



**PREVIOUS PAGES:**  
 This front view of the original M3 of 1986/1987 shows that many detail changes had been made to the basic body-shell, including the provision of flared wheel arches, and a different front spoiler....

**ABOVE:....with the same attention to detail being given to the rear end, also including flared arches, a raised boot lid, a functional rear spoiler and a different rear bumper.**

Although they were already committed to a high-profile and very-expensive programme of developing 1.5-litre turbocharged engines for F1 racing (see the image on page 28), BMW concluded that not only did they have enough technical expertise, but there were promising new-model road-car developments in the pipeline that might allow them once again to become competitive in touring car racing. But it was going to require new thinking, bold product planning, and decisive action into the bargain: it went without saying that this could not be slipped through the corporate mesh without gaining board approval, for the investment would be considerable.

The reasons were obvious. To qualify for Group A homologation, the new regulations insisted that a company would have to build a minimum of 5,000 cars within a 12-month period. This, by definition, meant that an average of at least one hundred cars would have to be completed every week – more if possible, to get the cars approved and homologated in good time – and such cars would have to be based on a more mundane series production machine, and should ideally share the same final assembly facilities.

This was never going to be easy, even for a company as profitable and ambitious as BMW. To quote a contemporary motor industry pundit who had a great deal of experience in such matters: 'Anyone can build one car – that's easy – and even building 20 cars is possible, given available finance. But building 200 Group B cars, or 5,000 Group A cars means that big money has to be spent on tooling for special pieces....' Not that BMW needed reminding of this, for they had just gone through that self-same process with the beautiful mid-engined M1 Coupé.

Nevertheless, the company decided to develop a new Group A Saloon model based on the still secret new-generation 3-Series (the E30 range, which was due to be announced in 1982). It was a big decision, and one that would require considerable investment. The plan was to produce the necessary 5,000 cars within a year of assembly beginning, even if this figure was at the top end of what its planners saw as a natural sales ceiling for cars of this sort.

BMW, to their great credit, boldly faced up to this from the beginning, deciding that they could meet the challenge. Like all German motor companies, they would develop every aspect of the



**ABOVE: In 1987, the combination of Schnitzer-prepared M3s with Roberto Ravaglia behind the wheel was almost unbeatable – and Ravaglia became World Touring Car Champion in that season.**

in July. In fact, M3s finished 2-3-4-5-6-7, which, considering that this was something of a 'home circuit' race for the Germans, went down very well in Munich. They made up for this with outright victory in the Spa 24 Hours race in August.

This was set to be a battle of the titans by any standards, for at Spa there were no fewer than 13 M3s lining up against eight Ford Sierra RS500 Cosworths and eight Alfa Romeo 75 Turbos. It was no wonder that all the forecasts of lap records being smashed were confirmed. Although the monstrously-powerful turbocharged Fords led for many hours, the works-backed M3s plugged on, and on, and on – and after 24 hours, which included every potential weather condition from sunshine to heavy rain (and even some early-morning mist), it was the cars from Munich that took first, second, third and fifth. There were six M3s in the top ten.

In terms of outright victories, however, the M3's World Championship season was now almost past its peak, for no other car could thereafter keep up with the Fords. Even so, at Brno, in Czechoslovakia, M3s took 3-4-5-7-8, and quite

dominated the Class 2 (up to 2.5-litre) category, with Roberto Ravaglia looking more and more likely to be the BMW driver who would eventually take the drivers' crown at the end of the season.

The scene was set, however, for a concentrated nine-week period between mid-September to mid-November 1987 when there would be five races in four countries and three continents – at Silverstone in the UK, Bathurst and Calder in Australia, Wellington in New Zealand and Fuji in Japan. Controversy about the acceptable limits of interpretation of homologation regulations boiled over, and disqualifications followed, yet BMW M3 drivers managed to score maximum points in three races. When the dust had settled (and it took until the spring of 1988 for every ruffled feather to be patted down) BMW driver Roberto Ravaglia (who always ran in Schnitzer-prepared cars) emerged as champion, while the two Schnitzer-prepared M3s took second and third in the team standings.

It was not controversy over the performance and suitability of the cars that caused so much trouble at this time (for by then there was no



Photo courtesy of McLaren Automotive Limited

## McLAREN F1 ROAD CAR – BMW V12 ENGINE

I make mention of this impressive power unit for it was, effectively, a blood relation of the six-cylinder engines used in the E36 and E46 M3 ranges of the period. Designed to order for McLaren, and specifically for their use in the three-seater F1 road car (it was not related to another V12 in BMW's road-car range), this S70/2 engine was an amazingly powerful V12 in which many details would later be refined and used in E36 Evolution and E46 M3s. Work began in Munich in March 1991, the first prototype engine ran on a test-bed before the end of the year, and the first engine was delivered to McLaren for installation in March 1992.

Based around what looked otherwise like a conventional aluminium alloy cylinder block and cylinder heads, it measured 6,064cc, with a bore and stroke of 86mm and 87mm respectively. Purely for interest (and BMW insist that this was no more than a convenient coincidence), I note that the cylinder bore was exactly the same as the 2,990cc BMW 'six', whereas the stroke was unique. Because of this coincidence, the detailing of the cylinder head, valve gear and gas-flow layouts was, indeed, very similar to that of the existing M3-type 'six'.

Chronologically, the V12 engine was, in fact, the first from BMW to use Double VANOS valve timing control (naturally enough, on each cylinder head) – this feature is described on page 100.

The power output of this engine was a colossal and hyper-impressive 627bhp at 7,400rpm, with an electronically-monitored peak torque of 479lb ft developed all the way from 4,000 to 7,000rpm. The engine itself, incidentally, weighed 586lb (266kg), which was substantial enough – but then it had a very substantial power output.

The performance of the F1 road car was itself quite colossal too. The only authorised road test of an F1 was carried out by *Autocar* in May 1994. The top speed was 'in excess of 230mph' (at which the engine was turning over at approx 7,500rpm). In standing start sprints it passed 60mph in a mere 3.2sec, 100mph in 6.3sec and 200mph in 28.0sec. The standing start quarter mile was dismissed in a mere 11.1sec, which was something quite out of the ordinary for any other road car of the period.

In the end, incidentally, McLaren built a total of 106 ultra-expensive F1 road cars, of which 28 were race-modified cars.



In the meantime, the success of the 2-litre 'Super Touring' type of saloon car racing in the UK rapidly saw it being taken up by countries all over the world (including Australia, though in the hearts of that nation's spectators it could never replace the long-standing V8 Championship which was only being contested between domestically-manufactured Ford and Holden cars). Such countries which did adopt Super Touring fell in line with the convention that the cars themselves would have to be current-model four-door saloons which were in regular quantity production, but that engines from another model range could be used, just so long as these were modified to be of 2-litre capacity, and would run only up to 8,500rpm before hitting an electronic rev limiter.

For BMW, therefore, there was still an obvious 'get out of jail' clause, with the concession that alternative engines of the same brand could be used, for there seemed to be no point in trying to reduce the E36-type straight six all the way down to 2.0 litres when the company already

had a robust and still totally competitive 2-litre four-cylinder (the short-stroke version of the E30 M3) which was available in large numbers, and could produce robust, reliable and competitive horsepower.

Paul Rosche's team had evolved an engine which was at once light, and sang its way up to 8,500rpm without complaint, so why should anyone complain if it was put into cars that were not normally sold on the road in such a guise? No one did, of course, and victories continued to pile up. For what can only have been marketing reasons, the cars on which these Super Touring 'specials' were created were often supposedly based on the six-cylinder 320i shell, which was, of course, almost identical in size and bulk to that of the latest M3 Saloons.

Because the cost and complication of DTM was already spiralling out of control, in 1994 the German authorities had set up an alternative series, the Deutsch Tourenwagen Cup, which ran to rules similar to those in Super Touring. In 1995, there

**ABOVE: The V8-powered GTR was competitive wherever the regulations allowed it to race – this being at the Nürburgring in 2004.**



**ABOVE:** On the starting line, in more ways than one, in September 2020 were the new M3 Saloon (left) and M4 Coupé (right). These cars shared the same platform and running gear, but their body structures were very different.

**RIGHT:** In spite of their very sophisticated chassis, and control of torque delivery, you could still get these ultra-powerful cars to smoke their tyres on circuit testing.



predecessors had been, and there were no large and obtrusive slats, spoilers or aerofoils to take away the purity of the new lines. As expected, the roof panel of both models was made of high-tech carbon fibre plastic.

Technically, the M engineers were proud to show off the latest iteration of their mechanical expertise, for the modern six-cylinder twin-turbocharged 'S58' engine was demonstrably more

able that the older S55 type had been (not only because it had a wider torque band than before), but it also seemed to have built-in reserves for the future higher-performance types that were sure to follow. Behind it, in the driving line, the manual six-speed transmission was familiar on those cars, but the fitment of ZF's latest eight-speed fully automatic torque-converter transmission (in place of the previous seven-speed semi-automatic DSG