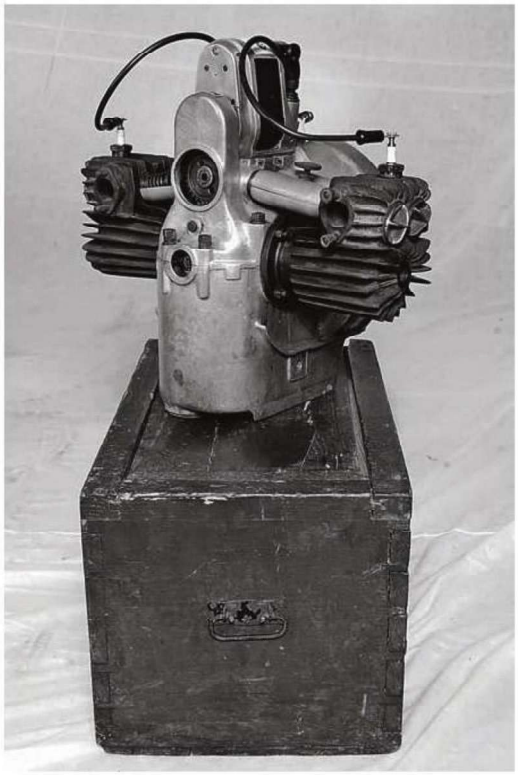
THE ART OF BMW

85 YEARS OF MOTORCYCLING EXCELLENCE

PETER GANTRIIS
PHOTOGRAPHY BY HENRY VON WARTENBERG
FOREWORD BY FRED JAKOBS




1927
R47

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motorbooks

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I'd rather
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FOREWORD

I don't recall the exact date when I had the first contact with Peter Nettesheim. I remember a guy from the United States who sent a request to our archives to look up a few frame and engine numbers of his classic BMW motorcycles. When I did the research—we have in the BMW company archives handwritten delivery records going back to the first BMW type, the R32 from 1923—I thought, Nice collection he has! Shortly after this request, Peter announced his intent to visit the BMW headquarters in Munich. He wanted to have a look into the archives because he was seeking the history of some of his other motorcycles. I suggested that he should send us the serial numbers in advance of his visit. When he sent this list to me, I was more than impressed. I realized that this guy has one of the largest and best BMW motorcycle collections anywhere in the world.

When we had the first meeting, it started like a lot of business meetings that happened every day in a lot of countries around the world. But then I thought, This is not a meeting like usual. We went to a Munich beer garden—in Bavaria, the difference between a pub, a bar, and a restaurant is blurred—and I realized that this guy from New York is not big headed. He didn't collect the motorcycles for his self-confidence! He built up his collection because he's a real BMW enthusiast.

Since our first contact, I have met Peter Nettesheim many times, both in Germany and in the United States, where he supports a lot of events with his collection. Unforgettable, for example, is the Mastery of Speed exhibition in the American Motorcycle Association (AMA) Motorcycle Hall of Fame Museum. But he's not aloof and looks for the prime events where a lot of journalists are. With equal sincerity, he presents parts of his collection at the BMW Motorcycle Owners of America (MOA) rallies, the annual gatherings of BMW enthusiasts in North America. Over three days, he doesn't like only to show the bikes—he makes a great show. For each bike, he tells the personal story, and he starts the engine of every bike people want to hear running. And I admire him when he answers the same question for the twentieth time with the same sincerity as when he was asked for the first time.

I think a little story demonstrates Nettesheim's enthusiasm and determination. . . . In the early years, the BMW motorcycles were not produced on an assembly line. The workers built them on a special kind of table. These tables were in use at the BMW motorcycle race department through the 1950s. We have one of these tables in our historical collection, and when Peter Nettesheim heard about it, he came to Munich to take its measurements. He rebuilt two of them for special display of the early parts of his collection. For me, that shows his professionalism even more than do the perfect restorations of his motorcycles.

I'm pleased that Peter Nettesheim and his collection are the topic of a book. I wish you a pleasant story . . . and enjoy the history of BMW motorcycles.

Fred Jakobs

Fred Jakobs is responsible for BMW's motorcycle heritage collection and archives at BMW Mobile Tradition.


H. EHLERS
BMW
DAS·SCHNELLSTE·MOTORRAD·DER·WELT!
STAND VOM 1-11-1929

1923–1936

ORIGINS

The Bayerische Motorenwerke became an official entity in July of 1917. It was created as the result of a merger between two separate aircraft engine manufacturers, the Rapp Motorenwerke and the Otto-Werke. Rapp Motorenwerke had been facing some dire straits, and the merger would be a big step toward stability.

In 1913, Rapp received a large order for aircraft engines from the German armed forces. The German and Austrian forces needed the engines for their planes, as they were gearing up for conflict with the Entente Powers (Russia, France, Britain, Italy, and ultimately the United States). An arms race had broken out, and it became more intense through the first decade of the twentieth century. Rapp had been asked to produce eight- and twelve-cylinder aircraft engines to help strengthen German/Austrian air power.

In 1914, war finally broke out and threw Europe into battle. Yet when Rapp's engines proved unreliable and delivered poor performance, the military refused to order more. With a nearly dormant factory, Karl Rapp pinned his hopes on the opportunity to manufacture Austro-Daimler aerospace engines under license. Franz-Joseph Popp inspected the facility on behalf of the military and declared it suitable for the task. Popp served as production supervisor and took the company helm when Karl Rapp resigned.

The company had earned a bad reputation during the Rapp years, and military planners did not soon forget this. Seeking a fresh start, owners renamed the company Bayerische Motorenwerke GmbH in 1917 and set out to fulfill an order for Austro-Daimler licensed engines. They hired a young Max Friz to head up engineering. Friz promptly developed a new inline six-cylinder aero engine with a key technical advantage: an adjustable carburetor that could enrich the air/fuel mixture during takeoff and low-altitude operation, yet could be leaned out to accommodate the thin air at higher altitude. The new engine performed as well at higher altitudes as it did at ground level, and within only a few months, the German fighter pilots were flying planes with BMW six-cylinder power.

Through the end of the conflict, BMW continued to make aircraft engines. In 1919, pilot Franz Zeno Diemer even set a world altitude record in a BMW-powered plane, reaching more than 32,000 feet. Yet within days of Diemer's record, the warring nations signed the Treaty of Versailles, a provision that forbade Germany to manufacture military aircraft and related equipment.

If his company was to survive, Popp had to find new products to manufacture. Fortunately, engines were needed for many non-aero applications, including agriculture, truck, and marine uses, so BMW began to explore these niches to find buyers. Popp was also able to secure a contract to manufacture braking assemblies for railway cars. This large brake order put sufficient money into the coffers to keep the company alive, for the time being.

Shop foreman Martin Stolle suggested that the company explore the idea of manufacturing motorcycles. Stolle was an avid motorcyclist, and in early 1920 while the company was tooling up to manufacture railroad braking systems, he began to experiment with motorcycle engines. He developed a handful of running prototypes with their cylinders in an opposed-twin "boxer" layout dubbed the M2B15. The boxer design proved successful, and BMW received its first orders for the motorcycle engine from Victoria-Werke. Soon thereafter, BMW was able to find additional manufacturers that were interested in buying the engines, and the M2B15 was a success.

Despite the railroad air brake's profitability, Popp was eager to ditch that business. In the summer of 1922, he spun it off into a separate entity. With financial backing from wealthy Austrian Camillo Castiglioni, Popp was able to acquire the rights to the BMW name and engine designs and establish a newly independent BMW. Taking his key associates, Friz and Stolle, he moved the shop into one of Castiglioni's many factories—the site of the Bayerische Flugzeugwerke, also known as BFW.

Popp's timing was fortuitous. During World War I, BFW had made airplane components and provided maintenance and repair for the military. Like BMW, it was forced by the Versailles treaty to abandon those efforts. Led by engineer Karl Ruhmer, BFW had developed its own motorcycle—a small motorized bicycle nicknamed the "Flink." It was also building a motorcycle called the Helios, powered by BMW's M2B15 engine. It resembled an elongated bicycle with the BMW engine set longitudinally (cylinders oriented fore and aft) within the frame.

The Flink and the Helios were not popular motorcycles, however, owing mostly to their weak chassis designs. The failure of these motorcycles brought BFW to the verge of bankruptcy, yet the BMW engine had proven reliable and was praised by riders and the motoring press alike. The BMW/BFW motorcycle collaboration thus had a clear goal: develop an effective chassis to carry BMW's well-regarded engine. Popp gave the new design project to Max Friz.

Friz was reluctant at first to embark on such a project; he was an aero engineer by training, not a motorcycle designer. Yet, he did have experience with motorcycles and was willing to attack the project in his spare time while working at home.

The result of Friz's design work was the BMW R32. Friz had had experience with the Helios, and he knew that frame weakness was a critical issue for a motorcycle.

He therefore created a triangular frame, incorporating strong double-cradle spars to hold the engine and a rigid spine spanning from the steering head to the rear hub. In that engine cradle lay the M2B33 engine, an evolution of the original M2B15.

The new engine was a side-valve boxer twin that produced a modest 8.5 horsepower. It was mounted transversely across the chassis, virtually the same layout used in every BMW boxer since. This put the cylinders directly into the wind stream and solved the chronic overheating problem that plagued the rear cylinder in the Helios. This engine was also fully encased, which protected the valvetrain from road debris and in the event of a tip over. The transmission was a three-speed shifted by a hand lever mounted to the right of the fuel tank. Final drive was via a low-maintenance Cardan shaft drive—a design that was ubiquitous on bicycles of the day.

The new R32 was branded a "BMW" in an effort to set it apart from the poorly regarded BFW bikes. BMW showed the new R32 at the Paris Auto Show in the fall of 1923, and the bike caused quite a stir. While its engine wasn't especially powerful, onlookers were able to see some clever, thoughtful elements to the bike's design. It was also clear that the R32 was created with two key criteria in mind: ease of maintenance and reliability.

It's difficult to overstate how important these attributes were in the eyes of 1920s motorcycle owners. Motorcycles were viewed as essential transportation tools—they were inexpensive to buy, simple to operate, and capable of traveling to just about anywhere. Most owners performed the simple maintenance tasks themselves, and no one wants to be stranded by a mechanical failure while riding. The BMW R32 addressed these concerns. Its Cardan shaft drive required far less maintenance than belt or chain drives. Valve adjustments were performed relatively easily, since the transverse orientation of the engine provided easy access to the cylinder heads. Features like these, in combination with BMW's growing reputation for quality and reliability, made the R32 a noteworthy bike and helped justify its premium price.

The R32 went into production in late 1923, and it formed the basis for BMW's motorcycle designs through the prewar period. More than 3,000 R32 bikes were produced between 1923 and 1926. BMW steadily refined the R32 and successive models, addressing concerns and failures and improving the motorcycles' overall performance. In addition, BMW raced and rallied its bikes to build brand awareness and test its motorcycles' technology.

BMW's rivals included Victoria, which had hired Martin Stolle as its chief engineer. BMW's early efforts to compete with Victoria proved unsuccessful, and the company suffered embarrassing defeat in the Stuttgart races of 1923. Yet BMW was pushing new technology into its racing efforts. Young BMW engineer Rudolf Schleicher had developed a new boxer engine variant featuring an overhead-cam cylinder head. The engine, called the M2B36, would help BMW claim racing victories in the ensuing years. Key among these victories was Schleicher's win at the prestigious six-day race in England in 1926. Schleicher claimed victory on an R37, and the international press heralded BMW's competitive success. To make Schleicher's feat even more impressive, he had accomplished it not on a specially prepped race bike, but on a true series-produced motorcycle shod with conventional road tires!

Success in the racing program gave BMW the confidence to continue developing new motorcycles and pushing new technologies. In 1927, BMW launched the R47, and in 1928, the company launched four new models. BMW's strategy was to use a common chassis to build both sporting and touring models to broaden the product portfolio. The sporting models typically featured higher-horsepower overhead-cam engines. Like today's sportbikes, these models were targeted at the buyer who wanted a spirited motorcycle for personal use—a machine that had much in common with the factory's racing bikes. The touring models were more utilitarian and were powered by torquey side-valve boxer engines. Sidecar rigs were essential vehicles in the prewar era; they were used for tasks like mail and package delivery, law enforcement, and military transportation. BMW's touring models typically featured a sidecar and were built with reliability and serviceability as their key strengths.

While the boxers represented BMW's top of the line, the company also manufactured economical single-cylinder bikes during the 1920s. The R39 was introduced in 1925, but was discontinued in 1927 due to slow sales. Production of single-cylinder bikes resumed in 1931 with the 200-cc R2, followed by the 400-cc R4.

The motorcycle business was growing nicely for BMW in the late 1920s. In 1926, the company also was able to resume manufacturing aero engines and, in 1928, ventured into automobile production. BMW purchased the Eisenach factory and began to build a line of tiny autos under license from Britain's Austin. Motorcycle racing efforts also continued steadily through the '20s and into the '30s, with star rider Ernest Henne setting many world motorcycle speed records on his BMWs throughout this period.

The "pressed steel" models defined BMW's bikes of the 1930s. These chassis were stronger than the tubular steel predecessors, though many enthusiasts find the earlier bikes more elegant. Nevertheless, the motorcycles needed stronger frames, and the welding and metallurgy of the day did not allow BMW to continue using tubular frames. Of course, in the late 1930s, geopolitical developments were overshadowing the world of motorcycling, and reliable vehicle and engine manufacturer, BMW, would again be pulled into war production.

1923 R32

First shown at the Paris Salon of 1923, the R32 represented the state of the art of motorcycle design in the early 1930s. Its triangular frame and compact driveline gave it a distinctively tight, low profile, and the technological developments in the bike would shape BMW's designs for decades to come.

The heart of the R32 was its new engine. Labeled the M2B33, the R32's engine was built with reliability and ease of maintenance as the primary design criteria. This new engine displaced 494 cc, with 68-millimeter bore and stroke measurements. It was a wet-sump design, with oil pumps that circulated the oil. This was a significant technological advancement and, unlike the total-loss oiling systems of the day, it did not require the owner to add oil at regular intervals.

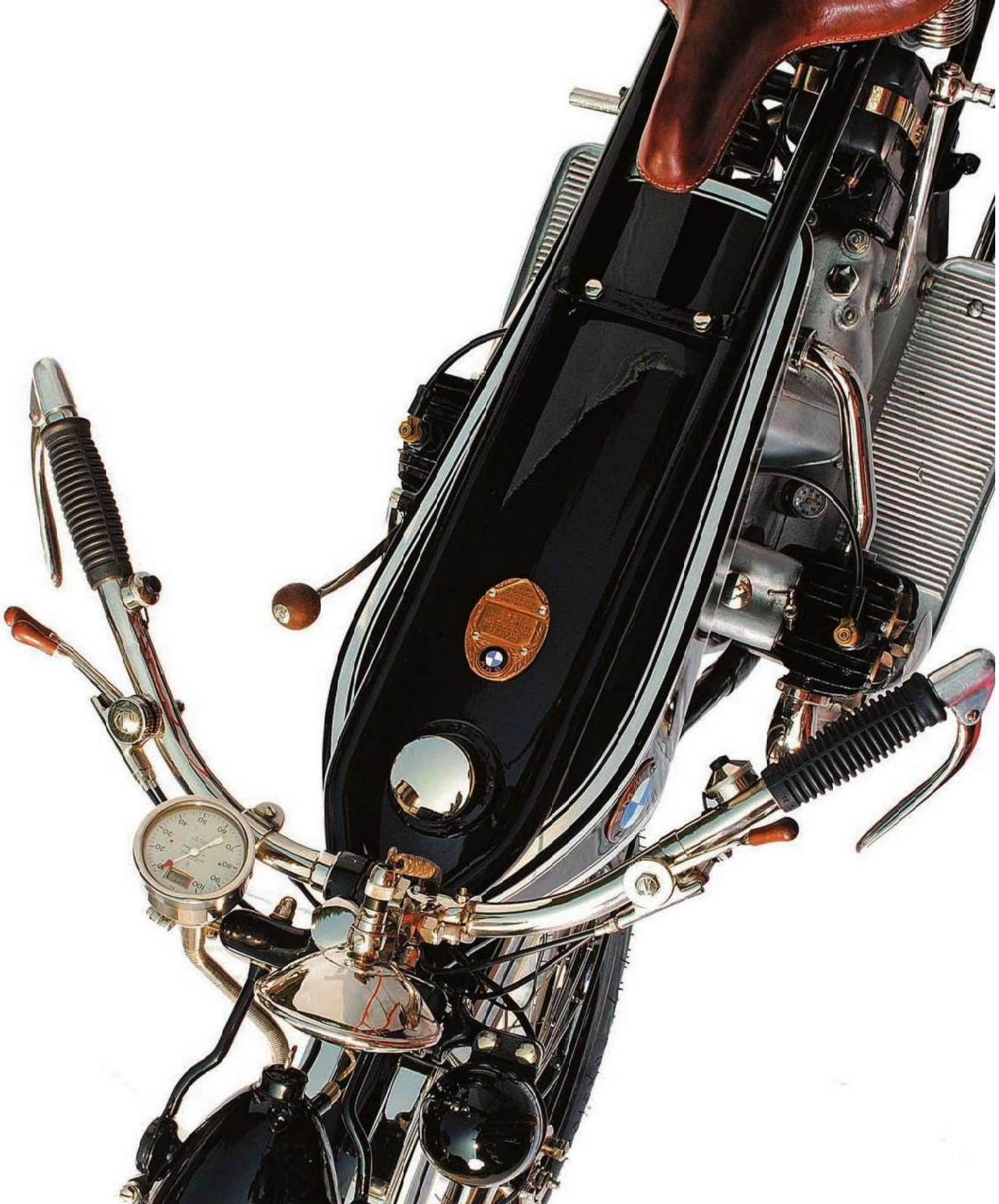
Where the preceding engine design (the M2B15) was intended for a fore-and-aft cylinder arrangement, the new engine was mounted transversely across the frame. This had several key benefits. First and foremost, the cylinders were now protruding into the airflow around the bike, which dramatically improved the cylinder cooling and servicing. The side-valve cylinder head made valve adjustments very easy to perform. Finally, this drivetrain layout made it practical to connect the transmission directly to the engine case, eliminating the need for a primary drive system that might require periodic maintenance.

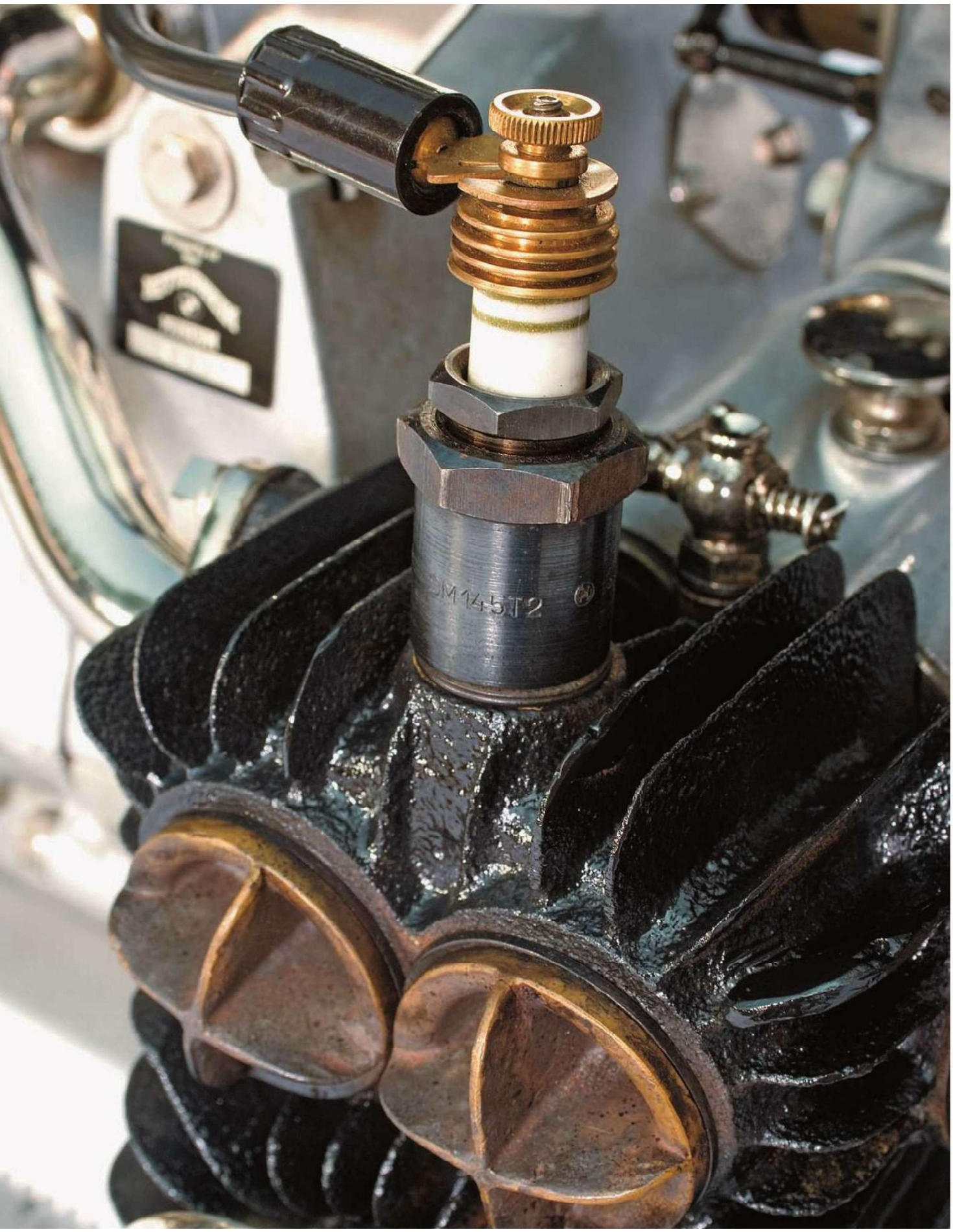
The R32's chassis situated the engine low, keeping the center of gravity low and making the bike easier to handle. The new engine/transmission layout also made practical a shaft final drive. Shaft drive requires much less maintenance than a belt or chain and has the added benefit of facilitating wheel and tire changes. The importance of this feature cannot be overstated, as many R32s traveled rough roads, and their tires were frequently punctured. Speaking of rough roads, the R32 offered a leaf-spring front suspension for the front wheel and a sprung seat compensated for the rigid rear suspension.

By today's standards, the R32's performance was not exceptional. The M2B33 engine produced a modest 8.5 horsepower and propelled the motorcycle to a top speed of about 60 miles per hour. But in its day, this was adequate performance for a motorcycle, considering that most riders would cruise at speeds in the 40-mile-per-hour range. Significantly, the R32 also had excellent fuel economy. It could travel more than 80 miles on a gallon of fuel, making it a very practical machine for daily use. The 3.7-gallon fuel tank gave the bike a comfortable range for touring.


BMW

1925 **R32**

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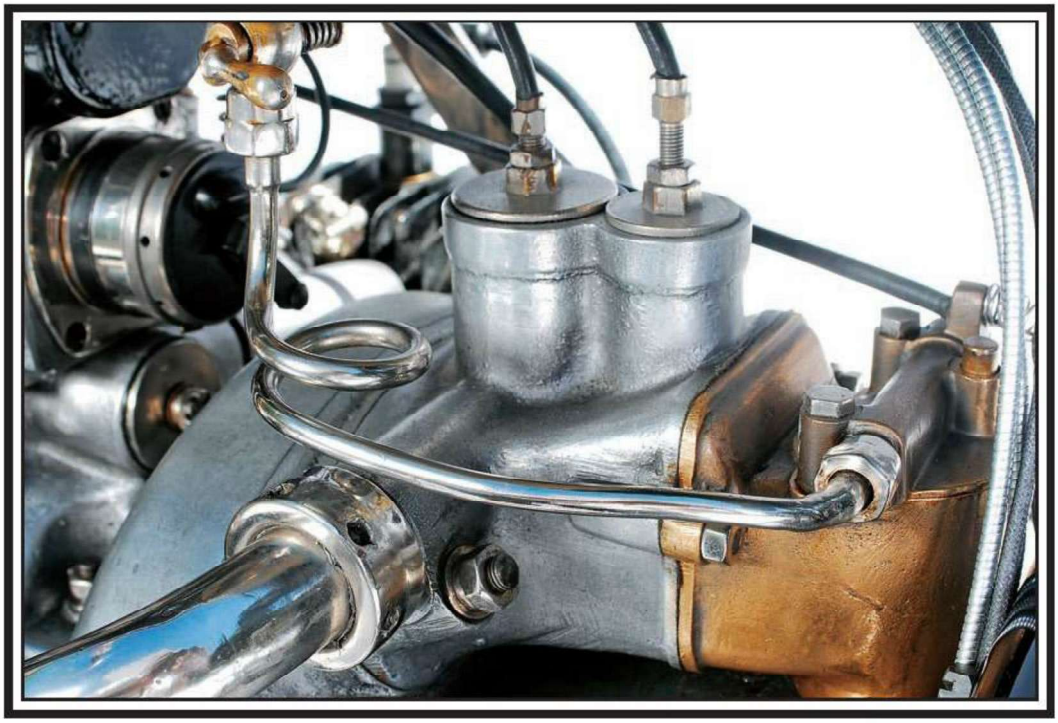


1927 R47

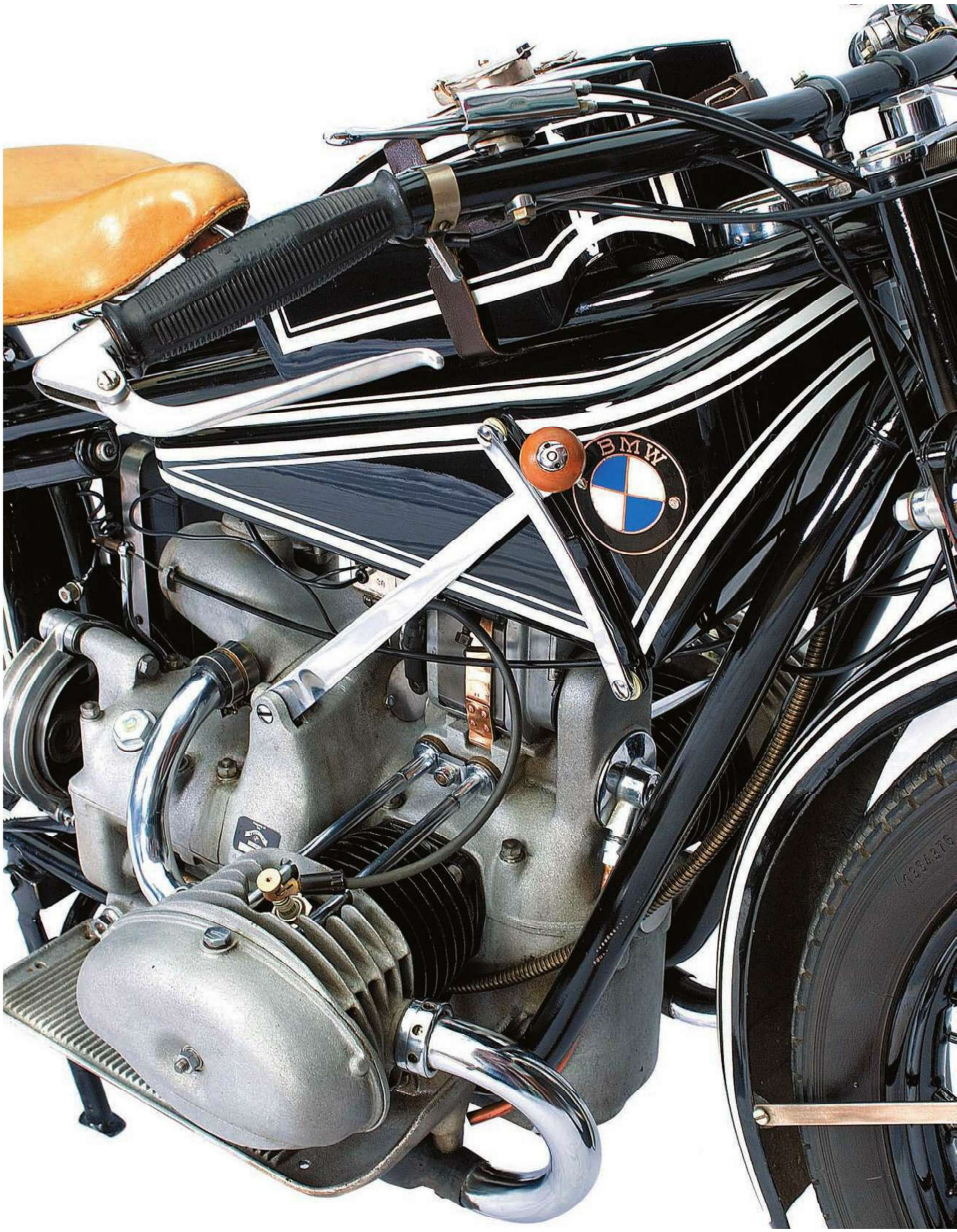
In 1926, the R32 was joined by a sibling, the R37. The R37 shared a chassis with the R32, but it was considered an aggressive, sporting motorcycle and was powered by an overhead-valve (OHV) engine (versus the R32's side-valve arrangement). The OHV M2B36 engine offered a nice increase in performance; it could produce 16 horsepower, compared with the R32's 8.5. The improved airflow to the cylinder heads enabled the engine to run a higher compression ratio and at a higher rpm range.

Lubrication of an OHV cylinder head proved to be a challenge, but in typical fashion BMW's engineers developed some unique solutions. Early BMW OHV engines incorporated three separate oil sumps. The first was located in the main engine case and operated by a high pressure oil pump, which lubricated the crank, cam, lifters, and gear train. The roller bearing rocker arms were lubricated by their own separate oil sump in each cylinder head. Once the valve cover was installed, they were filled with 250 milliliters of oil, and the valves were now able to get adequate splash to lubricate the bearings in the cylinder heads.

By the end of 1926, the R42 replaced the R32. The R42 was powered by an updated side-valve engine that produced 12 horsepower. This engine, the M43a, retained the "square" 68-millimeter bore and stroke measurements, but new alloy cylinder heads and an improved carburetor increased performance. The R42 retained a three-speed transmission, while engineers improved the model's braking abilities with an expanding-shoe front brake and a rear brake that applied its braking force to the driveshaft. A new frame cradled the engine in a lower position and further back, thus creating a lower center of gravity. With these engine and chassis improvements, the R42 proved much more capable than the R32, especially when mounted with a sidecar.

The R47 was introduced in 1927, and it succeeded the R37 as the performance model in the BMW lineup. At a price of DM 1,850, the R47 was considerably more expensive than an R42 (DM 1,510), but priced far below the outgoing R37 (DM 2,900). The R47 shared the same chassis as the R42, but its engine produced 18 horsepower and could propel the R47 to a top speed of 68 miles per hour.


R47
BRENNABOR
A.G. München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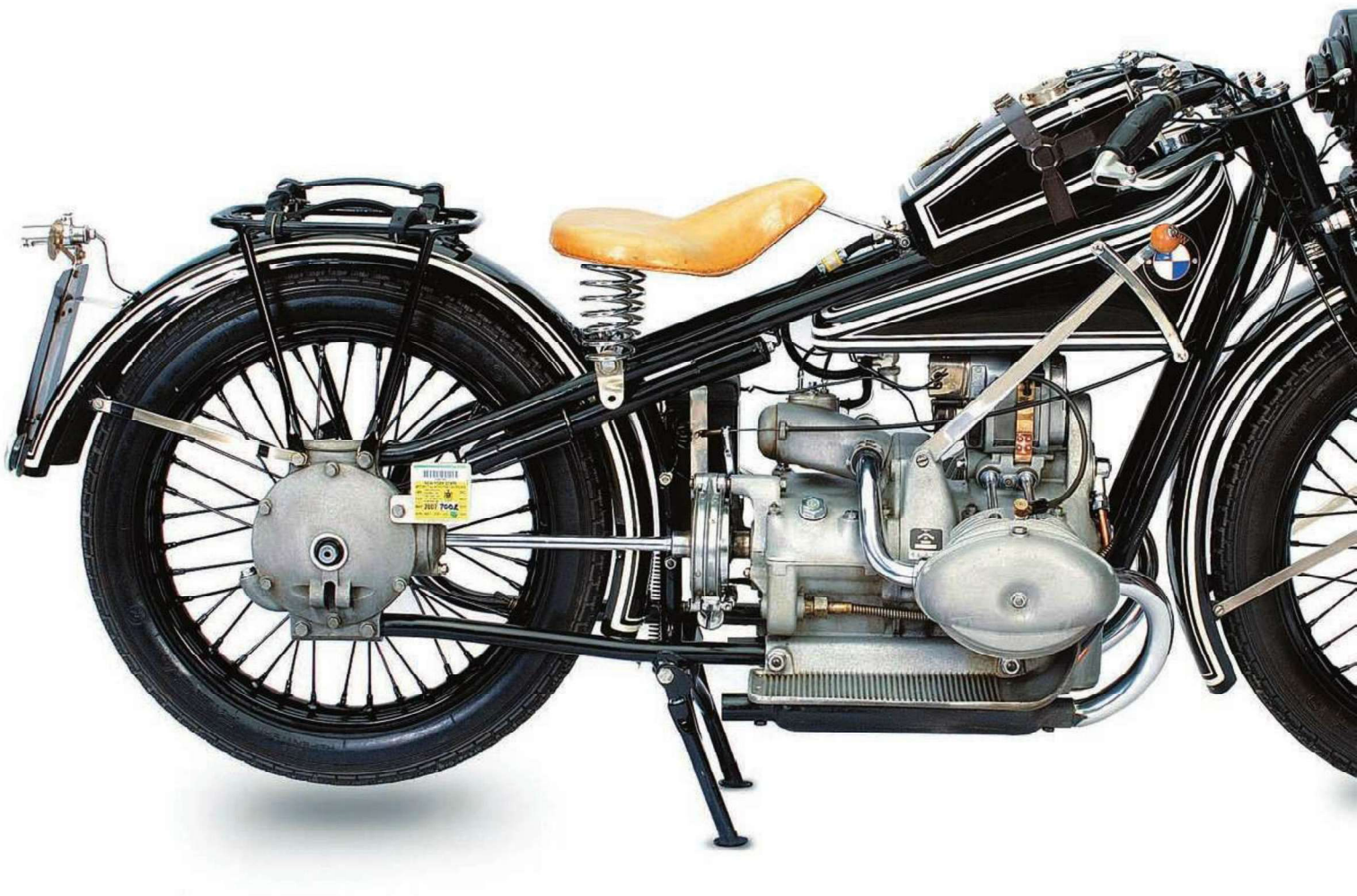
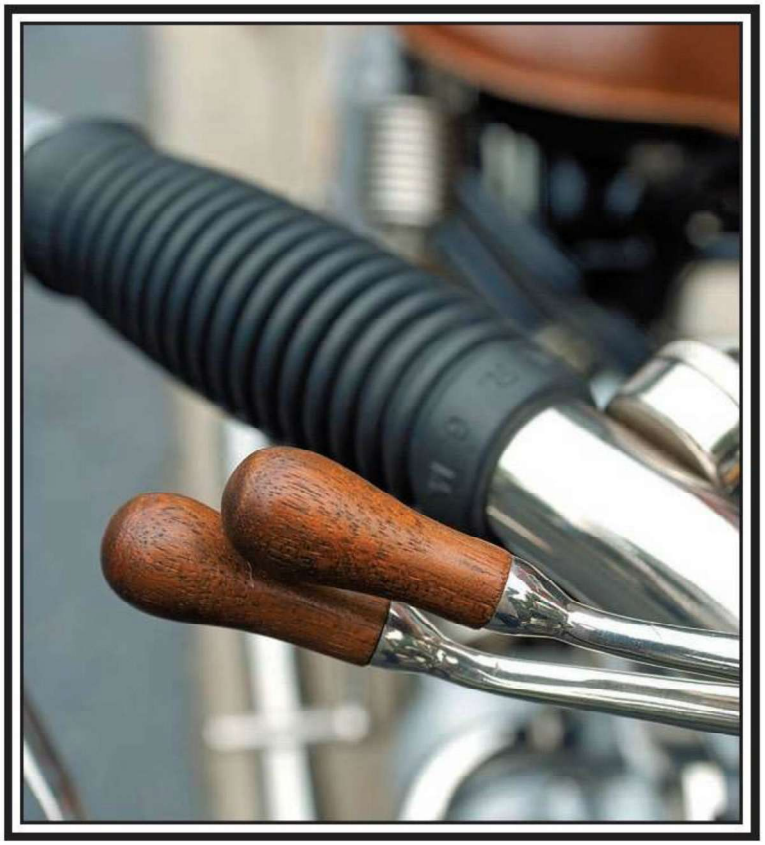





1927
Bayerische
Motoren
Werke AG München
R47

1928 R52

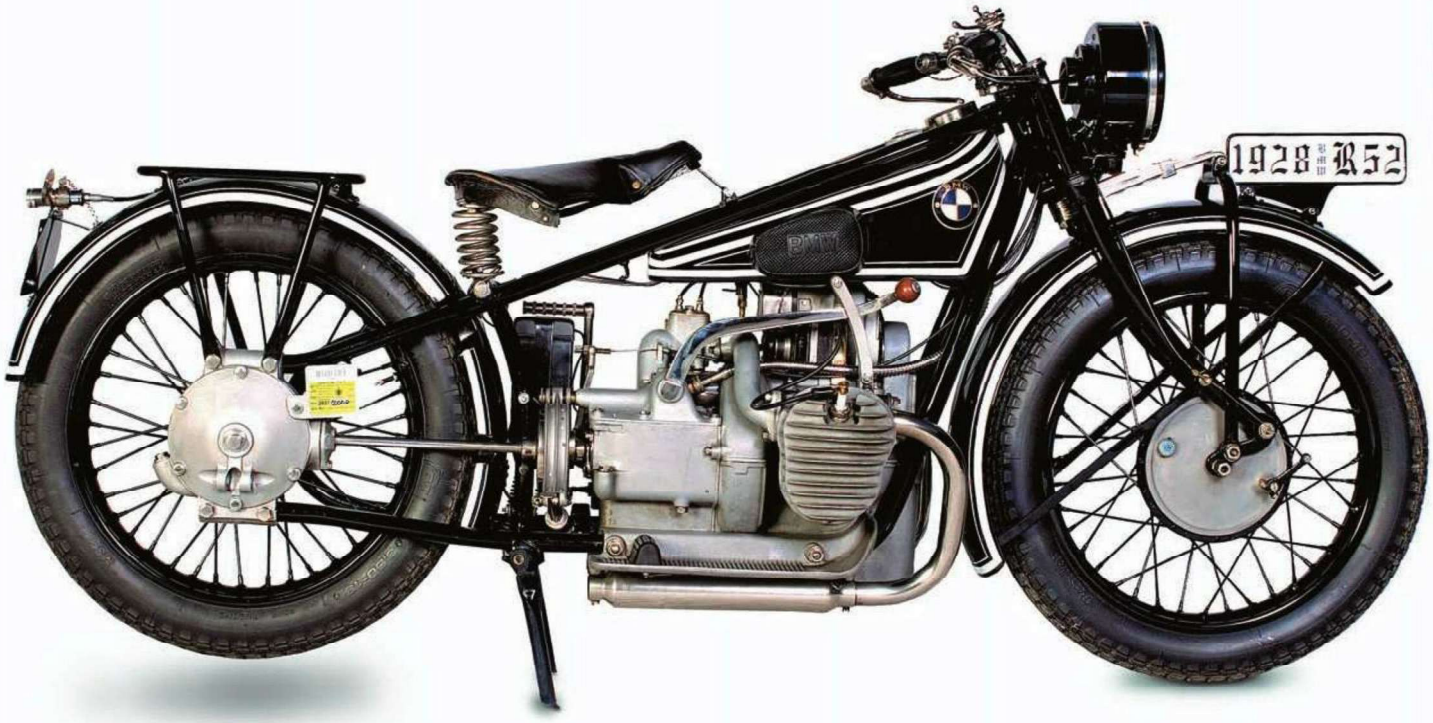
By 1928, BMW was preparing to make some significant changes to its engine lineup. Racing had taught the company some valuable lessons, and the motorcycle market was rewarding BMW's performance and technology advancements. BMW sales were growing nicely, and the company recognized that there was room in the marketplace for more than two BMW models at a time.

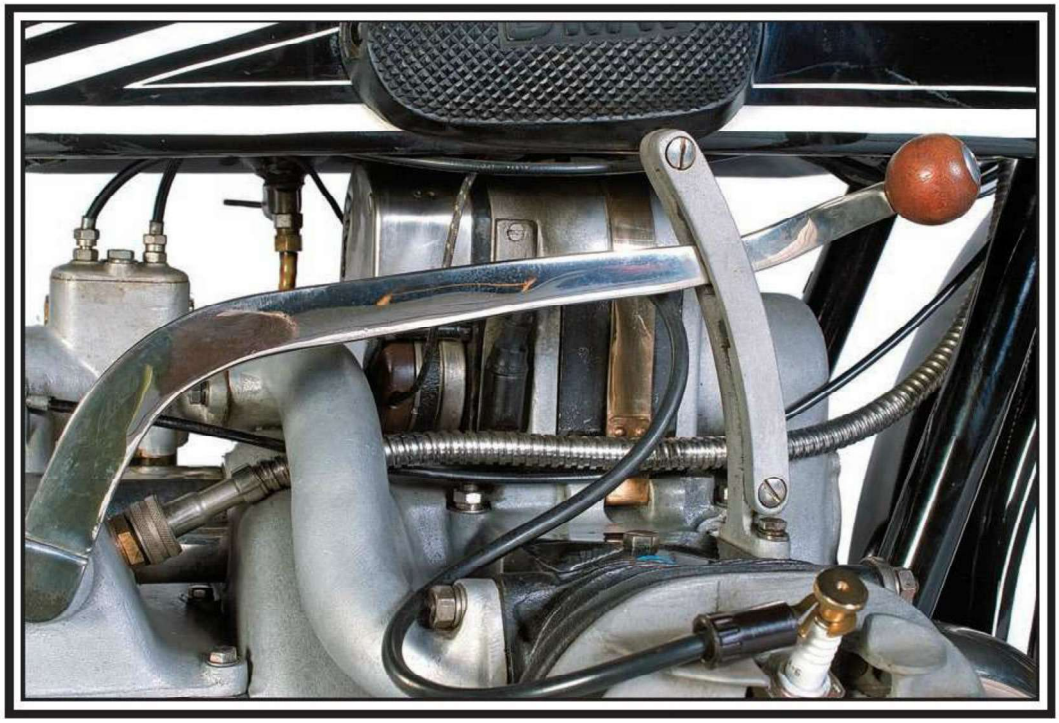
The R52 was introduced as a replacement for the R42. The R52 would fill the role of touring motorcycle, priced at an attainable DM 1,510 (the same price as the R42). The R52 was powered by a new version of the side-valve boxer, marked the M57. Though displacement was nearly the same as the M43a engine, the 486-cc M57 did not retain the "square" bore and stroke measurements of the M43a. Instead, the engine received a 63-millimeter bore and 78-millimeter stroke.

These internals were installed in an engine case that had some rather unique features. The rear was completely enclosed—an engineering strategy that substantially increased the engine case's strength in the area around the rear bearing retainer, which was under a great deal of stress. The downside of this strategy was that clutch service was quite difficult. However, the BMW engineers were facing some serious issues with weak castings. Metallurgy of the late 1920s was nowhere near as advanced as it is today, and BMW engineers needed to form the back of the case in this manner to add strength. As casting processes and metal quality improved, this very non-service-friendly casting was no longer necessary.

The new internals mildly altered the engine's power and torque curves, but the R52's performance was nearly identical to that of the outgoing R42, and peak horsepower output was virtually identical. The R52 could attain a top speed of 62 miles per hour, and it achieved a still excellent fuel economy of 67 miles per gallon. Best of all, the long-stroke engine generated a bit more mid-range torque and was better suited for sidecar duties.

This updated side-valve engine was mounted in a new frame, designated the F56. This frame was to be shared across three additional models from the period: the R57, the R62, and R63. BMW produced almost 4,400 R52s.


1928 R52



1928 **R52**

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1928 R57

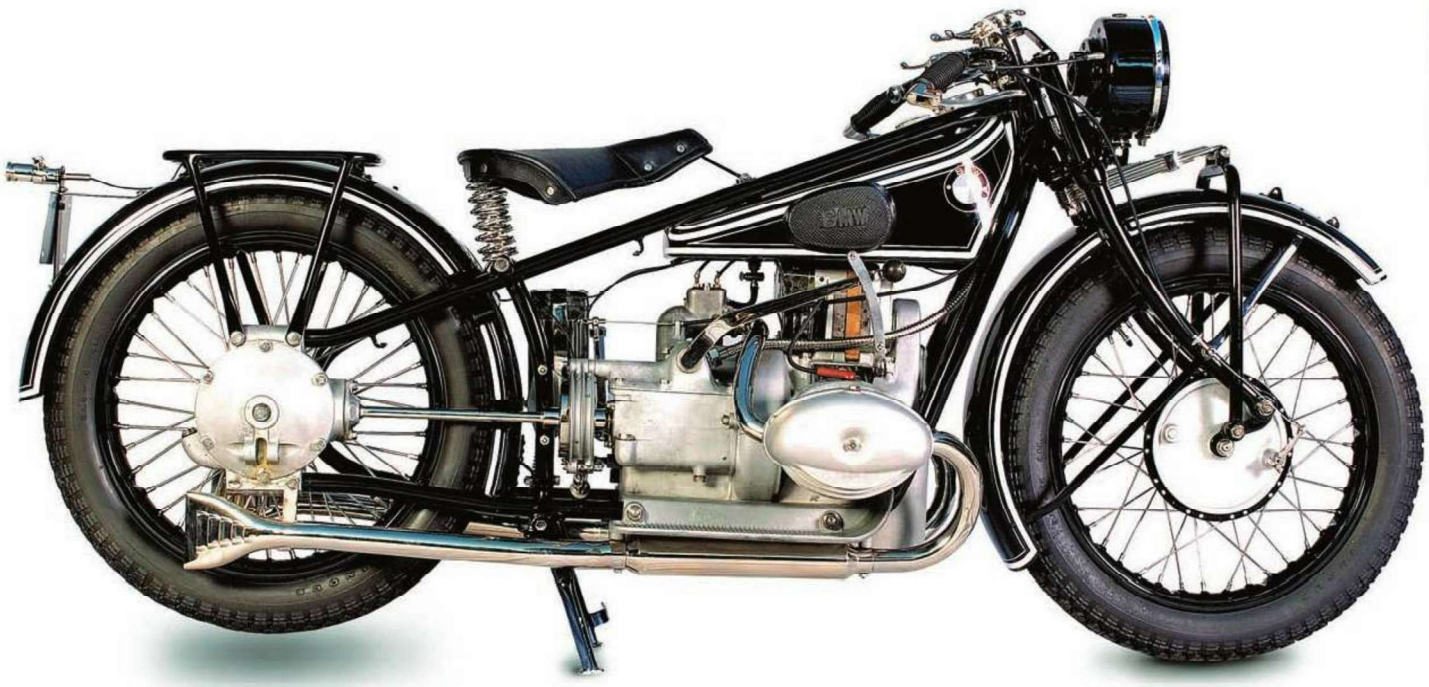
The R57 had much in common with the R47 it replaced. Its engine featured the familiar "square" bore and stroke at 68 millimeters and matched its predecessor's 18 horsepower output. However, there were some key evolutionary changes that affected the R57's performance. Key among them was an improved transmission and electrical system. This series of incremental improvements was not unlike the current evolution of the modern sportbike.

In 1928, Bosch improved the BMW boxers' magneto ignition system with higher voltage and an optional generator to better power lights. The value of a strong ignition system cannot be overstated, considering the variable quality of fuel and state of tuning during the 1920s. Contrary to today's riders, motorcyclists then were not required to have lighting nor did they necessarily desire it. BMW's sporting motorcycles were typically devoid of headlights or taillights, emphasizing the no-frills aggressive nature of the sport-oriented machines, but by 1929, lighting was standard equipment on all BMWs.

To meet sidecar owners' needs, BMW's engineers gave the R57 a clutch update that incorporated two plates, rather than one in the dry clutch. Like all BMWs, the R57 was also available with an optional, shorter final drive ratio.

Considering its sporting intent, the R57's chassis and suspension received some minor improvements to enhance the bike's handling. The wheelbase was shortened by 10 millimeters, and the fuel capacity was reduced due to a revised fuel tank shape. The front brake was enlarged to 200 millimeters, providing improved stopping power and compensating for the weak brake shoe at the rear wheel. Unfortunately, the R57's curb weight grew by 45 pounds, which likely negated any performance gains to be had from the driveline and chassis refinements.

BMW produced about 1,000 R57 motorcycles, which was substantially less than the 1,700 R47 bikes to leave the factory. This was likely due to two factors: a 20 percent price premium over the outgoing R47 model, and competition from the stout 750-cc side-valve R62, available for DM 1,650.




WITTKOP

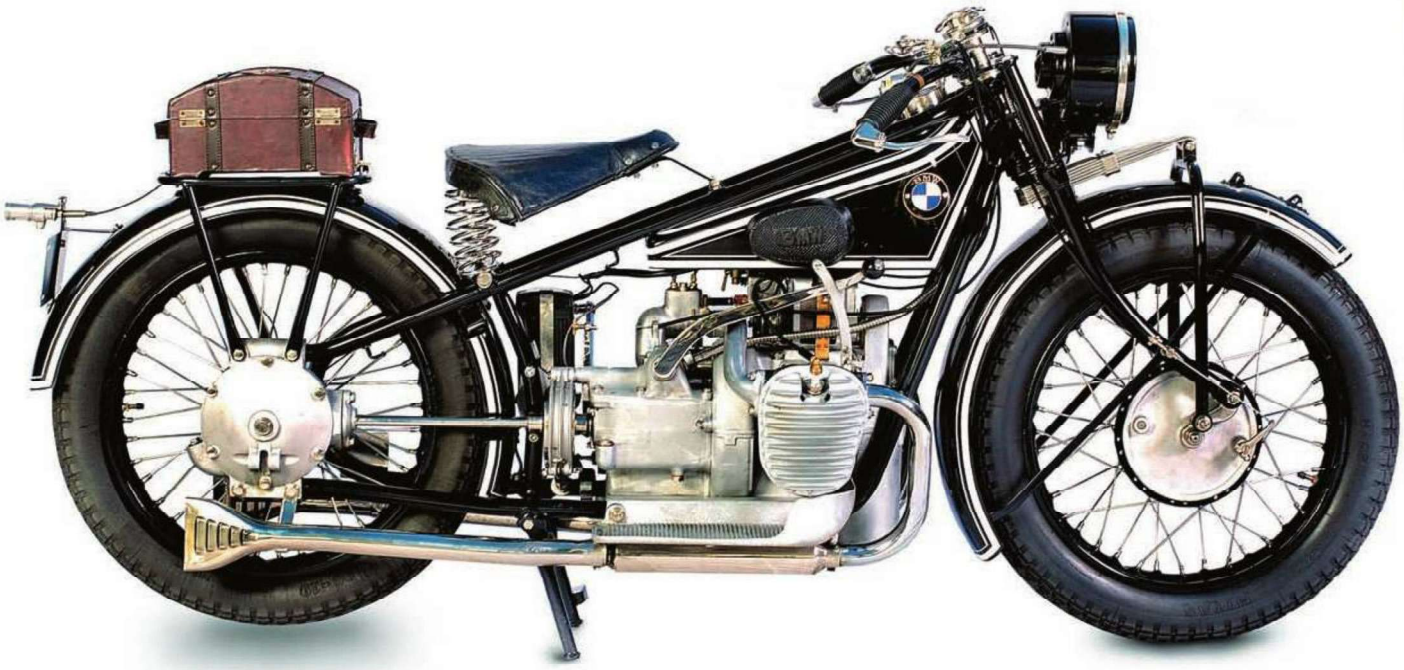
1929 R62

The R62 and its stablemate, the R63, added dimension to the BMW lineup. The R62 shared the same frame as the R52, R57, and R63, but it was powered by a larger-displacement version of the side-valve boxer. The 745-cc R62 generated 18 horsepower and significantly more torque than the 486-cc side-valve R52. Priced a mere 10 percent more than an R52, the R62 attracted customers in equal numbers. BMW produced 4,300 of the R62 models.

This new 745-cc engine was closely related to its smaller-displacement side-valve sibling in the R52. It had "square" bore and stroke measurements (78 millimeters), and a compression ratio of 5.5:1. The engine was mated to a three-speed transmission, which was available with sidecar final drive gearing (1:5.18 final drive ratio); the engine retained BMW's unique flywheel air intake system.

Flywheel intake? Well, at the time when the R62 was built, air filtration was in a primitive state. BMW engineers didn't have access to sophisticated filters, much less today's nanofilter technology. But naturally, motorcycle engines needed to breathe fresh air in some rugged conditions. BMW's engineers needed to design an intake system that could supply dry, clean air, and they developed some clever solutions to the problem.

Since air filters were not commonly applied to motorcycle engines, the engineers' first goal was to increase the length of the engine's intake tract. This allowed more surface area for particles in the intake air to collect on before they could be pulled into the combustion chamber. Next, BMW's engineers selected an unusual location for air to enter the engine. These air inlets were located on the side of the engine case, behind each horizontal cylinder. This air inlet location has several key benefits: First, the air intake is protected from debris and water splash by the protruding cylinders themselves. Second, the intake air is preheated by the hot cylinder, shortening the engine's warm-up time. Finally, as the air circumvents the engine's spinning flywheel, the latter acts as a centrifugal cleaner before the air enters the intake runners. Once filtered, the intake air then doubles back through the carburetor and down the long intake tubes. This clever intake system was a unique feature that helped ensure that BMW engines breathed fresh air without the aid of an air filter.

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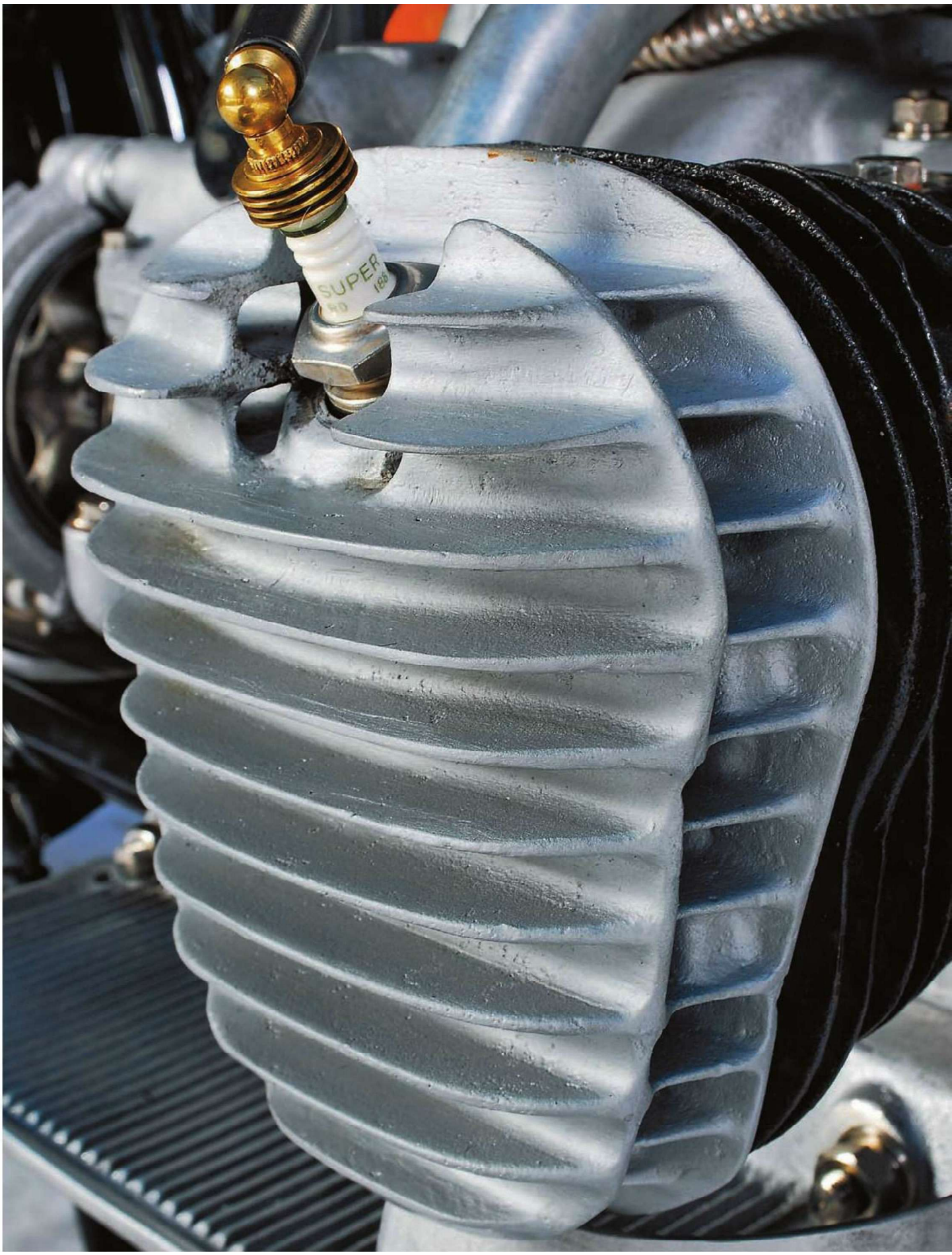
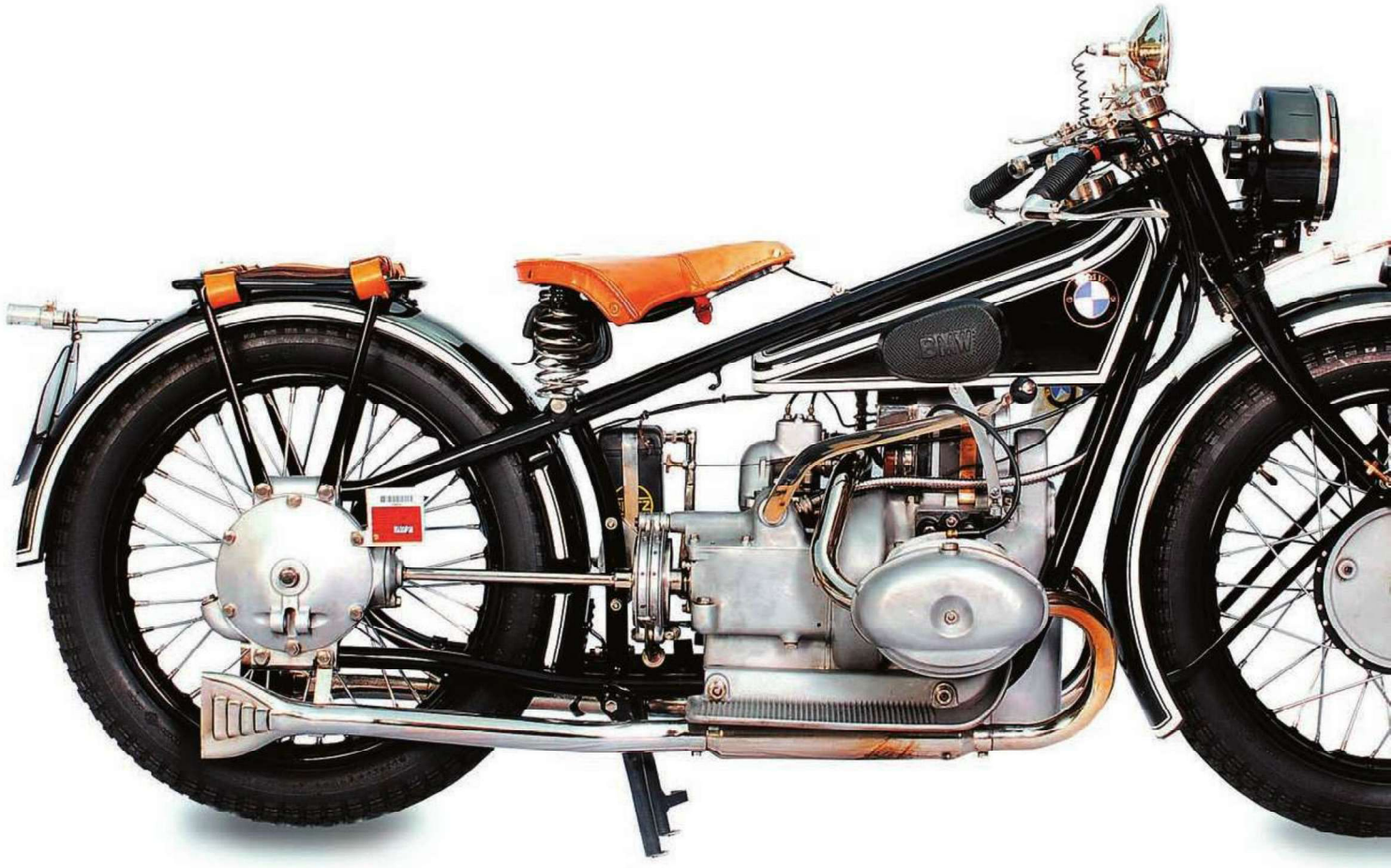

SUPER

1928 R63

Introduced in 1928, the R63 was BMW's "superbike." Built on the F56 chassis, the R63 was true to the fledgling company's competitive spirit. BMW had been racing 750-cc motorcycles for two years before offering the high-performance R63, and the racing development helped shape the street-going bike's new 735-cc OHV powerplant.

This new OHV engine, designated the M60, had a power band very different from its side-valve stablemate. This was a high-revving engine with an 83-millimeter bore and a short 68-millimeter stroke, and alloy pistons replacing the previous cast-iron slugs. The M60 was rated at 24 horsepower at 4,000 rpm, though performance suggested this was a conservative output rating. In stock form, the R63 could attain a top speed of 74 miles per hour, making it one of the fastest motorcycles on the market. It was also one of the most expensive motorcycles, priced at DM 2,100.

Naturally, such a powerful superbike would find its way to the track; racing and record-setting were very important to BMW in the 1920s. Racing success established BMW's reputation for building fine sporting motorcycles. It also directly influenced the company's production motorcycles, revealing weaknesses and creating opportunities to experiment with new engine and chassis technologies. The knowledge BMW gained from extreme competition led to a unique pair of new models.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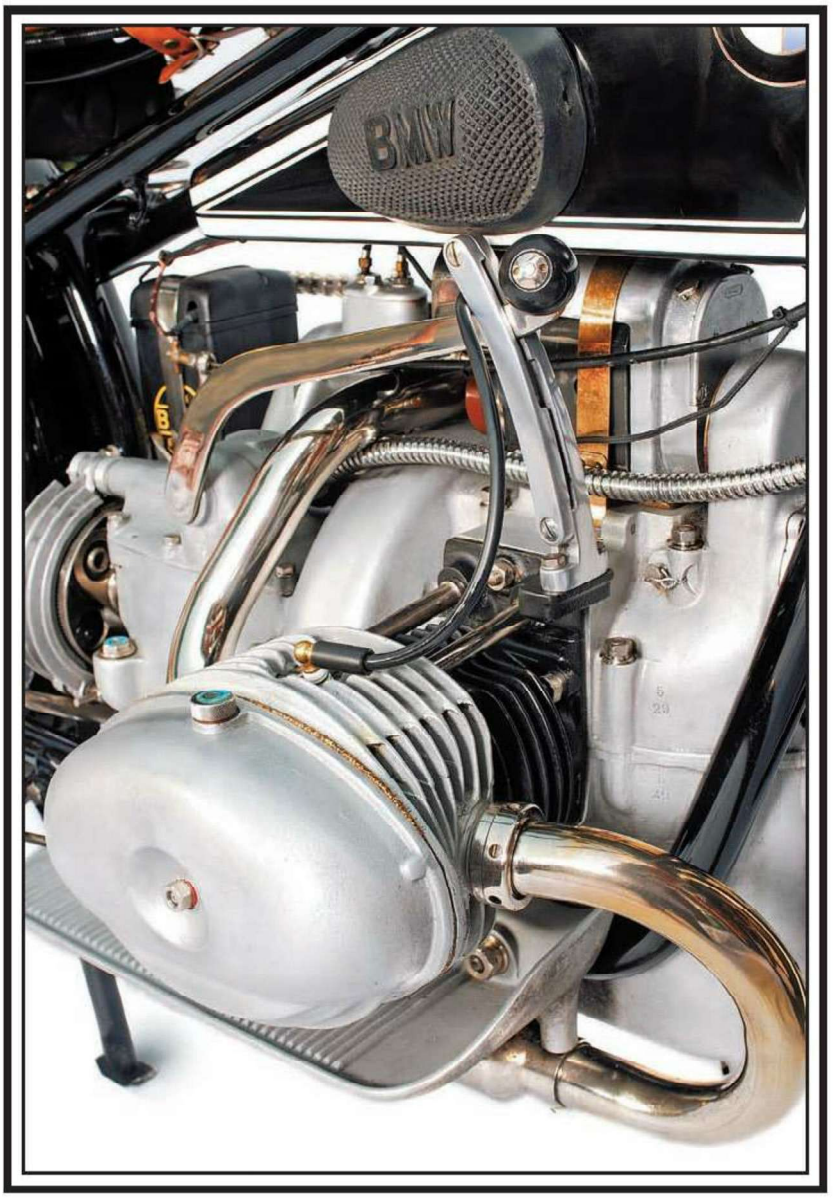
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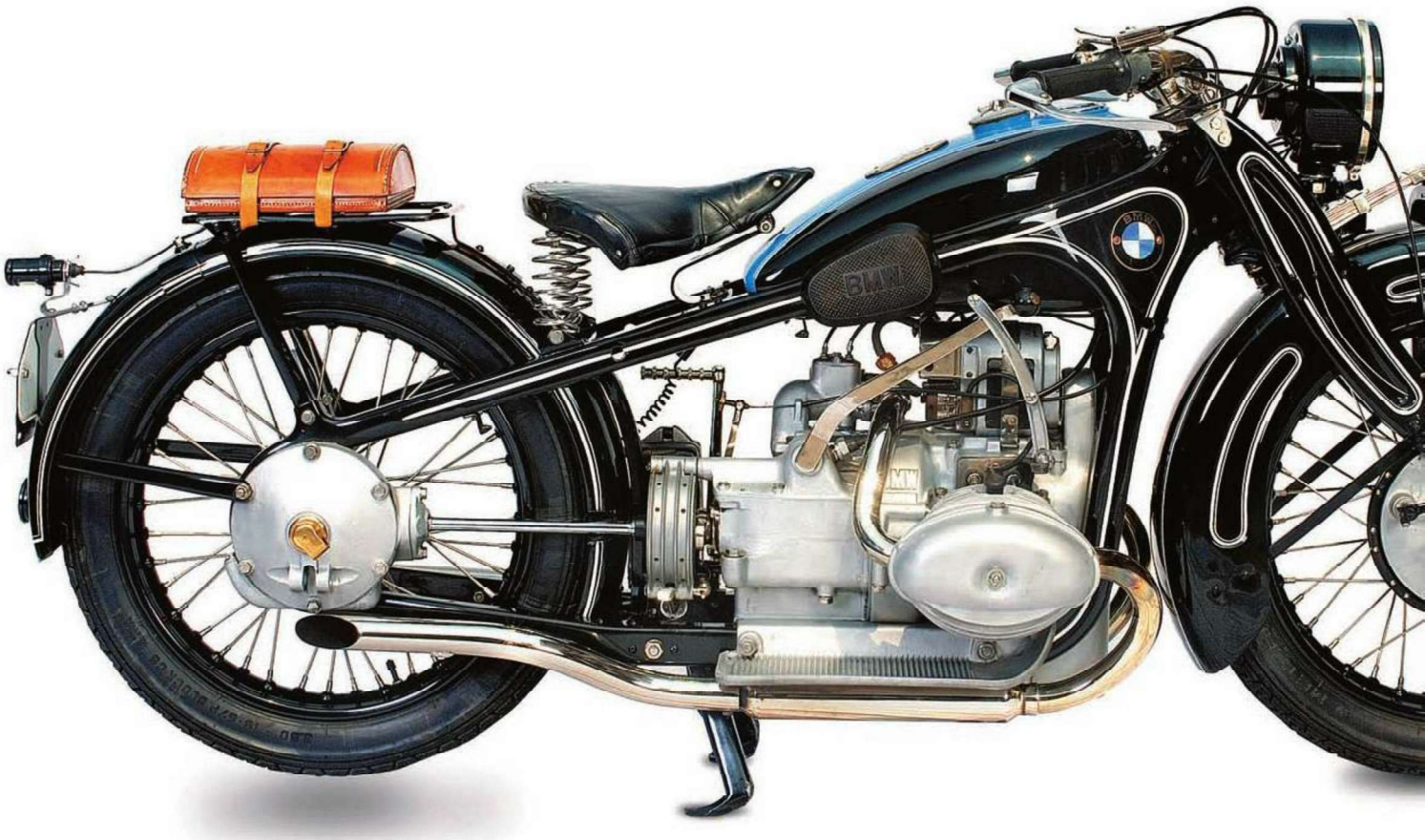
1931 R16

From the late 1920s until World War II, BMW motorcycles were competitive in both road-racing and top-speed racing events. Winners of these competitions were highly regarded, and for good reason; it took a special type of rider to pilot a supercharged hardtail motorcycle at speeds of over 130 miles per hour. BMW had its hero in Ernst Henne, whose efforts gave BMW its first of many speed records on a supercharged 750. In September 1929, Henne pushed a BMW 750 to a world motorcycle speed record of 134.78 miles per hour on a closed course near Munich. More records followed as Henne and BMW competed with other manufacturers like Gilera and Brough Superior.

As a direct result of its racing development work, BMW was able to address weaknesses in the tube-steel frames that formed the backbone of bikes like the R63. These tube-steel frames were prone to breaking, particularly when subjected to the stresses of supporting a sidecar. There were also instances of collapsing front forks, as the bikes were pounded over Europe's ancient roads. BMW crafted a solution to these problems, called the R16.

Introduced in 1929, the R16 was built on an all-new pressed-steel frame. This frame had much in common with its predecessors, including a familiar twin-loop design and a virtually identical plate-spring trailing-link front suspension setup. However, the new frame added some much-needed torsional rigidity, making it better able to withstand the rigors of sidecar duty and high-performance riding. The downside of this added strength was a 22-pound weight increase.

The R16 was propelled by the same OHV engine that powered the R63. This M60 engine received some upgrades, though, to improve its power output. In 1932, BMW replaced the three-jet BMW carb with twin Amal carburetors. The upgrades yielded significant gains, bringing output of the 736-cc engine to 33 horsepower at 4,500 rpm. Top speed was also increased to 78 miles per hour.


BMW

1931 **R16**

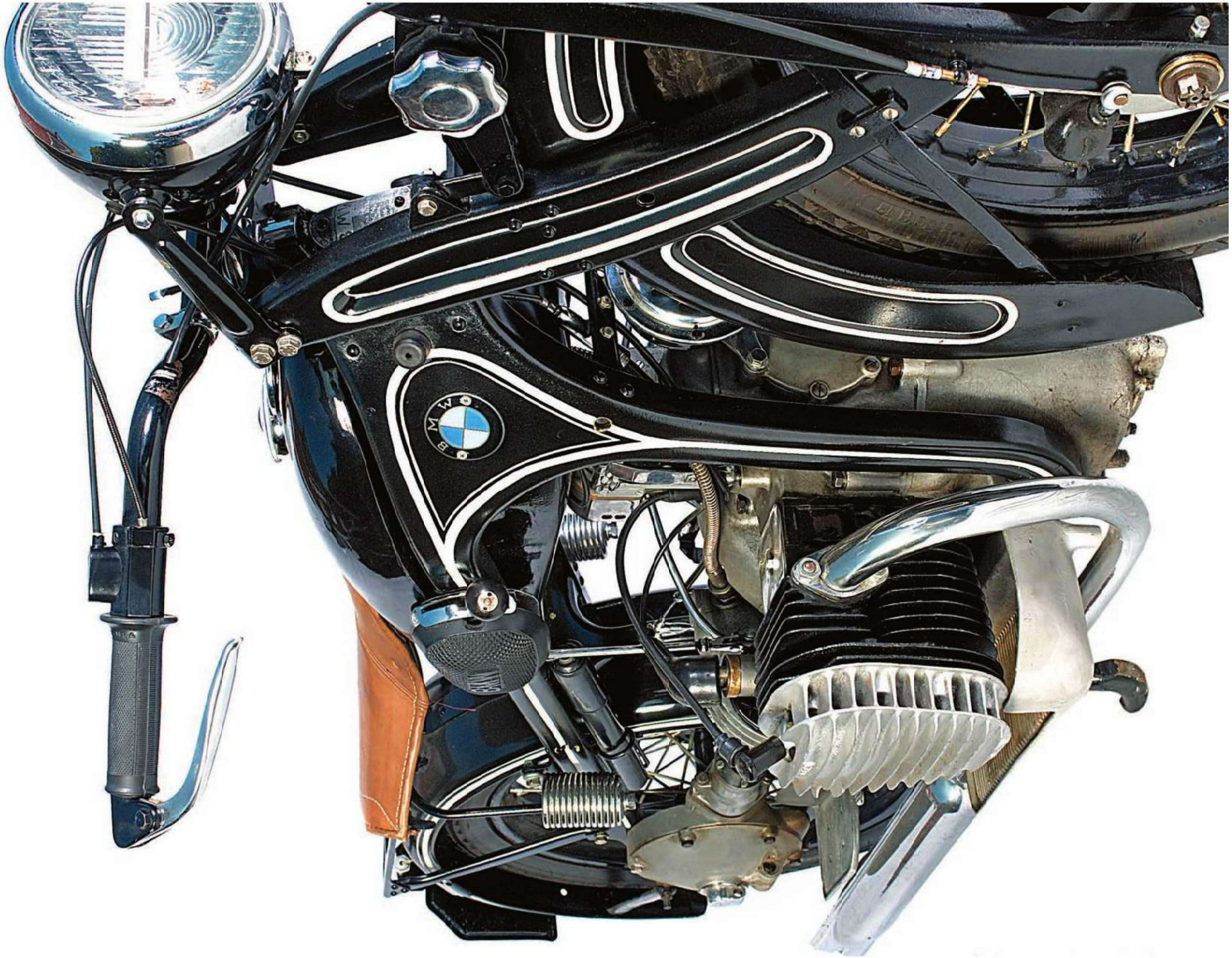
1934 R11

The R11 was a sibling to the R16. Also introduced in 1929, the R11 replaced the R62 as BMW's touring motorcycle. Built around the same pressed-steel frame as the R16, the R11 used the outgoing R62's side-valve engine. By 1934 the R11's 745-cc side-valve M56 engine was tuned to produce 20 horsepower.

Between 1929 and 1934, BMW offered five versions, or "series", of both the R11 and R16. The company continually refined its bikes through this period, making incremental improvements to the chassis, brakes, engine, and controls. The five series of the R11 and R16 set a naming convention that BMW would carry through the 1960s.

The Series 2 R11 and R16 bikes were released in 1930. At that time, both bikes received larger-diameter Cardan brakes to improve stopping power at the rear wheel. More significant changes appeared with the Series 3 bikes in 1932. The R11 Series 3 received a new Sum carburetor that provided preheated, secondary air-injection from the exhaust manifold. The R16 Series 3 featured twin carburetors and its compression ratio increased to 7:1, which pushed output to 33 brake horsepower.

Incremental improvements continued through 1934, with the Series 4 and Series 5 models. For 1933, the only change for the Series 4 R11 was a revised shift lever, mounted on the right side of the tank. However, for the 1934 Series 5 model, BMW added a dual-carburetor setup to the side-valve engine. Drawing fuel through twin Amal carbs, the R11 could now produce 20 horsepower and attain a top speed of 69 miles per hour. Even though the twin carbs offered significant performance advantages, some single-carb versions of the bike were produced for the military. In total, approximately 7,500 R11 bikes were produced during the 1929–1934 period, outselling the R16 at a ratio of more than seven to one.



1936 R5

Deriving much of its new design from BMW's racing efforts, the R5 was a sensation when introduced in 1936. The R5 featured a new chassis, a new engine, and major suspension and control improvements. By today's standards, the R5 would be characterized as a "bargain sportbike," as it rolled all of these advanced new features into a stylish package offered at a very competitive price.

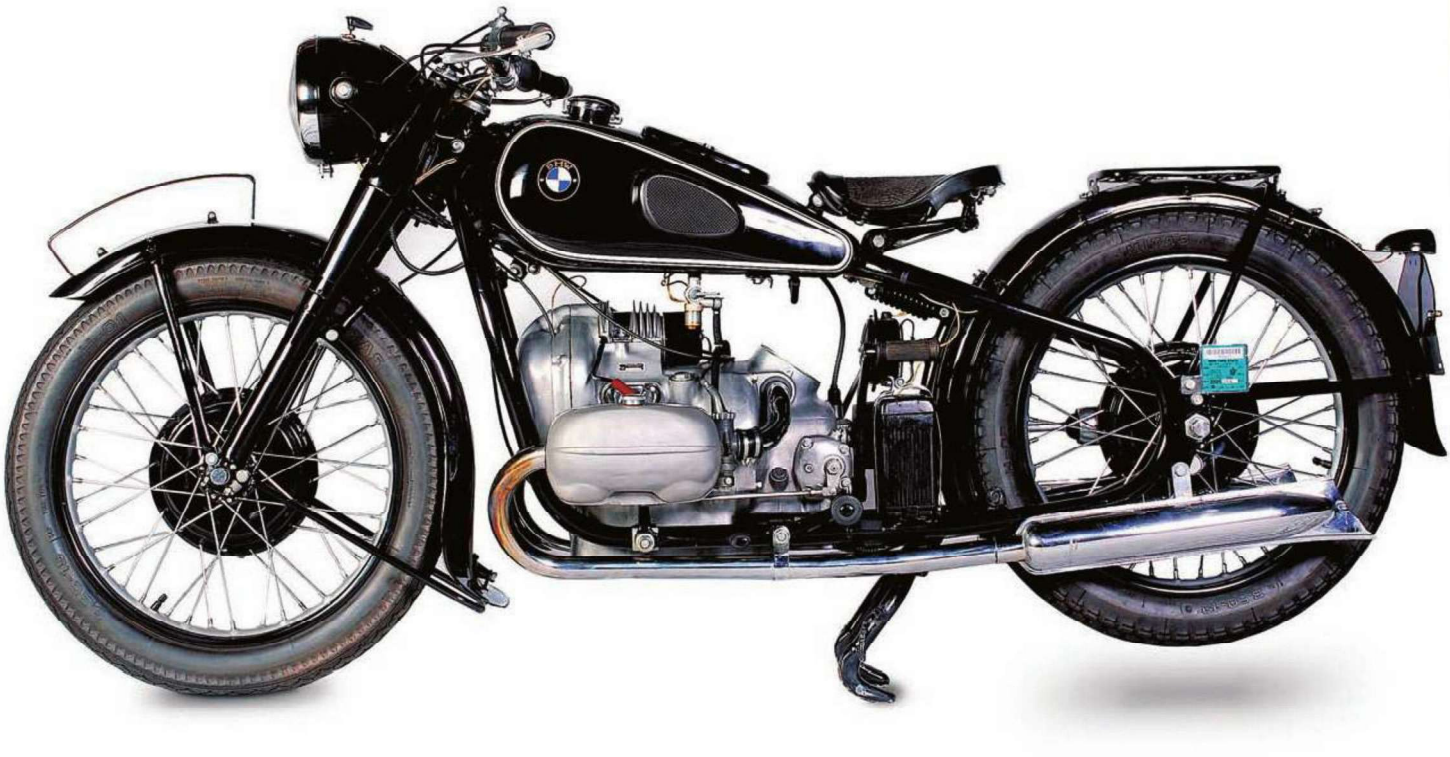
The basis of this new bike was a well-designed new frame that drew heavily from BMW's racing development experiences. Metallurgy and assembly techniques were improving rapidly at BMW, allowing the engineers to use tubular steel for the new R5 frame. Unlike previous tube-frame bikes like the R63, the R5's new frame had tubes with an oval-shaped cross-section. Improved electrical welding made the joints much stronger, and the new frame achieved remarkable rigidity. Best of all, the R5's frame was not nearly as heavy as the pressed-steel frames of the R11 or R16, enabling the new R5 to tip the scales at an excellent 363 pounds.

In addition to the lightweight frame, the R5 received a sweet powerplant—a potent and race-proven 494-cc OHV boxer. The all-new engine featured a revised valvetrain, incorporating two camshafts driven by a timing chain. The engine case was no longer a split-housing, but a single casting. New cylinder head assemblies included rocker arm bearings that were cast into the heads and valve springs that were better suited to high-rpm operation. The result was a powerplant that produced 24 horsepower at 5,500 rpm—almost the same output as the OHV engine in the early R16 models.

To deliver the power, the R5 was fitted with a four-speed transmission. A key feature of this transmission was the new shifter location by the rider's left foot. The R5 also had a vestigial shift lever on the right side of the case, ostensibly to enable inexperienced riders to find neutral easily. However, it is likely that this hand-shift lever was rarely used once the rider became accustomed to the left-foot shifting action.

Of particular note on the R5 is its front suspension. The new motorcycle featured a telescopic fork that even allowed for external damping adjustment. This setup is ubiquitous in today's motorcycling world, but telescopic forks were a breakthrough in the 1930s. Although front-wheel travel was limited and the bike retained a rigid rear suspension setup, this new front suspension still offered superior wheel control and contributed significantly to the bike's handling and sporting character.

Overall, the R5 represented an excellent value for money. Priced at DM 1,550, it cost DM 500 less than the R17 and was even priced below the R12. For that price, a buyer was getting a very capable 500-cc sporting motorcycle that was built around some of the best technology available. Its performance was a match for 750-cc motorcycles, and its nimble handling made it a delight to ride.

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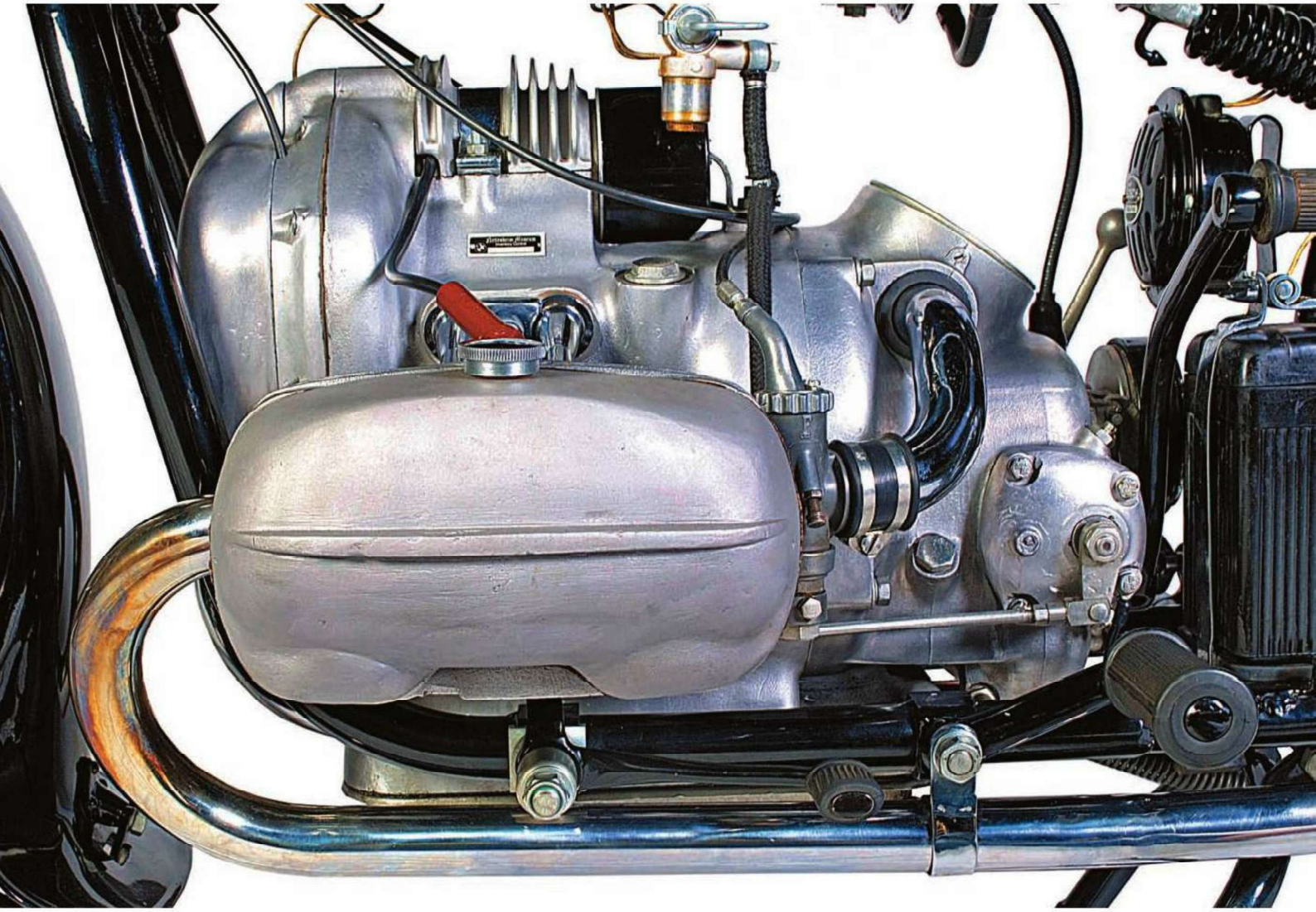
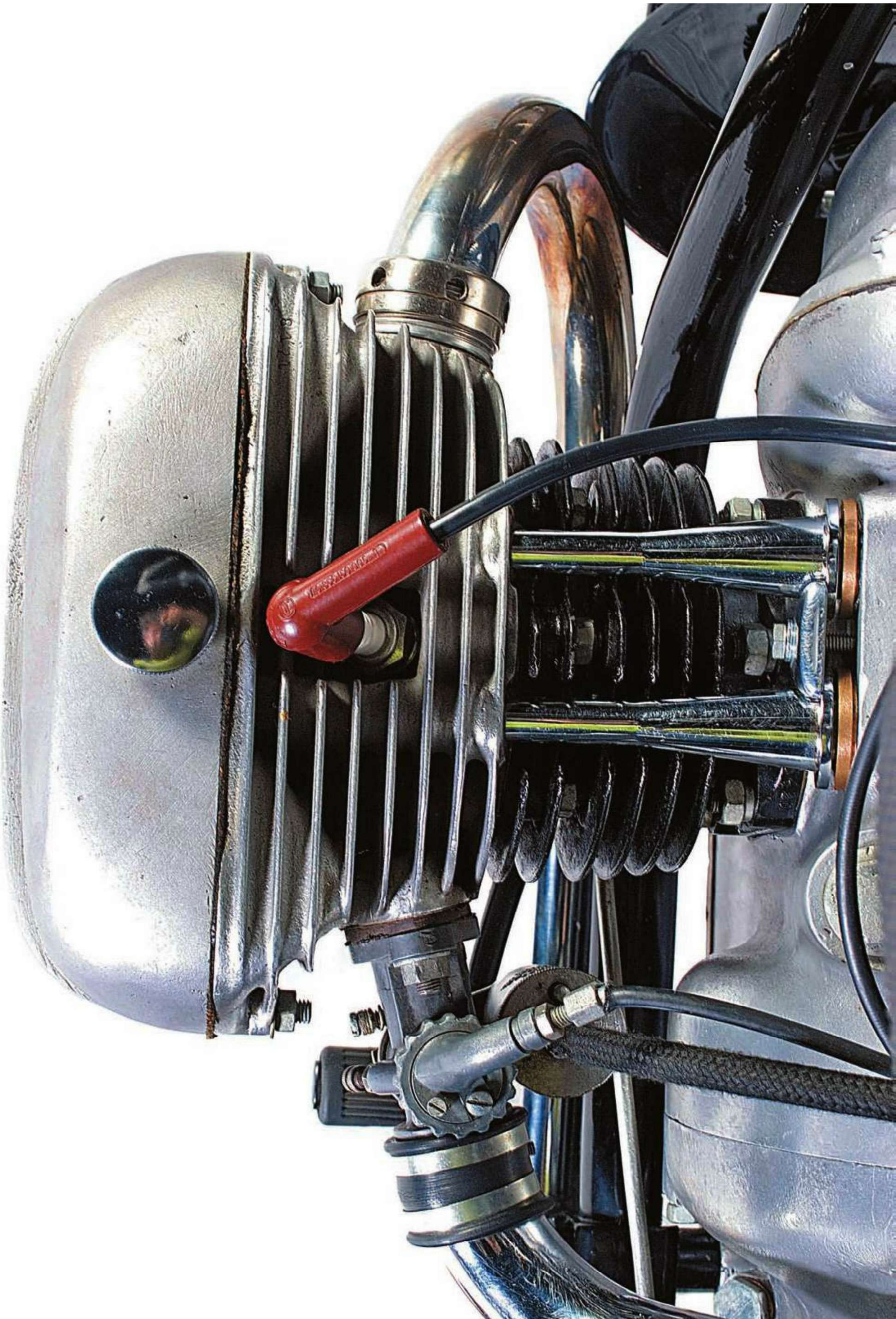
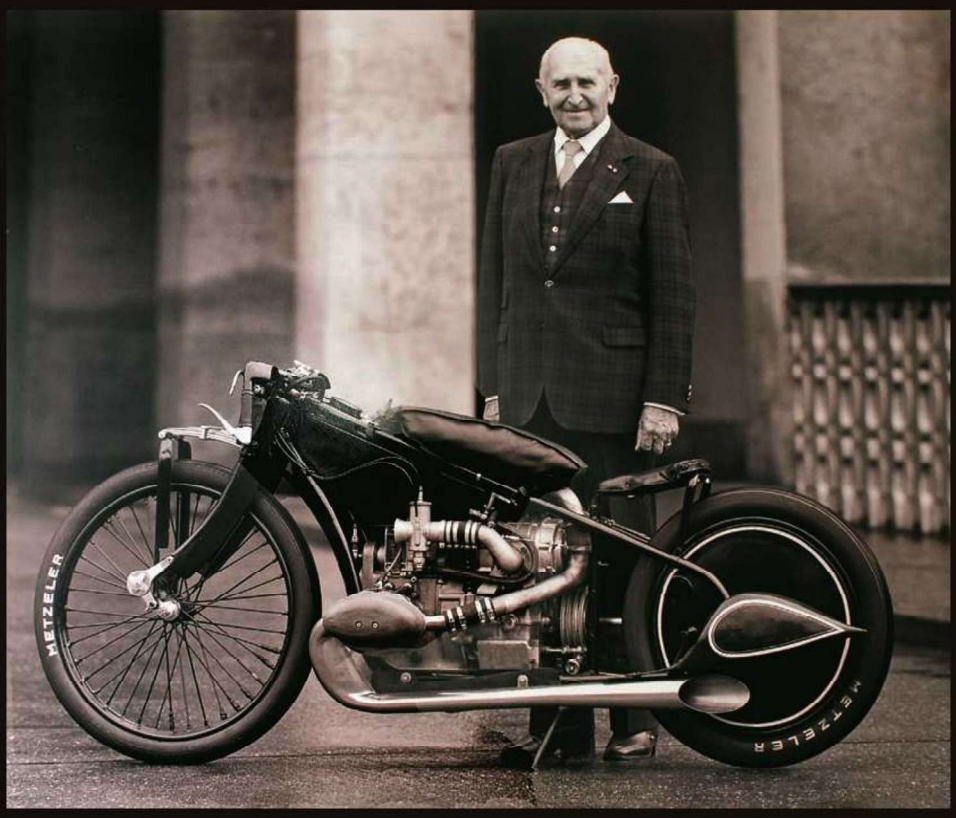





METZELER
METZELER

1937–1969

BMW continued to build its inexpensive single-cylinder bikes throughout the 1930s. The 200-cc R2 was a popular model, since the rider was not required to have a motorcycle license to operate a bike up to 200 cc. The single-cylinder range was also expanded to help "bridge the gap" between the singles and the larger-displacement boxer-powered models. These models included the 300-cc R3 and the 400-cc R4. The R3 was a failure, since it had neither the R4's power nor the R2's licensing exemption. But the R4 found many buyers. It was not a spectacular performer, but it was very affordable transportation at a time when autos were still prohibitively expensive. The R4 was also popular as a fleet vehicle, and it was purchased in large numbers by the military and local police forces. BMW would later build the R35, a single that descended from the R4, but featured the new telescopic front fork.

WORLD WAR II

Production of civilian motorcycles came to a halt in 1940. Germany was by now fully engaged in conflict, and the nation's industrial power was redirected to support the military effort. BMW had been selling motorcycles to the military for years, and there were already many R2, R4, and R35 models, along with R12 sidecar haulers, in the military fleet.

But the military's needs were evolving, and BMW (along with its rival, Zundapp) was asked to produce a sidecar motorcycle that would be more effective for the armed forces. Particularly, the military needed a bike that was reliable and robust enough to survive extended periods at low marching speeds—where the engine was below its power band and cooling air across the cylinders was minimal. The bikes had to be powerful enough to move three fully burdened soldiers, plus a bit of additional armament and gear. The military also demanded that the bike be capable of off-road travel over rough terrain. Of course, all of this was required without having to sacrifice reliability. So in 1938 BMW began developing what would become the R75. BMW would ultimately manufacture this motorcycle at the Eisenach facility and, from 1941 to 1944, would produce approximately 18,000 examples for the German military.

Allied bombings battered BMW's facilities, making mass production a challenging proposition. The Eisenach factory, which was making both autos and motorcycles, was a frequent target. The Munich facility was making aero engines for the German military, so it too was a primary bombing objective. Air raid destruction reduced the facilities' output. By the end of the war, virtually every building that BMW had been using was damaged by the bombings.

POSTWAR

The entire company was in shambles after the war. Not only were the physical structures severely damaged, but also most of the motorcycle blueprints had been lost during the conflict. The Eisenach facility was located in what would become East Germany.

There were some glimmers of hope when the conflict ended, though. The American occupiers needed a facility where they could repair and maintain their vehicle fleets. They used BMW's Munich facility and employed its staff with maintenance tasks. The facility was also used to manufacture household items and even some bicycles.

The staff wanted to resume manufacturing motor vehicles, however. BMW was granted permission to produce motorcycles on the condition that its engines displaced less than 250 cc. Since the company's plans and blueprints were lost, engineers tore down some surviving motorcycles and measured each component as accurately as possible. They used this information as the basis of the plans for a new motorcycle, the R24.

BMW showed the public the R24 in the spring of 1948 and began manufacturing the bikes as quickly as possible. Unfortunately, material shortages delayed the delivery of the bikes for about six months; dealers did not begin to receive the motorcycles until December. There was a great deal of pent-up demand for the bikes. Germans needed affordable transportation, and the BMW fit the bill nicely. Despite a number of competitors that offered less expensive, smaller-displacement two-stroke bikes, BMW's motorcycles were in high demand. The BMW reputation for quality and racing success in the prewar years had been successfully carried forward to the postwar marketplace. Buyers were clamoring for the bikes, and even the German president's security detail rode the single-cylinder "Beemers." The R24 would ultimately be supplanted in 1950 by the R25, a more refined model that offered rear suspension. BMW would build many R25s for a hungry postwar marketplace; its production topped 23,000 units in its first year alone.

In 1950, occupying forces permitted BMW to resume production of its larger-displacement boxer-powered bikes. BMW took up the opportunity by launching the R51/2, a mildly updated version of the prewar R51. This bike was also a success; the public bought more than 5,000 units in the first year. The

company continued developing the R51 through the first part of the decade, adding a new model, the R68.

The sporting R68 was a postwar breakthrough for BMW. The bike's performance was stellar for the day, its 35 horsepower engine propelling it to a 100-mile-per-hour top speed. Serious sporting motorcyclists snapped up the bike despite its premium price of DM 4,000.

BMW's motorcycle production levels grew steadily through the 1950s, peaking at about 30,000 bikes in 1955. By the mid-1950s, though, the automobile was beginning to put the brakes on motorcycle sales growth. As the German economy rebounded from the war, buyers aspired to own an automobile, and BMW's moto sales began to suffer. In 1952, the company restarted its auto manufacturing and was producing the very unique Isetta subcompact car. Growth in the auto business was quickly on track to outpace the motorcycle business, and much of BMW's resources became focused on automobile products.

Nevertheless, BMW bikes were receiving new features and technology. By the mid-1950s, the company had made major chassis updates, including the Earles fork front suspension. Racing efforts were integral to the development of new technologies, and Georg "Schorsch" Meier and Walter Zeller were bringing much attention to the high-performing BMW bikes in the German racing championships. However, by 1957, BMW's motorcycle successes had reached a zenith, and the company's fortunes would take a downward turn at the end of the decade.

By 1960, BMW was staggering under the weight of its ailing auto business. Its six-cylinder models had not been well received, and debts were mounting. At its darkest hour in December 1959, a buyout offer from Daimler-Benz was rebuffed, and with the help of banker Herbert Quandt, BMW was able to avert a complete collapse. Quandt's capital infusion helped to spark the company's product-development efforts, but the effects were felt more quickly in the automotive division, and they took some years to reach the motorcycle group.

The automotive side of BMW's portfolio grew rapidly through the 1960s. By 1969, motorcycles represented only 5 percent of BMW's sales revenue; it was utterly dwarfed by the rebounding automotive sales. As a result, the motorcycle division became a bit of a corporate backwater. BMW made only nominal product updates to its bikes during the early '60s.

Motorcycle staff began to see glimmers of hope in 1967. That year BMW offered three key new models for export: the R50 US, R60 US, and R69S. The renewed development efforts these bikes reflected were important for the company, as competition from other motorcycle manufacturers had increased. Automobile production continued to dominate the BMW landscape, so much so that by 1969 the company was forced to relocate its motorcycle production to Berlin to make way for expanded auto production at the Munich plant. Having its own factory proved beneficial for the motorcycle division, however. Changes were afoot, and the bikes from the Berlin factory would be pivotal in a BMW motorcycle renaissance.

1937 R12

1941 R12

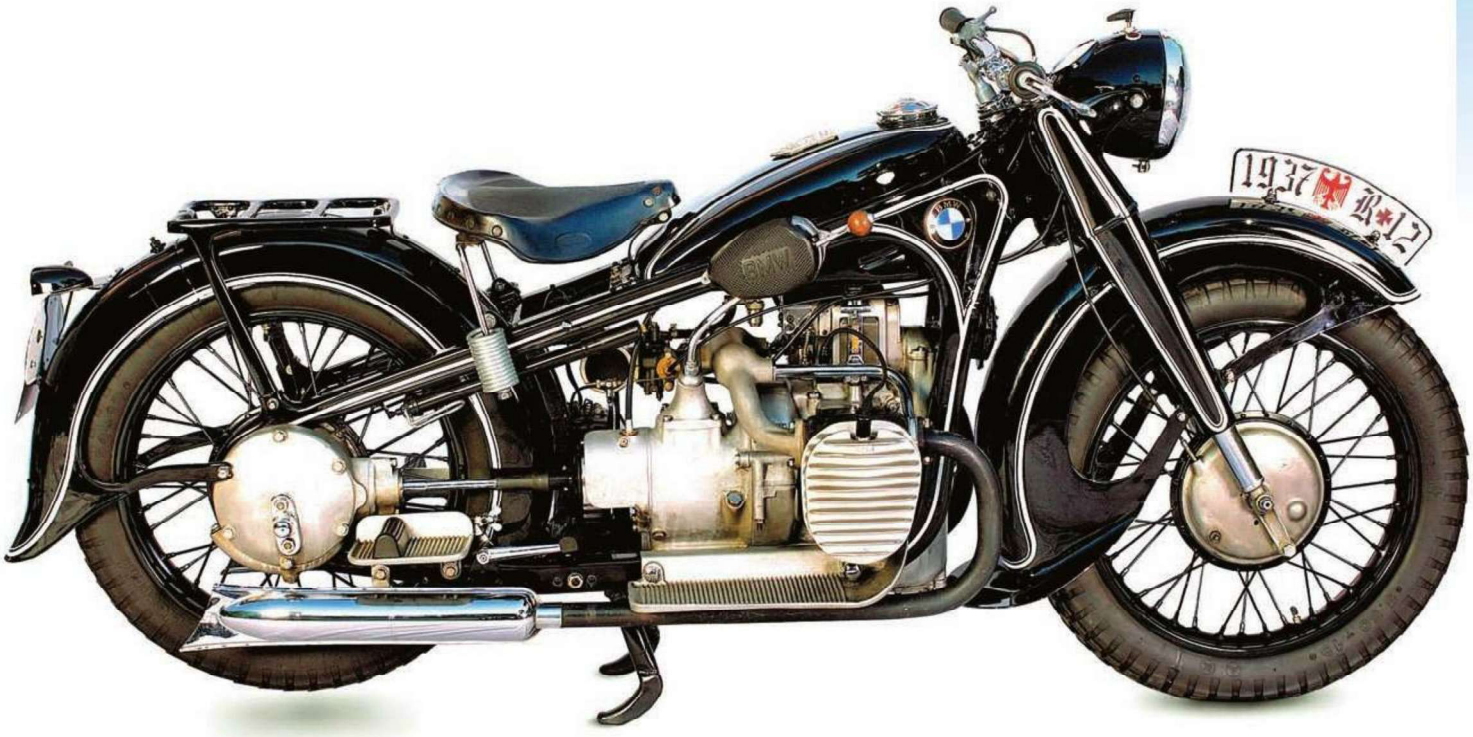
Business was booming at BMW in the mid-1930s. Total production increased dramatically in 1934 to almost 10,000 motorcycles, and the company was maintaining its momentum with continuous product development.

While not nearly as attractive-looking as their predecessors, the R11 and R16 pressed-steel models proved to be workhorse motorcycles, and they sold in significant numbers. Their stout frames made them ideal for sidecar applications and also helped the bikes endure the roughest road conditions, making them indispensable to the German armed forces. In early 1935, BMW unveiled updated versions of the pressed-steel bikes. Dubbed the R12 and R17, these bikes carried on with the robust pressed-steel frame, yet they integrated some new drivetrain and chassis technology.

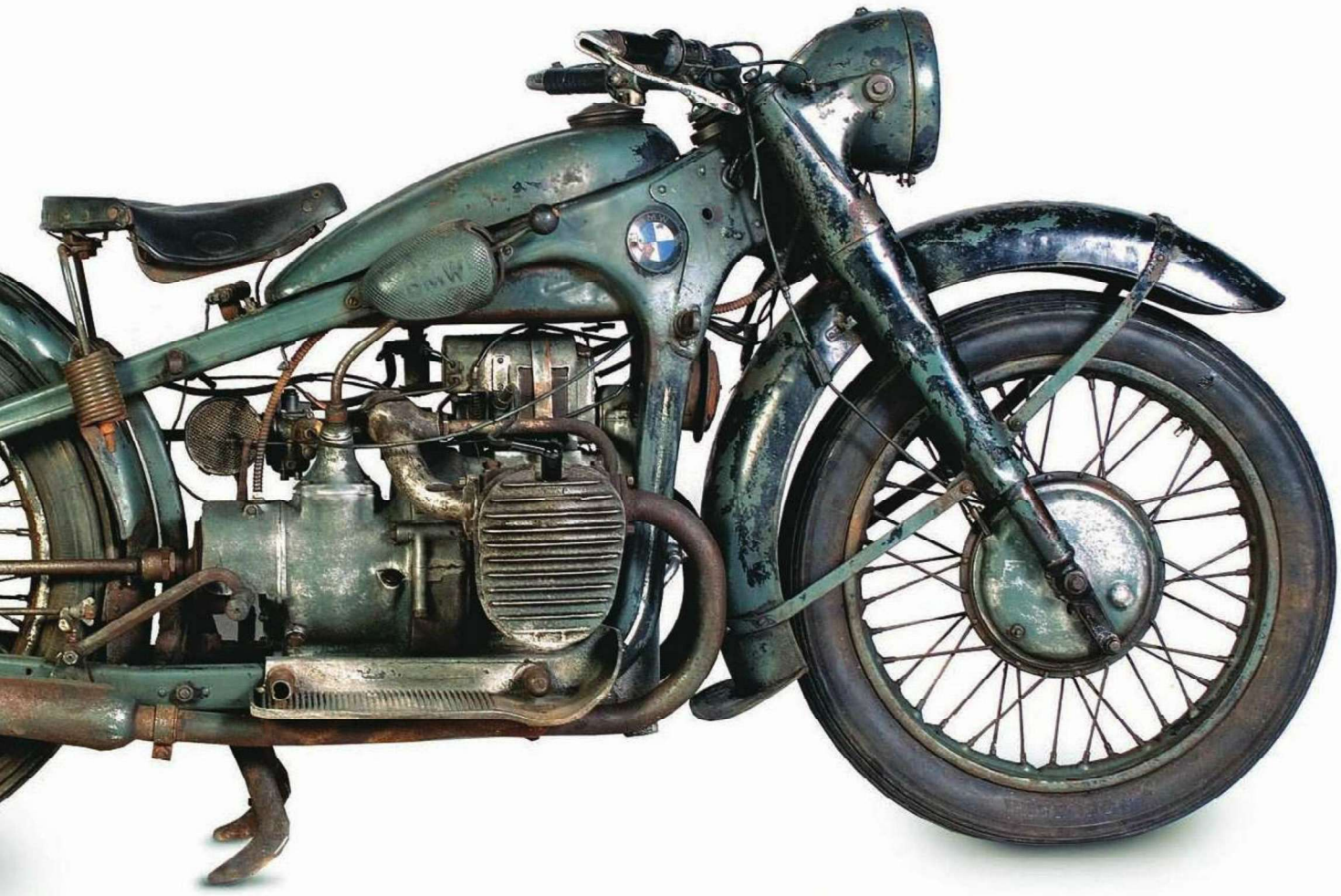
Powered by the same basic 745-cc engine as the R11, the R12 featured either a single carburetor or a dual-carb setup. The single-carb engine produced the same 18 horsepower as it did in the R11, while its dual-carb sibling produced 20 horses. The single-carb version was the choice of Germany's armed forces, which likely valued the simplicity of a single-carb engine for ease of maintenance and reliability. These engines were mated to a new four-speed transmission.

The real significance of the R12 lay in its updated chassis. When introduced in 1935, the R12 and its sibling, the R17, were the first motorcycles in the world to be fitted with a hydraulic telescopic front fork. Though it had a limited range of travel, the fork vastly improved ride quality and was very similar in design to the front forks of most of today's motorcycles. Despite the breakthrough technology of this front suspension, the R12 and R17 were still built with a rigid rear suspension; shock absorbers and springs would not appear on a BMW motorcycle until 1937.

Rounding out the changes to the R12 was a new rear braking system with a 200-millimeter drum. This was a great improvement over the previous Cardan brake, which applied its braking force to the driveshaft. The new rear drum was the same size as the drum on the front wheel, and the front and rear wheels were interchangeable. The wheels also used the ubiquitous 3.5x19 tires that other manufacturers used, making it easier to find replacement tires.


1937 R12

1937 **R12** 1941 **R12**




BMW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1937 R35

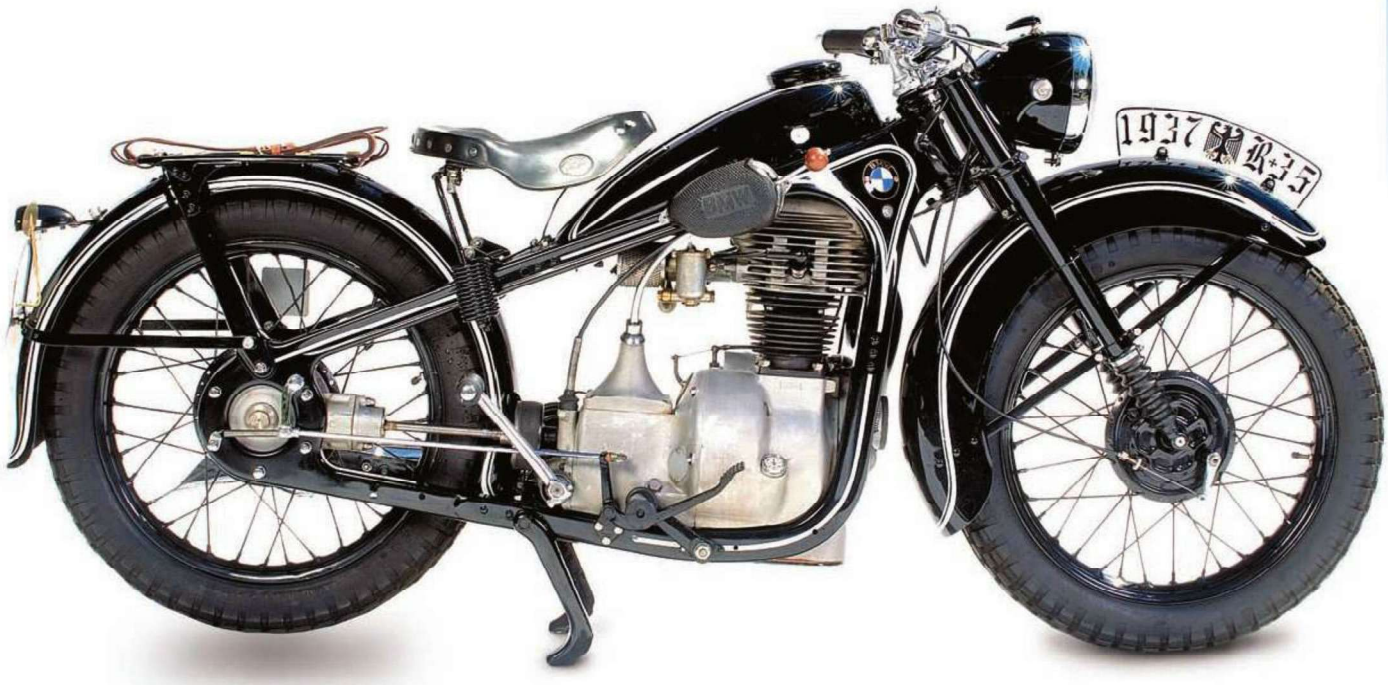
While BMW focused much of its development efforts on the larger-displacement boxer twins, it maintained a solid presence in the single-cylinder market throughout the '30s. The singles served as mainstream bikes aimed at the rider who wanted economical transportation and bulletproof reliability, yet they were closely related to their larger-displacement, boxer-powered cousins. Technology and design changes initiated on the larger bikes trickled down to the singles in the form of engine components, chassis refinements, and better suspension and controls—all offered at an attractive price. The R35 is a prime example of this strategy.

The R35 was the last BMW single to utilize a pressed-steel frame, even as other models in the BMW lineup used the new, improved tubular frames. The R35 also used a simpler version of the telescoping front fork, which did not utilize hydraulic damping. Both of these product decisions saved manufacturing costs for this budget-minded model.

Despite its humble basic components, the bike would prove to be a solid performer and a showroom success. The R35 was propelled by an OHV 342-cc single-cylinder engine that produced 14 horsepower at 3,500 rpm. This vertical single-cylinder engine was matched to a four-speed transmission controlled via a hand-shift on the right side of the bike. This powertrain could bring the R35 to a top speed of 62 miles per hour, yet sip fuel at the rate of 78 miles per gallon.

The R35's simplicity and economy made it very attractive to the military. Its 342-cc engine was proven, and the pressed-steel frame was a positive attribute for military use, where strength and function were more important than aesthetic appeal. As a result, the German military bought the R35 in large numbers for use primarily as courier bikes.

The R35 was built at BMW's Eisenach plant, which was located in what was to become East Germany after the war. Later versions remained in production until 1955, long after the end of World War II, and the bike's total production exceeded 80,000 units. Later models received some significant chassis upgrades, notably the "plunger" rear suspension, which would improve the ride quality somewhat.


1937 R35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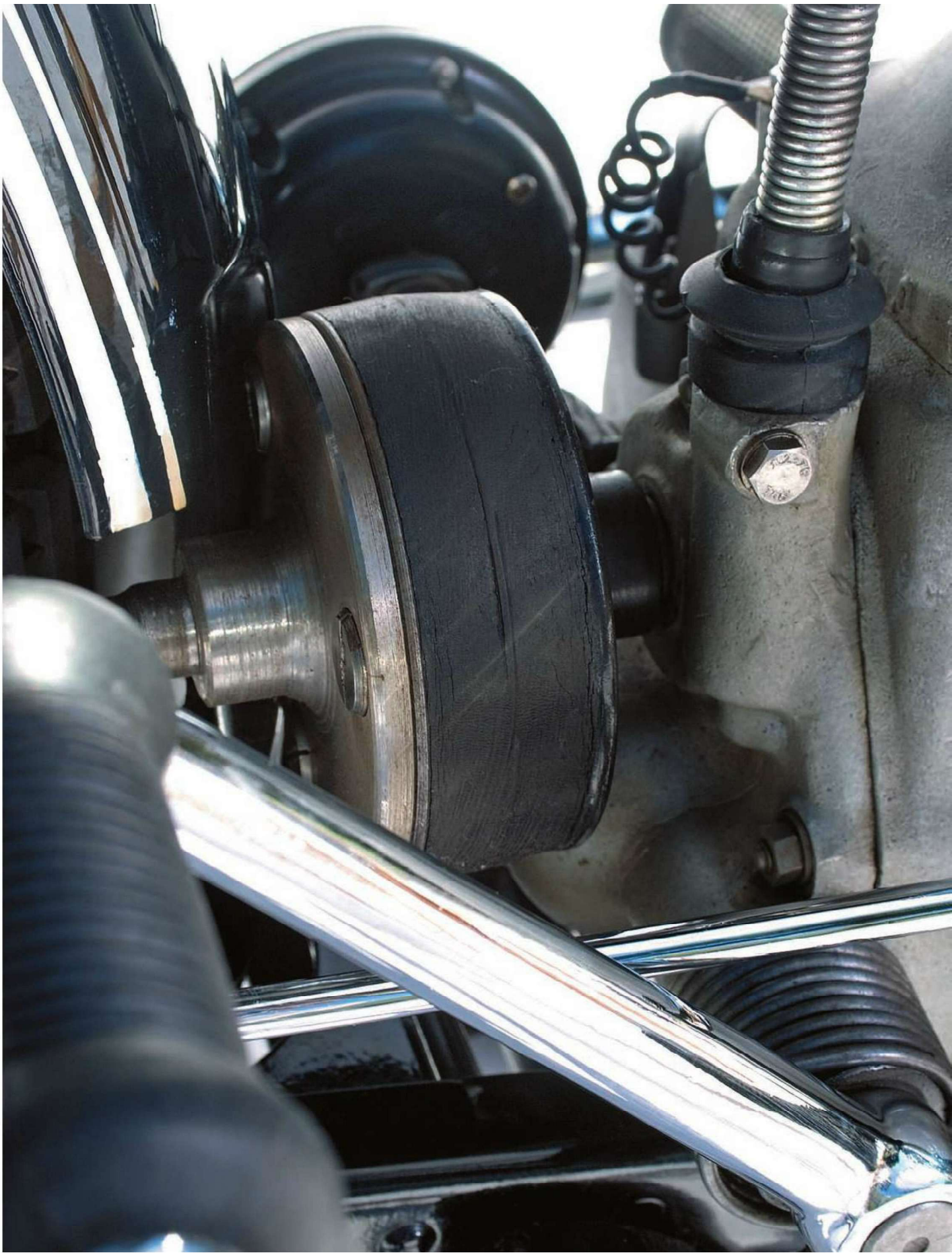

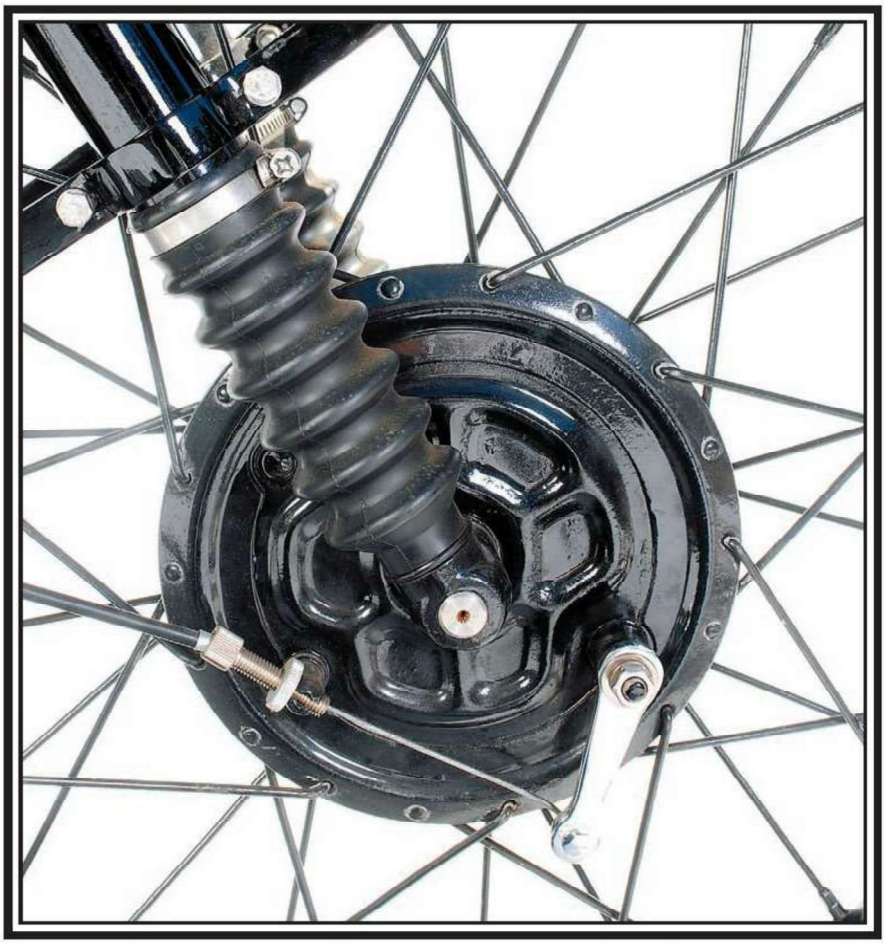

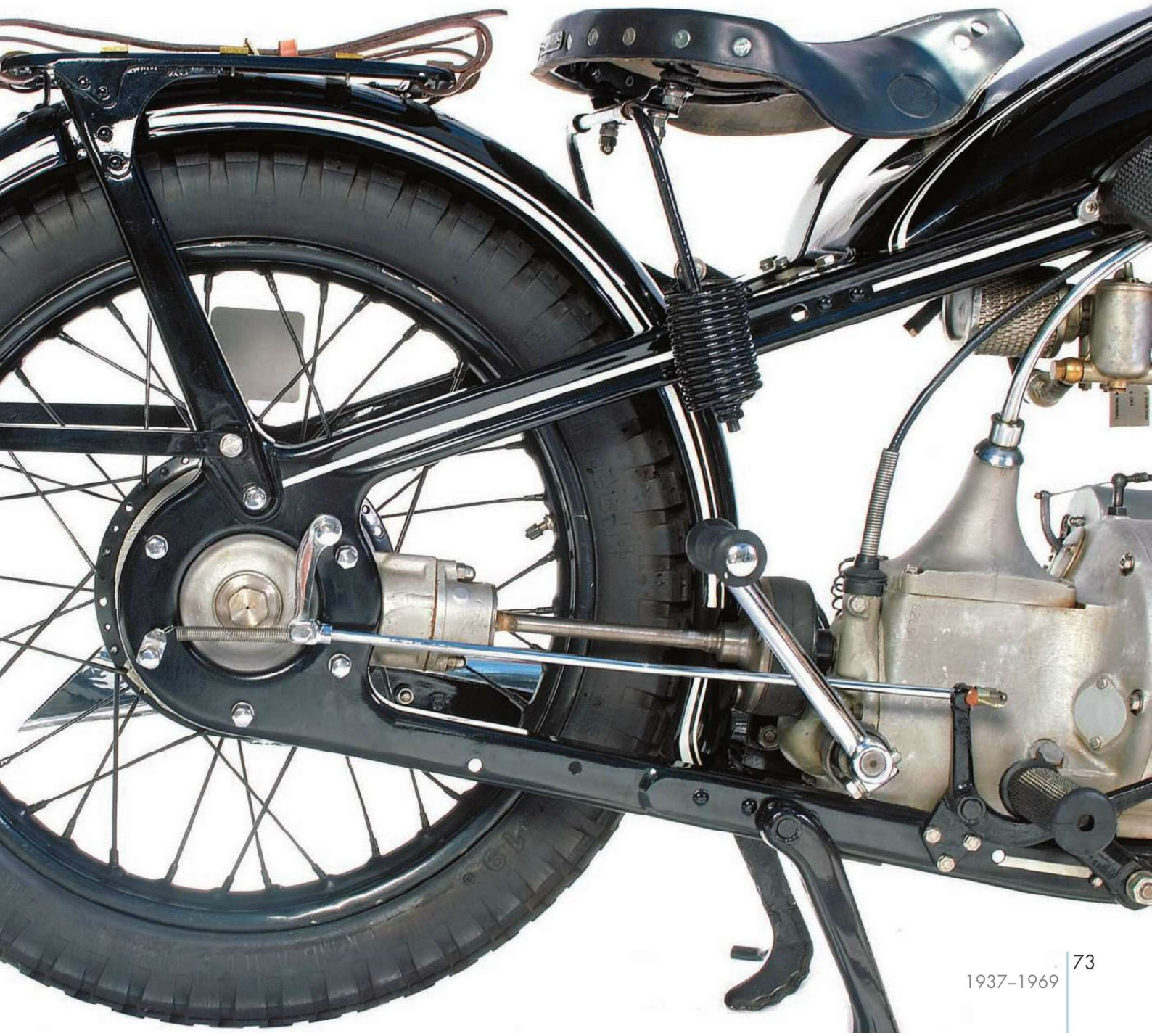

1941 R71

In 1938, BMW brought out four new boxer-powered models, all based on a new tubular-steel, dual-cradle, fully sprung chassis. With this new chassis, dubbed the 251/1, BMW engineers finally integrated a rear suspension setup, a design that was tested on the racetrack in 1937. The layout that BMW engineers chose was a plunger-type telescopic rear suspension. The design incorporated a large shock absorber on each side of the rear wheel, and the shocks allowed approximately 2 inches of vertical suspension travel. The driveshaft was also fitted with a universal joint to allow it ample flexibility when the suspension compressed. The front of the bike retained the familiar telescopic fork.

Two of BMW's new motorcycles were built to supersede existing BMW models. The new R51 took the place of the R5, retaining the 494-cc OHV powerplant. The R61 supplanted the R6, carrying over its 600-cc side-valve mill. But there were also two all-new models that expanded the BMW lineup: the R66 and the R71.

The new OHV R66 was positioned as BMW's top-of-the-line sporting motorcycle. Its 597-cc OHV engine was fueled by twin Amal carburetors and matched to a four-speed transmission. This engine produced 30 horsepower at 5,300 rpm and could push the R66 to a top speed of 90 miles per hour.

The final new model was the R71. Designed primarily as a sidecar motorcycle, the R71 was designated to replace the aging R12. Its power came from the familiar side-valve 746-cc engine fed by twin Graetzin carburetors. This engine made 22 horsepower and plenty of torque for sidecar use, but it would prove to be the last side-valve that BMW ever produced.

The 1941 R71 in these photographs is among a small number of bikes produced for civilian use during World War II. Germany was, of course, fully engaged in conflict during that year, and BMW would soon be required to devote its manufacturing effort to producing war-related materiel. Nevertheless, the company produced a final run of civilian R71 motorcycles in the spring of 1941. In May of that year, BMW discontinued all civilian motorcycles. The government required it to manufacture only aircraft engines and its military-spec R75 motorcycles, which were also introduced in 1941.


BMW
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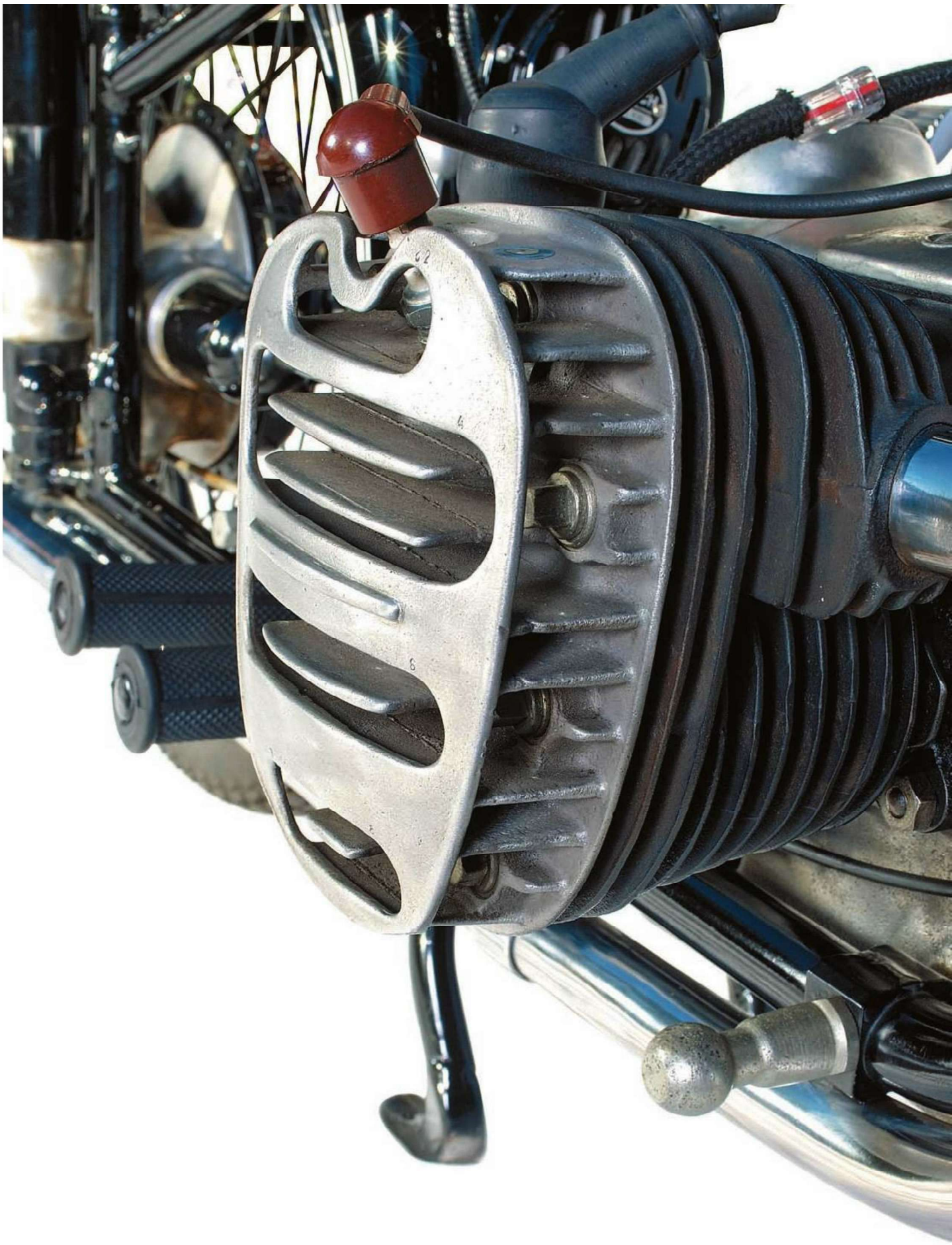
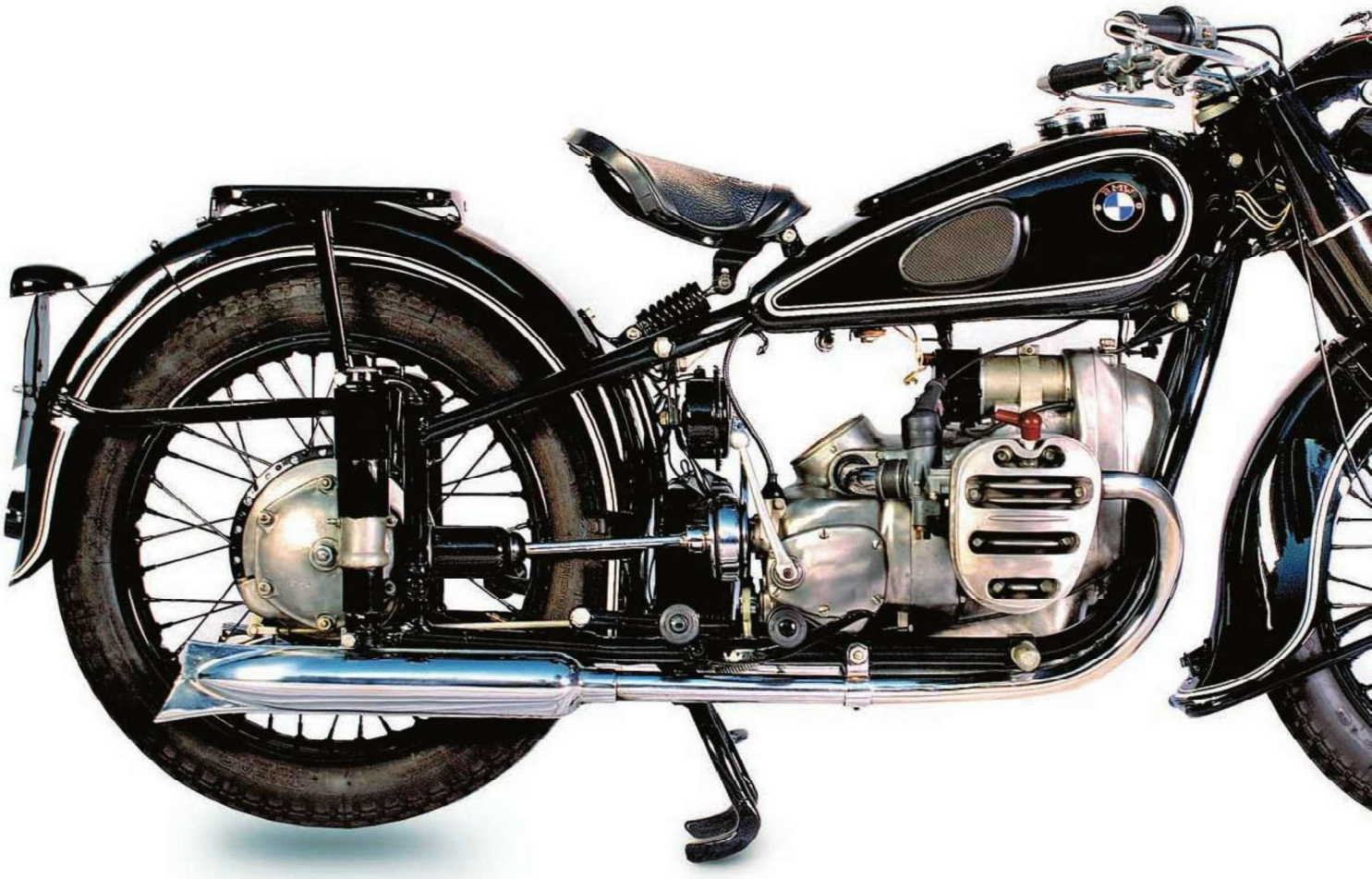
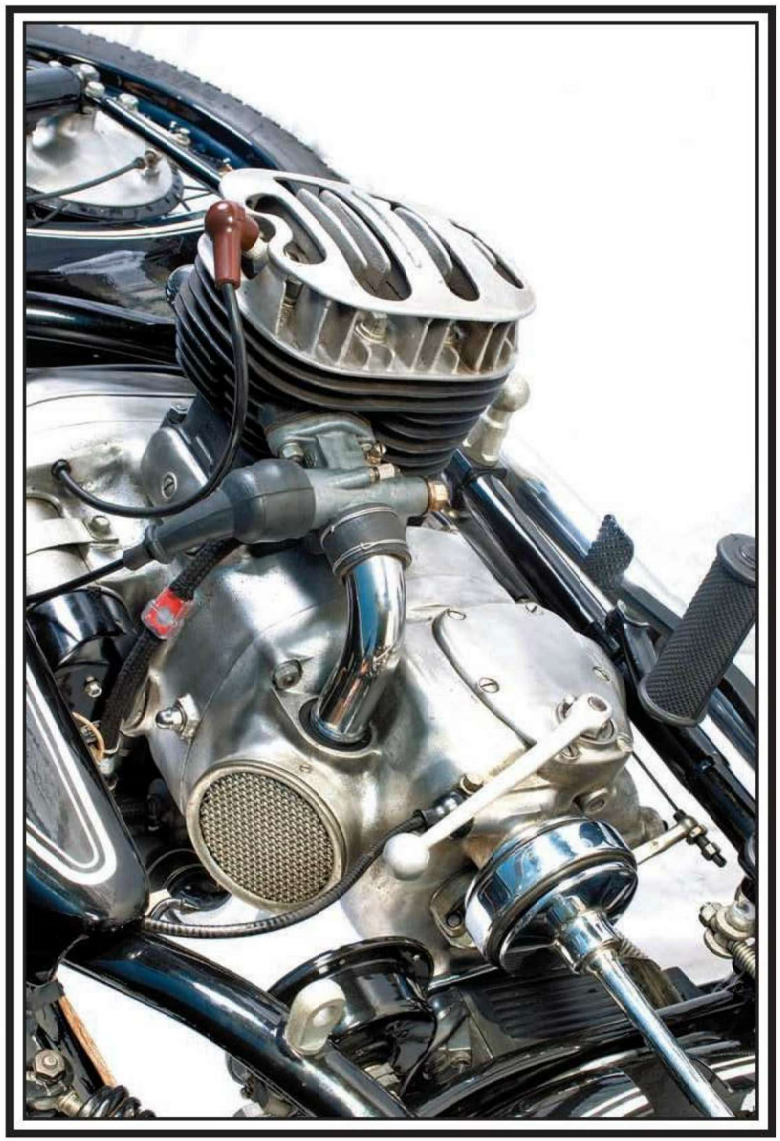







1941

1942 R75M

BMW had been selling military-spec R12 motorcycles to the German army since it introduced the model in 1935. The German army used sidecar-equipped motorcycles in a primary transportation role, much like the Allies used the ubiquitous Jeeps. The side-valve, single-carb R12 was easy to maintain and reliable under demanding army use. In fact, BMW continued to sell the R12 to the military until its production was finally ceased in 1942.

In 1937, the army asked both BMW and its rival, Zundapp, to build new 750-cc motorcycles to military specifications. Some of the army's specifications included:

- *Payload capacity of 500 kilograms (the equivalent of three fully armed and equipped soldiers)*
- *Capable of 80-kilometer-per-hour cruising speed when fully burdened*
- *Ability to maintain a "marching speed" of 2 kilometers per hour without overheating*
- *Minimum ground clearance of 150 millimeters, plus the ability to accommodate tire chains for snowy conditions*

Zundapp's engineers developed the robust KS750 to meet the German military's specifications. The Zundapp was powered by an air-cooled 170-degree V-twin engine that was very similar in design to the BMW boxer twins. The KS750 was built on a very strong frame, was stopped by a hydraulic braking system, and incorporated a sophisticated differential that transferred power to the sidecar's wheel to improve traction.

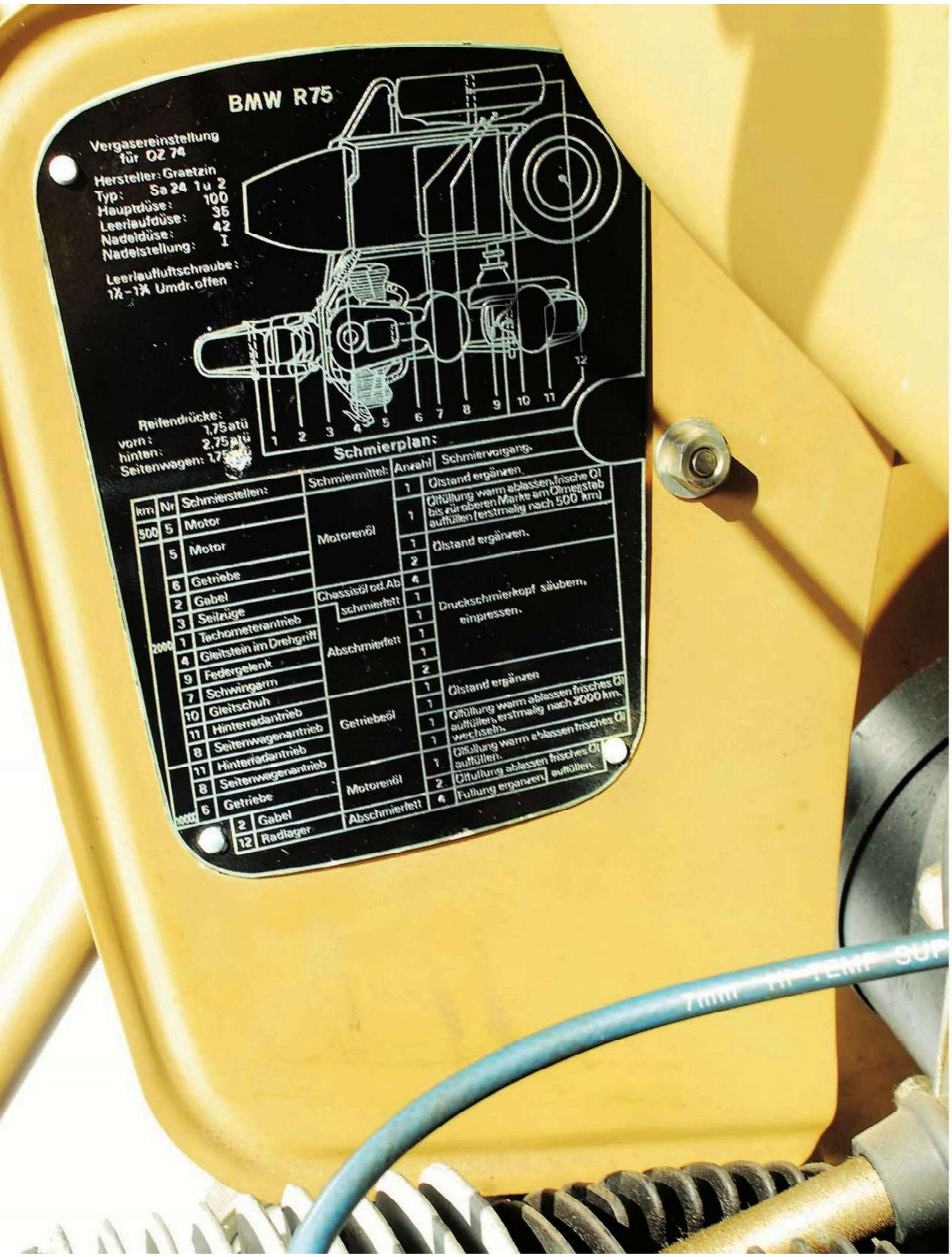
BMW's answer to the military's request was the R75. Powering the R75 was a new OHV engine derived from R71's side-valve design. This OHV engine, dubbed the 275/2, was fed by twin Graetzin carburetors. It produced 26 horsepower at 4,000 rpm and ample torque for the heavy sidecar applications. A low compression ratio of 5.8:1 allowed the engine to burn inferior, or even synthetic, fuels as required.

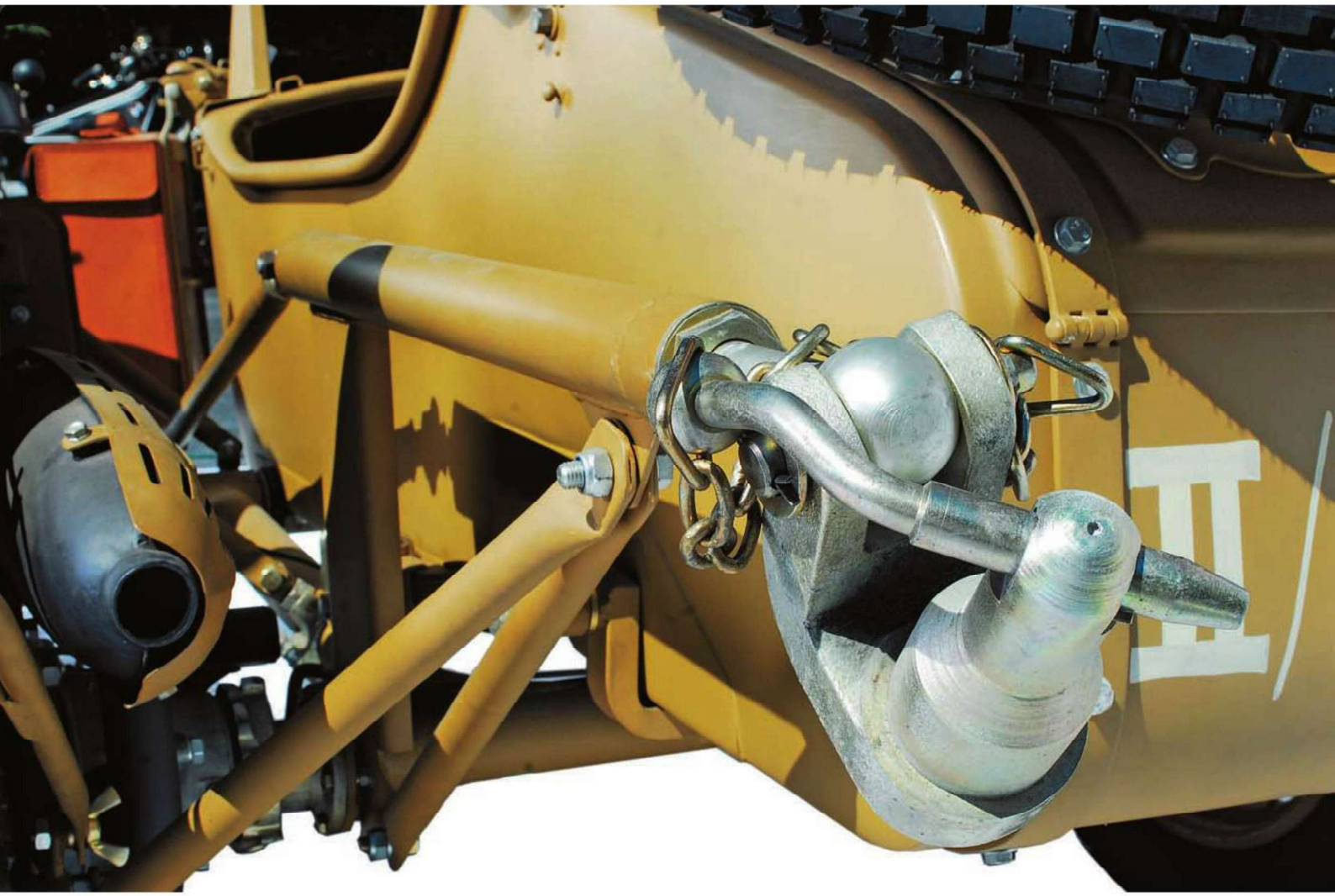
Power from this stout engine was fed through a transmission that featured four on-road speeds and three (low-range) off-road speeds. A locking rear differential transmitted power to the sidecar wheel, and there was a reverse gear to make it easier to maneuver a heavily burdened sidecar rig. Another BMW innovation in the R75 was a split in the lower frame spars, which made it much easier to remove and reinstall the engine and transmission for servicing.

The military's selection committee, the GBK, preferred the Zundapp KS750 over the BMW R75, and there were two key reasons for this. First, the R75's front suspension (consisting of telescopic front fork) was collapsing under heavy loads. Second, the BMW was expensive to manufacture. BMW was offered a choice by the military committee; it could graft the Zundapp front suspension onto its R75, or it could license production of the Zundapp motorcycle. As one might imagine, BMW's executives were not eager to begin production of a competitor's motorcycle. In the end, BMW was able to ignore the Wehrmacht's request to use a competitor's design, and the company forged ahead and continued to build its R75 with the telescopic front fork.

As the war progressed, the four-wheeled Kübelwagen built by Volkswagen (VW) became the preferred army vehicle. This inexpensive transport was comparable to the Allies' Jeep and could be manufactured much more rapidly than the BMW or Zundapp motorcycles. BMW would continue to manufacture R75 motorcycles for the military until October 1944, when Allied troops overtook the Eisenach facility.

BMW
2-2-14


BMW R75
Vergasereinstellung für OZ 74
Hersteller: Graetzin
Typ: Sa 24 1 u 2
Hauptdüse: 100
Leerlaufdüse: 35
Nadeldüse: 42
Nadelstellung: I
Leerlaufluftschraube: 1½-1¾ Umdr. offen
Reifendrücke:
vorn: 1,75 atü
hinten: 2,75 atü
Seitenwagen: 1,75 atü
1 2 3 4 5 6 7 8 9 10 11 12
Schmierplan:
Km | Nr | Schmierstellen: | Schmiermittel: | Anzahl | Schmiervorgang:
500 | 5 | Motor | Motorenöl | 1 | Ölstand ergänzen.
2000 | 5 | Motor | Motorenöl | 1 | Ölfüllung warm ablassen, frische Öl bis zur oberen Marke am Ölmeßstab auffüllen (erstmalig nach 500 km)
2000 | 5 | Motor | Motorenöl | 1 | Ölstand ergänzen.
2000 | 6 | Getriebe | Motorenöl | 2 |
2000 | 2 | Gabel | Chassisöl od. Abschmierfett | 4 | Druckschmierkopf säubern, einpressen.
2000 | 3 | Seilzüge | Abschmierfett | 1 |
2000 | 1 | Tachometerantrieb | Abschmierfett | 1 |
2000 | 4 | Gleitstein im Drehgriff | Abschmierfett | 1 |
2000 | 9 | Federgelenk | Abschmierfett | 1 |
2000 | 7 | Schwingarm | Abschmierfett | 2 |
2000 | 10 | Gleitschuh | Getriebeöl | 1 | Ölstand ergänzen
2000 | 11 | Hinterradantrieb | Getriebeöl | 1 |
2000 | 8 | Seitenwagenantrieb | Getriebeöl | 1 | Ölfüllung warm ablassen frisches Öl auffüllen, erstmalig nach 2000 km, wechseln.
2000 | 11 | Hinterradantrieb | Getriebeöl | 1 |
2000 | 8 | Seitenwagenantrieb | Getriebeöl | 1 | Ölfüllung warm ablassen frisches Öl auffüllen.
10000 | 6 | Getriebe | Motorenöl | 2 | Ölfüllung ablassen frisches Öl auffüllen.
10000 | 2 | Gabel | Abschmierfett | 4 | Füllung ergänzen, auffüllen.
10000 | 12 | Radlager | Abschmierfett | |



1950 R51/2 & STEIB S350

BMW resumed building motorcycles in 1949. Due to the strict rules in the immediate postwar years, BMW was forced to refrain from manufacturing vehicles without Allied approval. To make matters worse, BMW had lost much of its tooling, the factories were in shambles, and virtually all of the bike blueprints had been confiscated or destroyed by the Allied and Russian armies.

The R51 was a state-of-the-art motorcycle when it was introduced in 1938, and BMW was able to sell almost 3,800 copies before its production was halted in 1940. Positioned as an updated replacement for the excellent R5 in the 500-cc range, the prewar R51 was powered by a twin-carb OHV boxer twin that produced 24 horsepower. This engine was installed in the fully sprung 251/1 chassis with telescoping front fork and plunger-type rear suspension.

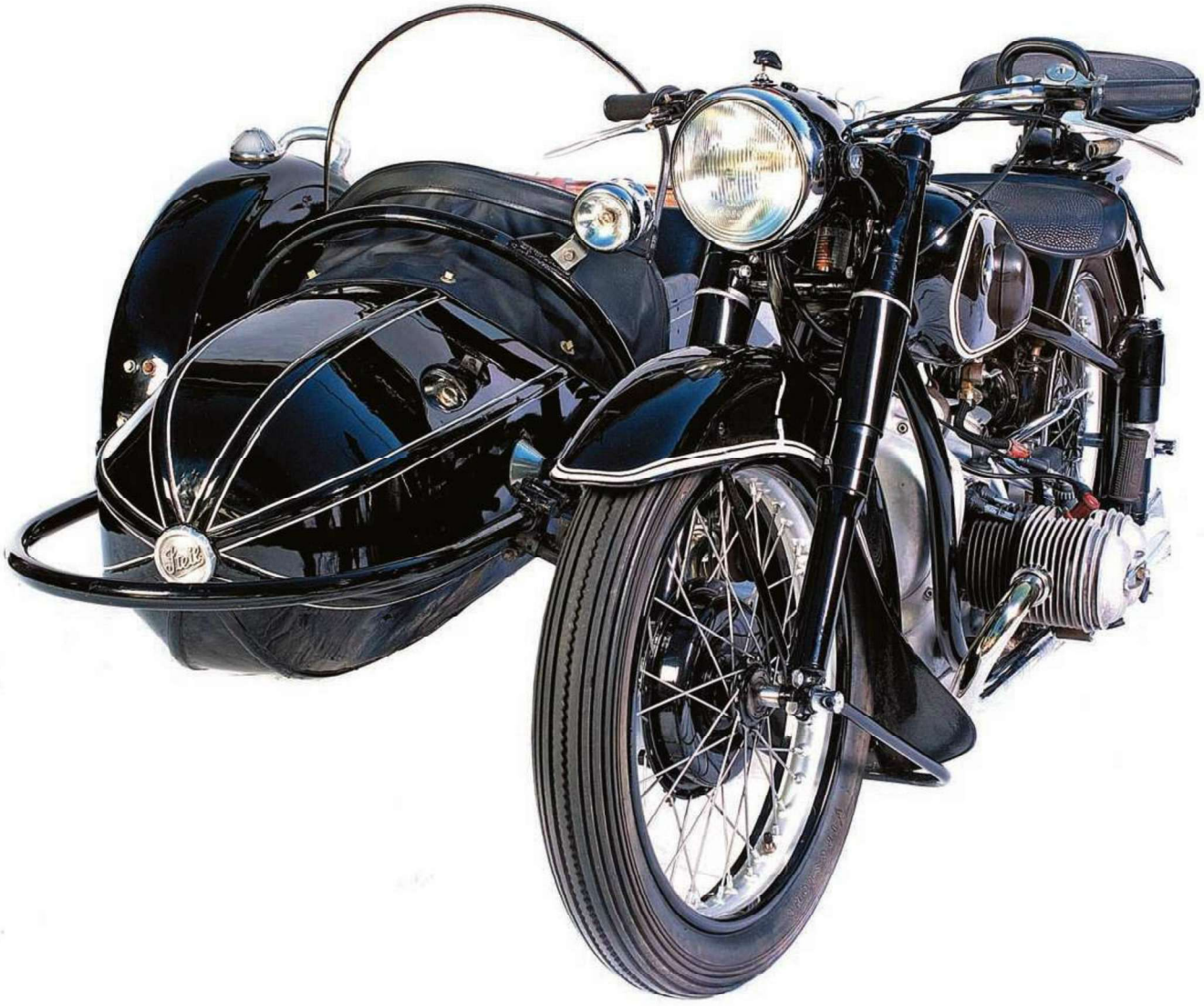
Naturally, money was tight at BMW, and the little funding that was in the coffers was earmarked for rebuilding the factories themselves. With essentially zero funds available to spend on research and development (R&D) for a new motorcycle, the engineers decided to reverse-engineer and restart manufacture of the model R51. The team tore apart several surviving R51 motorcycles and measured the dimensions of virtually every component. Using these measurements, they reconstructed the tooling and blueprints, and commenced production of the "new" R51/2 in the second half of 1949.

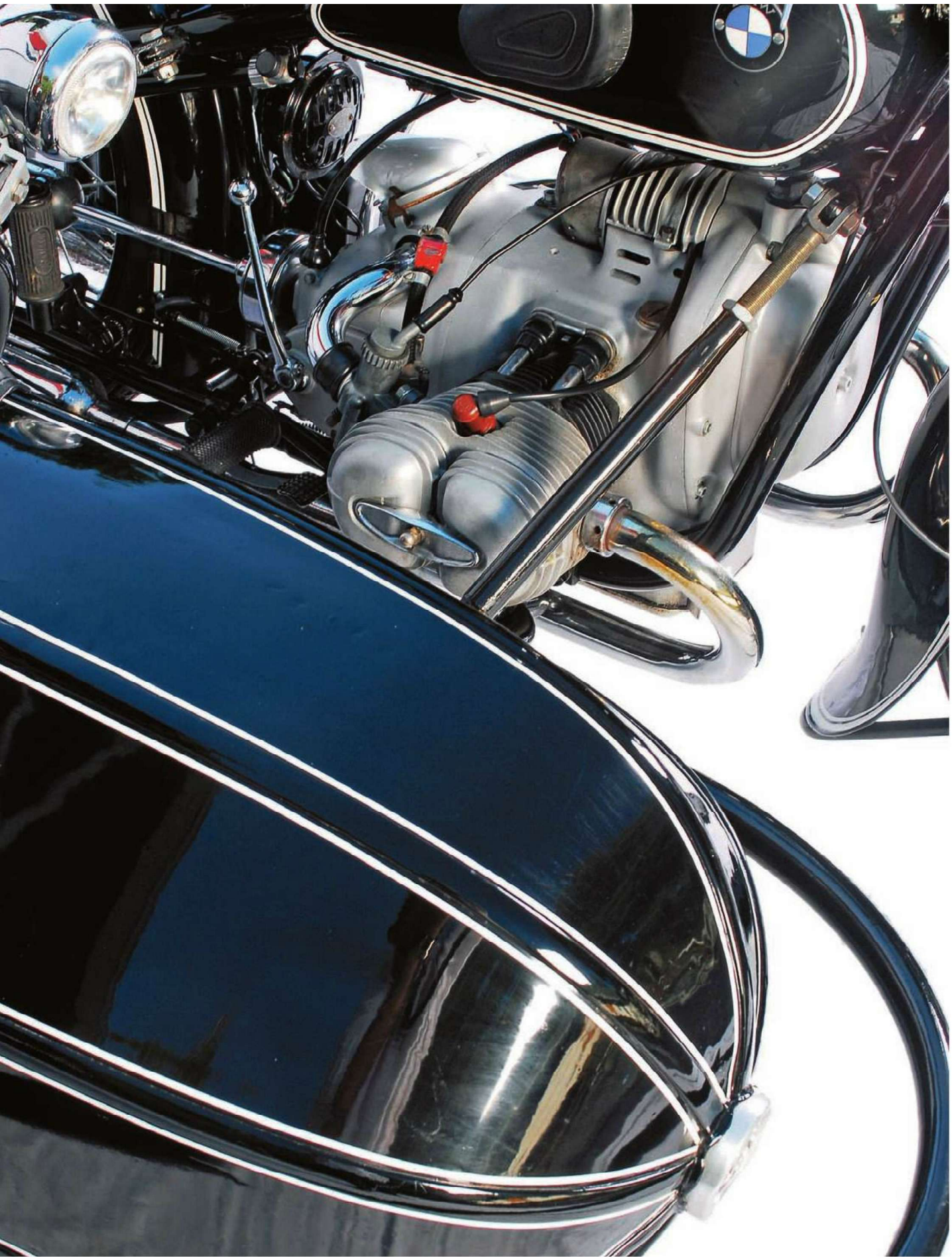
BMW engineers made a shrewd decision in resurrecting the R51, and, in typical fashion, they rapidly began to make a series of steady improvements to the bike. The R51/2 differed from its progenitor in a few significant areas. The engine, while based on the original's 494-cc mill, received new cylinder heads that featured coil valve springs in place of the previous hairpin valve springs. The lubrication system was improved to allow better flow to the cylinder heads. The R51/2 also received revised controls, which dispensed with the inverted pivots of the older models.

Aesthetically, the 1951 R51/3 differed little from the /2 version, but its engine was a big step forward. The R51/3 had an all-new engine, featuring a single-cam cylinder head that eliminated the long, trouble-prone cam chain of the prior model. A new engine case enclosed the magneto ignition and oil pump, yielding a very modern, clean look. There was also a new intake layout that incorporated a paper-based air filter mounted atop the transmission. Despite these improvements, however, peak output remained at 24 horsepower.

Steib sidecars were popular companions to early BMW bikes, and Steib's Zeppelin-like designs were symbolic of the styling trends of the day. Founded in 1914 as an automotive paint and upholstery shop, Steib began

building sidecars in 1925 and quickly became one of the premier sidecar makers in Germany. BMW had a long relationship with Steib—BMW even commissioned Steib to build the BMW Spezial, a modified Steib TR500 sidecar that was built to BMW's specifications. By the late 1950s, automobiles had effectively killed the market for sidecar-equipped motorcycles, and Steib's sidecar sales had fallen commensurately. Sidecar production was discontinued, and Steib ultimately survived by producing a lineup of tractors and other agricultural equipment.



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1953 R67/2

As the postwar years unfolded, BMW had to work quickly to fill out its product lineup. The German economy was in shambles, and factories (like those that BMW owned) had been major targets for Allied bombings during the war. The Allied occupation forces also restricted the vehicle manufacturing for a time after the war, and it wasn't until 1949 when BMW was allowed to resume building motorcycles. Despite huge obstacles during the late 1940s, BMW rapidly introduced (or reintroduced) models to build up its product portfolio and spark sales.

Just as is the case today, it was important to have a wide range of models to satisfy buyers with a variety of transportation needs and budgets. BMW's single-cylinder models filled out the low-priced range, powered by 250-cc air-cooled engines. In the upper ranges, BMW offered the 500-cc and 600-cc boxer twins.

The R67 appeared in 1951, positioned as a budget-minded sidecar motorcycle. The R67 shared a chassis with the R51/3 and, later, the high-performance R68 introduced in 1952. Powered by a 594-cc OHV boxer that produced 26 horsepower, and offered at a modest price premium above the R51/3, the R67 sold 1,470 copies during 1951. While not a particularly popular model, it filled a niche in the product line.

For the next three years, R67 development mirrored that of the R51/3. An improved engine, introduced in the R67/2, enclosed the magneto and oil pump in the engine case. The R67/2 also breathed through a new intake system and had a revised valvetrain and cylinder heads. These improvements would yield a modest 2 horsepower gain, bringing the maximum output to 28 horsepower. A final version, the R67/3, arrived in 1952, bringing only minor changes like a wider rear tire.

In late 1951, BMW used the R67's chassis as the basis for a new sporting motorcycle, the R68, its top-of-the-line sportbike. The R68's 594-cc engine featured higher-compression (8.0:1) pistons, larger Bing carburetors, and a more aggressive cam profile. The result was a high-performance engine that behaved nothing like the mild-mannered lump in the R67. With 35 horsepower on tap, the R68 was propelled to speeds near 100 miles per hour—competitive with the fastest British twins. Stopping chores were handled by the 200-millimeter drums from the R51/3, including the new duplex front hub that dramatically improved front braking power. All of this performance came at a dear price, however. At almost DM 4,000, the R68 was not for everybody, and BMW sold only 1,452 copies of the bike between 1952 and 1954. The R68 is a rare and desirable bike, one of the most sought-after postwar BMW motorcycles.


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NEW YORK
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08
THE EMPIRE STATE


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MILES
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