



1985 BMW Motorrad Programm

BMW Motorcycle Range

Gamme motos BMW

Programma motociclette BMW

Programa de motos BMW



TABLE OF CONTENTS

1	Short Version
2	Long Version
3	The BMW Motorcycle Concept
4	The K-engine
5	The K-running gear
6	The K-equipment
7	Specifications, K-Series
8	Technical Drawings, K-Series
9	BMW flat twins 1985
10	Specifications, R-Series
11	Technical Drawings, R-Series

In short

BMW's flat twins show their metal: Two new 800 cc models

A year after the successful introduction of the K Series, the new generation of four-cylinder motorcycles, BMW is making two noteworthy additions to its traditional flat twin series for the 1985 programme: the R 80 and the R 80 RT.

Now that the 1000 cc flat twins have, as announced, been discontinued the five 800 cc models form the top end of the flat twin range. The twins still managed to turn in extremely respectable sales in the face of the worldwide success of the K series, whose production continues unchanged. The models are the R 80, R 80 RT, R 80 ST, R 80 G/S and the special model R 80 G/S Paris-Dakar. Both series are put together in Europe's most modern motorcycle works in Berlin-Spandau on the same production line.

The new R 80, a pure and unadulterated flat twin, is designed for fans of the classic sports motorcycle. It represents a logical development of two successful models, the R 80 G/S and the R 80 ST, and makes use of experience and components, too, from the K series.

The heart of the R 80 and the R 80 RT, which apart from its full fairing is virtually identical, is the well-tried, sturdy 800 cc two-cylinder horizontally opposed engine with an output of 50 HP (37 kW). Modifications to the rocker bearings led to a noticeable reduction in noise from the valves in this and all other horizontally opposed engines in the 1985 programme.

With acceleration from 0 to 100 kph in six seconds and a top speed of 178 kph there is no need to hang around with the R 80. It was given an up-swept, conical, two-into-two exhaust which improves noise reduction by 3 dBA and gives a better torque curve compared to the R 80 G/S and the R 80 ST, which both have a high-mounted two-into-one exhaust.

Two conventional dials for speed and rpm, a big 22 litre tank and the comfortable new seat all contribute to the classical, timeless appearance, not slavishly following fashion.

Substantial improvements were made to the running gear: A completely redesigned telescopic front fork with a fork stabilisor built into the front mudguard improves stability on the road, while a single-disc brake system for the front wheel with fixed caliper and a larger 285 mm diameter brake disc copes with the toughest situations. And the double-tube steel frame was reinforced to improve stability even further. A new technique was employed in the manufacture of the 18 inch cast light-alloy wheels, which have tubeless low-profile tyres.

The BMW Monolever one-arm swinging arm system already used in the R 80 G/S, the R 80 ST and the K series is now also present in the R 80 and the R 80 RT. Its advantages are torsion-less wheel tracking, low weight and easy rear wheel removal. The R 80 weighs in at only 210 kg with a full tank and is thus also a lightweight within its class.

The R 80 RT is also remarkably light for a touring bike being only 17 kg heavier than the R 80. It takes over unchanged the full fairing developed in the wind tunnel for its forerunner, which affords excellent protection from the elements and ensures comfort on long hauls. As one has come to expect from BMW, the programme for the two new flat twins, which start production in November 1984, is rounded off by a wide range of optional extras and accessories to suit every taste.

In full

BMW's flat twins run with the times: The IFMA sees two new 800cc models

A third victory in the Paris-Dakar Rally, the toughest long-distance race in the world, and the customers' unceasing demands leave no room for doubt: in 1984 BMW's flat twins could still run with the times. A year after the successful introduction of the K series, the new generation of four-cylinder motorcycles, BMW is making two noteworthy additions to its traditional flat twin series for the 1985 programme: the R 80 and the R 80 RT. They will be presented at the IFMA show (International Bicycle and Motorcycle Exhibition) in September 1984 in Cologne.

Now that the 1000 cc flat twins have, as announced, been discontinued the five 800 cc models form the top end of the range. They are the R 80, R 80 RT, R 80 G/S and the special model R 80 G/S ParisDakar, while the range is completed by the R 65 and the R 65 LS together with the "baby", the R 45.

The K series, which was a worldwide sales success from the word go, and which continues in production unchanged, was a useful source of experience, and of components too, for the new flat twins. They are put together in Europe's modernest motorcycle works in Berlin-Spandau on the same production line as the K 100, the K 100 RS, and the K 100 RT.

The new R 80, a pure and unadulterated flat twin, is designed for fans of the classically sporting motorcycle, for touring connoisseurs, for those who ride actively yet with unruffled composure. It represents a logical development of two successful models, the R 80 G/S and the R 80 ST.

The R 80 G/S, introduced in 1980, is equally suited to on or off-road use. It particularly attracted public attention with the innovative use of the one-arm swinging arm, BMW's Monolever system. In 1984 it was voted "enduro

of the year" in West Germany for the fourth time in a row. The thoroughbred roadster version presented at IFMA 1982, the R 80 ST, was praised for its handling and manoeuvrability, and was elected "the thinking man's motorcycle".

The heart of the R 80 and the R 80 RT, which apart from its full fairing is virtually identical, is the improved air-cooled 800 cc two-cylinder horizontally opposed engine, which has proved its worth in previous 800 cc models. This muscular engine is notable for its smooth running and for high torque even at low revs. Modifications to the rocker bearings led to a noticeable reduction in noise from the valves in this and all other horizontally opposed engines in the 1985 programme. The drive chain is arranged according to well-tried principles. Power is channelled directly to the drive shaft and the rear axle via a light-alloy clutch and a flanged-on five-speed gearbox. The output of this compact, easy-to-service power unit remains at 50 HP (37 kW); fuel consumption (regular fuel) is a mere 5.5 litres per 100 km. With acceleration from 0 to 100 kph there is no need to hang around with the R 80.

The R 80 has an up-swept, conical, two-into-two exhaust which improves noise reduction by 3 dBA and gives a better torque curve compared to the R 80 G/S and the R 80 ST, which both have a high-mounted two-into-one exhaust.

Two conventional dials for speed and rpm, a big 22 litre tank with two fuel taps, the comfortable new seat with grab handles for the pillion passenger and with a 5.5 litre capacity storage space built into the rear section all contribute to the classical, timeless appearance, not slavishly following fashion.

The running gear of the R 80 has some important improvements to show. This includes a completely redesigned, highly sensitive telescopic front fork (spring travel 175 mm) with double acting hydraulic damping and pro-

gressively acting springs. The stand pipe diameter was increased to 38.5 mm, that of the front axle to 25 mm. Taken in conjunction with the fork stabiliser built into the redesigned front mudguard the result is greater stiffness and thus more stability on the road.

The new fixed-caliper single disc brake on the front wheel also sets new standards in efficiency. The bigger, 285 mm diameter stainless-steel brake disc and the semi-metal brake linings, which are completely resistant to fading in wet weather, make for precise control and powerful deceleration.

For the 18 inch cast light-alloy wheels with a Y-shaped spoke arrangement a new manufacturing technique was developed. They are remarkable for their toughness, their uniform elasticity and their low weight. The particular shape of the rims allows the use of tubeless, low-profile tyres.

To improve stability still further reinforcements were made to the dorsal tube and to the bolted-on rear section of the well-tried doubletube steel frame.

The BMW Monolever system already used in the R 80 G/S, the R 80 ST and the K series is now present in two more machines, the R 80 and the R 80 RT. Its advantages are torsion-less wheel tracking, low weight and easy wheel removal. Unlike the G/S and the ST, in the R 80 the four-way adjustable gas strut (Monoshock) with a spring travel of 121 mm is attached not to the swinging arm but directly to the rear axle housing. The rear axle drive has a taper roller bearing as in the K series instead of the needle bearing previously employed. This improves endurance and reliability.

The new battery, which is the same as the one used in the K series, has been upgraded from 16 to 20 Ah thus offering power to spare for cold starts, and with its transparent casing makes it possible to check the electrolyte level from the outside. The new main stand gives stabler support and also makes it easier to get the machine on and off the stand.

The R 80 weighs in at only 210 kg with a full tank and like its sister models is thus a lightweight within its class. A permissible fully laden weight of 440 kg makes it possible to carry loads of up to a substantial 230 kg.

The R 80 RT is also remarkably light for a touring bike being only 17 kg heavier than the R 80. It takes over unchanged the full fairing developed in the wind tunnel for its forerunner, which affords excellent protection from the elements and ensures comfort on long hauls.

There are three colours to choose from for the R 80: Polaris silver metallic, Colorado red metallic, or black; while the R 80 RT comes in Colorado red metallic or Yukon blue metallic.

As one has come to expect from BMW, the programme for the two new flat twins, which start production in November 1984, is rounded off by a wide range of optional extras and accessories to suit every taste.

THE BMW MOTORCYCLE CONCEPT

Why the BMW motorcycle concept has a future:

Sometimes straightforward thinking reveals the quality of genius. This was true, for example, of the BMW chief designer Max Friz in 1923. The ingenious engineer took a flat twin engine, installed it in a double tubular frame with cylinders at right angles to the direction of travel and the crankshaft along the axis of the bike and thus led the power of the engine directly onto the rear wheel via the clutch and gearbox and a shaft drive. At the Paris Salon the experts were overcome with admiration for the first BMW motorcycle, the R 32.

The basic ideas of this design have determined the BMW motorcycle concept for 61 years down to the present time. And since physical facts do not change they will also determine the BMW motorcycle concept of the future.

Its advantages: a completely unmistakeable appearance, optimum handling thanks to the lightness and the low centre of gravity of the engine, functional and easy-to-control technology, great reliability, unparalleled accessibility and easy maintenance.

Why BMW introduced an entirely new model generation with the K series in 1983:

BMW not only wants to maintain its position in the sector of large capacity motorcycles above 750 cc (it is the market leader 1984 in the Federal Republic and some other European countries in this class) but also to extend it on a worldwide basis. With the K series, a high-performance motorcycle which follows the basic philosophy of all BMW motorcycles, BMW wants to win new customers, to attract buyers with an even higher demand on both sportiness and styling, power and comfort of the engine, who have not ridden a BMW so far.

Why the flat twin was not suitable for this task:

Before BMW decided to build a new high-performance motorcycle the limits of the large-capacity flat twin were carefully explored. The result was that the performance limit of the 1000 cc engine of 70 HP for series machines could not have been exceeded without compromises which are not acceptable for BMW and which do not preserve the salient features of all BMW motorcycles, namely smooth running, easy handling and maintenance.

These limits are also determined by the increasingly stringent noise and exhaust regulations which will in the years to come make it difficult to maintain even the output of the large flat twin. Therefore, BMW decided to discontinue the large 1000 cc flat twins in 1984.

Nevertheless the traditional and time-tested flat twin motorcycles - more than half a million have been built since 1923 - are by no means outdated. Within the scope of the present dual product strategy the flat twin assumes the task of powering the BMW motorcycles up to 60 HP. In this range the air-cooled two-cylinder engine will continue to demonstrate its strong points: as a classical, original and extremely light and rugged motorcycle, such as the new very easy-to-handle R 80, the economical touring machine R 80 RT or the adventurer's bike, the R 80 G/S and, of course, BMW will continue to support and refine the flat twin range.

Why the K models are also true BMW motorcycles:

The BMW engineers' task was to build a high-performance BMW while preserving and even optimising the properties of the time-tested BMW motorcycle concept in essential points.

This objective has been fully met with the new K series. With this series BMW has set new standards in motorcycle engineering and has implemented

its own ideas of a modern, future-oriented high-performance motorcycle: a light high-performance motorcycle, easy to handle and control, thus providing a high degree of safety and low-cost, trouble-free service and maintenance. A bike whose performance convinces not on paper but where it really counts, namely out on the road. And it is not only its top performance that counts but also its development of power. With a power unit reaching 85 % of its maximum torque at 3000 rpm and thus permitting a dynamic but nevertheless relaxed riding style.

Why the BMW Compact Drive System is so unique:

The basis of the K series is a new unique motorcycle engine concept, the BMW Compact Drive System. Josef Fritzenwenger's idea, registered with the German Patent Office in Munich on February 1st 1979, is just as revolutionary and plausible as in 1923 the idea of Max Friz, the father of the flat twin.

Just as Max Friz did fifty years ago Josef Fritzenwenger also hit on the right idea. He turned an inline four-cylinder engine in such a way that the crankshaft was aligned in the direction of travel just as in the flat twin, thus permitting a direct drive to the drive shaft without the power loss due to deviation. Thanks to skillful arrangement of all auxiliary units above and below cylinder level of the horizontally mounted engine a very compact power block was the result. In addition to the direct drive the BMW Compact Drive System has two further essential advantages in common with the horizontally-opposed principle and thus the BMW motorcycle concept: The low center of gravity ensures good handling, and unprecedented accessibility of all components guarantees an ease of maintenance which is unparalleled in four-cylinder engines.

The BMW Compact Drive System provides overwhelming proof of the fact that progressive technology need not imply complexity and is a far reach from fashionable pseudo-technology which unnecessarily pushes up the maintenance costs and spoils the pleasure in riding.

By progress BMW means technically useful innovations to make motor-cycling even more pleasant, safe and problem-free. And also kinder to the environment thanks to water cooling, electronic ignition and fuel injection coupled with noise and exhaust reduction.

In the development of this new motorcycle generation BMW's engineers were not sparing with surprising ideas and solutions but certainly were with the weight of the K 100 wherever possible and meaningful. And this without impairing stability, i.e. by using light-weight aluminium parts, a torsion-resistant tubular space frame in which the K power unit is integrated as a supporting component and the monolever which has already stood its test in the flat twins.

Comprehensive experience from 60 years of motorcycle construction coupled with the technological knowhow of one of the most successful automobile manufacturers in the world created optimum prerequisites for the development of the K generation. Extensive tests in the aerodynamic and aerothermal test centres of BMW provided superior stability at high speeds and optimum protection for the rider against wind and weather on the K 100 RS and K 100 RT machines with fairing.

Moreover, BMW's engineers and technicians, who are all active motorcycle riders themselves, have perhaps the most demanding test area right on their doorsteps, in addition to the factory's test track and ten automatic engine test benches: the "autobahn" without speed limits and the extremely winding mountain roads of the Alps. They tested the bikes under realistic conditions for many hundred thousands of kilometres before the K series

was released for series production in the newly built motorcycle factory in Berlin, one of the most modern plants in the world. Its equipment increased the quality of BMW motorcycles even further thus preserving reliability and life-span as firm components of the BMW motorcycle concept.

Continuous quality also means after-sales customer service, a smoothly running service and spare-parts network. Perhaps this is one of the open secrets of the success of BMW's concept – for motorcycles which are simply different.

ENGINE

A strikingly simple idea: The BMW Compact Drive System

The technological figure-head of BMW's new K series is the propelling backbone of all three K variants. The BMW Compact Drive System, the drive train with engine, transmission and drive shaft is identical in all K models.

Centrepiece of this logically and consistently designed drive unit is the water-cooled, one-litre four-cylinder inline engine whose patented uniqueness is well documented by its arrangement. BMW installs the new power unit longitudinally and horizontally into the running gear instead of at right angles to the direction of travel and in an upright position. Skillful arrangement of all auxiliary units above and below cylinder level resulted in an extremely compact power unit.

Three decisive advantages of this type of construction are convincing at first glance, just as with the flat twin:

- o The low centre of gravity of the engine permits optimum handling and easy control of the machine
- o The horizontal position of the engine provides superb accessibility and easy maintenance. Spark plugs, valves or injection nozzles are easily accessible on the left hand side without the necessity of removing tank or engine units. It is even possible to replace all bearings of the crankshaft as well as pistons and connecting rods on the right hand side without having to remove the engine from the frame.
- o The crankshaft installed longitudinally to the direction of travel permits direct drive to the drive shaft thus avoiding power losses as a result of deviations.

BMW achieved both problem-free handling and progressive engine construction.

The focus: Light-weight engineering

Finding light, but far from light-headed solutions was one of the main tasks facing the BMW engineers. Thus the 76.5 kg engine block is made of a light alloy. As in the more recent air-cooled cylinders of the flat twins BMW did without separate cast-iron cylinder liners. Instead, the bearing surfaces are treated with a highly abrasion-proof coating known as Scanimet made of nickel-silicon carbide which reduces not only the weight but also the friction.

The forged steel crankshaft with its five bearings has balance weights on seven crank webs. This ensures silent running. The eighth and last crank web was designed as a spur wheel to drive the secondary shaft and the clutch. To keep the length down and to ensure plenty of tractive power the four-cylinder BMW with a capacity of 987 cc has a fairly long stroke. The bore is 67 mm and thus slightly less than the stroke, which is 70 mm.

Experience in Formula 2 has been exploited

For the construction of the light-alloy cylinder head with two overhead camshafts - both mounted on five bearings - BMW was anxious to incorporate its experience gained in Formula 2. The relatively small valve angle of 19° permits a compact combustion chamber design and a relatively straight alignment of inlet and exhaust ports to permit uninhibited flow.

In spite of considerable experience with four-valve cylinder heads in car racing, BMW decided, for the sake of weight reduction and easy maintenance, to limit itself to two valves per combustion chamber. The valves are operated by the two overhead camshafts via a roller chain and bucket tappets whose shims are accessible from above for easy servicing.

Not only the compactness of the combustion chamber in the cylinder head and a large squish area but also the fact that the valves lie in slightly different planes, cause turbulence to be created in the mixture inlet port - a decisive prerequisite for effective turbulence in the air fuel mixture and optimum fuel distribution. The spark plug is ideally mounted in an almost central position.

Oil and water pump in a single housing

An elaborate lubrication and cooling system affords this high-performance engine a long service life. Multi-circuit forced feed lubrication provides sufficient oil supply to the crank and valve gear by a cog-wheel driven pump. The oil pump casing also houses the coolant pump, which is also driven by the front end of the output shaft, and pumps 2.8 litres of coolant through the crossflow light-metal radiator. At a coolant temperature of 103°C an electric fan located behind the radiator is switched on automatically. The rigid light-metal engine block offers ideal prerequisites for well-balanced temperature distribution thanks to its good thermal conductivity. The starter motor power is conveyed over a gear on the secondary shaft and the powerful generator is directly driven by the secondary shaft at a ratio of 1 : 1.5.

Computer-controlled: Ignition and fuel injection

The four-cylinder engines get their sparks from a digital control unit installed at a protected place below the tank. This not only keeps the ignition timing as a function of vacuum and engine speed on a graph preprogrammed in exhaustive test series but it also triggers the pulse for the solenoid valves of the injection system, reduces the ignition advance to limit engine speed at approx. 8600 rpm and switches off the injection at approx. 8750 rpm, thus avoiding engine damage caused by false operation.

Connected to the ignition system, the Bosch LE-Jetronic tried and tested in hundreds of thousands of BMW injection engines for automobiles, provides an optimum fuel mixture for the BMW K series. Installed in a well protected place below the seat this compact digital computer (called LE 2) controls in a specially economic manner the quantity and duration of the injection as a function of the temperature of the intake air and the coolant, of the quantity of air just sucked in and the engine speed. The exact dosage of fuel in any operating condition not only leads to reduced fuel consumption but also less pollution in the exhaust. A fuel cutoff down to 2000 rpm provides additional fuel saving. The routine maintenance of the injection system is limited to a checkup of the idling synchronisation.

The power unit is fed by an injection system thus requiring an efficient electrical fuel pump. This pump is hidden in the 22 l aluminium tank of the BMW but is easily accessible via a large service opening around the filler cap. For the exhaust system BMW looked for a solution which would last a lifetime. The four exhaust pipes and the capacious silencer of the four-into-one system are made of stainless steel and provided with a large cover.

New standards in motorcycle engineering

The many unconventional details show that the BMW engineers have thoroughly revised the actually quite old subject of the four-cylinder inline engine. The result of these efforts led to solutions and properties setting new standards in motorcycle engineering.

The planned and achieved output of 90 HP (66 kW) at 8000 rpm and the torque of 86 Nm at 6000 rpm only demonstrate that high peak output could be achieved at fairly low revs. An acceleration to 100 km/h in four seconds and a top speed of 210 km/h are more than satisfying values. But it is more illuminating to examine the curves of power and torque more closely.

For example, over the extraordinarily wide range from 3000 rpm to the upper limit of 8600 rpm more than 85 % of the maximum tractive force is available. Or again: Above 5000 rpm the rider can call up at least 55 HP with a mere flick of the wrist. By remaining aloof from the worldwide escalation of peak power output and remaining under the magic 100 HP mark the BMW engine has won a flexibility that many other powerful engines seem to have lost. Its impressive development of power over a wide range of engine speeds allows one to ride with few gear changes in a way that is at once spirited and composed.

The philosophy of the K series is characterized by everyday reliability and a good balance between touring ability and sportiness. The wonderfully smooth running must be seen in the same vein. Two large dampers in the drive train - in front of the clutch and behind the gearbox - make a further contribution to the excellent running characteristics. A third damper is located on the gearbox input shaft. The unusual arrangement whereby the clutch and generator rotate in the opposite direction to the crankshaft is also part and parcel of the BMW engineers' desire to create a cultivated machine. For these counterrotating masses keep the pitching moment down during changes in load, i.e. when opening or closing the throttle. In other words the engine's negative torque is fully compensated.

A single disk dry clutch with asbestos-free linings operated by a Bowden cable and requiring a force of only 70 N transmits the 90 HP of the engine to the three-shaft five-speed gearbox which is harmoniously tuned to the engine's performance characteristics and which is easy to operate. The drive shaft which rotates in a light-metal swinging arm for protection avoids any change in length caused by suspension travel thanks to a universal joint at the axis of rotation and has an over-size Silentbloc type torsion damper.

With the Compact Drive System BMW realized just as independent and unique a concept as in the flat twin which has been built for 60 years: a pioneering power unit by a manufacturer whose name is Bayerische Motoren Werke, not by accident.

RUNNING GEAR

Supporting roles:

Tubular space frame and Compact Drive System

The best forerunner for development of road machines has always been racing sports with its extreme requirements. As light and easy to handle as possible but also highly stable - this was BMW's objective in the design of the running gear. Following the example of long distance racing sports a tubular frame open at the bottom is used for the K series, which is manufactured largely from straight tubes and weighs only 11.3 kg. The engine and gearbox housing connected to the frame by five bolts make their own contribution to the overall strength. Indeed they are an integral part of a distortion-resistant whole. The stability of the Compact Drive System is amply demonstrated by the seemingly weird idea of BMW's engineers to install the bearings of the monolever for the rear wheel in the gearbox housing.

Time-tested elements: Monolever and telescopic fork

The swinging arm called monolever at BMW is a monoshock system which can withstand even toughest off road conditions, such as in the R 80 G/S. Therefore it was only logical to use this principle which has also stood its test in the R 80 ST in a high-performance road motorcycle.

The monolever arm which is now made of high-strength light metal is supported by an inclined spring strut (spring travel 110 mm), the spring being in a progressive arrangement for smooth response and high load resistance. The spring basis has three possible adjustments to meet individual wishes. Thanks to the monolever removal of the rear wheel is child's play.

For the guidance of the front wheel BMW also used tried and tested parts: Accordingly, the telescopic front fork continues BMW's practice of using double acting hydraulic damping and progressive springing. The generous diameter of the external pipe of 41.4 mm ensures riding stability and the spring travel of 185 mm provides the comfort desired by long distance riders.

Monolever and telescopic fork guide stress-free light alloy cast wheels produced in a new casting process of high material strength.

The Y spokes with H profile provide the necessary flexibility. The 18" rim in front and the 17" rim in the rear have high speed tubeless low section tyres.

Generously dimensioned: The braking system

In spite of all weight-reducing measures safety was given top priority. The 239 kg BMW has a braking system which would also be suitable for much heavier bikes. A double disc brake in front and a disc brake with brake dosage device partially integrated in the rear wheel drive are hydraulically operated, stop the bike safely and prevent fading. With a diameter of 285 mm the stainless steel brake discs are unusually large and the semi-metal brake linings also contribute to the overall safety: They respond instantaneously even in wet weather.

A running gear which can cope with the engine output

The running gear of the K series is up to par with the high efficiency of the engine. The synthesis of excellent running gear, low centre of gravity and low weight provides both excellent handling and unwavering directional stability and thus easy control and a high degree of safety, since, after all, it is still the running gear which connects the rider with the road.

EQUIPMENT

Economy in weight but not in the equipment

The major target when developing the K series was to closely follow the example of the flat twin series with respect to low weight. The flat twins have always been the lightest machines in their class; now the same is true of the K 100: With only 239 kg (with full tank) BMW offers the lightest four-cylinder series machine among up-market bikes and this with water cooling and shaft drive.

This result was mainly made possible by competent lightweight engineering, i.e. the use of weight-saving but also expensive light-metal parts. Nevertheless the equipment of the K series is very generous. The machines' standard equipment ex factory is both rich and functional, just as the flat twins' has always been.

The equipment program of the K series starts with the one-key system for the steering lock, ignition, the filler cap and the lock of the wide and well upholstered seat with integrated grab handles. When tipped up it gives access to the comprehensive, 16-piece tool kit, the breakdown and first aid kits and the rear storage compartment with a capacity of 9 litres.

The instrument unit is a good example for the progressive and realistic work of BMW's engineers. The values essential for riding such as speed and revs are clearly displayed on large analog dials. Place-saving digital liquid crystal indicators are used for the clock (optional extra for the K 100) and the gear. Since cooling water temperature does not normally present a problem a warning lamp is sufficient for the rare exceptions to this rule and since fuel indicators are not reliable in motorcycles BMW simply provides a two-stage warning lamp program (seven and four litres). In addition there are control lamps for oil pressure, flashers, generator and high beam, and a warning lamp for the choke lever.

Electronic Tail Light Control

The electronic tail light control is a speciality: During the ride a control lamp lights up if the tail or brake light or the wiring fails or if the brake light switch is defective. This lamp lights up as soon as the ignition is switched on and goes out only after hand and foot brake have been checked. In other words, this is a type of Check Control which has been working reliably in BMW automobiles for a long time.

Functional and Logical Solutions

The new BMW is not only functional in terms of engine and running gear but also in terms of ergonomics, which combines seating position, cockpit and handlebars to a harmonious unit. The new design of the switches on the handlebar developed in cooperation with scientists of the Technical University in Aachen is another reason why the rider on his K 100 feels comfortable and in control of things right away. The scientists came to the logical conclusion that when flashing on the left the button to be pressed should also be on the left hand side and vice versa.

The electronic system switches off the flasher automatically after twelve seconds or 210 m. If the rider operates the indicators erroneously he can turn off the flashers with a separate switch on the right handlebar.

The multitude of ideas is also documented in simple but effective details, such as the hinged grab handle behind the left side-panel which makes getting the machine on and off its main stand even easier.

Unique and timeless appearance

The rider was always the focus of attention during the K series development. Therefore not a futuristic but rather an ergonomically logical design was the objective in styling which does not follow short-lived trends but emphasises the individuality of the new engine concept and achieves a unique, timeless appearance without the use of an extravagant paint job.

The radiator fairing is also a styling element of the K series which underlines the family ties to the automobiles in the typical BMW kidney. At the same time favourable aerodynamic values were achieved with the design of the radiator fairing and the headlamp area (halogen light, 180 mm diameter) as well as by making use of the compact and smooth power unit design in the case of the K 100 without fairing.

Fairings developed in the wind tunnel set new standards

Aerodynamics was a point of major concern especially with the two models with fairing: the sporty K 100 RS and the touring machine K 100 RT.

Since BMW had been the first motorcycle manufacturer in the world to launch a series fairing for the flat twins R 100 RS and R 100 RT on the market which had been developed in the wind tunnel, new standards were set again based on this experience and after elaborate tests in the BMW wind tunnel with the K fairings of high-strength glass fiber reinforced plastic. In spite of reduced dimensions which make the front surface smaller and lower sidewind influences the protection for rider and pillion passenger has been further improved. The lifting forces on the front axle could be reduced to values previously inconceivable. The result is optimum stability at high speeds.

One engine and one chassis: three model variants

The variants for the new BMW K generation follow the lines of the R 100 flat twin models, engine and running gear being identical in all three models.

o The K 100: the "pure" motorcycle

The K 100 is the classical "pure" motorcycle without a fairing for all those who want to feel the breeze in their nostrils.

o The K 100 RS: the sports model

The cockpit with the shorter handlebar is designed for sporty riding and takes the rider's slightly bent forward position into account. The multi-part sports fairing is centrally fastened to the head lug by means of a multi-arm support and is mounted on bearings to reduce vibrations. It has an aerodynamically designed rear view mirror housing with protection for the hands and integrated flashers as well as knee pads of integral foam at the rear fairing edges. An adjustable spoiler in front of the upper edge of the fairing permits direction of the airflow over the helmet of the rider. A complete sealing of the boring through which the fork passes keeps the interior of the cockpit dry in wet weather and an insulated hot air outlet with vents in the sides protects the rider from engine heat.

The superior aerodynamic values of the K 100 RS provide not only extremely low lifting forces at the front axle and thus optimum stability at high speeds but also an increase in top speed of about 10 km/h as compared to the K 100 without fairing.

o The K 100 RT: the Super Touring Machine

The multi-piece touring fairing of the K 100 RT is also centrally fastened to the head lug by means of a multi-arm support and is mounted on bearings to reduce vibrations. The swept-back fairing screen with spoiler and with predetermined breaking point protects the rider and pillion passenger against wind and weather. It also has rear view mirror housings with hand protection; the flashers however, are integrated in the fairing. As with the K 100 RS the boring through which the fork passes is fully sealed and the rear fairing edges form knee pads. A hot air outlet is also available. Standard equipment with integral cases designed in wind tunnel tests and lockable lateral compartments underline the use of this machine for touring.

In line with the requirements placed on a true super touring machine the loading capacity of 187 kg means your holiday luggage is no problem.

OPTIONAL EXTRAS

Developped in conjunction with the K series:

Optional extras and accessories

It will come as no surprise to the flat twin rider that a large range of optional extras and useful accessories is available for the K-series as well. They were developped and tested in parallel with the K-models and comprise crash bars, Nivomat, additional headlights and heatable grab handles.

Specially designed for the K-models are extras and accessories which further increase luggage capacity: Integral panniers with special inner bags, small city panniers and a very light luggage rack to accomodate the new luggage roll. The Multivario tank bag as well as the new tank bag fit on the tank of the K-machines.

And, of course, BMW as the motorcycle manufacturer with the largest range of accessories will continue to offer all those articles which contribute to the passive safety of rider and pillion passenger: From the BMW system helmet, and high-quality leathers to warm underwear and waterproof rain suits.

Optional extras ex factory

	K 100	K 100 RS	K 100 RT
Rack for integral panniers	x	x	o
Integral panniers with rack	x	x	o
High handlebars	x	-	o
Alternative final drive ratio (initially available only on the domestic market)	x	x	x
Jumbo tool kit	x	x	x
Digital clock	x	o	o
Chrome-plated crash bars	x	x	x
Spray flap at rear	x	x	x
Nivomat	x	x	x
Hazard warning lights	x	x	x
Burglar alarm	x	x	x
Plug	x	x	x
Luggage rack	x	x	x
Windshield	x	-	-
Twist grip stopper	x	x	x
Additional headlights	x	-	-
Heel-operatable gear lever	x	x	x
30 Ah battery	x	x	x

x = optional extra

- = not available

o = standard equipment

Optional extras which can be retrofitted

	K 100	K 100 RS	K 100 RT
Crash bars, black	x	x	x
Wind protection	x	-	-
Heatable handgrips	x	x	x
Multivario tank bag	x	x	x
Tank bag	x	x	x
Set of spare bulbs	x	x	x
City-paniers (smaller size)	x	x	x
Inner bag (for integral paniers)	x	x	x
Luggage roll	x	x	x
Steel cable lock	x	x	x

x = equipment possible

- = not possible

TECHNICAL DATA BMW MOTORCYCLES

Model	Engine										Electrical
	Capacity cm ³	Bore/Stroke mm	Output kW/HP at rpm	Torque Nm at rpm	Type No. of cylinders	Compression ratio	Valve/Exhaust	Valves per cylinder inlet/outlet dia.	Carburettor type no./passage	Ignition	
K 100	987	67/70	66/90 8.000	86 6.000	4 cyl.	10,2/	2	2 34/28			460
K 100 RS	"	"	"	"	"	"	"	"			
K 100 RT	"	"	"	"	"	"	"	"			

Bosch LE-Jetronic,
4/34

Digital Ignition System
Bosch VZ-51L

Weights, Dimensions

Model	Wheelbase mm	Brakes front/rear	Wheels front/rear	Tyres front/rear	Overall length/width mm	Handlebar width mm	Seat height mm	Empty weight with full tank kg	permissible total weight kg	Fuel tank ltr
K 100	1516	Dual fixed caliper disk brake, 285 dia. integrated fixed caliper disk brake, 285 dia.			2220/ 960	730	810	239	450	22/7
K 100 RS	"		"	"	2220/ 800	690	"	253	"	"
K 100 RT	"		"	"	2220/ 916	770	"	263	"	"

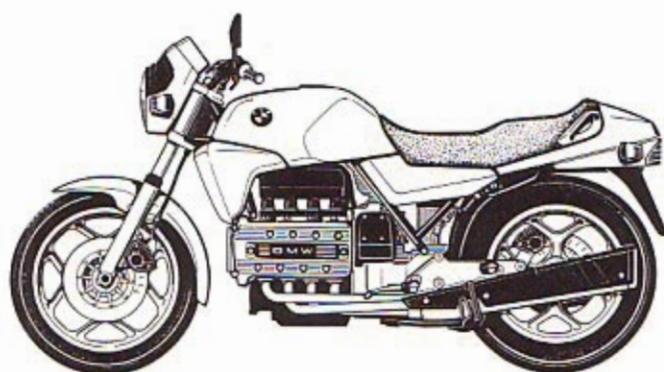
Electrical System			Power Transmission			Running Gear			
Battery V/Ah	Headlight	Starter kW	Gearbox	Gearbox secondary transmission ratio	Rear wheel drive	Clutch	Type of frame	Spring travel front/rear mm	Caster mm
12/20	H4 55/60 W	0.7	5-speed gearbox with dog- type hook shift	I = 4,50 II = 2,96 III = 2,30 IV = 1,88 V = 1,67	new enclosed drive shaft with universal joint and integrated torsional damper	single-plate dry clutch counter-rotational	Tubular space frame engine as additional support	185/110	101
"	"	"	"	"				"	
"	"	"	"	"				"	

Performance				Equipment		
Fuel tank/reserve litr	Fuel consumption (90/120 km/h)	Acceleration 0-100 km/h	Top speed*	Fairing	Standard equipment	Special equipment
2/7	5,0/6,3	3,9 23,6	215		Breakdown kit Tool kit	High-rise handlebar, digital clock, windscreen, additional headlamp, K 100, RS, RT: engine protection bar, luggage grid, integral cases with support, hazard warning system, alternative final drive ratio, super tool kit, splashguard rear, Nivomat, anti- theft device, plug, heel-operatable gear lever, First aid kit
	4,3/5,7	4,0 23,5	220	multi-piece, aerodynami- cally optimised sports fairing made of glass fiber reinforced plastic	" Digital clock	
	4,4/5,9	4,1 24,1	215	multi-piece, aerodynami- cally optimised touring fairing made of glass fiber reinforced plastic	" High-rise handlebar Integral cases with support	

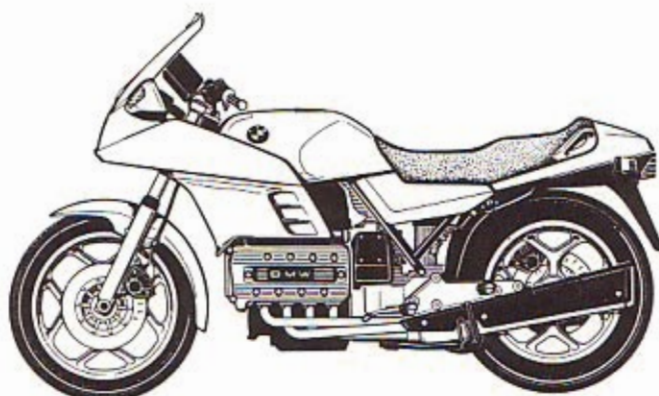
BMW Motorräder K 100 / KS 100 RS / K 100 RT

R 84/16

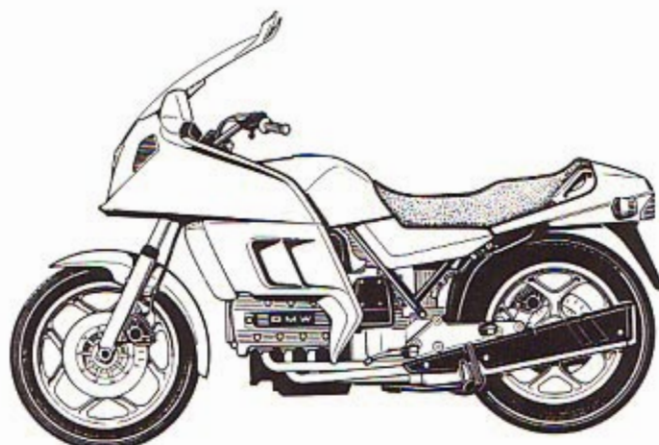
K 100



K 100 RS



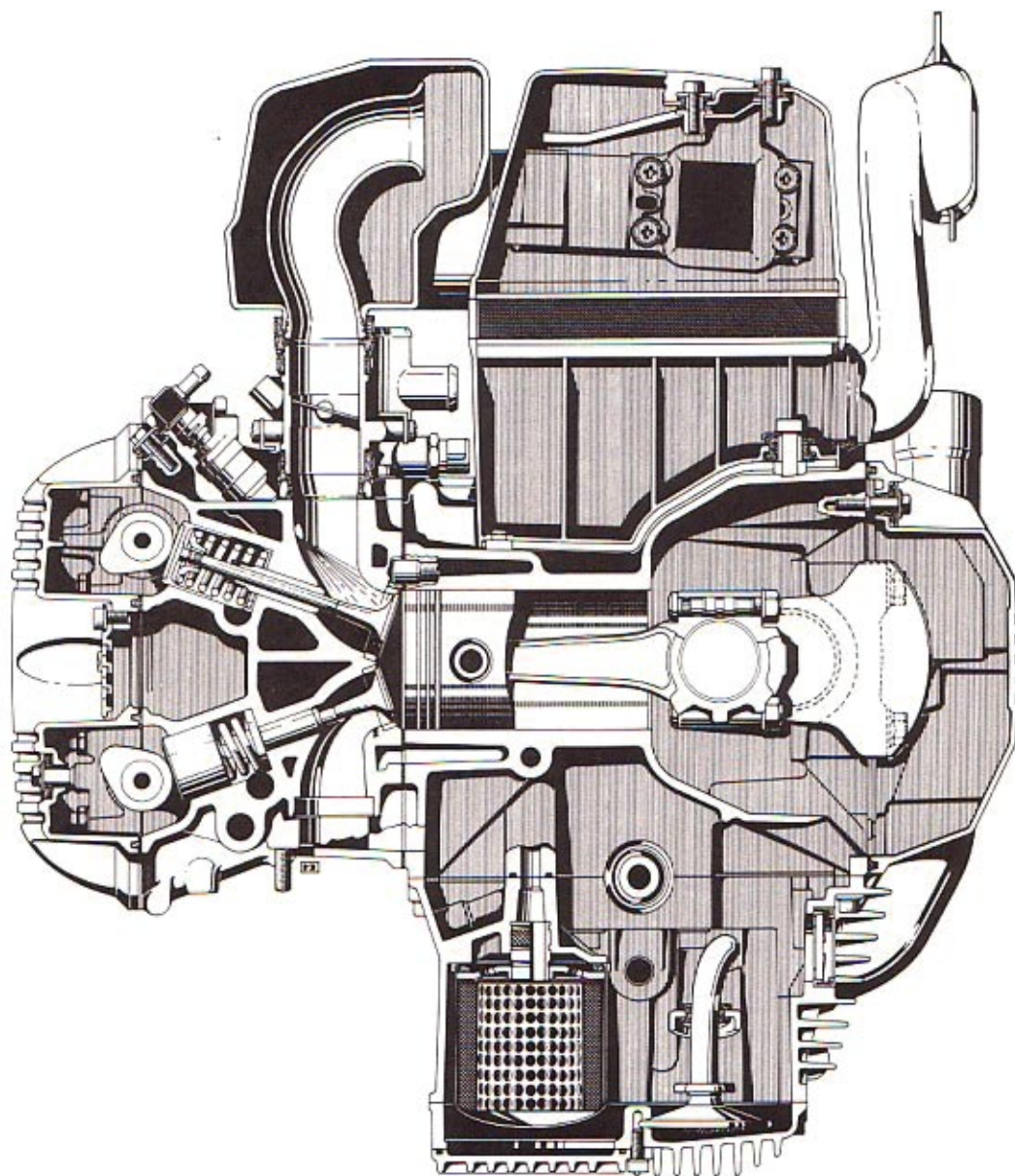
K 100 RT



BMW K 100

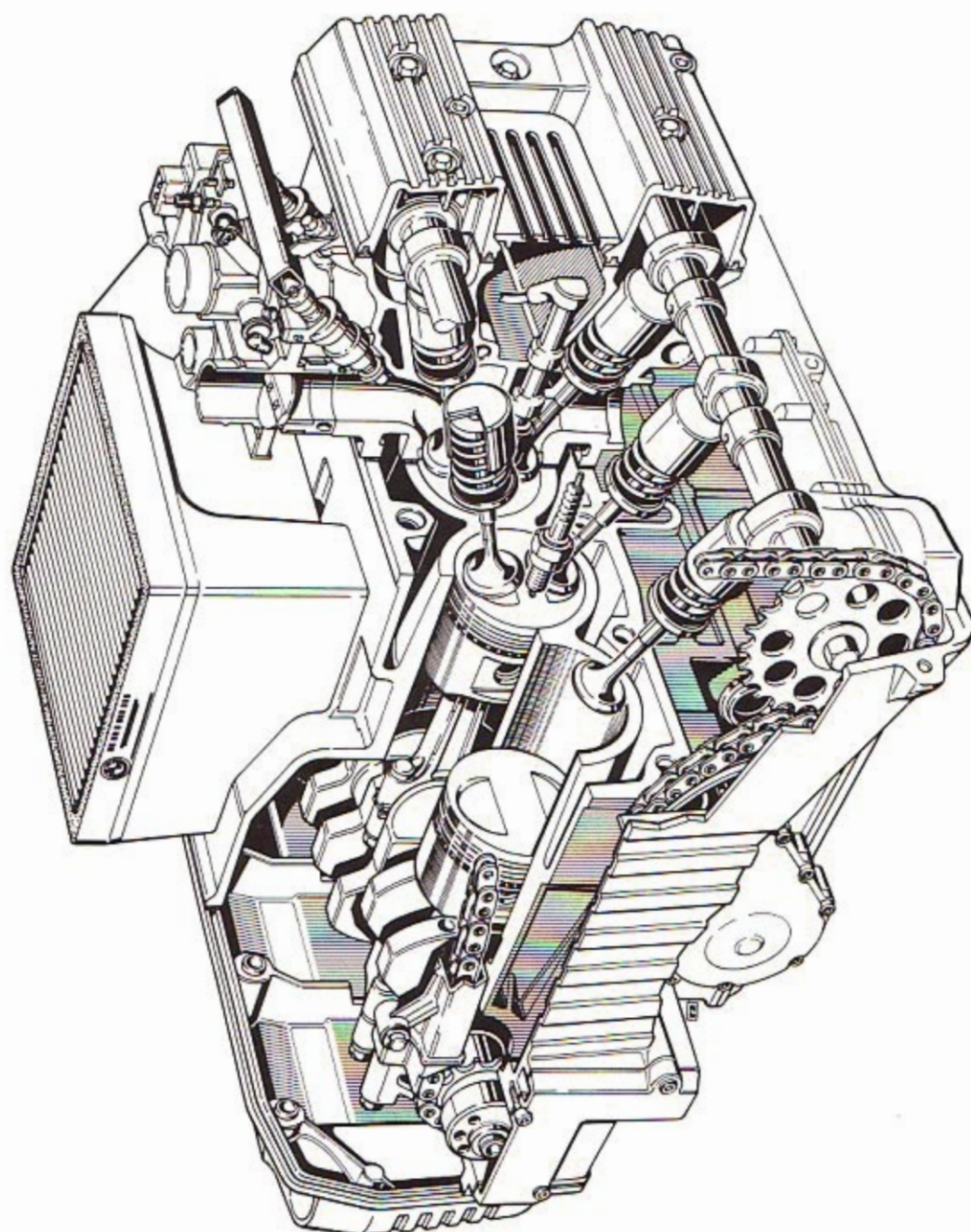
Motorquerschnitt (Ansicht von hinten)

83/10



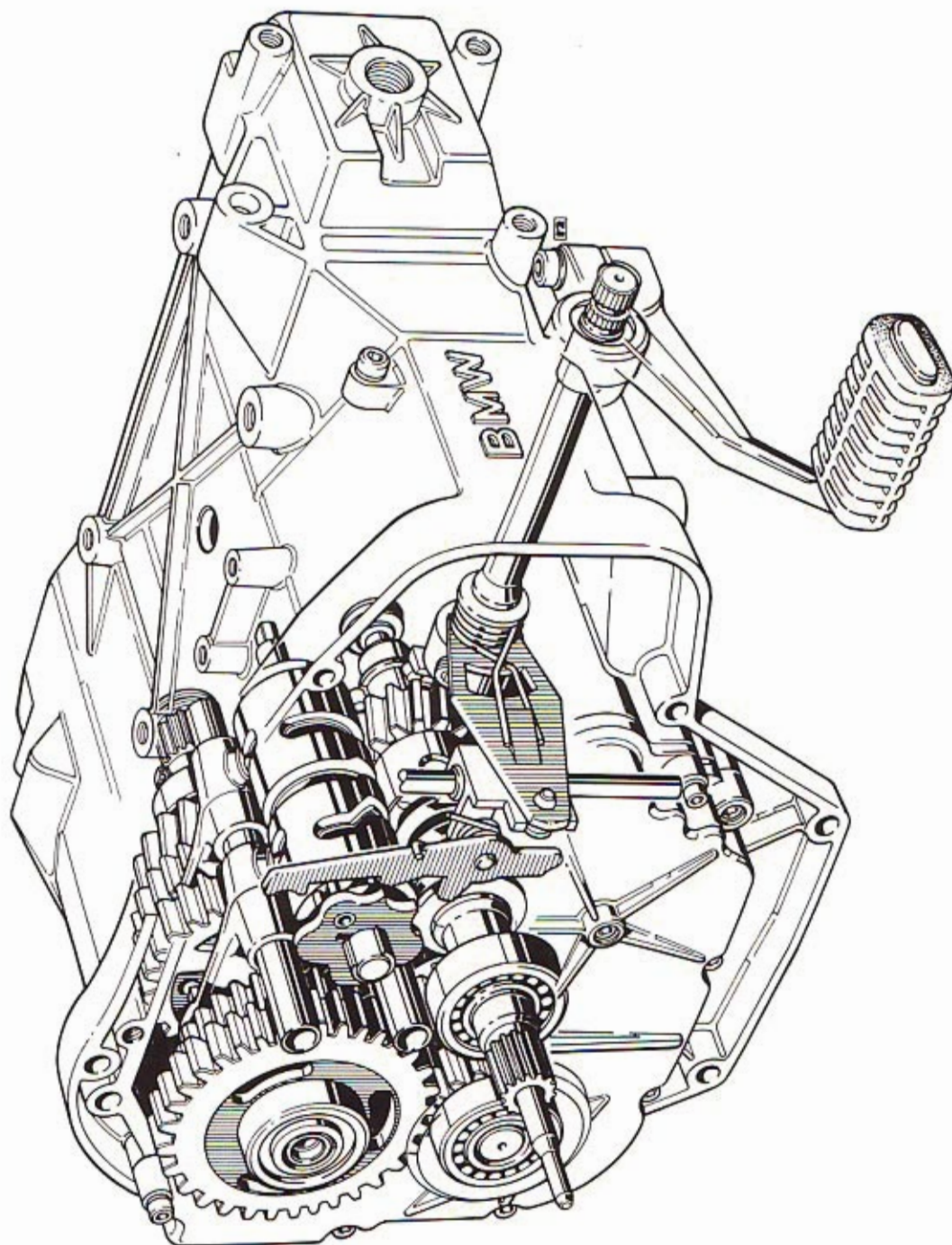
BMW K 100
Motorschnittbild

83/11



BMW K 100
5-Gang-Schaltgetriebe

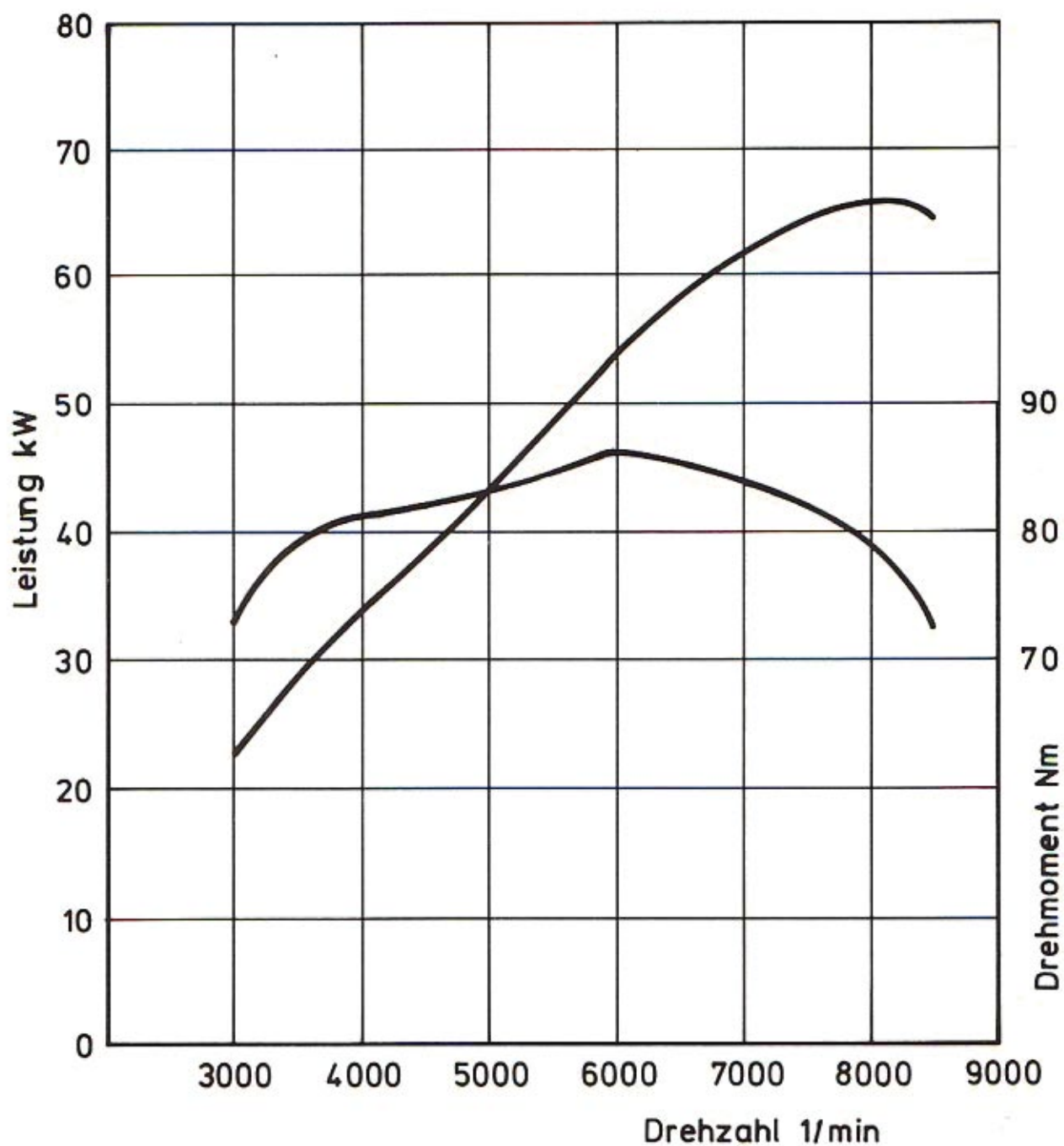
83/12



BMW K 100

Leistungs- und Drehmomentdiagramm

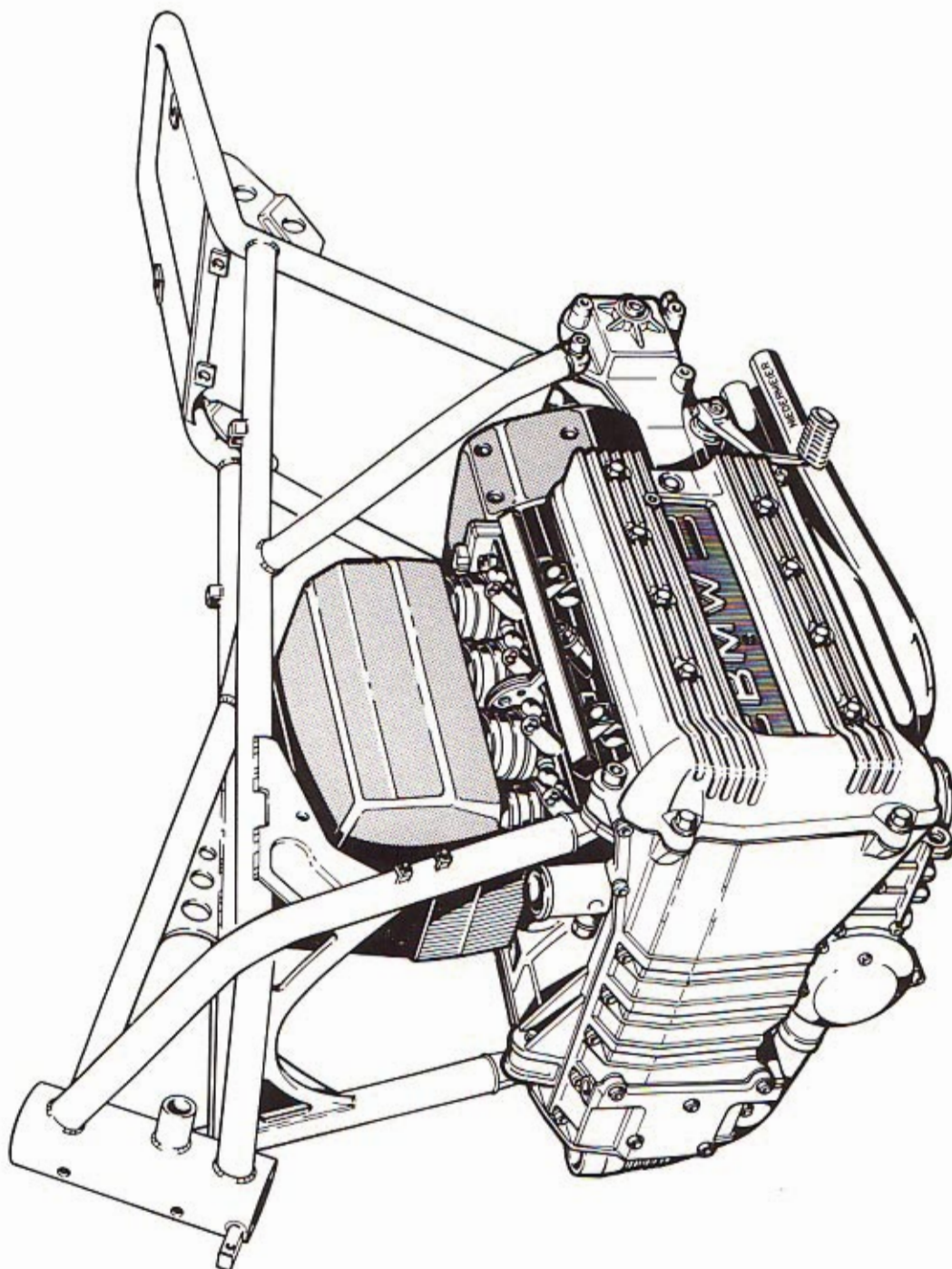
R 83/13



BMW K 100

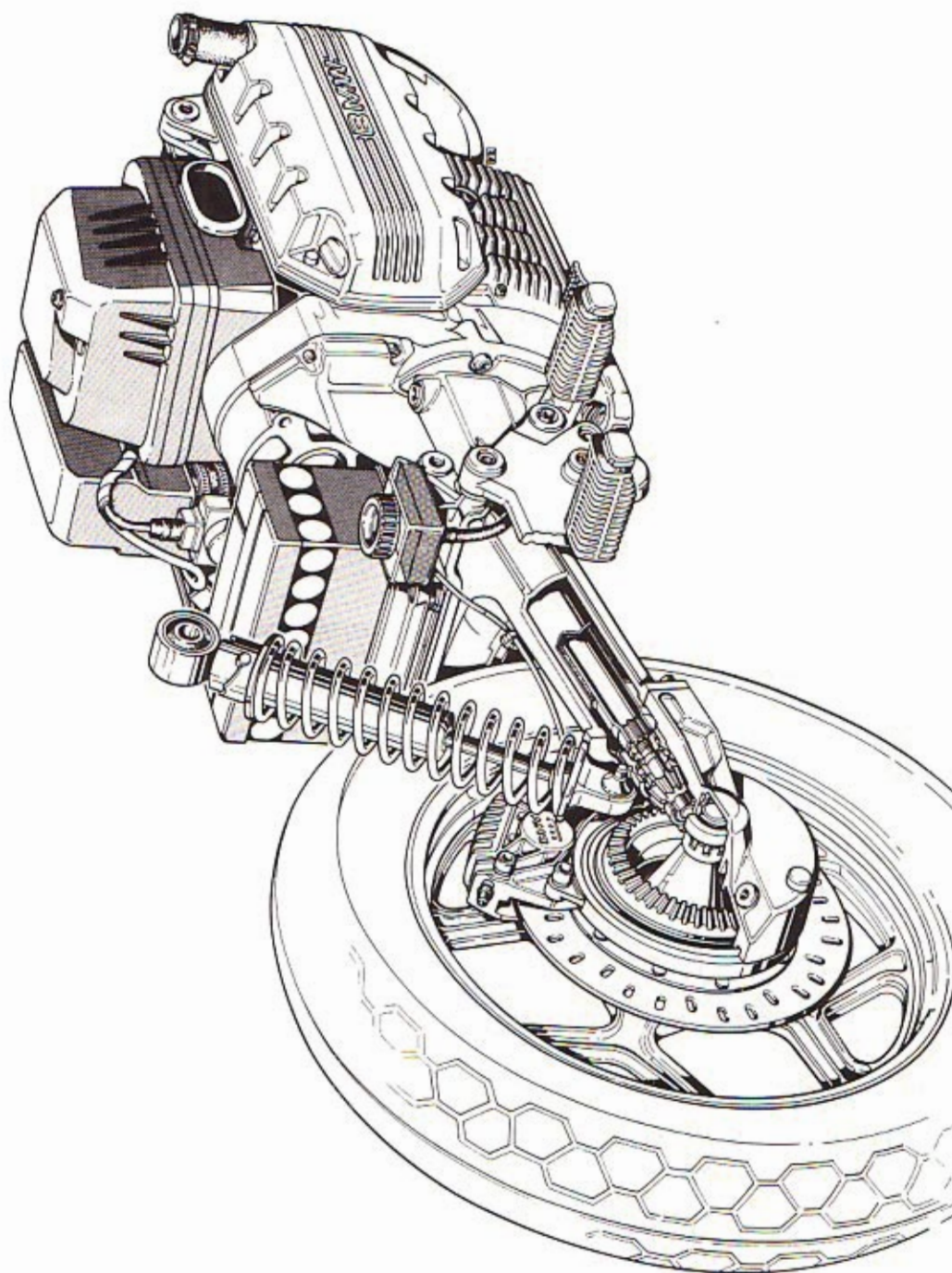
Brückenrahmen in Fachwerkkonstruktion mit Motor und Antriebsblock
als mittragendes Element

R 83/14



BMW K 100
Compact Drive System

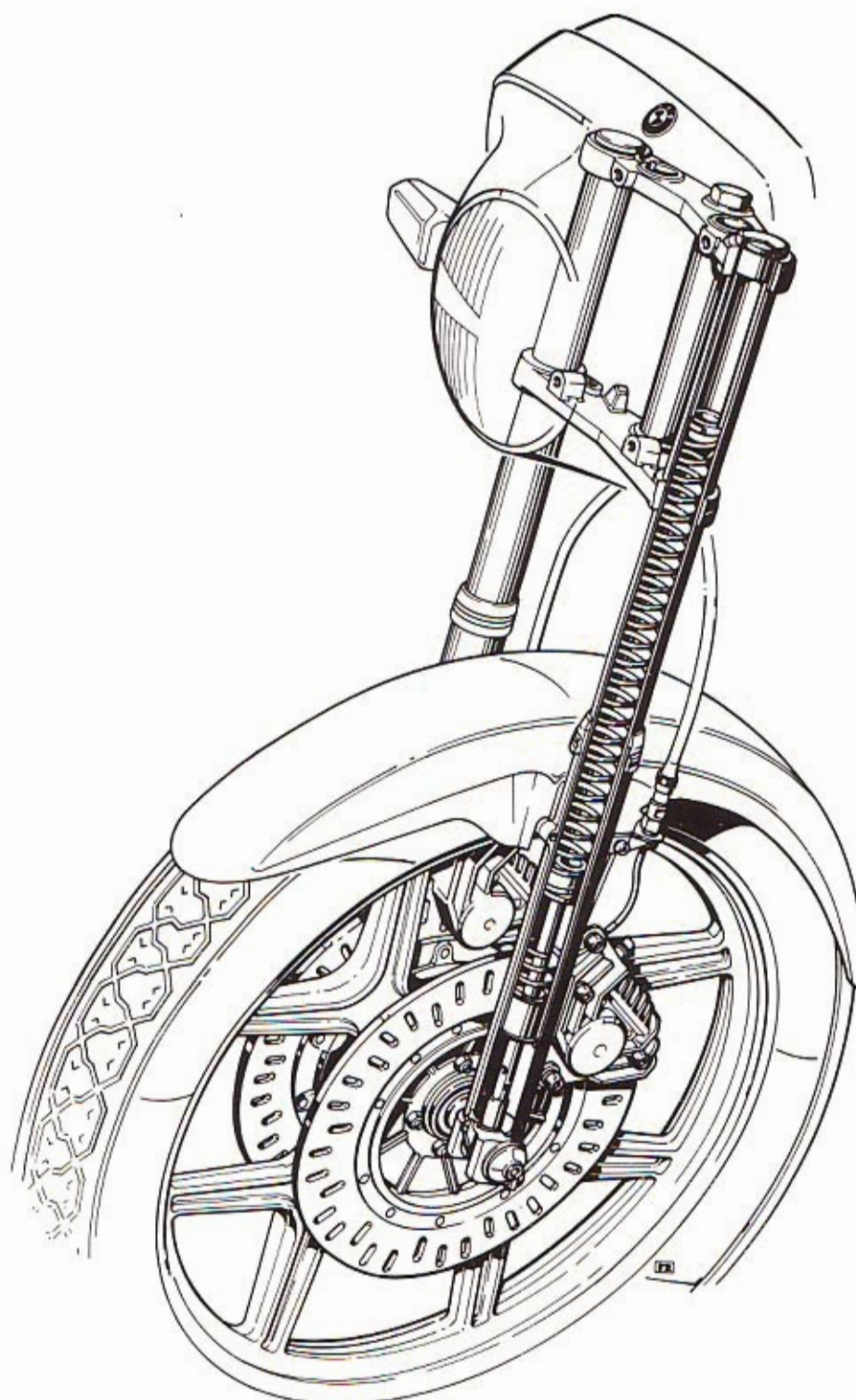
R 83/15



BMW K 100

Vorderrad mit Teleskopgabel

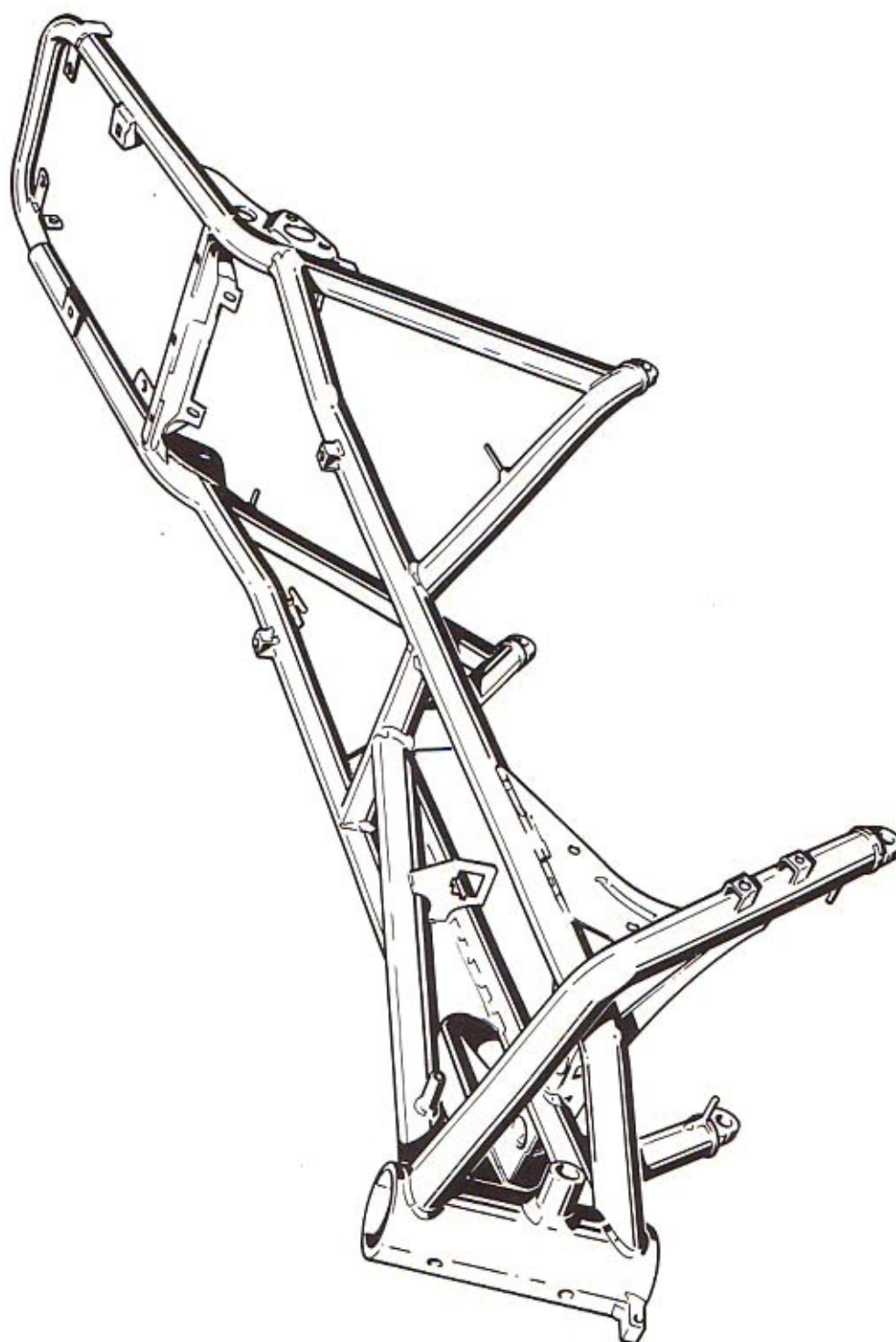
R 83/16



BMW K 100

Brückenrahmen in Fachwerkkonstruktion

R 83/17



At a glance: BMW's range of flat twin models for 1985

R 45	with 20 kW (27 HP) and 26 kW (35 HP)
R 65	with 37 kW (50 HP)
R 65 LS	with 37 kW (50 HP)
R 80	with 37 kW (50 HP)
R 80 RT	with 37 kW (50 HP)
R 80 ST	with 37 kW (50 HP)
R 80 G/S	with 37 kW (50 HP)
special model R 80 G/S Paris-Dakar	with 37 kW (50 HP)

For novices and for those stepping up: The BMW R 45 and R 65/R 65 LS

With the R 45 and The R 65/R 65 LS BMW offers three models for novices and for those stepping up. Three different engines can be chosen:

- | | |
|-------------------------|---|
| the R 45 | - with 20 kW (27 HP), regular ("2 star") fuel, especially aiming at the 27 HP class which is inexpensive to insure on the German market |
| the R 45 | - with 26 kW (35 HP) - Premium ("4 star") fuel |
| the R 65/R 65 LS | - with 37 kW (50 HP) - premium ("4 star") fuel |

Most of the sophisticated components of the bigger models are used in the R 45/65 series and are uncompromisingly adapted to the requirements of an optimum middle-class motorcycle. Production standards and performance match up with the high BMW standards. The two cylinder engines, thermally and mechanically as sound as a bell, exhibit exemplary balance of all masses and outstanding cooling, are reliable even in extreme, continuous use, and, at the same time, are easy to maintain and economical. For riding comfort all BMW models are fitted with a torsion damper on the drive shaft, which reduces peak loads when accelerating, shifting gears and braking.

With a sporty and exclusive touch: The R 65 LS

While the R 45 and the R 65 are optically identical, the R 65 LS differs in appearance, mainly because of its cockpit with significant spoiler design, which reduces front-wheel lift by one third thus increasing safety. Furthermore the sports handlebar, the seat bench, the rear-end tail with integrated grabhandles, the mat-black chrome finish of the exhaust and last but not least the aluminium - compound wheels contribute to the sporty and exclusive touch of the R 65 LS.

The new top-of-the-range flat twins: Five models with something for everyone

R 80: the pure and unadulterated flat twin

The new R 80, a pure and unadulterated flat twin, is designed for fans of the classically sporting motorcycle, for touring connoisseurs, for those who ride actively yet with unruffled composure.

It represents a logical development of two successful models, the R 80 G/S and the R 80 ST, while the K series was a useful source of components and experience.

The heart of the R 80 and the other four 800 cc models is the improved air-cooled 800 cc two-cylinder horizontally opposed engine. This muscular engine is notable for its smooth running and for high torque even at low revs. Modifications to the rocker bearings led to a noticeable reduction in noise from the valves in this and all other horizontally opposed engines in the 1985 programme.

The drive chain is arranged according to well-tried principles. Power is channelled directly to the drive shaft and the rear axle via a lightalloy clutch and a flanged-on five-speed gearbox.

The output of this compact, easy-to-service power unit remains at 50 HP (37 kW); fuel consumption (regular fuel) is a mere 5.5 litres per 100 km. With acceleration from 0 to 100 kph in six seconds and a top speed of 178 kph there is no need to hang around with the R 80.

The R 80 has an up-swept, conical, two-into-two exhaust which improves noise reduction by 3 dBA and gives a better torque curve compared to the R 80 G/S and the R 80 ST, which both have a high-mounted two-into-one exhaust.

Two conventional dials for speed and rpm, a big 22 litre tank with two fuel taps, the comfortable new seat with grab handles for the pillion passenger and with a 5.5 litre capacity storage space built into the rear section all contribute to the classical, timeless appearance, not slavishly following fashion.

The running gear of the R 80 has some important improvements to show. This includes a completely redesigned, highly sensitive telescopic front fork (spring travel 175 mm) with double acting hydraulic damping and progressively acting springs. The stand pipe diameter was increased to 38.5 mm, that of the front axle to 25 mm. Taken in conjunction with the fork stabilisor built into the redesigned front mudguard the result is greater stiffness and thus more stability on the road.

The new fixed-caliper single disc brake on the front wheel also sets new standards in efficiency. The bigger, 285 mm diameter stainlesssteel brake disc and the semi-metal brake linings, which are completely resistant to fading in wet weather, make for precise control and powerful deceleration.

For the 18 inch cast light-alloy wheels with a Y-shaped spoke arrangement a new manufacturing technique was developed. They are remarkable for their toughness, their uniform elasticity and their low weight. The particular shape of the rims allows the use of tubeless, low-profile tyres.

To improve stability still further reinforcements were made to the dorsal tube and to the bolted-on rear section of the well-tried doubletube steel frame.

The BMW Monolever system already used in the R 80 G/S, the R 80 ST and the K series is now present in two more machines, the R 80 and the R 80 RT. Its advantages are torsion-less wheel tracking, low weight and easy wheel removal. Unlike the G/S and the ST, in the R 80 the four-way adjustable gas strut (Monoshock) with a spring travel of 121 mm is attached not to the swinging arm but directly to the rear axle housing. The rear axle drive has a taper roller bearing as in the K series instead of the needle bearing previously employed. This improves endurance and reliability.

The new battery, which is the same as the one used in the K series, has been upgraded from 16 to 20 Ah thus offering power to spare for cold starts, and with its transparent casing makes it possible to check the electrolyte level from the outside. The new main stand gives stabler support and also makes it easier to get the machine on and off the stand.

The R 80 weighs in at only 210 kg with a full tank and like its sister models is thus a lightweight within its class. A permissible fully laden weight of 440 kg makes it possible to carry loads of up to a substantial 230 kg.

R 80 RT: the comfortable and economical longdistance tourer

The new R 80 RT is almost identical to the new R 80 but takes over unchanged from its forerunner the full fairing which affords excellent protection from the elements and together with the high touring handle bars makes comfortable long-distance touring a reality.

The sophisticated full fairing has a swept-back adjustable windscreen, indicator lights built into the fairing itself, rear-view mirrors that also function as hand protectors and two lockable storage compartments. Fresh-air inlets on both sides with adjustable jets make ventilation possible in hot weather. Moreover, it is possible to install retractable headlights and additional instrumentation.

Fully tanked, the R 80 RT weighs in at only 227 kg - remarkably little for a tourer.

R 80 ST: Sporty, with a touch of the chopper

The unique manoeuvrability of the R 80 ST, the thoroughbred roadster version of the R 80 G/S, was showered with praise in every test report that appeared in motorcycle magazines the world over. Like the R 80 G/S it has a high-mounted two-into-one exhaust and, of course, a one-arm swinging arm.

The most striking element in the R 80 ST is the high handlebar with a touch of the chopper about it, making riding feel dynamic and sporting yet nonetheless relaxed.

R 80 G/S: The bike for adventure

The R 80 G/S is the perfect machine when you are out in search of adventure. Whether on asphalt or right off the beaten track it is in its element both on and off road. Its special off-road tyres allow top speeds of up to 170 kph. It is the right bike for individualists who want to carve out their own tracks.

Introduced in 1980, the R 80 G/S was the first BMW motorcycle with a one-arm swinging arm and in a sense it fathered the BMWs that came home victorious from the 1981, 1983 and 1984 Paris-Dakar rallies.

The special model R 80 G/S Paris-Dakar:

Following in the winner's footsteps

Modelled on the BMW with which Gaston Rahier, the Belgian ex World Motorcross Champion, was victorious in the 1984 Paris-Dakar rally, this special version based on the R 80 G/S has been produced in a limited series.

The features distinguishing it from the R 80 G/S are the 32 litre tank in Alpine white, with knee padding, Paris-Dakar emblem and two fuel taps, as well as a specially comfortable solo seat, a large luggage rack and a chrome-plated exhaust with mat-black trim. It is equipped with Michelin T 61 tyres, crash bars and side stand.

The R 80 G/S can be reequipped with the special parts (tank, solo, luggage rack), which are available singly or as a kit.

Special Equipment

	R 45	R 65	R 65LS	R 80	R 80G/S	R 80ST	R 80RT
Voltmeter with quartz clock	-	-	-	-	-	-	x
Voltmeter with quartz clock and holter	x	x	-	x	-	x	-
Hazard warning system	x	x	x	x	-	-	x
2 additional headlamps	x	x	-	x	-	-	-
2 additional headlamps, tiltable	-	-	-	-	-	-	x
Quartz clock	-	-	-	-	x	-	-
Digital clock	-	-	x	-	-	-	-
Rev counter	o	o	o	o	x	o	o
Dual-tone fanfare	x	x	x	x	-	-	x
30 AH battery	-	-	-	x	-	-	x
Socket	x	x	x	x	x	x	x
High-rise handlebar	x	x	-	x	o	o	o
Steering damper	x	x	x	-	-	-	-
Nivomat	-	-	-	x	-	-	x
HD spring strut, rear	x	x	x	-	-	-	-
Double disk brake	x	x	o	x	-	-	o
Twist grip brake	x	x	x	x	x	x	x
Kick starter	x	x	x	-	x	x	-
Super tool kit	x	x	x	x	-	-	x
Splashguard	x	x	x	x	x	x	x
Windscreen	x	x	-	x	-	-	-
Heatable grips	-	-	-	x	-	-	x
Holder for touring case	x	x	x	x	-	-	x
Holder for touring case with luggage rack	x	x	-	-	x	x	-

Luggage rack	-	-	-	x	-	-	x
Set: touring case with holder	x	x	x	x	-	-	x
Set: touring case with holder and luggage rack	x	x	-	-	x	x	-
Low seat bench	x	x	-	-	x	x	-
Cylinder protection bar	x	x	x	x	-	-	x
Cylinder protection bar with integr. lateral support	-	-	-	-	x	o	-
First aid kit	x	x	x	x	x	x	x

x = available

- = not available

o = standard equipment

TECHNICAL DATA BMW MOTORCYCLES

Electrical System

Model	Capacity ccm	Bore/Stroke mm	Output kW/Hp at rpm	Torque Nm at rpm	Type	No. of cylinders	Compression ratio	Valve/Exhaust and Refill Control	Valves per cylinder inlet/outlet dia.	Carburettor type no./passage	Ignition	Generator W
R 45 20 kW	473	70/61.5	20/27 6.500	34.1 4.500	Boxer 2	8,2 N	OHV	2 34/32	BingV64/II 2/26			280
R 45 26 kW	"	70/61.5	26/35 7.250	37.5 5.500	"	9,2 S	"	"	" 2/28			"
R 65	650	82/61.5	37/50 7.250	52.3 6.500	"	"	"	2 40/36	" 2/32			"
R 65 LS	"	"	"	"	"	"	"	"	"			"
R 80	797.5	84/70.6	37/50 6.500	58/ 4.000	"	8,2 N	"	2 42/38	" 2/32			"
R 80 RT	"	"	"	"	"	"	"	"	"			"
R 80 ST	"	"	"	56.7 5.000	"	8,0 N	"	"	"			"
R 80 G/S	"	"	"	"	"	"	"	"	"			"
Special model R 80 G/S Paris - Dakar	"	"	"	"	"	"	"	"	"			"

Contactless electronic transistorized battery ignition

System

Power Transmission

Running Gear

Generator kW	Battery V/Ah	Headlight	Starter kW	Gearbox	Gearbox secondary transmission ratio	Rear wheel drive	Clutch	Type of frame	Spring travel front/rear mm	Caster mm
12/20	H460/55W ø 160 mm	0.7			I = 4.40 II = 2.86 III = 2.07 IV = 1.67 V = 1.50 4.25				175/110	96
"	"	"	"		„/3.89				"	"
"	"	"	"		„/3.44				"	"
"	"	"	"		„/3.44				"	"
"	H4/55/60W ø 180 mm	"	"		„/3.20				185/121	120
"	"	"	"		„/3.36				185/121	120
"	" ø 160 mm	"	"		„/3.20				175/153	129
"	" ø 140 mm	"	"		„/3.36				200/170	95
"	"	"	"		„/3.36				200/170	95

5-speed gear box with dogtype hook shift

Bevel gears with palloid serration

Single-plate

Doubletube steel frame

Dimensions, Weight

Model	Wheelbase mm	Brakes front/rear	Wheels front/rear	Tyres front/rear	Total length/ width mm	Handlebar width mm	Seat height mm	empty weight with full tank kg	max. permissible weight kg	T
R 45 20 kW	1.400		LM 1.85Bx18 2.50Bx18	3.25 18 4.00 18	2.110 688	650	810	205	398	22/4
R 45 26 kW	"		"	3.25 S 18 4.00 S 18	"	"	"	"	"	"
R 65	"		"	3.25 H 18 4.00 H 18	"	"	"	"	"	"
R 65 LS	"		Alu-Comp 2.15Bx18 2.50Bx18	"	"	"	"	"	"	"
R 80	1.447		LM-dic-cast MTH 2.50x18 E MTH 2.50x18 E	90/90-18H 120/90-18H	2.175 800	635	807	210	440	22/4
R 80 RT	1.447		"	"	2.175 960	714	"	227	"	"
R 80 ST	1.446		Spoke 1.85Bx19 2.50Bx18	100/90H19 120/90H18 or 120/90 - 18.65H	2.180 790	715	845	198	398	19/2
R 80 G/S	1.465		Spoke 1.85Bx21 2.50Bx18	3.00-21R 4.00-18R	2.230 746	820	860	191	"	19.5
R 80 G/S Paris- Dakar	1.465		"	"	"	"	875	205	"	32/4

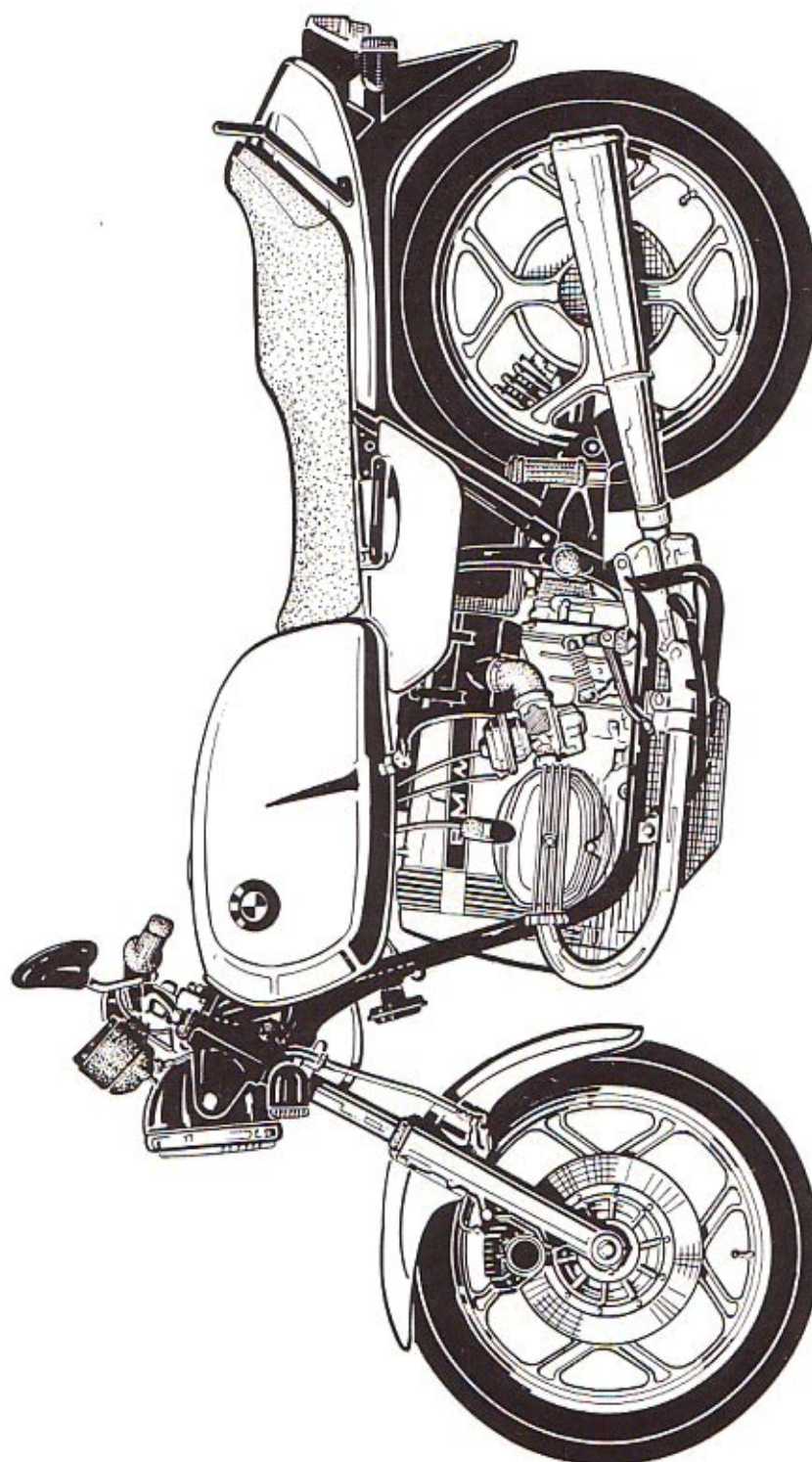
R 80/R 80 RT, front single-disk fixed caliper brake, ϕ 285,
others: ϕ 260, brake lining non-fading under wet conditions
rear: Simplex full-hub brake, ϕ 200
R 65 LS, front: double-disk brake

Data				Equipment		
	Tank/spare tank kg	Fuel consumption	Acceleration 0-100 km/h (sec)	Top speed km/h *	Fairing	
					Standard equipment	Special equipment
2/2	5.0	8.5 32.5	145		Tool kit	High-rise handlebar, cylinder protection bar, luggage grid, touring case with support, time clock/voltmeter, windscreen, additional headlamp, kick starter, hazard warning system, rear splash guard, dual-tone fanfare, socket, double-disc brake, HD suspension, super tool kit, first aid kit
	4.5	7.4 30.7	160		"	"
	4.6	5.9 28.1	175		"	"
	"	"	"		handlebar-mounted sport cockpit, spoiler shaped	Cylinder protection bar, touring case with support, high-rise handlebar, kick starter, hazard warning system, rear splash guard, dual-tone fanfare, socket, HD suspension, super tool kit
2/2	5.5	5.9 27.6	178		Tool kit breakdown kit	Windscreen (R 80 only), high-rise handlebar (R 80 only) voltmeter with quartz clock, 2 additional headlamps, double disc brake, 30 AH battery, hazard warning system, cylinder protection bar, touring case with support, rear splashguard, socket, luggage rack, heated handlebars, dual-tone fanfare, super tool kit, steel rope lock, Nivomat
	5.9	6.4 29.0	170		Frame-mounted full fairing with adjustable windscreen and integrated stowage boxes	
9/2	5.5	5.6 26.0	174		Cylinder protection bar with integrated lateral support tool kit, air pump	Voltmeter and quartz clock with holder, kick starter, luggage grid with support for touring case, left and right; rear splash guard, socket
9.5/2	"	5.6 26.5	168		Electrical starter tool kit, air pump	Cylinder protection bar with integrated lateral support, luggage grid, kick starter, touring case left and right, time clock, rev counter
32/4	"	"	"		Electrical starter tool kit, air pump, solo seat, red luggage rack behind the solo seat, cylinder protection bar with lateral support	Kick starter touring case left and right time clock rev counter twin seat

* Top speed is dependent on rider's size, position and clothing, road and weather conditions

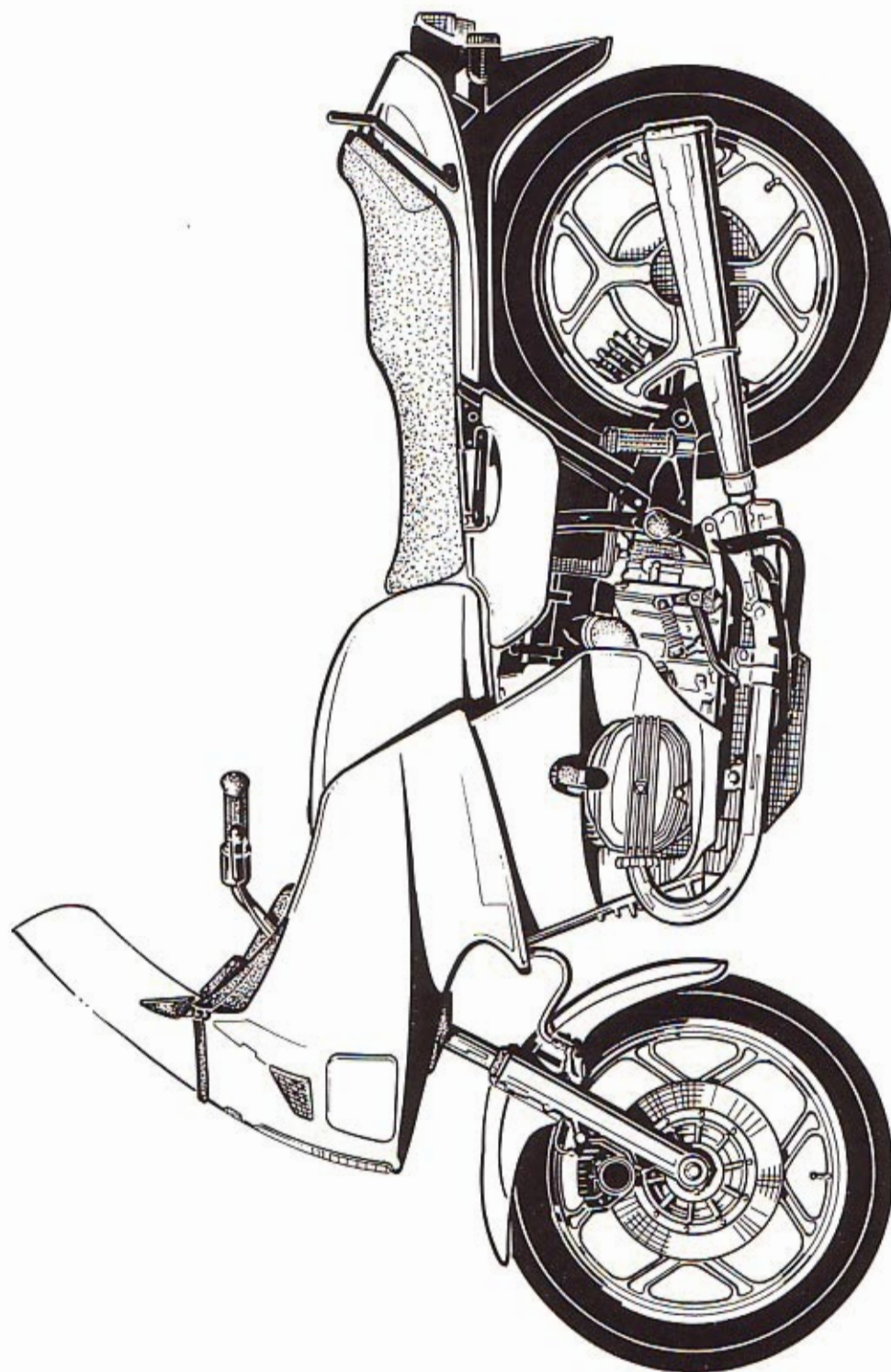
BMW R 80

R 84/18



BMW R 80 RT

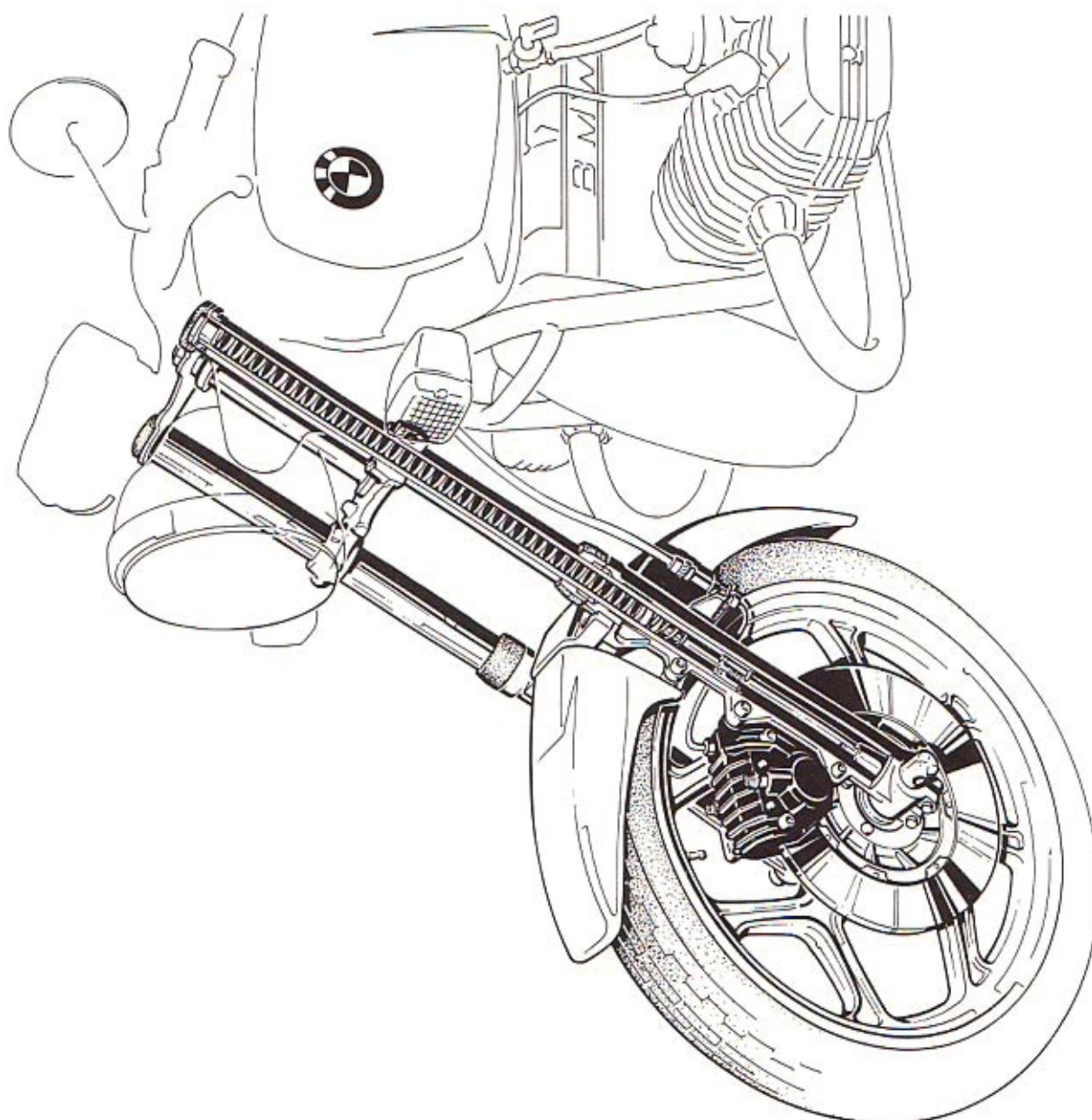
R84/19



BMW R 80 und R 80 RT

Teleskopgabel mit Gabelstabilisator

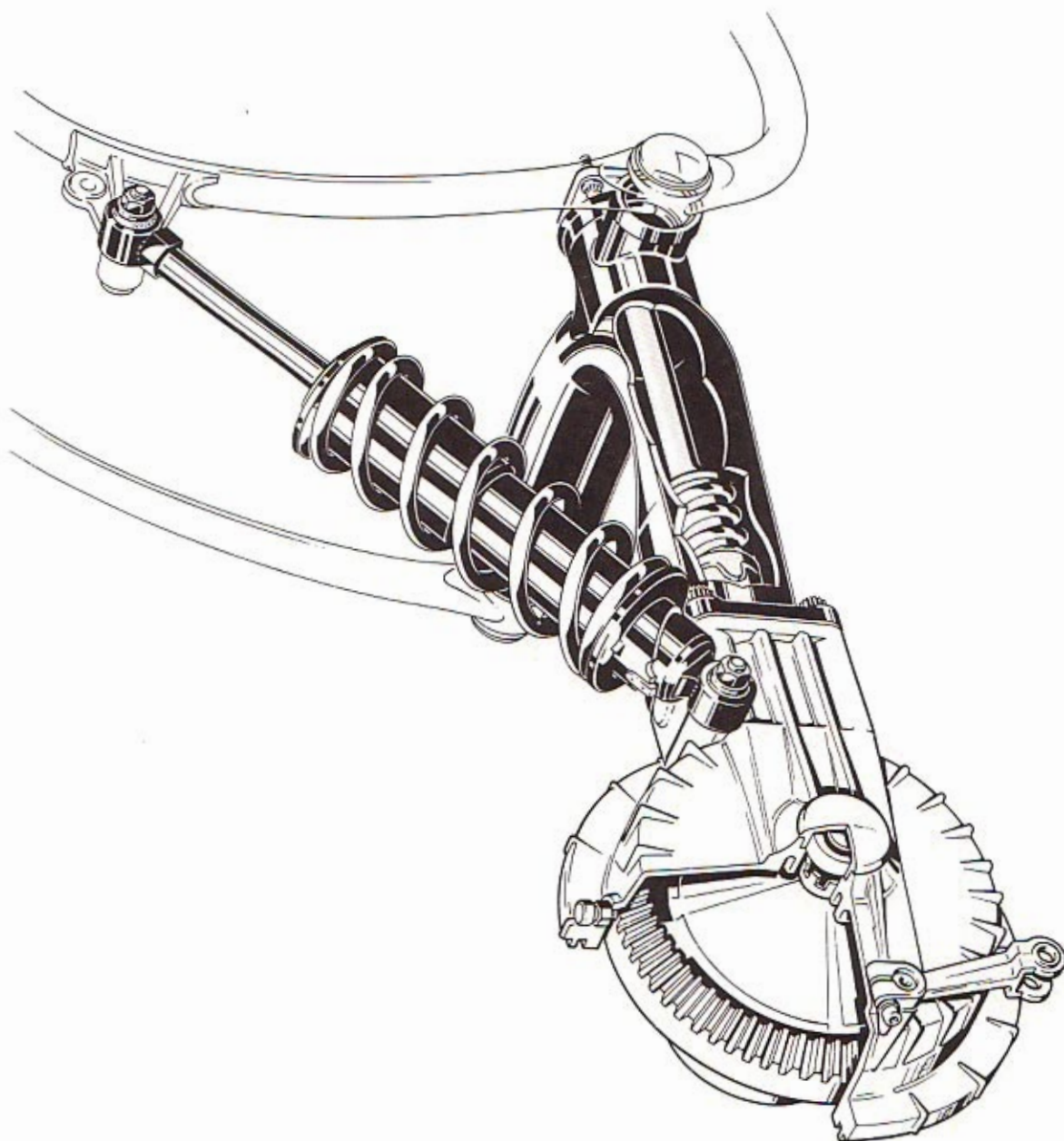
R 84/20



BMW R 80 und R 80 RT

Einarmschwinge (BMW Monolever-System)

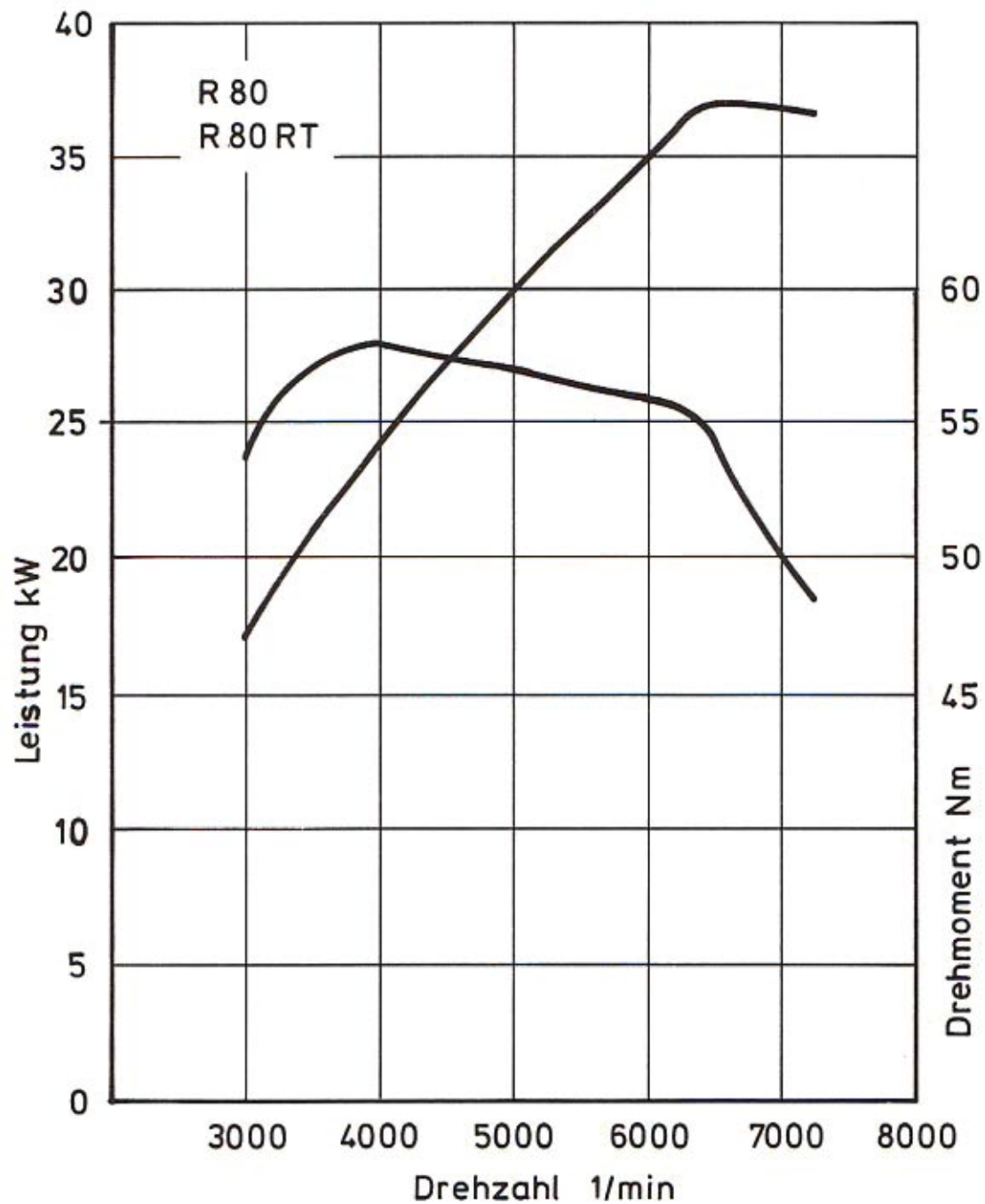
R 84/21



BMW R 80 und R 80 RT

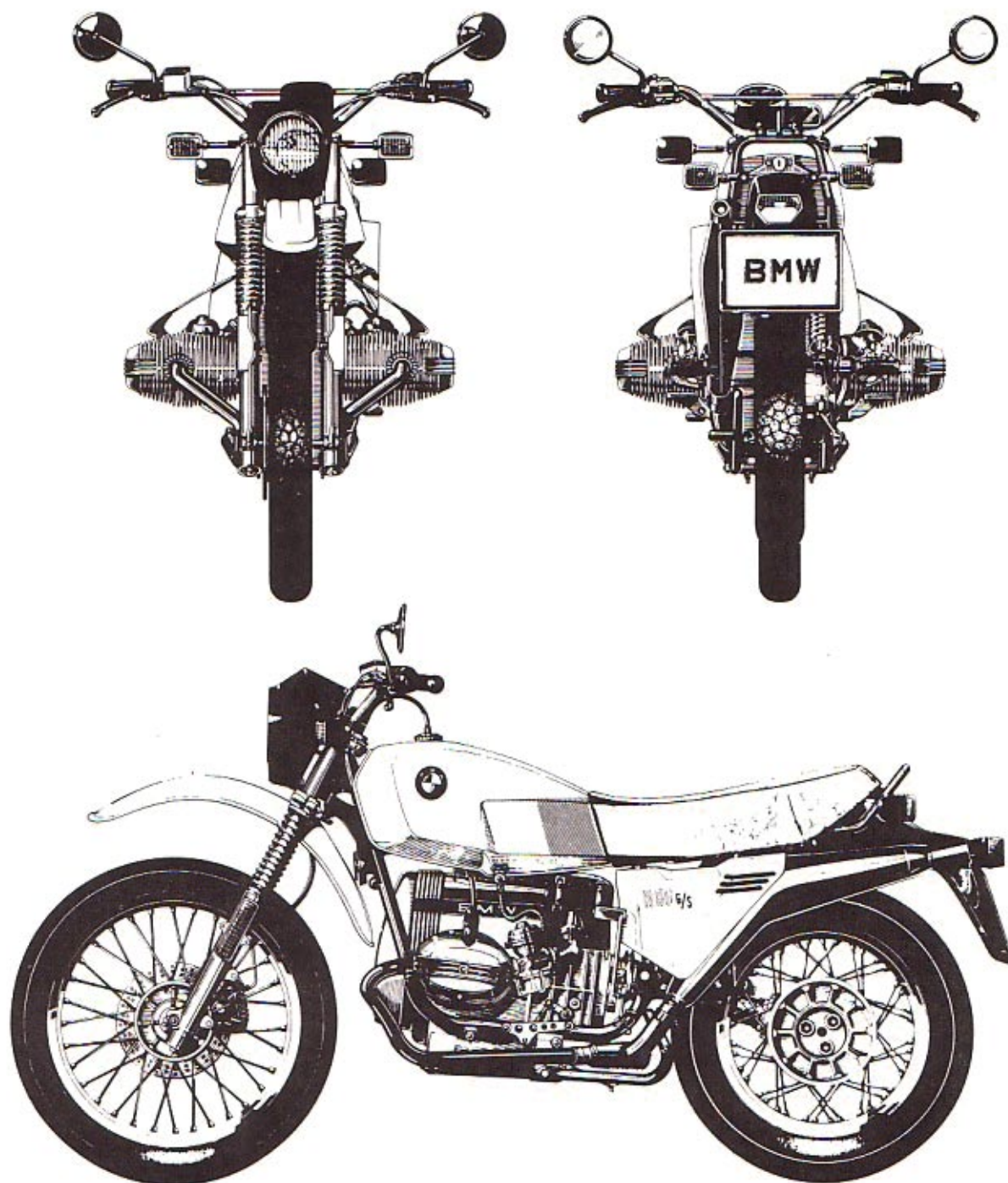
Leistungs- und Drehmomentdiagramm

R 84/22



BMW R 80 G/S

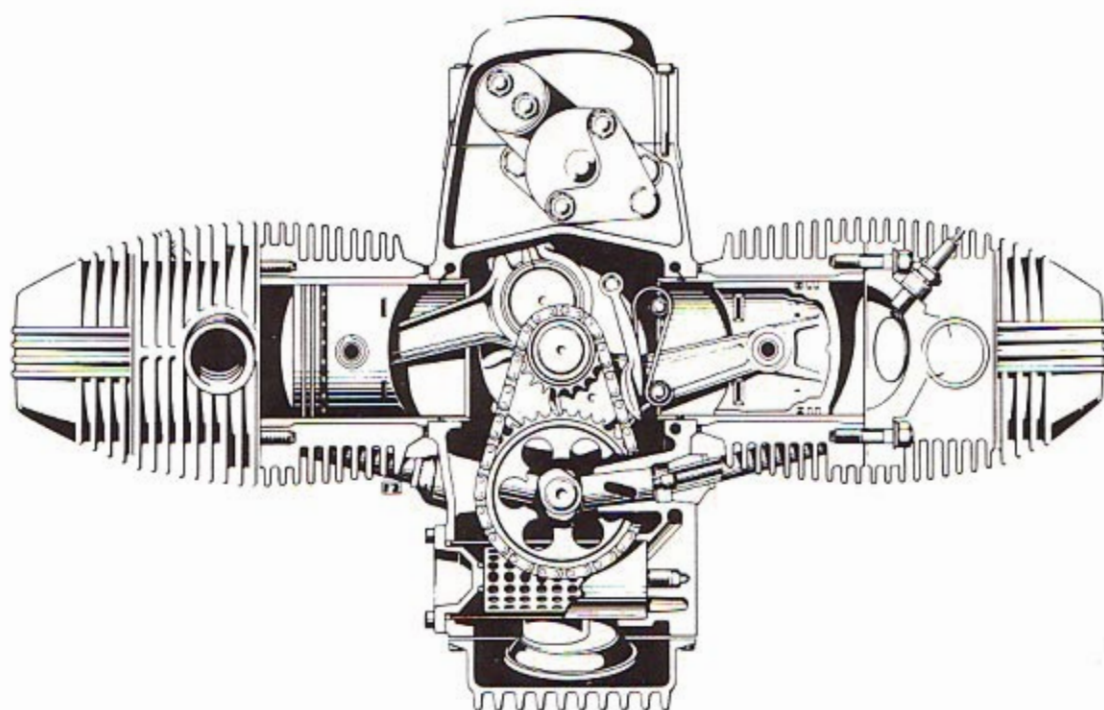
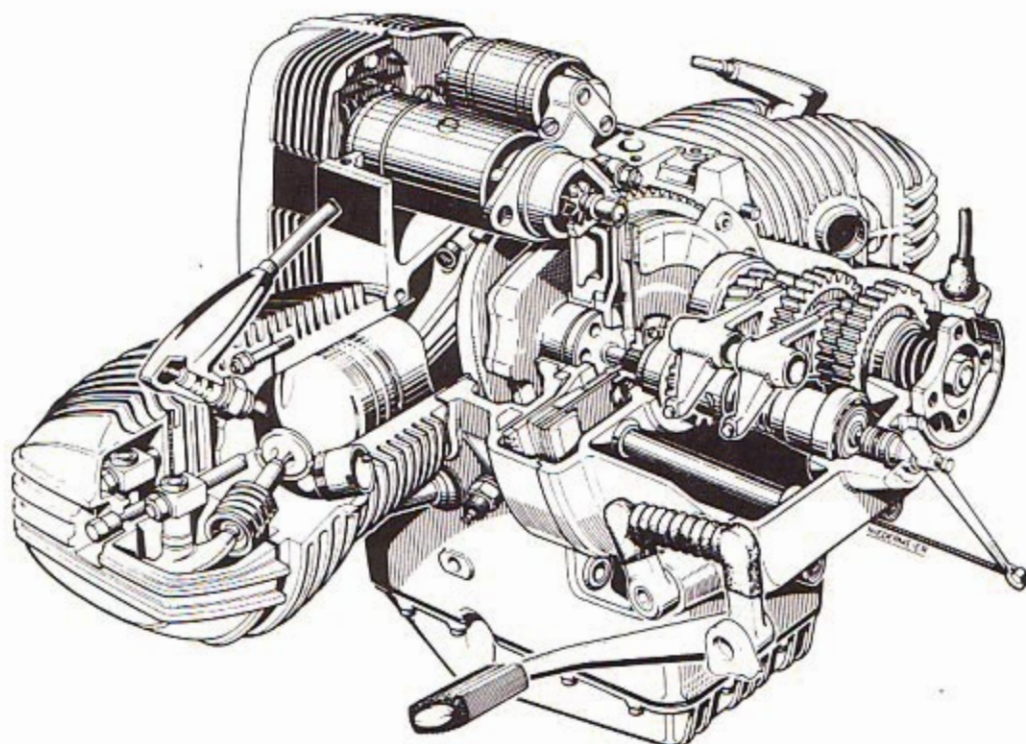
R 83/1



BMW Motorräder

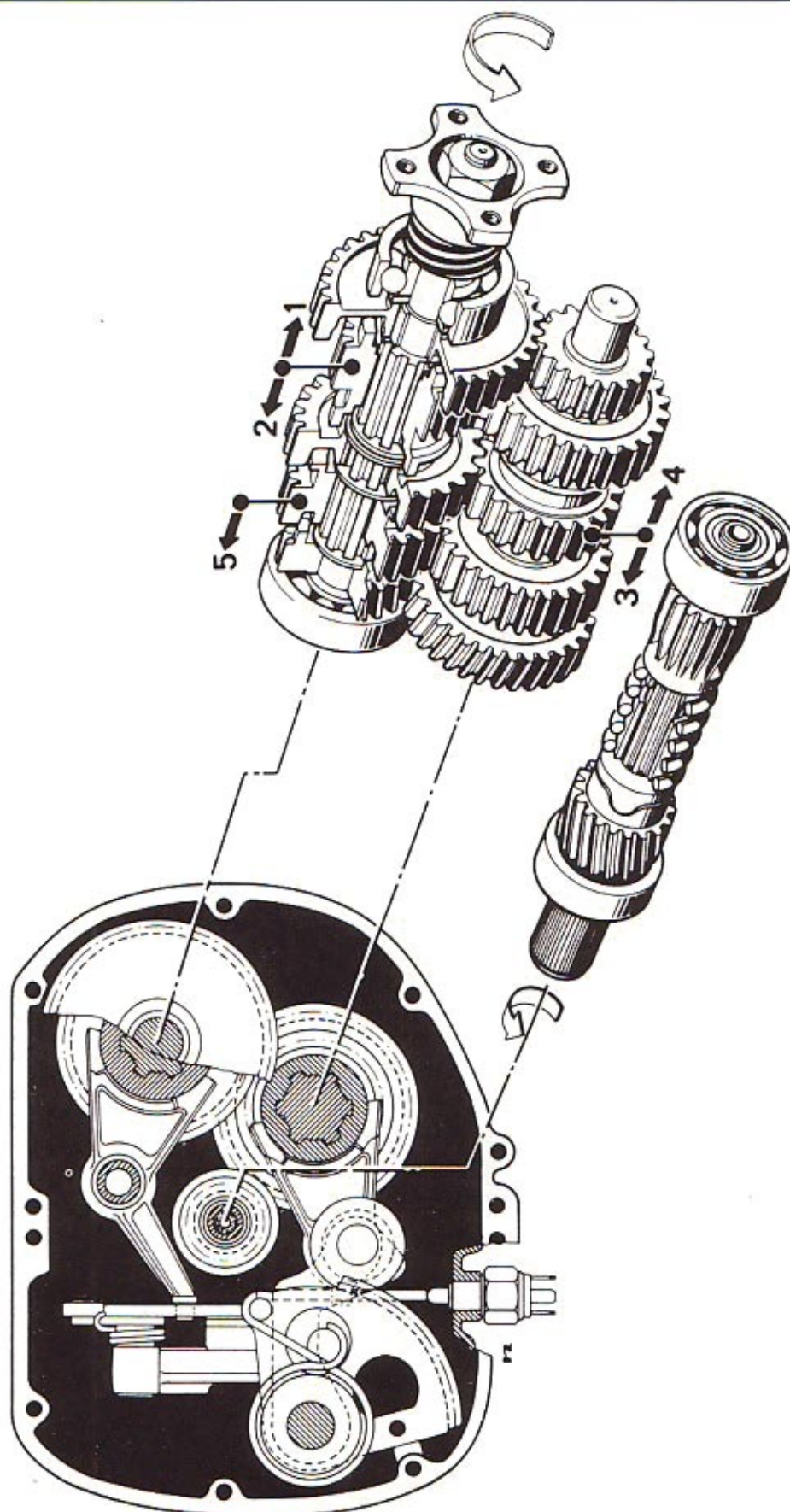
Motorschnittbild (800 cm³)

R 83/3



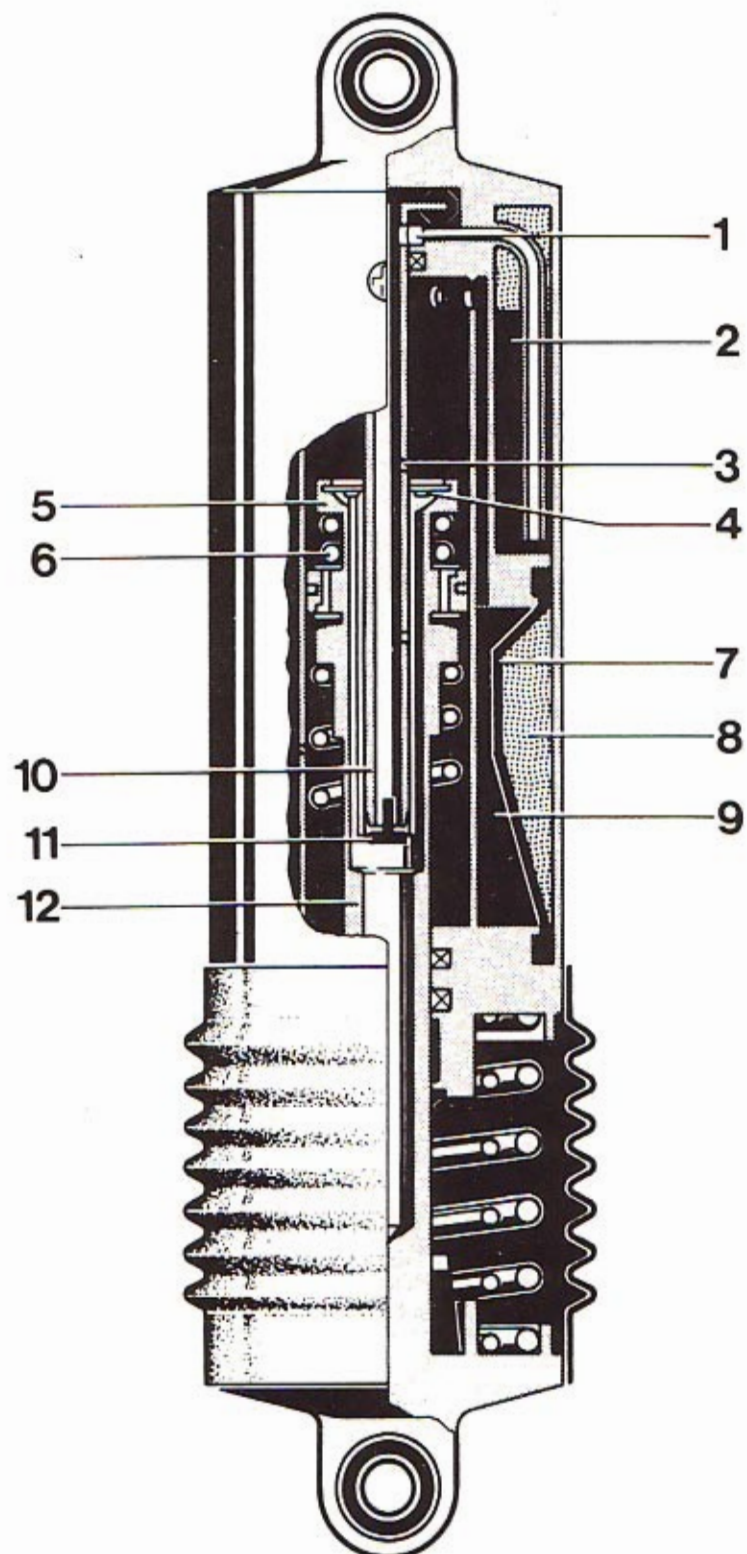
BMW 5-Gang-Schaltgetriebe
Gesamtprogramm

R 83/7



BMW NIVOMAT – Motorräder
Schnittzeichnung

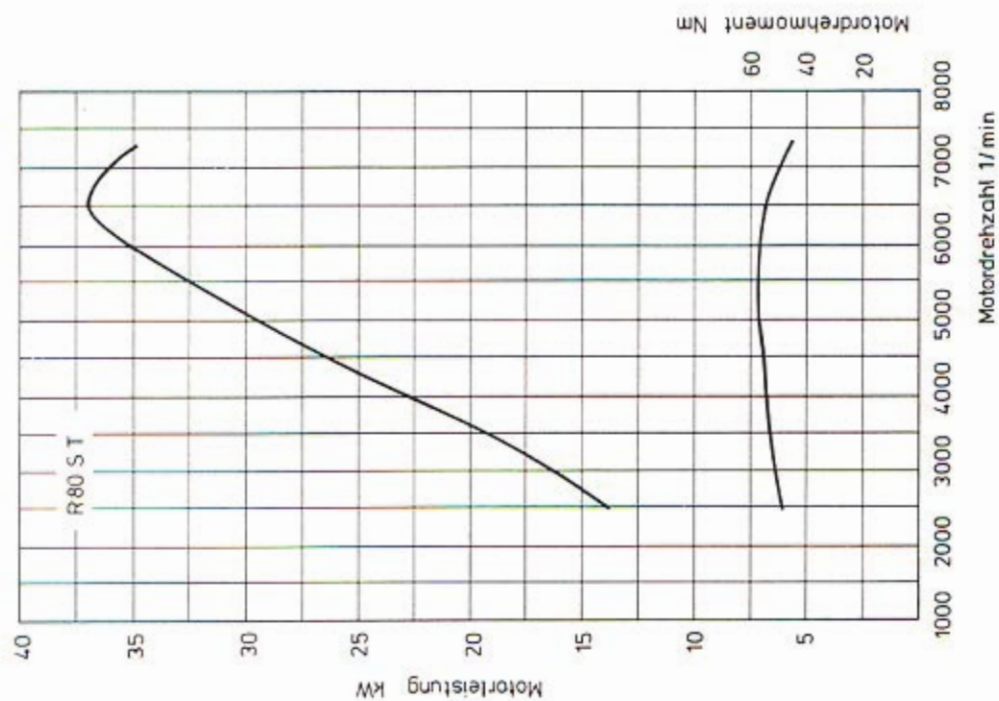
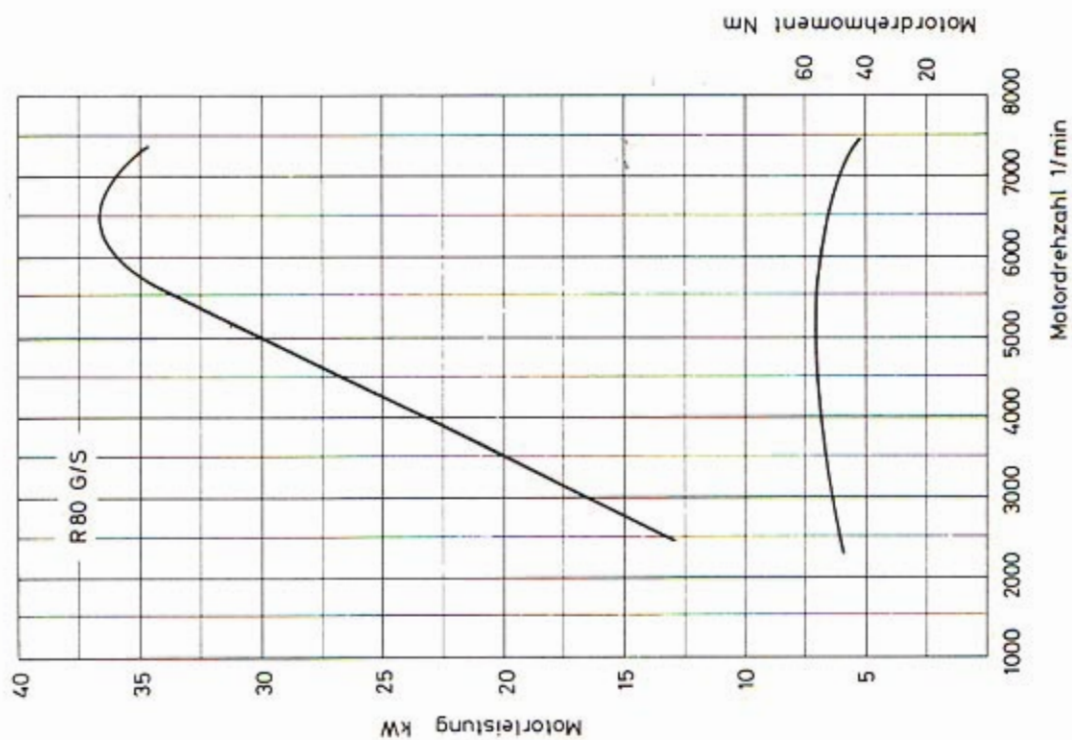
R 83/8



BMW R 80 G/S, BMW R 80 ST

Leistungs- und Drehmomentdiagramm

R 83/5





BMW R 45, BMW R 65, BMW R 65 LS
Leistungs- und Drehmomentdiagramm

R 83/4

