

IMMEDIATE

David J. Buchko
BMW Product Communications Manager
201-307-3789 / dave.buchko@bmwna.com

Gordon B. Keil
BMW Product Communications Specialist
201-307-3790 / gordon.keil@bmwna.com

THE HISTORY OF THE BMW 5 SERIES

The concept originated in the late fifties; its success continues today. At the time, BMW made the decision to develop an automobile which had not existed in Germany yet: a stylish, mid-sized four-door car with a sporty chassis and a powerful engine and was comfortable enough for five passengers and agile enough for fast motoring. The marketing strategists gave it the name “The New Class” and in 1961, the BMW 1500 was born.

The design of the New Class was neither conservative nor was it influenced by the American style. Instead, it was more reminiscent of Italian lines – after all Giovanni Michelotti had been involved in the design. The overhead cam inline 4-cylinder engine was the first German touring sports engine. With a maximum output of 80 horsepower at 5700 rpm, the BMW 1500 approached a top speed of 93 miles per hour.

The suspension of the new BMW attracted particular attention. The wheel location of the front wheels was provided by a transverse link, supported by a tension strut and a McPherson strut. The rear wheel suspension was particularly sophisticated, controlled by a rubber-mounted semi-trailing arm bolted to the differential. The driving response remained neutral in virtually all conditions; the suspension was tight but not uncomfortable. The interior provided safety features such as padded upper and lower edges on the instrument panel and a padded steering wheel hub.

The BMW 1500 found a very positive response, both among the international automobile press and customers. Only a year after the start of production, a sibling model with a 1.8-liter/ 90 horsepower engine - the BMW 1800 – was put on the market. In 1964 and 1966 respectively, the BMW 1600 and 2000 followed. And in 1969 the top model of the New Class appeared in the form of the BMW 2000tii, the first BMW serial production model to have a fuel injection system. As early as August 1965, BMW customers could order an

automatic transmission for the first time, as the 1800 model was also available with an optional ZF three-speed automatic transmission.

Up to the end of production in 1972, the New Class had become the most successful BMW model series, with 329,626 cars leaving the production line in Munich. BMW had finally achieved the step of becoming a successful mass producer of automobiles.

Code Name E12: The First Generation of The BMW 5 Series

“The new 2-liter 4-cylinder car of the Bayerische Motoren Werke bears the model designation BMW 520 (‘five -twenty’), diverging from previous designation practice. Here, the first figure refers to the body type, the second and third to the engine capacity.” With this statement, a new generation of automobiles was presented at the Frankfurt Automobile Show in 1972: the 5 Series.

The appearance of the two models initially presented, the BMW 520 and BMW 520i, was characterized by a whole new design style: large window areas and a deep waistline were the most striking features of the new shape, along with the typical double headlights. In the cockpit, a markedly economical functionality dominated. BMW had created a style, which was to last for decades, making the brand unmistakable to this day.

In the design of the body, which offered further improved passive safety as compared to its predecessor, BMW had for the first time made more extensive use of computer technology – still in its infancy at this time. Computer-calculated front and rear crush zones with controlled, optimum deformation guaranteed the greatest possible occupant protection at the time, with a high degree of body stiffness being achieved by means of roll-over bars integrated in the roof construction.

New 4-Cylinder Engine With Swirl Combustion Chambers

Experience with the new 6-cylinder engines, in production since 1968, was a key in the development of the revised 2.0-liter 4-cylinder engines, both in the BMW 520 with two Stromberg side-draft carburetors and the BMW 520i with fuel injection. The combustion chamber was developed into a triple sphere swirl pan with combustion concentration at the spark plug, resulting in a high anti-knock index and low fuel consumption. On the chassis side, too, considerable advancements were made beyond the New Class. The wheelbase and track were significantly enlarged, the front axle with individual suspension and transverse link, tension strut and stabilizer now had struts tilted back at an angle of 12° with trail. The sophisticated rear axle semi-trailing arm developed by BMW remained essentially

unchanged. All in all, spring travel was lengthened by 20 mm and the car displayed easily controllable driving qualities with sporty but comfortable overall suspension settings.

The new models were well received and as usual the performance-oriented BMW clientele soon wanted additional, even more powerful models. So only a year passed before BMW brought the first 5 Series model with a 6-cylinder engine to the market, in the form of the BMW 525. In 1975, the 165 horsepower 528 followed. Both models were fitted with carburetor engines borrowed from the big series (2500 and 2800) which promised superior driving performance. In particular the balanced BMW 525 developed alongside the BMW 520 into the most successful representative of the series. The BMW 518 with 90 horsepower appeared in Europe in the summer of 1974 as a relatively economically priced entry model to the upper medium category.

In 1977, the series was revised in terms of visual details, and the BMW 520 was given a completely new 6-cylinder short stroke engine with double register downdraft carburetor and an output of 122 horsepower. The new top model was the BMW 528i with 176 horsepower and from 1978 with 184 horsepower, the first BMW 5 Series to break through the 200-km/h barrier (124 mph) – still magical for a sedan in this class at the time. The first E12 5 Series available in the US was the 3-liter BMW 530i, which came out in the autumn of 1974, made especially for the US market with its increasingly stringent exhaust gas regulations.

The M 535i was developed by BMW Motorsport GmbH – founded in 1972 – and marked the final power increase of the first BMW 5 Series in 1979. This car was little changed on the outside and was powered by a 3.5-liter short stroke engine with 218 horsepower. Unavailable in the US, it was fitted in Europe with a 5-speed sports transmission. Only 1,410 units of the M 535i were produced: it was the first model of the category of automobiles derived from serial production models – a category which has remained a tradition to this day.

With this first generation of the 5 Series, which came to the end of its lifecycle in 1982, BMW was able to more than double production of automobiles in this class, with over half of all 5 Series being exported. Apart from a small number made between 1972 and 1974 at the Munich plant, all BMW 5 Series were produced at the new plant in Dingolfing.

Qualitative Lightweight Construction for Lower Weight: The Second Generation 5 Series (E 28) is Born

BMW had already presented the successor models of the E12 series to the press in the summer of 1981 in Munich. Although it was not entirely recognizable as a completely new automobile at first sight, it nonetheless reflected a great deal of painstaking work to optimize the body, interior and technology. By means of 'qualitative lightweight construction' - i.e. improvements in construction details – and the use of new materials, the weight of the new models was reduced by 132 to 200 lbs., making the BMW 520i the lightest car of its class. The smoother body and a slight wedge shape with a raised rear reduced air resistance as compared to the predecessor model by 12% to 0.385.

This time, BMW immediately put out four models with a broad range of engines: the 518i with 90 horsepower carburetor engine and the three fuel-injected 6-cylinder engines 520i, 525i and 528i with 125, 150 and 184 horsepower respectively. The BMW 520i with a compression ratio increased to 9.8:1 was regarded as the most economical 6-cylinder of its class. The 528e was the only 5 Series model offered in the US in 1982, joined by the 533i in 1983. Passive safety was further improved in the new 5 Series. The completely redesigned interior reduced the risk of injury by means of new materials and by reducing the sharpness of protruding parts as much as possible.

Further innovation was provided by a whole range of new electronic systems such as the service interval display, Energy Control, Check Control and the electronic heater regulation system. Anti-lock brakes and an on-board computer were optional extras.

The wheel suspension now used the double pivot universal joint strut with angled coil springs offset to the shock absorber, which had been used in the 7 Series models since 1977. The well-established transverse link rear axle was completely revised and used for the models 518i, 520i, 525i and 528i in two variations, differing in sweep. All these measures ensured that the new models were more agile and had greater stability, with at least the same level of comfort.

In 1982 (1983 in Europe), the new 5 Series generation was expanded with an interesting variation, the 528e. The small "e" in the model designation of the BMW 528e stood for the Greek letter "eta", the mathematical symbol for the efficiency factor. The aim with this model was to critically reduce fuel consumption without foregoing characteristic BMW properties such as superior output and engine comfort. With various measures, which resulted in lower frictional losses and optimized cylinder charge with air/fuel mixture, this aim was met in the BMW 528e.

BMW 524td: The Diesel Revolution.

A revolutionary decision in the history of BMW was to penetrate the highly competitive market for diesel automobiles and thus develop a new generation of engines. Finally, in June 1983, the BMW 524td was presented in Europe (1985 in the US). BMW had faced up to the challenge of constructing a diesel engine which was to unite the benefits of the diesel principle with characteristic BMW qualities such as dynamic performance and running smoothness. Thus the BMW turbodiesel engine was created on the basis of the existing in-line 6-cylinder engines between 2 and 2.7 liters capacity. With turbocharging and large flow cross sections in the intake and outlet valves of the 2.4-liter engine; a high output of 115 horsepower was enabled. The further developed swirl chamber combustion process also offered excellent conditions for low fuel consumption and combustion noise. According to DIN norms, BMW achieved a fuel consumption of just 33.1 mpg with this modern turbodiesel. With a top speed of 112 mph and an acceleration of 13.5 seconds from 0 – 62 mph, driving performance figures were realized which set new standards in dynamic performance for diesel automobiles.

A particular highlight of this 5 Series generation from 1984 was the first BMW M5, built in small series, sold only in Europe until 1988, when it was first offered in the US. With the 286 horsepower 24-valve engine of the BMW M635CSi (256 horsepower in US versions) and a chassis adapted by BMW Motorsport GmbH to the enormous output, this exclusively fitted four-door model proved itself to be one of the fastest sedans in the world.

After a production cycle of seven years and a new record with over 722,000 units produced, this series was replaced by the entirely new vehicles of the third BMW 5 Series generation.

The E 34: A New Dimension

In January 1988, BMW presented a completely new 5 Series, highly sophisticated in every detail. The larger and much more spacious, strikingly wedge-shaped body not only provided more interior space but also achieved a much improved air resistance figure of 0.30 – 0.32 depending on the model

Under its body, the chassis derived from the 7 Series with double tube gas shock absorbers, double pivot universal joint strut front axle and precision arm rear axle had a positive effect. Larger brake discs matched the higher output levels of the engines.

In terms of passive safety, the vehicle front structure was designed to exceed the requirements of the stringent US safety norms: up to an impact speed of 35 mph, the passenger cell largely retained its shape.

For the first time in the history of the medium BMW series, the series was launched only with 6-cylinder engines, with the spectrum ranging initially from the European 524td with 115 horsepower to the 535i with 218 horsepower, but other variations were quickly developed. It started in the summer of 1988 with the new M5 with a 315 horsepower 4-valve high performance engine with Bosch Motronic, from 1992 tuned up to 340 horsepower with a longer stroke and higher compression. From 1994, the M5 was even available with a newly developed 6-speed transmission and also in a touring (Sports Wagon) version. In 1991, a more powerful European turbodiesel version appeared with 2.5-liters capacity, charge air-cooling and 143 horsepower.

From the model year 1986 in the US and 1992 for the rest of the world, BMW fitted all automobiles as standard with ABS. With the new 525iX, permanent all-wheel drive, which had seen its debut in 1985 in the 3 Series, was now available in Europe in the upper middle category too. The introduction of Wagon models to this class was completely new – with BMW using the designation ‘touring’. On request, these models could also be ordered with a special variable double slide/tilt roof.

One year later, the standard of this series was significantly raised with the option of two V8 engines from the BMW 7 Series. These completely new engines made of light alloy and with three or four liters capacity, 4-valve technology and 218 and 286 horsepower respectively guaranteed outstanding output potential with maximum running smoothness and comparatively low fuel consumption.

With over 1.3 million units produced, this model series became one of the outstanding success stories in the history of BMW automobiles.

With Light Alloy Suspension: The E 39.

In 1995 the fourth 5 Series generation had its debut at the Frankfurt Auto Show. The sedan had grown in every dimension and showed a unique level of static and dynamic torsional stiffness within its class. A particular highlight of the new series was the suspension, however: this 5 Series was the world’s first large-scale serial production automobile to have the suspension made almost entirely of light alloy. In order to convert the reduced weight effectively into optimum driving response, the front axle was for the first time a combination of front rack-and-pinion steering and double pivot universal joint axle with tension struts. The patented integral rear axle was optionally available with a new pneumatic suspension.

For the first time in the history of the 5 Series, BMW no longer offered a 4-cylinder version with the exception of the 520d from 1999. In the US, a 6-cylinder 528i and a V8-powered

540i were offered as of the 1997 model year. (There were no 1996 model year 5 Series offered in the US.) From the beginning, the 6-cylinder gasoline and diesel engines were used, at the end of 1996 there followed the two V8 engines in Europe. The top model came out in 1999 (1998 in Europe): the new M5, with the most powerful serial production BMW engine of all times. Among other things, the 5-liter power unit with 400 horsepower has oil supply with centrifugal control and electronically controlled individual throttle valves. For the first time, BMW used a tire pressure warning system in this high-performance vehicle.

In 1997, BMW offered the 540i Protection model - the first standard light armored security car in Germany. The sedan was protected with aramid and armored glass against small arms and weighed only 365 lbs. more than the standard version. In the same year, numerous 5 Series variations were available in the popular touring version.

This much is certain: this BMW 5 Series will once more have set a new production record with over 1.4 million vehicles – in spite of tougher competition – when the successor generation shortly lines up for the start. All in all, BMW has created for itself a crucially successful pillar of company success with the 5 Series. In the sum of its qualities, the middle BMW series has always set standards. From 2003, the innovative new generation of 5 Series models, the E60, will continue this tradition as successfully.

BMW Group In America

BMW of North America has been present in the United States since 1975. Since then, the BMW Group in the United States has grown to include marketing, sales and financial service organizations for the BMW and MINI brands and Rolls-Royce Motor Cars; DesignworksUSA, an industrial design firm in California; a technology office in Silicon Valley and various other operations throughout the country. BMW Manufacturing Corp. in South Carolina is part of BMW Group's global manufacturing network and is the exclusive manufacturing plant for all Z4 roadster and X5 Sports Activity Vehicles. The BMW Group sales organization is represented in the U.S. through networks of 340 BMW car, 327 BMW Sports Activity Vehicle, 148 BMW Motorcycle retailers, and 70 MINI dealers. BMW (US) Holding Corp., the BMW Group's sales headquarters for North, Central and South America, is located in Woodcliff Lake, New Jersey.

Information about BMW Group products is available to consumers via the Internet at <http://www.bmwusa.com> <http://www.bmwmotorcycles.com> and <http://www.miniusa.com>

#

Journalist note: Information about the BMW Group and its products is available to journalists on-line at the BMW Group PressClub at the following address - www.press.bmwgroup.com.

#