The M double-clutch transmission with Drivelogic.
Contents.

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Description in Brief.

- The world's first Double Clutch Gearbox conceived and developed for a high-speed power unit; gearshift without interruption of power and traction; gearshift management with M-specific configuration; seven gears for optimum gear increments ensuring particularly dynamic acceleration; simultaneous debut in the BMW M3 Coupé, BMW M3 Saloon, and BMW M3 Convertible.

- Drivelogic with eleven electronically controlled driving programs in M-specific set-up; five shift programs in the automatic mode, six shift programs in the manual mode including Launch Control for maximum acceleration from a standstill; efficiency-enhancing transmission control in the automatic mode; sequential gear selection in the manual mode.

- Fourth, consistently enhanced generation of the automated manual gearbox in M-specific configuration; further enhancement of the car's dynamic driving characteristics and the motorsport-oriented driving experience; manual gear selection by sports selector lever or via paddles on the steering wheel; both control elements in M-specific configuration and set-up; Shift Lights.

- Perfect interaction of the M double-clutch transmission with Drivelogic and the V8 power unit in the new BMW M3; measurable and tangible improvement of acceleration; optional sporting downshift performance with int-between gas.

- Elaborate cooling of transmission fluid as the prerequisite for absolute reliability and endurance of the Double Clutch Gearbox with Drivelogic even on the race track, when subject to extreme loads and high outside temperatures.

- Optimised comfort in driving manoeuvres at very low speed ensured by Low Speed Assistant; automatic activation of parking lock after switching off the engine.

- Further reduction of fuel consumption and emissions compared with manual gearshift and a conventional converter-type automatic transmission.

Shift Quicker, Drive Faster: The M double-clutch transmission with Drivelogic.

BMW M GmbH is proud to be the world's first car maker now offering a seven-speed Double Clutch Gearbox specially conceived and designed for a high-speed power unit. Compared with all conventional systems available so far, this new gearbox ensures an optimum gearshift and even more dynamic acceleration, and at the same time reduces fuel consumption by a significant margin.

The new M double-clutch transmission with Drivelogic shifts gears without the slightest interruption in the flow of power, thus promoting both the sports driving experience and gearshift comfort for the driver. In its gearshift characteristics, the new M double-clutch transmission with Drivelogic is ideally matched to the fast-revving V8 power unit in the new BMW M3. Making its debut on the same occasion in the BMW M3 Coupé, the BMW M3 Saloon and the BMW M3 Convertible, the new transmission helps to provide even faster and more dynamic acceleration.

Given these qualities, the seven-speed Double Clutch Gearbox offers particularly the sporting and ambitious driver an attractive alternative to the six-speed manual gearbox featured as standard. Maintaining a permanent flow of power from the engine, reducing gear increments to a minimum and using dynamic torque surge when shifting gears, the M double-clutch transmission with Drivelogic ensures a truly sporting experience at all times when shifting gears, whether in the automatic or manual mode.

A further essential point is that Drivelogic exclusive to BMW M with its five shift programs in the D- and six shift programs in the S-mode gives the driver the opportunity to tailor his BMW M3 individually to his personal style of motoring.

An even faster and more comfortable gearshift is ensured by the M double-clutch transmission with Drivelogic both in the automated (D-) mode and when driving in the manual (S-) mode.

The process of shifting gears is basically the same as on BMW's proven Sequential M Gearbox, meaning that even when shifting gears manually there is no need for a clutch paddle and the driver may keep the gas pedal on the floor during the shift process as such.

To activate the D- or S-mode and to shift to reverse, the driver first has the choice of the new sports shift lever exclusive to the BMW M3, enabling the him to shift gears himself in the S-mode. In this case he moves the gearshift lever only along one line, that is in a sequential process.

As an alternative the driver is able to shift gears via paddles on the steering wheel, pulling the right-hand paddle to shift up, the left paddle to shift down.

Consistent enhancement of the automated manual gearbox.
As early as in 1996, the BMW M3 became the first production car in the world to feature a fully automated manual gearbox. In the years to come the Sequential M Gearbox (SMG) was consistently enhanced and upgraded in two further generations, optimised in its control logic and enhanced by the addition of further functions.

In 2001 BMW M GmbH then presented the – again unique – Sequential M Gearbox with Drivelogic in the predecessor to the new BMW M3, enabling the driver to adjust gearshift characteristics according to his individual requirements and preferences.

The new M double-clutch transmission with Drivelogic now offers further, consistent enhancement of the automated manual gearbox in BMW M GmbH's high-performance sports cars. Similar to the Sequential M Gearbox featured so far, the new gearbox fulfils all the specific requirements coming from motorsport in the transmission of supreme engine power to the drive wheels and offers unique control and gearshift technology all enhanced to an unprecedented standard.

Once again, therefore, BMW M GmbH is setting a new benchmark in technology through this new gearshift concept. And like the three generations of the Sequential M Gearbox in the past, the M double-clutch transmission with Drivelogic immediately comes at the top of the market in terms of sportiness and driving pleasure in a production car.

Motorsport as the benchmark, top performance as the principle.
In its concept and operating principle, the Double Clutch Gearbox comes straight from motorsport. On the race track, where every tenth of a second is crucial to winning or losing, this unique gearshift concept has proven its value and benefits in the same way as the sequential gearshift used in Formula 1: Shifting up with his foot fully on the throttle and without the slightest interruption of torque and pulling force makes even a professional driver a few fractions of a second faster, giving him that small but incredibly important advantage on the track.

Moving over to production cars, the problem so far was that the gearshift comfort required in everyday use could only be achieved in combination with far less powerful engines and with far less torque. But now, for the first time, the benefits of a Double Clutch Gearbox are available for the first time even under supreme loads. The M double-clutch transmission with Drivelogic is indeed the first power transmission of its kind the world over conceived and designed for engine speeds of up to 9,000 rpm.

A further advantage for the driver of a BMW M3 is the systematic control concept ensuring maximum driving dynamics also in motorsport: Gearshift paddles on the steering wheel guarantee a very fast and, at the same time, safe gearshift in all situations, the sequential shift pattern serving to minimise the risk of making a mistake when shifting gears.

Always a step ahead when shifting gears.
The M double-clutch transmission with Drivelogic combines two gearbox components in one common housing with the same compact dimensions as a conventional manual gearbox. The “heart” of the new M double-clutch transmission in technical terms is formed by the two oil-cooled wet clutches. One of the two clutches is for the even (2, 4, 6), the other for the uneven (1, 3, 5, 7) gears and, in addition, for the reverse gear.

While driving, one of the two clutches is always closed, the other is open. When accelerating – and when shifting down – the clutches are activated in an alternating process, one after the other. When shifting gears, therefore, the first clutch opens just as the second clutch is closing. This ensures an absolutely smooth and comfortable and at the same time an incomparably fast gearshift without the slightest interruption in the flow of power.

This interaction of two clutches ensures an unparalleled rate of gear change in particular because the transmission control unit pre-selects the next gear with the transmission ratio matched ideally to engine and road speed and keeps this gear waiting for immediate operation. So if the BMW 3 Series is accelerating, say, in third gear, an immediate flow of power is ensured by the appropriate clutch and the gearbox component controlling the uneven gears.

While all this is happening, the gearbox segment responsible for the even gears shifts to the gear required, in this case to fourth gear. The only operation required for this purpose is to close the clutch for fourth gear, at the same time opening the clutch for third gear, the power of the engine then being transmitted through the new gear with its different ratio to the wheels.

This entire process takes only a few milliseconds, meaning that in the time even a skilled driver takes to press down the clutch pedal the M double-clutch transmission with Drivelogic has easily completed the entire process of shifting gears, continuing to accelerate in the next gear higher up.

Like in motorsport: dynamic torque peaks when shifting up, in-between gas when shifting down.

With the process of engaging and disengaging the gears continuing in a smooth flow, the positive engagement connecting the engine to the transmission is not interrupted, allowing the driver to set off smoothly and comfortably and, in particular, to shift up at an incomparably fast speed. To provide an even more sporting driving impression and to further improve the car's acceleration, the M double-clutch increases torque and pulling power to an even higher standard when shifting gears by means of the appropriately configured Drivelogic programs. In conjunction with the small increments between gears, these Drivelogic programs give the driver an even more intense feeling of acceleration, sensing each gearshift as the starting point for an even greater surge of power. The additional power generated in this way comes out clearly in the new transmission ratio feeding torque and traction to the drive wheels.

The combination of short gearshift times, small gear increments and the increase in torque gives the driver of a BMW M3 with an M double-clutch transmission a new, unprecedented experience of driving dynamics carried over directly from motorsport.

When shifting down the M double-clutch transmission works according to exactly the same principle. The only difference is that the electronic transmission control makes the process of engaging the clutch smoother and softer to prevent the rear wheels from being slowed down suddenly and with too great an effect.

Should the electronic control unit – for example when the driver is driving the car in an extremely sporting style or applying the brakes hard – recognise a very large gap in engine speed when changing gears, it will automatically adjust the transition of torque to the speed of the engine. This process of giving gas in between gears serves to further enhance the car's driving stability and makes the entire driving experience even more intense. The drag force exerted by the engine comes out only to the extent desired by the driver, remaining within the limits already well known from cars with a manual gearbox.

Electronic transmission management recognising the driver's particular preferences.

In choosing the gear to be prepared for operation, the electronic control unit naturally takes current driving conditions – that is the current situation on the road – into account: Focusing on the position of the gas pedal, engine speed, road speed and the driving program currently in use, the system recognises the kind of acceleration the driver wishes to enjoy or, conversely, whether he wishes to reduce his speed on the road.

Operating in such an intelligent manner, the transmission control consistently makes the necessary preparations for harmoniously continuing a manoeuvre initiated by the driver. So even with an extreme change in the style of motoring, the system changes gears appropriately, again at unparalleled speed and with unparalleled precision. Should the driver be required to suddenly stop the process of acceleration, for example, the M double-clutch transmission will promptly provide the transmission ratio required under such new conditions, operating just as quickly and efficiently as a conventional automatic transmission of the latest generation set to an extremely dynamic gearshift mode.

A two-mass flywheel serves as the torsion damper and the two clutches are activated via an integrated hydraulic module. Dry sump lubrication, in turn, guarantees a high standard of reliability and maintenance-free function throughout the entire running life of the car.

Special cooling to handle even the most extreme conditions.

The engineers at BMW M GmbH have adapted the M double-clutch transmission with Drivelogic not only to the high engine speed concept and the specific torque curve of BMW's M engines, but also to the high thermal loads encountered in the drivetrain of such a high-performance sports car. As an example, the transmission fluid is kept within the optimum temperature range not only by integrating the transmission into the coolant cycle of the engine. Instead, an additional oil/air cooler helps to avoid excessively high temperatures inside the M double-clutch transmission even under extreme conditions, for example on the race track.

A further point is that the transmission fluid, being connected to the engine's cooling system, reaches its normal operating temperature faster than usual, for example in particularly cold weather. This again helps to reduce frictional losses in the warm-up phase and saves fuel in the process.

Perfect combination:
eight cylinders and 8,400 rpm, two clutches and seven gears.

Both in its basic configuration and in the specific application on the BMW M3, BMW's new M double-clutch transmission with Drivelogic is the ideal partner for the – likewise brand-new – eight-cylinder power unit of the new BMW M3. Quite simply, this is because the particular power and performance characteristics of BMW's M Cars were taken into account from the start by the engineers in developing the new transmission.

In this process the engineers at BMW M GmbH were able – over and above their detailed knowledge of BMW M engines and their particular features – to contribute many years of experience in the development and set-up of the Sequential M Gearbox in the process of developing the new transmission. This skill therefore went directly into the design and construction of the M double-clutch transmission and was compared right from the start with the knowledge gained in developing the new V8 high-speed engine for the BMW M3. As a result, the M double-clutch transmission is the first transmission of its kind able to handle engine speeds of up to 9,000 rpm. And at the same time it is perfectly prepared for high engine torque and extra power.

Given this qualities, the M double-clutch transmission is particularly suitable for the BMW M3, where the unique muscle of the 309 kW/420 hp V8 power unit is based on the high engine speed concept so typical of BMW M: The eight-cylinder reaches its maximum output at 8,300 rpm and revs all the way to 8,400 rpm. Maximum torque, in turn, is 400 Newton-metres or 295 lb-ft.

So precisely this kind of power and muscle was taken into account from the start in developing the M Double Clutch Gearbox.

Like the Sequential M Gearbox already featured today, the new M double-clutch transmission comes with seven gears allowing perfect adjustment of the transmission ratios to the engine's power and performance. As a result, the new gearbox shifts gears when accelerating with only a minimum gap or increment between the gears involved, ensuring an optimum flow of engine power and speed in every gearshift and allowing the driver to really enjoy the enormous power reserves of the engine.

This serves to capitalise on the engine's torque and the traction and muscle offered by the high-speed concept throughout the entire speed range. After every gearshift, therefore, the speed of the car on the road continues to increase unabated with ongoing power and muscle.

Shifting gears without interruption of power:
dynamic and comfortable.

When it comes to driving dynamics, the seven-speed double-clutch transmission offers an advantage over seven-speed SMG already boasting an extremely fast gearshift by way of the change in gears now taking place without the slightest interruption of power and torque. In practice, this means even faster and more dynamic acceleration clearly measurable in seconds and metres.

The M double-clutch transmission is the only system of its kind able to offer the advantages of shifting gears without any interruption of power in combination with seven gears in a truly outstanding, high-performance car. The progress provided by this configuration comes to bear not only in the car's driving dynamics, but also in its driving comfort and efficiency. The fast and smooth shift of gears, for example, ensures an unusually harmonious process of acceleration.

Precisely this is why the indicator needle in the rev counter is virtually the only sign of a change in gears when shifting in the automated mode. The load change reactions so typical of a conventional gearbox are avoided completely, ensuring a standard of driving comfort even under dynamic conditions never experienced before.

More gears, greater efficiency.

Compared with a conventional automatic transmission, the M double-clutch transmission allows greater fuel economy and cleaner emissions on exactly the same engine with the same power. This is primarily attributable to the even more direct connection between the engine and the M double-clutch transmission as well as the general layout with seven gears. Quite simply, the advantage is that the larger number of gears allows even finer increments between the individual gear ratios.

With its overall gear spread of 4.8, the M double-clutch transmission with Drivelogic offers the appropriate transmission ratio in virtually every situation in everyday traffic. This again enables the driver to save fuel through an appropriate style of motoring, without making any concessions in terms of driving dynamics. For the M double-clutch transmission is able to provide the appropriate gear for fast and powerful acceleration at any time and with incredibly fast operation, even in response to sudden command.

Automatic or sequential – it's the driver's choice.
The M double-clutch transmission with Drivelogic allows both automated and manual selection of gears. In both cases gears are shifted at a rate and with a level of precision never seen before on a conventional manual gearbox or automatic transmission. At the same time the driver is able to enjoy the optimised gearshift comfort of the M double-clutch transmission while switching over whenever he wishes to a more active and dynamic style of motoring.

To change from the automated to the manual gearshift mode, the driver is not even required to move the gearshift lever in the appropriate direction. Rather, all he has to do while driving is to operate one of the gearshift paddles on the steering wheel to shift gears immediately and change over to the S-mode. Then, via the appropriate paddle or with the help of the gearshift lever, the driver subsequently selects the gear of his choice.

The electronic control unit relieves the driver of the usual chore of shifting down in a predetermined process independently of the gearshift mode selected – for example when rolling towards traffic lights switching to red. And in all operating modes and driving programs, a gear indicator in the instrument panel informs the driver of the gear currently selected by the automatic mode or by the driver himself.

M-specific Drivelogic with eleven driving programs.
The driver of a BMW M3 equipped with the M double-clutch transmission has the choice not only of automated and manual selection of gears, but also variable gearshift characteristics both in the D- and S-mode. For in both cases he is able to determine the degree of gearshift dynamics as he wishes. The configurations available range in several steps from a more balanced, comfort-oriented all the way to a very dynamic, racing-like set-up of the transmission.

To provide this additional function, Drivelogic specially tailored to the M double-clutch transmission provides no less than five driving programs in the D- and six programs in the S-mode.

This gives the driver the opportunity to configure his BMW M3 perfectly to his personal preferences also when it comes to the car's gearshift characteristics. At the same time he has the freedom to choose the appropriate set-up in various driving situations, taking, say, weather conditions, his route, or the load/number of passengers the car is carrying into account.

To change the gearshift program, all the driver has to do is press the Drivelogic button on the centre console. Indeed, he is even able to save his personal favourite among the Drivelogic options as part of an individual, personalised configuration, then retrieving this specific function at any time simply by pressing the MDrive button on the multifunction steering wheel of his BMW M3. Then, just like the gear currently in mesh, the driving program selected is shown in the instrument cluster between the speedometer and the rev counter.

Sports or comfort: the driver has the choice.
In the D-mode with the gearbox shifting automatically among no less than seven gears, the driver has the choice of five Drivelogic programs adjusting the gearshift characteristics very precisely to the driver's individual style of motoring.

The driving programs differ through the speed at which they change gears as well as the engine revs at which a gearshift is initiated. Both of these parameters are varied in all driving programs as a function of current driving conditions, the speed of the car, and the position of the gas pedal. So choosing the appropriate driving program, the driver is able to use the sports and comfort potential of the M double-clutch transmission as he wishes.

In a particularly sporting set-up – driving program D5 – the M double-clutch transmission shifts up almost like in a racing car whenever the driver activates the kick-down function, that is shortly before the engine reaches its maximum speed – and the process of shifting down is equally dynamic.

The other end of the gearshift range is Drivelogic stage D1 enabling the driver to set off in second gear. In this case the clutch is particularly smooth and soft, helping the driver to set off without problems on, say, slippery surfaces in winter.

In the automated mode the driver is able to influence the gearshift for example by taking back the gas pedal slowly and determining himself when the transmission shifts up. Conversely, by kicking down the gas pedal he is able to quickly shift back to the best gear for optimum acceleration.

Clear signals: feedback when shifting and Shift Lights.
In the manual gearshift mode the driver has the choice of six Drivelogic driving programs again rendering the complete range of features and characteristics so typical of the M Double Clutch Gearbox. In the most dynamic Drivelogic stages in the S-mode, management of the clutch is very sporting and dynamic, creating the direct flow of power so typical of a car with a manual

gearbox – which is precisely what most drivers with a particularly sporting orientation expect. Indeed, this kind of feedback to the driver after shifting gears serves to further emotionalise the driving experience in a BMW M3 with the M Double Clutch Gearbox.

The engine speed required for optimum acceleration when shifting up is presented clearly to the driver by eight LED units housed in the upper edge of the rev counter on the ornamental surround. These Shift Lights enable the driver to precisely determine the ideal time for shifting gears. Six LED units flashing on in yellow one after the other accompany the engine as it approaches its top speed. The latest moment for shifting up is then presented by two LED units coming on in red.

Once the engine reaches its maximum speed, the lights so far remaining on consistently start to flash on and off. A further point is that the driver is able to configure the individual operation of the Shift Lights via the MDrive button and, if he wishes, deactivate their operation in the instrument cluster.

Manual mode with Launch Control for setting off like a racing car.
In the manual mode Drivelogic also provides a Launch Control function operating in accordance with specific BMW M parameters. Under optimum conditions in terms of the tyre condition, road surface and the load the car is carrying, Launch Control ensures the fastest possible acceleration from a standstill. To achieve this dynamic performance, all the driver has to do with the car at a standstill and in driving program S6 is move the sports shift lever to the front and hold it in this position. Then, as soon as the starter flag symbol comes on in the instrument cluster, the driver just presses down the gas pedal to automatically obtain the ideal starting speed on the engine. Pressing down the brake pedal lightly with his left foot, in turn, the driver can prevent the car from rolling forward, and by briefly tipping the cruise control lever he is able to finely adjust the desired starter speed.

Then, after letting go the selector lever, the BMW M3 accelerates with optimum performance and with slip on the rear wheels controlled by the clutch – if the driver wishes, all the way to top speed.

In this process the M double-clutch transmission chooses exactly the right gearshift points ensuring optimum pick-up of engine speed when shifting up.

To use Launch Control the driver is first required to deactivate DSC Dynamic Stability Control. Then, after completing the acceleration process, the driver again takes command in choosing the gears he wishes to use.

Sequential gearshift like in a racing car.
The seven-stage M double-clutch transmission with Drivelogic is operated by an M-specific sports gearshift lever transmitting the driver's shift commands electronically to the transmission management. This serves to facilitate the gearshift process, reducing control forces in accordance with the dynamic character of the gearbox and the car itself. The shift commands determined by the driver through manual control are generated in a sequential process, that is on one single level.

To shift up to the next gear, all the driver has to do is briefly tip the gearshift lever backwards, to shift down all he does is briefly tip the lever forwards. In both cases the lever automatically moves back to its starting point after operation.

This configuration is the same as on the sequential gearboxes used in motorsport and is the logical control mode for the sports-minded driver. At the same time this highlights the close connection between the M double-clutch transmission and motorsport technology.

Gearshift paddles on the steering wheel to shift gears quickly and smoothly.
In addition to the newly developed gearshift lever, the BMW M3 equipped with an M double-clutch transmission also comes with gearshift paddles on the steering wheel. Made of solid aluminium, these paddles enable the driver to shift gears manually ultra-fast and with maximum safety. In particular, this is because he does not have to take his hands off the steering wheel when shifting gears, which means extra safety in controlling the car.

Fitted firmly to the steering wheel, the gearshift paddles are always in a convenient position for shifting gears virtually level with the driver's hands. They therefore enhance not only the driving experience, but also the high standard of safety the driver enjoys at the wheel.

Like the sports gearshift lever, the gearshift paddles operate according to the usual pattern in motorsport: The paddle on the right is for shifting up, the paddle on the left for shifting down. And at the same time the high-quality finish of the aluminium paddles also establishes a direct link to motorsport with the flair of a genuine racing car.

The kick-down function is a special feature in controlling the car, operated either by the gearshift paddles or by the gearshift lever in the S-mode. As soon as the driver presses the gas pedal right down to the floor (kick-down) and then pulls the left-hand paddle once or tips the gearshift lever forward, the transmission shifts back for optimum torque and pulling force.

Pulling the paddle or tipping the gearshift lever only once therefore makes the transmission shift down either one or several gears, whatever is appropriate. The electronic control unit in command of the M double-clutch transmission automatically changes the gear currently in mesh to give the car optimum acceleration under its current driving conditions and at the speed at which it is travelling.

Comfort and safety functions rounding off the sporting character of the car.
The M double-clutch transmission with Drivelogic supports the driver of the BMW M3 not only when he prefers a particularly sporting mode, but also through a wide range of safety functions. In critical driving situations, for example, the M double-clutch transmission instantaneously opens the clutch currently active to prevent the rear end of the car from swerving round due to engine drag forces suddenly acting on the drive wheels.

For optimum conditions when driving at particularly low speeds – for example when manoeuvring below 5 km/h – the M double-clutch transmission features a Low Speed Assistant. This function already well known from the automatic transmission serves to significantly increase driving and control comfort, for example when parking, and is activated by briefly tipping the gas pedal. After the engine has been switched off, the electronic control unit also automatically activates a parking lock acting through the transmission.

Assistance when setting off on an uphill gradient.
Gradient detection by the M double-clutch transmission varies the gearshift points as a function of the route the driver is taking and its specific profile. This means that the gears shift differently on uphill and downhill gradients than when driving on a flat, level surface. Driving uphill, for example, this function avoids the constant change of gears so typical of a conventional automatic transmission, the so-called pendulum gearshift with the gears constantly shifting up and down. When driving downhill, on the other hand, the M double-clutch transmission keeps the lower gears in mesh longer than would otherwise be the case in order to capitalise on the brake power of the engine. And last but not least, the choice of gears is automatically adjusted to an uphill gradient in the automated mode.

Motorsport character for everyday traffic:
the BMW M3 with M Double Clutch Gearbox.
Introducing the new M Double Clutch Gearbox, BMW M GmbH is presenting a power transmission which offers the latest state of the art in this technology. The M double-clutch transmission with Drivelogic excellently enhances the particularly dynamic character of this high-performance sports car bearing

the M logo. In its M-specific configuration, the new transmission harmonises perfectly with the engine and suspension technology of the BMW M3 based from the start on the particular features and requirements of motorsport. And at the same time the M double-clutch transmission with Drivelogic makes a helpful contribution to driving comfort and supports the driver in ensuring maximum efficiency at the wheel.

The M double-clutch transmission with Drivelogic offers all the features required to enjoy extra driving dynamics and motoring comfort as well as a new standard of all-round economy in a car of this calibre. Compared with a conventional automatic transmission, for example, there is no loss of energy otherwise caused by the torque converter.

A further advantage of this high-performance transmission management is that it is able to provide the ideal transmission ratio at all times for maximum efficiency, taking the particular style of motoring preferred by the driver into account. In this way the M double-clutch transmission with Drivelogic also helps to reduce fuel consumption and emissions.

Proudly presenting the new technology, BMW M GmbH is once again highlighting the Company's competence in modern technology and its leading role in the development of high-performance cars able to provide their racing qualities also in everyday motoring and offer up-to-date comfort and efficiency at the same time.

3. Specifications BMW M3.
BMW M3 Coupé.

		BMW M3 Coupé	BMW M3 Coupé (with M DCT)
Body			
No of doors/seats		2/4	2/4
Length/width/height (EU, unl)	mm	4,615/1,804/1,418	4,615/1,804/1,418
Wheelbase	mm	2,761	2,761
Track, front/rear	mm	1,540/1,539	1,540/1,539
Turning circle	m	11.7	11.7
Tank capacity	approx ltr	63	63
Cooling system incl heater	ltr	11.4	11.4
Engine oil	ltr	8.8	8.8
Transmission fluid	ltr	2.5	approx 9.0
Final drive fluid	ltr	1.2	1.2
Weight, unladen, to DIN[1]	kg	1,580	1,575
Weight, unladen, to EU[2]	kg	1,655	1,675
Max load to DIN	kg	500	480
Max permissible to DIN	kg	2,080	2,080
Max axle load, front/rear	kg	1,020/1,120	1,020/1,120
Max trailer load[3)] Braked (12%)/unbraked	kg	–	–
Max roof load/max trailr download	kg	75/–	75/–
Luggage compartment to DIN	ltr	430	430
Air drag	C_d x A	0.677	0.677
Power Unit			
Config/No of cyls/valves		V/8/4	V/8/4
Engine management		MS S60	MS S60
Capacity	cc	3,999	3,999
Bore/stroke	mm	92.0/75.2	92.0/75.2
Compression ratio	:1	12.0 : 1	12.0 : 1
Fuel grade	RON	98 (95)	98 (95)
Max output	kW/hp	309/420	309/420
at	rpm	8,300	8,300
Max torque	Nm/lb-ft	400/295	400/295
at	rpm	3,900	3,900
Electrical System			
Battery/installation	Ah/–	70/luggage comp	70/luggage comp
Alternator	A/W	180/2,520	180/2,520
Chassis and Suspension			
Suspension, front		Aluminium two-joint spring strut axle with tiebar; small, positive steering roll radius; compensation lateral forces; anti-dive	
Suspension, rear		Five-arm axle with anti-squat and anti-dive	
Brakes, front		Single-piston swing-calliper compound disc brakes	
Diameter	mm	360 x 30, vented and cross-drilled	
Brakes, rear		Single-piston swing-calliper compound disc brakes	
Diameter	mm	350 x 24, vented and cross-drilled	
Driving stability systems		ABS, ASC, CBC, DSC; Variable M Differential Lock	
Steering		Rack-and-pinion steering with hydraulic assistance and Servotronic	
Steering trans ratio:	:1	12.5	12.5
Type of gearbox		SG 6	M DCT Drivelogic
Gear ratios I	:1	4.055	4.780
II	:1	2.369	2.933
III	:1	1.582	2.153
IV	:1	1.192	1.678
V	:1	1.000	1.390
VI	:1	0.872	1.203
VII	:1	–	1.000
R	:1	3.678	4.454
Final drive	:1	3.846	3.154
Tyres, front/rear		245/40 ZR18 / 265/40 ZR18	
Rims, front/rear		8.5J x 18 EH2+ IS 29 cast aluminium/9.5J x 18 EH2+ IS 23 cast aluminium	

		BMW M3 Coupé	BMW M3 Coupé (with M DCT)
Performance			
Power-to-weight ratio to DIN	kg/kW	5.1	5.1
Power-to-weight ratio to DIN	kg/hp	3.8	3.8
Output per litre	kW/ltr	77.3	77.3
Output per litre	hp/ltr	105.0	105.0
Acceleration 0–100 km/h	sec	4.8	4.6
Top speed	km/h	250[4)]	250[4)]
Fuel Consumption in EU Cycle			
Urban	ltr/100 km	17.9	17.0
Extra-urban	ltr/100 km	9.2	9.0
Composite	ltr/100 km	12.4	11.9
CO_2, overall	g/km	295	285
Miscellaneous			
Emission rating		EU4	EU4

[1)] Weight of vehicle in road trim (DIN)
[2)] Weight of vehicle in road trim (DIN) plus 75 kg for driver and luggage
[3)] May be increased under certain conditions
[4)] electronically limited

BMW M3 Saloon.

		BMW M3 Saloon	BMW M3 Saloon (with M DCT)
Body			
No of doors/seats		4/5	4/5
Length/width/height (EU, unl)	mm	4,580/1,817/1,447	4,580/1,817/1,447
Wheelbase	mm	2,761	2,761
Track, front/rear	mm	1,540/1,539	1,540/1,539
Turning circle	m	11.7	11.7
Tank capacity	approx ltr	63	63
Cooling system incl heater	ltr	11.4	11.4
Engine oil	ltr	8.8	8.8
Transmission fluid	ltr	2.5	Approx 9.0
Final drive fluid	ltr	1.2	1.2
Weight, unladen, to DIN[1)]	kg	1,605	1,625
Weight, unladen, to EU[2)]	kg	1,680	1,700
Max load to DIN	kg	545	525
Max permissible to DIN	kg	2,150	2,150
Max axle load, front/rear	kg	1,020/1,190	1,020/1,190
Max trailer load[3)] Braked (12%)/unbraked	kg	–	–
Max roof load/max trailr download	kg	75/–	75/–
Luggage compartment to DIN	ltr	450	450
Air drag	C_d x A	0.697	0.697
Power Unit			
Config/No of cyls/valves		V/8/4	V/8/4
Engine management		MS S60	MS S60
Capacity	cc	3,999	3,999
Bore/stroke	mm	92.0/75.2	92.0/75.2
Compression ratio	:1	12.0 : 1	12.0 : 1
Fuel grade	RON	98 (95)	98 (95)
Max output	kW/hp	309/420	309/420
at	rpm	8,300	8,300
Max torque	Nm/lb-ft	400/295	400/295
at	rpm	3,900	3,900
Electrical System			
Battery/installation	Ah/–	70/luggage comp	70/luggage comp
Alternator	A/W	180/2,520	180/2,520
Chassis and Suspension			
Suspension, front		Aluminium two-joint spring strut axle with tiebar; small, positive steering roll radius; compensation lateral forces; anti-dive	
Suspension, rear		Five-arm axle with anti-squat and anti-dive	
Brakes, front		Single-piston swing-calliper compound disc brakes	
Diameter	mm	360 x 30, vented and cross-drilled	
Brakes, rear		Single-piston swing-calliper compound disc brakes	
Diameter	mm	350 x 24, vented and cross-drilled	
Driving stability systems		ABS, ASC, CBC, DSC; Variable M Differential Lock	
Steering		Rack-and-pinion steering with hydraulic assistance and Servotronic	
Steering trans ratio:	:1	12.5	12.5
Type of gearbox		SG 6	M DCT Drivelogic
Gear ratios I	:1	4.055	4.780
II	:1	2.369	2.933
III	:1	1.582	2.153
IV	:1	1.192	1.678
V	:1	1.000	1.390
VI	:1	0.872	1.203
VII	:1	–	1.000
R	:1	3.678	4.454
Final drive	:1	3.846	3.154
Tyres, front/rear		245/40 ZR18 / 265/40 ZR18	
Rims, front/rear		8.5J x 18 EH2+ IS 29 cast aluminium/9.5J x 18 EH2+ IS 23 cast aluminium	

		BMW M3 Saloon	BMW M3 Saloon (with M DCT)
Performance			
Power-to-weight ratio to DIN	kg/kW	5.2	5.2
Power-to-weight ratio to DIN	kg/hp	3.8	3.8
Output per litre	kW/ltr	77.3	77.3
Output per litre	hp/ltr	105.0	105.0
Acceleration 0–100 km/h	sec	4.9	4.7
Top speed	km/h	250[4)]	250[4)]
Fuel Consumption in EU Cycle			
Urban	ltr/100 km	17.9	17.0
Extra-urban	ltr/100 km	9.2	9.0
Composite	ltr/100 km	12.4	11.9
CO_2, overall	g/km	295	285
Miscellaneous			
Emission rating		EU4	EU4

[1)] Weight of vehicle in road trim (DIN)
[2)] Weight of vehicle in road trim (DIN) plus 75 kg for driver and luggage
[3)] May be increased under certain conditions
[4)] electronically limited

BMW M3 Convertible.

		BMW M3 Convertible	BMW M3 Convertible (with M DCT)
Body			
No of doors/seats		2/4	2/4
Length/width/height (EU, unl)	mm	4,615/1,804/1,392	4,615/1,804/1,392
Wheelbase	mm	2,761	2,761
Track, front/rear	mm	1,540/1,539	1,540/1,539
Turning circle	m	11.7	11.7
Tank capacity	approx ltr	63	63
Cooling system incl heater	ltr	11.4	11.4
Engine oil	ltr	8.8	8.8
Transmission fluid	ltr	2.5	approx 9.0
Final drive fluid	ltr	1.2	1.2
Weight, unladen, to DIN[1)]	kg	1,810	1,830
Weight, unladen, to EU[2)]	kg	1,885	1,905
Max load to DIN	kg	470	450
Max permissible to DIN	kg	2,280	2,280
Max axle load, front/rear	kg	–/–	–/–
Max trailer load[3)] Braked (12%)/unbraked	kg	–	–
Max roof load/max trailr download	kg	75/–	75/–
Luggage compartment to DIN	ltr	210–350	210–350
Air drag	C_d x A	0.688	0.688
Power Unit			
Config/No of cyls/valves		V/8/4	V/8/4
Engine management		MS S60	MS S60
Capacity	cc	3,999	3,999
Bore/stroke	mm	92.0/75.2	92.0/75.2
Compression ratio	:1	12.0 : 1	12.0 : 1
Fuel grade	RON	98 (95)	98 (95)
Max output	kW/hp	309/420	309/420
at	rpm	8,300	8,300
Max torque	Nm/lb-ft	400/295	400/295
at	rpm	3,900	3,900
Electrical System			
Battery/installation	Ah/–	90/luggage comp	90/luggage comp
Alternator	A/W	180/2,520	180/2,520
Chassis and Suspension			
Suspension, front		Aluminium two-joint spring strut axle with tiebar; small, positive steering roll radius; Compensation lateral forces; anti-dive	
Suspension, rear		Five-arm axle with anti-squat and anti-dive	
Brakes, front		Single-piston swing-calliper compound disc brakes	
Diameter	mm	360 x 30, vented and cross-drilled	
Brakes, rear		Single-piston swing-calliper compound disc brakes	
Diameter	mm	350 x 24, vented and cross-drilled	
Driving stability systems		ABS, ASC, CBC, DSC; Variable M Differential Lock	
Steering		Rack-and-pinion steering with hydraulic assistance and Servotronic	
Steering trans ratio:	:1	12.5	12.5
Type of gearbox		SG 6	M DCT Drivelogic
Gear ratios I	:1	4.055	4.780
II	:1	2.369	2.933
III	:1	1.582	2.153
IV	:1	1.192	1.678
V	:1	1.000	1.390
VI	:1	0.872	1.203
VII	:1	–	1.000
R	:1	3.678	4.454
Final drive	:1	3.846	3.154
Tyres, front/rear		245/40 ZR18/265/40 ZR18	
Rims, front/rear		8.5J x 18 EH2+ IS 29 cast aluminium/9.5J x 18 EH2+ IS 23 cast aluminium	

		BMW M3 Convertible	BMW M3 Convertible (with M DCT)
Performance			
Power-to-weight ratio to DIN	kg/kW	5.9	5.9
Power-to-weight ratio to DIN	kg/hp	4.3	4.3
Output per litre	kW/ltr	77.3	77.3
Output per litre	hp/ltr	105.0	105.0
Acceleration 0–100 km/h	sec	5.3	5.1
Top speed	km/h	250[4)]	250[4)]
Fuel Consumption in EU Cycle			
Urban	ltr/100 km	18.7	17.3
Extra-urban	ltr/100 km	9.6	9.4
Composite	ltr/100 km	12.9	12.3
CO_2, overall	g/km	309	293
Miscellaneous			
Emission rating		EU4	EU4

[1)] Weight of vehicle in road trim (DIN)
[2)] Weight of vehicle in road trim (DIN) plus 75 kg for driver and luggage
[3)] May be increased under certain conditions
[4)] electronically limited