

BMW Automobiles from 1933 to the end of production during WW-II

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Start of BMW's 3-Series Automobiles

Starting with the introduction of the BMW 303 at the 1933 International Auto Show in Berlin, a very promising new generation



BMW 303 Four-Window Cabriolet

of BMWs was launched. The engine of this new car had a displacement of 1,182 cc in a 6-cylinder configuration with 30 HP. This engine design resulted from the addition of two cylinders and a second carburetor to the motor from the model AM4.

As a result of an enlarged bore and stroke this engine grew to a displacement of 1,490 cc with an output of 34 HP in 1934, leading to the model designa-



BMW 315 Cabriolet

jeeps.

The designers at BMW were oriented to produce high quality and yet economical cars, which they did by developing a basic design, which provided the platform for further development and a multitude of variants. This was quite a different strategy from that pursued by Daimler Benz.

For example in 1935 the BMW 319 was



Chassis for the BMW 303, 309, 315 and 319

introduced, a car with a body very similar to the 315 but with an engine displacement of 1,911 cc producing 45 HP. In order to continue the racing success of former years the roadsters BMW 315/1 and BMW 319/1 were introduced one year later.

Using triple-Solex carburetors and an increase in compression the engine output was increased to 40 HP for the 315/1 and to 55 HP for the 319/1. Despite the very limited production of these roadsters in 1935 and 1936 (BMW 315/1 – 242 cars; BMW 319/1 102 cars) they became significant competitors in motorsport events in Germany and abroad.

The racing success of the BMW 315/1 and 319/1 led to a significantly increased market penetration of BMW cars in Germany and abroad. The license agreement with Frazer Nash in England can be seen as an example of this development.



BMW 315/1 with right-hand steering at the 1935 Olympia-Show in London under the Fraser Nash sign

BMW 326 (1936 – 1941)

In response to a growing market demand in the mid-1930s for longer car trips, automobiles with more comfort and more trunk space for luggage became available. To meet this customer expectation the BMW 326 appeared on the market in 1936. The 326 was offered as a four-door sedan (5,500 RM) as well as a two- or four-door convertible (7,300 RM).

15,936 BMW 326 were produced, making this model the highest production BMW pre-World War II. Since touring in comfort and not the sporting character of some of the earlier BMWs was the main characteristic of the 326, BMW decided in 1937 to introduce a new variant in this family, namely a two-seat convertible with more spirited

BMW 319/1 and BMW 315 at the BMW display at the 1935 Berlin Autoshow IAA



BMW Vintage & Classic



BMW company drivers with their 315/1s at the dedication of a new stretch of Autobahn.

tion BMW 315, which was the most powerful and spirited car in its class at the time.

In parallel with the 315, BMW also catered to customers interested in the more economical, yet spacious sedans in producing the model 309 with the 4-cylinder engine of the AM4; this model was produced from 1934 until 1936. The model 315 was built as sedan, convertible-sedan, full convertible as well as special-bodied vans and

performance. This sports version on the 326 platform was marketed as the BMW 327.



BMW 326 2-door / 4-seat Cabriolet from a 1938 brochure

BMW 327 (1937 – 1941)

Through an increase in the compression ratio of the otherwise identical 326 engine, the power output for the 327 was increased by 5 HP to 55 HP. The body of exemplary elegance was produced by Autenrieth in Darmstadt and then shipped to Eisenach for final assembly on a so-called assembly line.

In 1938 a coupe version of the BMW 327 was introduced. While the convertible was delivered with leather seats, the coupe came with fabric interior. Both variants had adjustable (reclining) front seats and both came with upholstered jump-seats.

The harmonious design of both the convertible and the coupe was widely admired, and their extraordinary beauty is appreciated to this day.

In order to provide for better acceleration and a higher top speed of these BMW 327s, in 1938 BMW introduced an 80 HP version of this car, which had a rated top speed of 140 k/h (87.5 mph). Since the 80 HP engine used for this variant came from the BMW 328, this car was designated BMW 327/28.

A BMW reflecting the aesthetics of the 1930s, produced in Eisenach and which has become an icon as one of the most sought after sports cars of all time, which is admired today as it was 74 years ago, is the BMW 328.



**From top: BMW 327 Cabriolet (from a 1938 brochure)
Above: BMW 327 Coupe at Eisenach factory**

All these 2 ltr. BMWs were very popular not only in Germany but also abroad, as reflected in the sales and export statistics of the time

On June 14, 1936, when a large starting field was assembled at the famous Nürburgring, new standards were about to be set



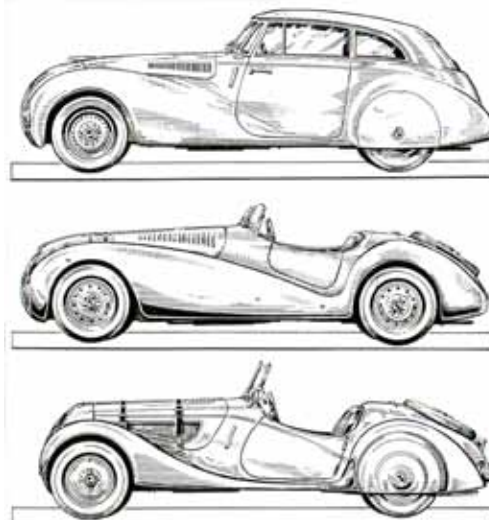
Belgium with 326, 327, 328 and 321 (from left to right)



Left: Final assembly of BMW 327 at Eisenach factory

BMW 328 (1936 - 1940)

Besides the relatively large volume production of passenger cars, BMW also continued the development of sports cars.



Three body styles of the BMW 328



BMW 328 Mille Miglia designs on display at the BMW exhibit at the Techno Classica in 2000



BMW 328

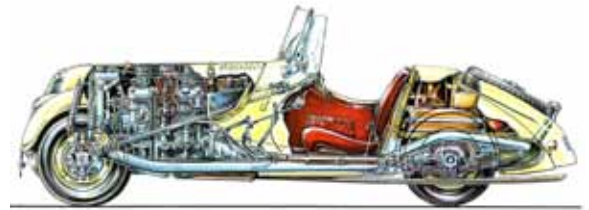
tubular steel frame with a transverse leaf-spring independent front suspension and a rigid rear axle provided for terrific handling and superb road-holding of this car.

The tow-piece windshield could be separately laid flat and the canvass top could be lowered into the trunk.

The dashboard instruments included a speedometer as well as a tachometer and an oil-temperature gauge for the oil cooler.

The wheels were mounted with quick-release central locks.

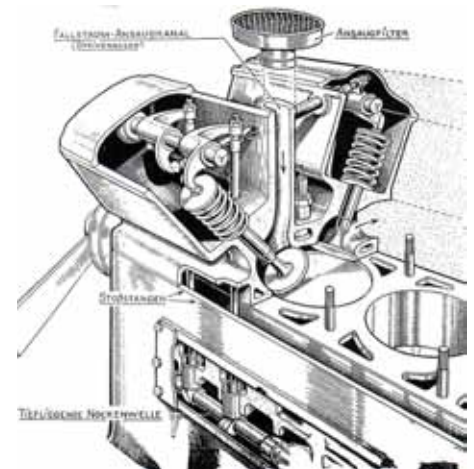
Interestingly, on all production 328s all the



Section drawing - BMW 328

bolts were cotted, and each 328 was test driven by one of the factory test-drivers for 100 km before delivery.

This rigorous procedure added significantly to the reliability of these cars, which thus survived the toughest races in Germany and abroad.



Valve drive of the BMW 328 engine

for sports car racing of future years. Race cars of 1,500 cc, compressor cars and normally aspirated engines competed for top honors. Among the many well known and proven racing machines there was at this Eifelrennen for the first time ever a snow-white sports car with the white-and-blue roundel identified as a BMW 328. Behind the wheel was the ex-Mercedes Benz Formula 1 driver and motorcycle world-speed-record holder (272 k/h = 170 mph) Ernst Henne.

Henne led this race from start to finish at an average speed of 101.5 k/h (63.4 mph), and it took two-and-a-half minutes more before the second car crossed the finish line, a compressor Alfa Romeo.

The so-called fathers of the BMW 328, Rudolf Schleicher and Fritz Fiedler, had developed the 328 in record time and with a very limited budget. This initiative, which created a phenomenal sporting machine, that influenced not only future development at BMW but also played a major role in defining motorsport in Germany.

The power plant for this car was a 1,971 cc high performance engine with three down-draft carburetors. The overhead valves were arranged in V configuration in an aluminum cylinder head, and were activated by a combination of push rods, two horizontal rocker spindels, bell-cranks and cross-over push rods. The main bearings had lead/bronze liners. At 5,000 rpm this engine produced 80 HP, the car achieved a top speed of 150 k/h (94 mph) and average gas consumption was 14.5 ltr./100 km (16.4 mpg). The rigid



Behind #12 (Paul Schweder on ADLER) the BMW 328 of Ernst Henne with starting number 14 at the start of the Eifelrace on the Nuerburgring on June 14, 1936



BMW 328s in hot competition at the British Tourist Trophy at Donington Park in 1938

Below: BMW 328 racing coupe (#26 with Max zu Schaumburg-Lippe & Fritz Wencher) at the Le Mans race on August 17 / 18, 1939



Among the 464 BMW 328s produced between 1936 and 1939 a phenomenal 300 podium places were achieved during motor races in the four years of production.

Specifically for the famous Mille Miglia, special-bodied aluminum versions of the BMW 328 were produced as roadsters and as coupes.

Sports car racers continued to rely on the BMW 328 for many years after World War II, both in West Germany as well as in the DDR and abroad, and even today this car attracts enormous attention at vintage car races, oldtimer rallies and concours d'elegance events around the world.

Just as today, quality had its price in the 1930s as well: For the price of a normal production BMW 328 one could at that time buy 4 Opel P4 sedans (a then standard boxy little Opel sedan).

BMW 335

After BMW automobiles equipped with their powerful 2 ltr. engines had established



BMW 335 sedan

Below: See retracted luggage bridge



themselves world-wide through many successes in international motor-sport events, it was decided that also BMW's customers using their cars on public roads needed to be offered a more powerful automobile. The following text from a BMW brochure of the time reflects on this consideration:

"If despite the success of the BMW 2 ltr. engines a new 3 ½ ltr. motor with an output of 90 HP is introduced, so only because we want to expand the sporting nature of BMW cars to be available to more of our motoring customers. BMW consciously pursues this development following its own path, which our world-wide reputation demands of us. BMW is synonymous with "class", - really world-class".

Even though the first prototype of the new BMW 335 was built in 1936, it was not

until October 1938 during the London Motor Show at Earls Court, that the first sedan, in this case with a right-hand-drive, was introduced to the public. Series-production of the car started in 1939.

With the 90 HP engine the BMW 335 had a top speed of 145 k/h (90 mph) and a

touring speed of 135 k/h (84 mph), speeds which were easy to achieve and maintain on the German Autobahns, which at that time had very little traffic. To obtain this engine performance a Solex twin-carburetor was used, and babitted main bearings. The driver would know at what position of the gas pedal to maximum touring speed was reached from a noticeable pressure point (like kick-down) in the pedal mechanism.

Because the tire industry before the war was not accustomed to mass production of high-speed tires for passenger cars, there were a number of serious accidents which resulted from tire failure. Consistent with BMW's standardized design and production approach, the well proven chassis of the 326 sedan was used as basis for the flagship 335 sedan; the only modification of the



BMW 335 Cabriolet at 1940 Auto Show in Bulgaria

chassis was the wheel base lengthening by 114 mm (4.5 inch) to accommodate the larger motor.

The BMW 335 was produced and sold domestically and internationally as luxury four-door sedan (body by Ambi-Budd, Berlin) and as two-door and four-door convertible (body by Autenrieth, Darmstadt).

Since the BMW 335 had been laid out as a 5-passenger touring car, a great deal of attention was paid to comfort and interior appointments. In order to provide sufficient luggage space for five people, a so-called luggage-bridge was added above the rear bumpers, so that if the trunk, which was accessible from inside, was insufficient for the travelers, additional luggage could be carried on the "bridge".

Unfortunately the second World-War interfered with the intended purpose of offering this powerful sedan to the motoring public, and indeed only very few of these cars were delivered to civilian buyers. – Apart from high-ranking political figures, officers from both the German army and air force were attracted to this car. Since most of the military customers used these cars at the front, only very few of them survived the war.

On orders from the authorities in Berlin, passenger car production in Eisenach was ended in 1941, to free up manufacturing capacity for the war effort. The only survival of the car production was the continued manufacture of 2 ltr. and 3.5 ltr. engines for use in gen-sets for the military.

BMW 325

While in 1937 military production throughout German industry had already achieved a very high level, the responsible authorities in Berlin directed BMW to produce a jeep-like vehicle in Eisenach. The design of this vehicle, classified as "light standardized passenger car", came from the Army



BMW 325 ordered by the German army

Weapons Office (Heereswaffenamt). This office defined the standardized chassis, with a steel under-cover and the body design. Similar production orders were awarded to Hanomag in Hanover and to Stoewer in Stettin. The only difference among these three vehicles was in the drive-train, as each company used its own engine, without being allowed to identify such with a company logo. The jeep out of Eisenach was



internally designated as BMW 325.

The specialty of the 325 was that it had all-wheel-drive and all-wheel-steering. These features were intended to assure superior all-terrain drivability and good maneuverability (turning circle of 21.3 ft [6.5 m]). In order to avoid bottoming in rough terrain, some of these vehicles were equipped with two small free-running extra wheels in the area of the doors.

The engine used in this vehicle was the 2 ltr. 6-cylinder, 50 HP motor used in the BMW 326, with the only modification being an oil pan of aluminum.

The gear box had 5 forward and one reverse gear. In first gear on firm ground, the BMW 325 could handle slopes of up to 60%. The minimum long-term speed of the vehicle was 4 k/h (2.5 mph) and the top speed was 90 k/h (56 mph). With a fuel consumption of 17 ltr./100 km (14 mpg) the range of the BMW 325 was limited to 350 km (219 miles).

Before a member of the Army Weapons Office could take delivery of a BMW 325 each vehicle was test-drive for about 80 km (50 miles) by a member of BMW's test team. As can be seen on the picture, the vehicles at this stage did not have the rear body assembly mounted on the chassis. To compensate a weight was attached to the chassis, to get to the design weight of 2,200 kg (4,840 lbs).

Following the successful test drive, the

vehicles were driven to a body-shop in near-by Waltershausen, where the body assembly was completed. Only after this assembly were these vehicles subjected to the final inspection by a representative of the Army Weapons Office. During use of the BMW 325 by the German army it turned out that these vehicles did not perform according to expectations. Apart from the problem with the high weight the complicated design made the vehicles unreliable so that production was stopped in 1940, and instead BMW Eisenach was ordered to produce an all-terrain motorcycle / sidecar unit by use of the army. In the period between April 1, 1937 and July 31, 1940 a total of 3,225 BMW 325s left the production facilities of BMW Eisenach.



BMW 325 with free-running side wheels

Data of selected BMW Automobiles built in Eisenach between 1934 and 1941

	BMW 315	BMW 326	BMW 327	BMW 328	BMW 335	BMW 325
Engine Displacement cc	1,490	1,971	1,971	1,971	3,485	1,971
Horsepower PS	34	50	55	80	90	50
Number of Cylinders & Configuration	6 in line	6 in line	6 in line	6 in line	6 in line	6 in line
Top Speed k/h	100	115	125	150	145	80
Number of Gears f / rev	4/1	4/1	4/1	4/1	4/1	5/1 AWD
Suspension Front	leaf springs	leaf springs	leaf springs	leaf springs	leaf springs	2 coil springs
Rear	leaf springs	leaf springs	leaf springs	leaf springs	torsion bars	2 coil springs
Built from - to	1934 - 1937	1936 - 1941	1937 - 1941	1936 - 1940	1939 - 1941	1937 - 1940
Number Built	9,521	15,936	1,396	464	415	3,225
Price (RM)						
Sedan	3,750	5,500			6,700	
Cabriolet	4,400	7,300	7,500		9,050	Gov't Pricing
Roadster				7,400		