

Media Information
7 May 2026

BMW M Ignite technology: Innovative new technology for all six-cylinder in-line engines from BMW M.

Pre-chamber combustion patented by BMW celebrates its premiere. High-efficiency new development makes its series production debut in BMW M models and enables a significant reduction in fuel consumption under high loads. New ignition process is a prime example of the transfer of technology from racing cars to series-production models and helps to meet the requirements of the EU7 standard. Production of the BMW M3 and BMW M4 with BMW M Ignite technology begins in July 2026; the new engine technology will be available for the BMW M2 from August 2026.

Munich. With BMW M Ignite technology, a new engine technology patented by BMW in 2024 is set to enter series production. This new kind of pre-chamber ignition system for petrol engines will debut in the six-cylinder in-line units for the BMW M2, BMW M3 and BMW M4 from mid-2026. One of its standout benefits is a significant reduction in fuel consumption under high loads – during track use, in particular. This new engine innovation has its roots in motor sport, making it another example of the transfer of technology from the race track to the road. And it also plays a major role in meeting the stringent requirements of the Euro 7 standard.

The centrepiece of BMW M Ignite technology is the pre-chamber positioned within the cylinder head. It is connected with the cylinder's main combustion chamber by overflow openings. The pre-chamber has its own spark plug and ignition coil, meaning the engine has two ignition systems.

At low and medium revs, the conventional spark plug in the main combustion chamber fires before the spark plug in the pre-chamber. But when the engine is operating under higher revs and loads, the pre-chamber ignition takes over the lead role, with part of the fuel-air mixture channelled through the openings into the pre-chamber also ignited there. The flames generated as a result exit the pre-chamber at around the speed of sound.

These ignition jets then ignite the mixture in the main combustion chamber above the piston at multiple points at the same time. The result is a significantly higher

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combustion speed. Meanwhile, the possible cause of uncontrolled combustion – i.e. “knocking” – is also countered effectively. An additional effect of this technology is a drop in the temperature of the exhaust gas.

Other new technical features alongside the pre-chamber ignition include a higher compression ratio and turbochargers with variable turbine geometry.

BMW M Ignite technology boosts the efficiency of the six-cylinder in-line engines dramatically, especially when the engine is being pushed to its limits. Under high loads, fuel consumption drops substantially. This is particularly beneficial for BMW M customers who drive their cars on race circuits – e.g. during track days: the fuel consumption reduction enabled by BMW M Ignite technology means they can keep lapping for longer on the same amount of fuel.

As well as these efficiency gains, BMW M Ignite technology also helps to meet the new European Euro 7 standard, which will come into force in November 2026. In this way, BMW M is ensuring the high-performance cars fitted with this technology will continue to meet European registration requirements in the future. The new engines therefore represent another instance of technology from racing cars making its way into series-production models.

All variants of the BMW M3 and BMW M4 will come with BMW M Ignite technology from July 2026. Production of the BMW M2 featuring this technology will get underway in August 2026. The displacement and power outputs of all the models with BMW M Ignite technology will be unchanged from those of the corresponding outgoing engines.

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The BMW Group

With its four brands, BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial services. The BMW Group production network comprises over 30 production sites worldwide; the company has a global sales network in more than 140 countries.

In 2025, the BMW Group sold 2.46 million passenger vehicles and more than 202,500 motorcycles worldwide. The profit before tax in the financial year 2025 was € 10.2 billion on revenues amounting to € 133.5 billion. As of 31 December 2025, the BMW Group had a workforce of 154,540 employees.

The economic success of the BMW Group has always been based on long-term thinking and responsible action. Sustainability is a key element of the BMW Group's corporate strategy and covers all products – from the supply chain through production to the end of their useful life.

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