



Press release
17 May 2017

The new BMW M5 with M xDrive. At a glance.

- The arrival of the new BMW M5 (fuel consumption combined: 10.5 l/100 km [26.9 mpg imp]; CO₂ emissions combined: 241 g/km) sees BMW M GmbH introducing the sixth model generation of the world's most successful high-performance sedan. The first BMW M5 made its debut in 1984.
- The new BMW M5 is equipped with the innovative M xDrive drivetrain system offering superior driving dynamics and traction.
- The new M xDrive technology melds the hallmark M agility and precision provided by standard rear-wheel drive with the traction-enhancing benefits of all-wheel drive.
- Five configurations span an extremely broad dynamic spectrum. With the DSC control system deactivated, three M xDrive modes enable drivers to create an individual set-up, including full rear-wheel drive.
- The combination of M xDrive and the likewise new eight-speed M Steptronic transmission with Drivelogic in the new BMW M5 gives drivers an even richer experience of the car's exceptional performance capabilities, not just on the race track but in everyday use as well.
- The latest and most advanced version of the 4.4-litre V8 engine with TwinPower Turbo technology has upped power and torque delivery once again.
- The new BMW M5 with M xDrive completes the sprint from 0 to 100 km/h (62 mph) noticeably quicker than its predecessor.
- The new BMW M5 with M xDrive and eight-speed M Steptronic is lighter than the outgoing model with classical rear-wheel drive.

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The new BMW M5 with M xDrive. The innovative M xDrive drivetrain system enhances the agility and traction of the new BMW M5, giving drivers a rich experience of the car's towering performance.

Munich. The new BMW M5 (fuel consumption combined: 10.5 l/100 km [26.9 mpg imp]; CO₂ emissions combined: 241 g/km) is the most exciting and emotionally enthralling high-performance sedan from this model range ever released by BMW M. The sixth generation of this fantastically sporty machine will be launched in 2017 complete with the M xDrive system, whose all-wheel-drive technology enables the business sedan's dynamic prowess to be experienced in even greater depth. Quite apart from its notably enhanced performance, the new BMW M5 also boasts far greater everyday practicality and supreme poise. It therefore constitutes another evolutionary step in every respect for an exceedingly successful vehicle concept that first emerged in 1984 with the launch of the original BMW M5.

A superior drivetrain: M xDrive.

High-performance driving dynamics on the one hand paired with the everyday practicality and qualities of a business sedan on the other: this neatly sums up M's traditional approach to model development – one which strives to harmonise individual drive components into a flawless whole.

“The core component of M xDrive is a central intelligence unit with M-specific software delivering integrated control of longitudinal and lateral dynamics. The new drivetrain technology – making its debut on the new BMW M5 – therefore combines all of the agility and precision of standard rear-wheel drive with the supreme poise and traction of the all-wheel-drive system,” explains Frank van Meel, Chairman of the Board of Management of BMW M GmbH. “As a result, the new BMW M5 can be piloted with the familiar blend of sportiness and unerring accuracy on both the race track and the open road – and in various weather conditions, too.”

The M xDrive system enables a wonderfully fleet-footed rear-biased set-up by only bringing the front wheels into play when the rear wheels aren't able to transmit any more power to the road and additional tractive force is required. Even when it is being driven in a particularly sporty manner and unleashing high levels



of power, the new BMW M5 with M xDrive behaves predictably and can be controlled with ease by the driver, paving the way for an even richer experience of the business sedan's extraordinary performance capabilities.

The driver can choose from five different configurations based on combinations of the DSC modes (DSC on, MDM, DSC off) and M xDrive modes (4WD, 4WD Sport, 2WD).

The configurations allow the drive system's characteristics to be tailored to both the driver's personal preferences and the nature of the journey. Purists can opt for classical rear-wheel drive by completely deactivating the all-wheel-drive system.

All in all, the new drive system engenders class-beating handling dynamics accompanied by unrestricted everyday usability. This is made possible by a central intelligence unit with M-specific software for integrated control of longitudinal and lateral dynamics. The result is optimum performance in each of the different configurations. With the advent of M xDrive, the engineers have succeeded in fusing the classical qualities of standard rear-wheel drive with the benefits of the sports-focused BMW xDrive.

This all adds up to a sense of dynamic flair that astounds even seasoned DTM drivers: "I'm a big M5 fan," explains BMW works driver Timo Glock, for example. "I often drive long distances and I need plenty of room for my family, but I wouldn't wish to give up the chance to explore the car's sporting character. With M xDrive, not only can the new BMW M5 be steered with the usual precision and agility, it also offers me something I really appreciate, living in Switzerland: a noticeable boost to traction and controllability – even when driving in particular environmental conditions, such as wet weather and snow, and in both everyday driving situations and when pushing the car to its performance limits."

Sportiness and smoothness: eight-speed M Steptronic transmission with Drivelogic.

In the new BMW M5 the task of relaying the engine's power falls to an extremely slick eight-speed M Steptronic transmission with Drivelogic. Thanks to its incredibly short shift times and optimal ratio spacing, the transmission combines with the new M xDrive system and the further improved turbocharged V8 engine to form a perfectly orchestrated whole.

In addition, the transmission offers impressively smooth start-off characteristics, makes manoeuvring easier and has a wide ratio spread that helps to keep fuel consumption low. The driver has the usual choice of three shift programs, as well as the option of changing gear manually using shift paddles on the steering



wheel and even performing sporty multiple downshifts. The eight-speed M Steptronic forms part of a new, finely honed overall package that turns the BMW M5 into a high-performance sedan offering genuine everyday practicality, and also resolves the apparent contradiction between sportiness and comfort.

More powerful and more efficient: the newly improved turbocharged V8 engine.

Lurking under the bonnet of the new BMW M5 is the latest version of the 4.4-litre V8 engine featuring M TwinPower Turbo technology. The further improved high-revving engine outperforms its predecessor in terms of power output and torque. The enhancements implemented by the engineers include higher injection pressure, new turbochargers, more powerful lubrication and cooling systems, plus a modified, lighter exhaust system, which generates an even clearer rendition of the unmistakable M soundtrack. Thus equipped, the V8 propels the sedan to still greater feats of dynamic performance. However, it is the combination of engine, M xDrive and eight-speed M Steptronic, even more than the upgrading of engine's technical specifications, that really sharpens the high-performance character of the new BMW M5; it takes the dynamic driving experience to a far higher level than the relatively moderate increase in power alone would allow.

Hardware and software with an M-specific set-up.

The principal hardware components of M xDrive are based on those of the BMW xDrive intelligent all-wheel-drive system and the Active M Differential, while the M-specific driving dynamics control software ensures innovative deployment. The drivetrain has been reinforced for greater rigidity and strength to factor in the high torque, rear-biased configuration and 2WD option. While the transfer case splits a portion of the engine's drive between the front and rear wheels in a smoothly adjustable ratio (depending on requirements), the Active M Differential is responsible for then distributing the drive between the rear wheels. This active control element is part of the M xDrive system's functionality and its locking effect can be varied between zero and 100 per cent, as the situation demands. This ensures enhanced traction, agility and handling stability when the car is being driven in a very sporty manner or on roads with differing levels of grip – i.e. exactly when it is needed. Since M xDrive includes M-specific dynamics control capability, stabilising interventions from the DSC system are only required in extreme situations. And so the engine's huge power can be converted into propulsive force with virtually zero losses. The upshot of all this is that the new BMW M5 can be guided with even greater precision and directional accuracy, responds sensitively and directly to the driver's inputs and thus requires few steering corrections when driving at the limit.



À la carte handling dynamics: 4WD, 4WD Sport or 2WD.

Every time the engine is started, the BMW M5 defaults to 4WD mode with DSC on. Even in this basic configuration, which initially allows a certain amount of slip at the rear wheels to produce the agility for which M models are renowned, M xDrive offers tangible benefits in situations such as accelerating out of bends. The sedan completes the 0 to 100 km/h (62 mph) or 200 km/h (124 mph) sprints in the sort of times that leave its predecessor trailing in its wake and will make fans of sporty driving everywhere instantly prick up their ears.

Drivers with an even greater thirst for sporty action can tap into the car's full performance potential by engaging a second configuration: M Dynamic Mode (MDM) with the M xDrive system's 4WD Sport mode has been configured for ultra-sporty and dynamic handling. As a result, the new BMW M5 becomes far more agile than in the standard configuration and channels even more drive to the rear wheels. At the same time, MDM permits far greater wheel slip, allowing the enthusiastic driver to send the sedan into a controlled drift and experience the remarkable agility of the new BMW M5 – a familiar trait of M models – to the full. The onset of oversteer is telegraphed in good time while the linear increase of sideslip angle makes it easily controllable, particularly as MDM aids stability at the limits of performance.

With DSC deactivated, there is a choice of three modes (4WD, 4WD Sport and 2WD). In 4WD mode, M xDrive has a neutral set-up that lends itself to optimum controllability and outstanding traction. This is of particular benefit on roads that are in mediocre or poor condition. At the same time, 4WD mode also lets the driver explore the dynamic performance capabilities of the new BMW M5 with the DSC control system deactivated.

Engaging 4WD Sport mode alters the M xDrive configuration for even greater agility and sportiness. The blend of absolute precision, delightful handling and phenomenal traction it reveals is a sure-fire route to supreme driving pleasure. 4WD Sport mode's set-up has been fine-tuned with the assistance of highly experienced specialists and is geared towards track use in dry conditions.

With 2WD mode activated, the new BMW M5 offers the keen driver the experience of driving a high-performance sedan with rear-wheel drive only, delivering a pure form of driving enjoyment that captivates in its own unique way. The combination of incredibly agile handling, terrific feel and exceptional controllability can be attributed to the Active M Differential.



The display and control concept.

The driver-focused cockpit of the new BMW M5 now has an even clearer layout courtesy of the lowered instrument panel with freestanding Control Display. The M-style instrument cluster featuring two classical circular dials and red needles also accommodates an additional digital speedometer on the left-hand side, while the rev counter on the right includes a variable rpm pre-warning field and sporty shift lights when the Head-Up Display is switched on. In the centre of the instrument cluster, the driver will find the readouts for the gear selection, Drivelogic shift program, M xDrive mode and M1/M2 set-up, plus the drive and suspension settings currently engaged. When the Head-Up Display is activated, key information can be projected onto the windscreen so it appears in the driver's immediate field of view. The graphics of the M view option developed for dynamic driving have been completely revised and M view now also allows navigation information to be displayed, if desired. The projection area of the Head-Up Display in the new BMW M5 has increased in size by around 70 per cent.

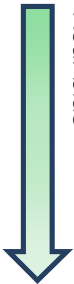
On top of the redesigned gear selector can be found the three-position rocker switch for selecting the Drivelogic shift programs. The P button below it for the parking lock is also within easy reach. In typical M fashion, the gears of the new eight-speed M Steptronic transmission can be changed using both the selector lever and the shift paddles on the steering wheel, while drivers can also opt for the automated D mode. In the manual S mode, meanwhile, the M Steptronic allows multiple downshifts, resulting in a significant reduction in shift times when performing sporty driving manoeuvres, such as braking hard into corners.

As on the outgoing model, the M sports steering wheel includes two individually configurable M Drive buttons (M1, M2) that allow the driver to retrieve a previously stored set-up. The buttons have been completely redesigned and are prominently located. This ensures they are even easier to reach and, in customary M style, offer excellent speed of use. As well as the M xDrive mode and the Drivelogic shift program, the engine and damper mapping, Servotronic steering characteristics and readouts in the Head-Up Display can also be memorised. The desired settings can be stored via the iDrive menu. An icon in the instrument cluster indicates to the driver when a stored M1/M2 set-up is activated.

A short press of the DSC button in the centre console activates M Dynamic Mode (MDM) and a long press engages DSC off mode. When DSC off mode is activated, the M xDrive settings menu appears in the Control Display at the same time. Plus, it is now possible to select 4WD, 4WD Sport or 2WD mode using either the iDrive Controller or the touchscreen function. The mode activated is



displayed in the instrument cluster and can also be saved as part of an M Drive set-up.

DSC status	DSC on	MDM	DSC off	
M xDrive status	4WD	4WD Sport	4WD	
			4WD Sport	
			2WD	

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The BMW Group

With its three brands BMW, MINI and Rolls-Royce, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. As a global company, the BMW Group operates 31 production and assembly facilities in 14 countries and has a global sales network in more than 140 countries.

In 2016, the BMW Group sold approximately 2.367 million cars and 145,000 motorcycles worldwide. The profit before tax was approximately € 9.67 billion on revenues amounting to € 94.16 billion. As of 31 December 2016, the BMW Group had a workforce of 124,729 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

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The new BMW M5 with M xDrive. **Appendix: the components of the drivetrain.**

BMW M xDrive.

The new drivetrain technology from BMW M GmbH combines all of the classical rear-wheel-drive agility and precision with the supreme poise and handling stability of all-wheel drive. The principal hardware components of the M xDrive system include a →transfer case with electronically controlled multi-plate clutch, a rear differential with integral →Active M Differential and a front differential. These are supplemented by two driveshafts, which relay the drive torque from the transfer case to the front and rear differentials. From there, output shafts direct the drive power to the wheels. The innovative deployment of the various components is handled by the M-specific driving dynamics control unit, which is linked up with various systems including →Dynamic Stability Control (DSC). The engine's power is transferred to the drivetrain via a new →eight-speed M Steptronic transmission with Drivelogic.

Transfer case.

The transfer case on the new BMW M5 channels a portion of the drive torque to the front wheels in a smoothly adjustable ratio, as requirements dictate. The torque is split by means of an electromechanically activated multi-plate clutch. Increasing the pressure on the plates channels additional power to the front axle; when the clutch is fully disengaged, on the other hand, the vehicle is powered through the rear wheels only. The clutch can be either fully disengaged or engaged within a matter of milliseconds. The system's rear-biased set-up allows the agility and precision for which M models are renowned to be retained, but at the same time there is a considerable improvement in traction when accelerating out of bends or driving in adverse weather conditions, such as rain or snow.

Active M Differential.

The Active M Differential already familiar from the outgoing BMW M5 has undergone further development for the new model and now features new carbon plates as well as a completely redeveloped control logic. The electronically controlled multi-plate lock enables fully adjustable distribution of drive torque between the rear wheels with a locking effect that can be varied between zero and 100 per cent. This leads to a tangible improvement in traction and handling stability when accelerating out of corners, for instance, performing fast lane changes or driving on road surfaces with differing levels of grip, because any wheel spin is nipped in the bud. Permanent synchronisation of the data from the differential and →Dynamic Stability Control (DSC) allows torque distribution to be controlled swiftly, precisely and proactively. Beyond ensuring outstanding



handling properties and customary M agility in pure rear-wheel-drive mode, the Active M Differential is actually an integrated element essential to the overall functionality of the new M xDrive system.

Dynamic Stability Control (DSC).

Dynamic Stability Control monitors the car's responses using an array of sensors, and stabilises the vehicle as and when required by intervening in engine and brake management. As a result, DSC can counter excessive oversteer or understeer effectively. Using the DSC button in the centre console, the driver can either raise the system's intervention thresholds by selecting the M Dynamic Mode (MDM) or completely deactivate it (DSC off). In both cases, the system permits greater wheel slip, allowing the enthusiastic driver to enjoy the full breadth of the characteristic M handling dynamics and to push the vehicle as close as possible to the limits of performance.

Eight-speed M Steptronic transmission with Drivelogic.

The new BMW M5 marks the first time an eight-speed M Steptronic transmission has teamed up with M xDrive and the optimised V8 engine to enable ferocious acceleration and bursts of speed. The transmission stands out with its extremely short shift times requiring no interruption in power flow, as well as its direct response to load alterations and exceptional shift quality. The wider overall ratio spread means that the increments in engine speed between the individual gears are smaller than on the predecessor unit, so there is an ideal ratio for every driving situation. This also translates into additional fuel savings in everyday use. Unlike a conventional automatic transmission, in which torque converter lock-up only takes place in the higher gears, the lock-up clutch on the eight-speed M Steptronic is engaged immediately after pulling away, creating a virtually rigid connection between the engine and transmission shaft. At the same time, a further improved turbine torsional damper serves to counteract any torsional vibrations. The transmission's direct connection to the drivetrain produces an extremely sporty feel.

As on the outgoing model, the M control concept offers drivers a choice of three shift programs, both in the automated D mode and the manual S mode, which can be selected using a button on the gear selector lever. The spectrum ranges from an extremely sporty program to one focused more on comfort and fuel efficiency. Alternatively, the driver can also change gears using shift paddles on the steering wheel. With S mode engaged, the transmission holds on to the selected gear even at full throttle, allowing optimum use of the V8's remarkable pulling power. What is more, Drivelogic enables multiple downshifts, resulting in

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considerably shorter shift times for drivers adopting a particularly sporty driving style.