Series, with technology adapted to meet the specific requirements for extreme race track use with high damping forces. The technology from motorsport is combined with the AMG RIDE CONTROL continuously variable, adaptive damping system. The system is electronically controlled and automatically adapts the damping on each wheel to the current handling situation, the speed and the road conditions. The damping characteristics are modulated rapidly and precisely by two separate valves for the rebound and compression forces in the dampers. These valves are new and are also based on motorsport technology. They react in an even more agile manner to fast suspension movements. A harder damping rate, for example when cornering and braking, effectively reduces rolling movements. The continuously variable adjustment of the damping to suit the current speed also ensures the best possible road contact and thus enhances safety, even at high speeds.

The driver can also adjust the adaptive damping characteristics at the touch of a button in the AMG DRIVE UNIT or by using the AMG DYNAMIC SELECT drive modes. Three modes are available: "Comfort", "Sport" and "Sport Plus". The modified logic means that there is an even better trade-off. 'Comfort' and 'Sport' are the right choice for public roads. In 'Sport', the damping is firmer, with a sportier body connection and less comfort – and can also be chosen for race tracks if more slippery track conditions prevail as a result of wet conditions. 'Sport Plus' is ideal for use on racetracks, as it has a special feature: The system automatically recognizes the quality of the track surface, i.e. whether the car is being driven on a flat Grand Prix course like Hockenheim or a bumpy track like the Nürburgring North Loop. It then automatically adapts the level of electronic damping in 'Sport Plus'. To develop this logic, the Black Series was tailored to a wide range of different track types and the adaptation perfected.

Additional Carbon-fiber to reduce the suspension weight

The front axle is equipped with a dual adjustable sway bar made of lightweight carbon-fiber. The sway bar has a short and firm connection as its default setting. Its counterpart at the rear axle is made of steel, has 3-way adjustment, and saves weight thanks to its hollow tube design. From the default "central" position, it can be adjusted to one level harder (short connection) or softer (long connection). The carbon-fiber shear panel in the rear underbody enhances the high driving precision. This lightweight and rigid element stiffens the rear-end structure and as a result makes the body shell even more stable. The electronically controlled dynamic engine and transmission mounts were also retuned to further increase the agility and deliver high-precision response and clear feedback.

Other suspension measures include the wide track at the front and rear, and the manually adjustable camber at the front and rear axles. This means that exceptionally high camber values can be set, which are only used for the purpose of increasing performance in motorsport on closed-off race tracks.

A Pilot Sport Cup 2 R MO tire, specially customized for the Black Series, has been developed in collaboration with Michelin®. As is the custom in motorsport, this high-performance tire is exclusively available for Mercedes-AMG in two compounds: The standard tire equipped from the factory is the soft-compound Michelin® Pilot Sport Cup 2 R MO1A, whose side flank enhances the silhouette of the AMG GT Black Series. A 'hard compound' is also available as a retrofitting option for race track use at higher temperatures. As well as the Michelin® Pilot Sport Cup 2 R MO2 designation, it can be identified by the tire compound available from the AMG Performance Center, with the hallmark motorsport sticker from the French tire manufacturer. The sizes are 10 J x 19 wheels with 285/35 ZR 19 tires (front) and 12 J x 20 wheel with 335/30 ZR 20 tires (rear).

Grip to the power of nine: AMG TRACTION CONTROL

For use on closed-off racetracks in ESP OFF mode, the AMG TRACTION CONTROL enables the driver to get individual support for controlling the immense power of the Black Series – and without any ESP brake intervention whatsoever. The level of support can be fine-tuned, providing the ideal level of assistance for each driver and each track. The AMG

TRACTION CONTROL has been extensively tailored to meet the requirements of the new Black Series and allows preselection of one of nine slip settings on the live rear axle. Control is exclusively via corresponding maps in the engine electronics and without any intervention in the ESP system, as is also the case with the GT3 racing car.

It is operated via a separate adjuster in the central console. It can also be operated while wearing racing gloves in its central position in the dashboard. Depending on the setting, the system permits more or less slip on the rear wheels – very helpful in a variety of road conditions. Level 1 is programmed for driving in the wet with high safety reserves. Level 9 allows maximum slip on the rear axle. Each setting is displayed on the adjuster itself and in the instrument cluster's central display.

The AMG TRACTION CONTROL has a major advantage over conventional systems in that it anticipates situations with the help of a friction coefficient evaluator and other data processed by a control unit within a fraction of a second. The maximum permissible drive slip on the rear wheels is calculated depending on the selected AMG TRACTION CONTROL level. When the wheels reach this level of slip during acceleration, the traction control modulates the engine output so that this level is not exceeded and the vehicle continues accelerating with this specified slip. The system's algorithms have been developed as a double control variable model and not only control the engine's drive torque, but also the locking level of the electronic differential lock.

Exclusive orange contrasting color

The interior design emphasizes the pole position of the AMG GT Black Series: Exclusive nappa leather is combined with sporty DINAMICA microfiber in black with orange contrasting topstitching. The instrument panel and the newly designed lightweight door panels, which are now equipped with loop pull handles instead of conventional handles, are trimmed in black DINAMICA microfiber. Further orange contrasting topstitching, matte black carbon-fiber trim and the Interior Night Package add further interior highlights. AMG carbon-fiber bucket seats (not available in the USA, Canada and China) combine low weight with optimum lateral support. In the USA, Canada and China, the Black Series is equipped with AMG Performance seats as standard. The interior is also optionally available with silver contrasting topstitching.

Displays with AMG-specific graphics

The AMG GT Black Series features the fully digital instrument displays from the AMG GT family with an instrument cluster measuring 12.3 inches in front of the driver, and a 10.25-inch multimedia display on the center console. The instrument cluster offers different designs with three AMG-specific display styles: 'Classic', 'Sporty' or 'Supersport'. The 'Supersport' view with a central rev counter features extensive additional information, such as a prompt to shift up in manual transmission mode, the 'shift light'. The visualizations on the multimedia display enable further vehicle functions to be experienced, e.g. with animated presentations of the driving assistance, vehicle and communication systems.

At your fingertips: display buttons in the center console

The innovative, colored display buttons in the V-shaped center console integrate the display and control of transmission logic, suspension, ESP, exhaust system, rear spoiler flap and start/stop function. The TFT display buttons use intuitive symbols to show their functions and are easy to operate with a small tap of the finger. As they have a mechanical pressure point, they can also be operated while wearing racing gloves. The display buttons are supplemented by the two rocker switches for the drive programs and volume control of the audio system.

Control in an instant: the AMG Performance steering wheel

The AMG Performance steering wheel is also adopted from the AMG GT family. It is characterized by its sporty design, a flattened bottom section with a heavily contoured rim and intuitive operation. The steering wheel rim is fully trimmed in DINAMICA microfiber, while the steering wheel badge exclusively features the Black Series lettering, along with the AMG logo. The aluminum steering wheel shift paddles for manual gear changes enable even sportier driving. The integrated Touch Control buttons can be used to control the instrument cluster and the multimedia display by means of horizontal and vertical finger swipes.

As standard, the AMG DRIVE UNIT steering wheel buttons also have a round controller with an integrated display, as well as two vertically positioned colored display buttons with switches. The AMG drive programs can be activated using the right controller. The selected setting is shown on the color LCD display directly integrated in the controller.

The two freely configurable display buttons and the additional switches on the left side enable further AMG functions to be controlled directly on the steering wheel. This means that the driver can concentrate fully on high-speed driving without having to take their hands off the wheel. Each required function can be depicted by a display icon, which the driver can set using the respective switch so the two individually preferred AMG functions can be defined exactly and the settings changed with just a tap of the finger.

The AMG Interior Night Package is also included as standard equipment. In this package, the shift paddles, steering wheel spokes and seat insert in the AMG Performance seats are finished in high-gloss black, while the door sill panels are finished in black brushed stainless steel, further emphasizing the car's sportiness.

Technical data at a glance

	2021 Mercedes-AMG GT Black Series
Engine	4.0-liter V8 biturbo
Displacement	3982 cc
Output	720 hp at 6,700-6,900 rpm
Peak torque	590 lb-ft at 2,000-6,000 rpm
Drive	Rear-wheel drive
Transmission	AMG SPEEDSHIFT DCT 7-speed
Acceleration 0-60 mph	3.1 s
Top speed	202 mph

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Media Contacts:

Michael Minielly michael.minielly@mbusa.com
Baron Smith baron.smith@mbusa.com

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Mercedes-Benz USA (MBUSA), headquartered in Atlanta, is responsible for the distribution, marketing and customer service for all Mercedes-Benz products in the United States. MBUSA offers drivers the most diverse lineup in the luxury segment with 15 model lines ranging from the sporty A-Class Sedan to the flagship S-Class and the Mercedes-AMG GT R.

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