BMW AG Presse

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1 SUMMARY OF NEW BMW MODELS AND FEATURES IN THE 2000 MODEL YEAR

Now with an even more powerful engine, six-speed gearbox and a new face:
The new R 1150 GS Enduro continues the successful story of the BMW GS

A clear alternative to the classic cruiser models:
The new Avantgarde versions of the R 1200 C and R 850 C

Delivering 60,308 units to customers the world over, the BMW Motorcycle Division set up yet another sales record in 1998 in the 75-year history of the Company. And the new models introduced in 1998 - the R 1100 Sand K 1200 LT - have successfully penetrated the market in the meantime.

Now, launching the 2000 model year, Europe's leading manufacturer of motorcycles in the plus-500 cc category is once again presenting two attractive new machines: the R 1150 GS Enduro and the Avantgarde versions of the R 1200 C and R 850 C Cruiser.

The famous "GS" abbreviation: already a legend in the motorcycle world

Launching the R 80 G/S back in 1980, BMW introduced the brand new market segment of large-capacity touring enduros, the letters G/S standing for *Gelande/Strasse* or, in English, offroad/road. Now, almost two decades later, the abbreviation GS has for a long time been acknowledged as the synonym for a true legend in the world of motorcycles. Whether winning the Paris-Dakar Rally or taking globetrotters on spectacular rides around the world, whether offroad or on the road, BMW's GS models have gained fame the world over as motorcycles for all kinds of roads and tracks. So it is no surprise that overall production of the R 80 G/S, R 80 GS and R 100 GS amounts to almost 70,000 units.

The enduro model of the latest Boxer generation featuring four-valve power units, the R 1100 GS launched in 1994 and joined in 1998 by the R 850 GS, was equally successful in quickly becoming one of the

best sellers in the BMW range: By summer 1999 production already exceeded 45,000 units, boosting the overall number of all GS models to more than 115,000.

Now, after six years of production, the R 1100 GS is being replaced in autumn 1999 by the new R 1150 GS, while the R 850 GS remains in the line-up without any changes. Featuring an even more powerful engine, a new six-speed gearbox and an attractive facelift, the original of all adventure and long-distance enduros is well prepared for the 20th year of BMW GS motorcycles and their success in history.

Even "beefier" torque, even greater power and pulling force

The heart of the new R 1150 GS is even stronger and more powerful than that of the R 1100 GS. Maximum output of the flat-twin power unit at 6750 rpm has been increased from the former 59 kW (80 bhp) to 62.5 kW (85 bhp), while maximum torque at 5250 rpm is up from 97 to 98 Nm (71.5-72.2 lb-ft). The far more remarkable point, however, is that the engine offers an even beefier torque curve throughout its entire speed range, maximum torque constantly exceeding 90 Nm all the way between 3000 and 6500 rpm. The result, clearly, is even more power and pulling force on the road.

Fitted as standard worldwide with a fully-controlled catalytic converter

The increase in power is ensured by various modifications of the engine. Engine capacity, for example, is up from 1085 cc by 45 cc to 1130 cc. The cylinder heads and crankshaft, in turn, have been carried over from the R 1100 S. Digital engine management, like on the R 1100 S, is now controlled by Motronic MA 2.4 and it almost goes without saying that the R 1150 GS, like all new BMW motorcycles launched as of 1997, comes worldwide with a fully controlled catalytic converter. And last but certainly not least, about 50 per cent of the increase in engine output is attributable to the all new exhaust and silencer system made of high-grade chrome-plated steel.

Sixth overdrive gear

Power is now transmitted via a hydraulic clutch, and the new sixspeed gearbox featured on the R 1100 S and realigned here for even more comfortable touring is yet another special feature of the R 1150 GS. Sixth gear serves as an overdrive significantly reducing both noise, vibrations and fuel consumption thanks to the substantial decrease in engine speed.

Running gear already proven in the R 1100 GS as well as the brake system (optionally available with ABS) have been carried over to the new model with hardly any modifications. The only major exception is the lighter version of BMW's unique Telelever on the front wheel already featured on the R 1100 S and now also to be admired on the R 1150 GS. The reduction in unsprung masses ensured in this way translates in practice into even better and smoother handling.

A new "face" with dual ellipsoid headlights

Entering the 2000 model year, the R 1150 GS boasts not only technical improvements, but also a genuine facelift in every respect, the front end of this outstanding machine indeed showing a new face. In its new design, the upper wheel cover ensures even better integration of the front section of the motorcycle into the sleek, flowing lines of the tank. The "eyes" of the new face form a genuine highlight of the new cockpit fairing, the old, rectangular headlight being replaced by asymmetric dual ellipsoid headlights. And right behind the headlights comes the aluminium-silver-painted cover for the redesigned instrument cluster.

The new transparent windshield redesigned for optimum streamlining and offering even better protection from wind and weather, is positioned directly on top of the instrument cover is not only adjustable to three different positions, but may also be removed entirely for the purist wishing to enjoy that unique thrill of riding in the open air.

Following their introduction on the R 1200 C and R 1100 S, BMW's new handlebar controls are also to be admired on the R 1150 GS, with all controls and switches fully integrated in the grab units. Features carried over unchanged from the former model are the

22-litre fuel tank, the high-comfort seat adjustable for height at the rider's end (either 840 or 860 mm/33.1 or 33.9"), and the luggage rack.

The new BMW R 1150 GS naturally available once again with a wide range of special features and accessories, comes in night blue, titanium silver metallic, and mandarin.

The Avantgarde Cruiser:
Components painted in graphitane instead of chrome

Two years after the launch of the R 1200 C, BMW is presenting a new styling rendition of the Cruiser for the 2000 model year. Proudly bearing the name *Avantgarde,* these special versions of the R 1200 C and R 850 C stand out clearly from the classic Cruiser models: The parts and components glistening in chrome or aluminium silver on the existing models now come in graphitane or, like the engine block and drive train, in black paint on the Avantgarde versions. An all-new colour, graphitane combines the qualities of graphite and magnesium. This "darker" alternative to classic silver has a particularly modern touch and clearly accentuates the high-tech qualities of this unique machine.

The parts and components finished in graphitane, among them the slide tubes for the front-wheel fork, the longitudinal control arm, the front frame section and the rear frame, form the visual background for the two body colours frost blue metallic and peach metallic. Comprising a touch of mother-of-pearl, these new paintwork colours, contrasting with graphitane, create an entirely new, unique and innovative rendition of the Cruiser.

New touring handlebar

The Avantgarde models come as standard with a new touring handlebar, a perfect blend of the high-rise standard handlebar on the classic cruiser models and the lower, more sporting handlebar available as an option. And again it almost goes without saying that the new touring handlebar is optionally available also on the classic models.

2 THE F 650 SINGLE-CYLINDER MODELS

New special versions of the F 650 ST

Following the special version of the F 650 launched in spring 1999, special versions of the F 650 8T are now due to follow in autumn 1999 in deep black (seat in black), ocean green (seat in light grey) and blue metallic (seat in black). All three models come as standard with heated handles, a touring handlebar, a high windshield, a topcase, case supports and a standard catalytic converter without electronic control. Otherwise, the F 650 models are entering the 2000 model year without any changes.

Production of the F 650 models now exceeding 61,000 units

Launched in November 1993, the F 650, together with the F 650 8T added to the range in autumn 1997, accounts for total sales of more than 61,000 units by summer 1999. This makes this single-cylinder not only one of the best sellers within the BMW range, but also one of the best-selling motorcycles throughout the market.

Twenty-seven years after the legendary R 27, BMW has once again taken up its heritage of single-cylinder motorcycles with overwhelming success, sales of such one-cylinder machines between 1925 and 1966 amounting to approximately 230,000 units ranging in engine size from 200 to 400 cc.

At the same time BMW has added an attractive 650-cc entry-level model to the range, with engine output of 35 kW/48 bhp and an additional version in Germany and Italy developing a maximum output of 25 kW/34 bhp. Benefitting from its relatively low weight of only 191 kg or 421 Ib and its low seat height, the F 650 is particularly popular among newcomers and re-entrants in the motorcycle market as well as with female riders.

BMW also took a new approach in the development and production of the F 650, which may really be called a "genuine European on two wheels", As part of a European joint venture, the F 650 was

developed jointly by BMW and Italian motorcycle manufacturer Aprilia, applying the original concept, quality standards and design provided by the white-and-blue marque. The F 650 comes with a single-cylinder Bombardier-Rotax power unit modified by BMW and manufactured by the Austrian engine company in the town of Gunskirchen. Assembly of the F 650, in turn, is in Aprilia's modern production plant in the Italian town of Noale, and sales are taken care of worldwide by BMW's own dealer network.

The F 650 clearly stands out from other motorcycles not only through its heritage and unmistakable looks, but also in its unique concept. And offering practical qualities quite outstanding for a single-cylinder (for example its ability to carry both the rider and a passenger, its touring qualities, and its environmental compatibility ensured by a catalytic converter either optional or standard in Germany, Austria, Switzerland, and the USA), making it a genuine BMW.

The suspension and running gear come between that of a fun bike and an enduro - which is why BMW refers to the F 650 as a funduro, on account of this combination and new concept.

In the 1997 model year, BMW set the stage for a continuation of this successful story:

Having been given the "once over", the F 650 received a styling facelift, while the running gear and engine remained technically unchanged.

Special kit reducing seat height by 50 mm

A special, retrofittable kit available for lowering the seat position serves to reduce seat height on the F 650 from 800 mm to 750 mm or 29.5". This kit comprises modified swinging-arm levers, a different spring strut rest point, and shorter main and side-stands.

The F 650 ST fun bike:
Ensuring even more riding pleasure on the road

Three years after the launch of the F 650, a second model, as mentioned, joined this very successful single-cylinder in the 1997 model year. Unlike the F 650 funduro very suitable for comfortable touring on long distances - alone or with a passenger - and for riding off-track as well as in - not too rugged - terrain, the F 650 ST fun bike appeals more to riders with a penchant for a somewhat more sporting style and focusing to a greater extent on road use.

Accordingly, the two models in the F 650 range differ above all through their running gear, as well as through modifications in their features and looks.

Smaller front wheel and shorter spring travel at the rear

Compared with the F 650 (with data shown in brackets), the suspension and running gear of the F 650 ST is even more agile and sporting thanks to the smaller 18-inch front wheel (19-inch), road tyres, slightly modified suspension geometry with wheelbase reduced to 1465 mm/57. 7" (1480 mm/58.3"), castor measuring 110 mm/4.3" (116 mm/4.6"), as well as the rear-wheel spring strut with modified damper action and 120 mm/4.7" (165 mm/6.5") spring travel. Spring travel on the front wheel, in turn, remains the same as on the F 650 at 170 mm or 6.7".

Seat height reduced if desired from 785 mm/30.9" to 735 mm/28.9"

The lowered suspension also reduces seat height to 785 mm/30.9" (800 mm/ 31.5"). Indeed, the lowering kit retrofittable if desired (see also description of the F 650) serves to reduce seat height even
further to just 735 mm or 28.9". Clearly, this is a particular advantage for newcomers and somewhat shorter riders.

Overall weight of the F 650 ST in road trim is 191 kg/421 Ib, ie, the same as with the F 650.

Narrower handlebar and thrilling handling on the road

Obviously, the new handlebar now slightly slimmer than before with the handles 760 mm/29.9" (800 mm/31.5") apart, angled further to the front, and w~ithout the typical enduro crossbar of the F 650, provides an even better seating position for riding on the road, at the same time ensuring even greater agility and supreme handling.

Small cockpit fairing and silver-painted engine spoiler

The new F 650 ST looks more sporting and dynamic right from the start, featuring a small cockpit fairing instead of the higher, transparent windshield typical of the F 650.

Unlike the matte-black paintwork on the F 650, the radiator and cylinder cover on the F 650 ST is painted silver. And contrary to the matte-black engine protection cover on the F 650 safeguarding the engine from stone-throw in rough terrain, the F 650 ST comes with an aerodynamic engine spoiler also painted in silver. The front mudguard, in turn, is narrower than before and there are no covers on the slide tubes.

Optionally available:
touring kit with higher windshield and hand protectors

In accordance with his personal taste, the customer may also order his F 650 ST with the higher, transparent windshield featured on the F 650 and hand protectors. Then he also needs a modified handlebar, all of these accessories being combined within one touring kit.

Same options and accessories as with the F 650

It hardly needs emphasising that the F 650 ST - optionally available in Germany and Italy with 25 kW/34 bhp engine output - is available also with catalytic converter (standard in Germany, Austria, Switzerland, and the USA). Other special equipment includes engine protection hoops, case supports, side-cases, a topcase, a power socket, heated handles, and an anti-theft warning system.

POWER UNIT:

Water-cooled four-valve power unit with superior torque

Like the R 27, BMW's last single-cylinder produced until 1966 (250 cc, 18 bhp, air cooling), the F 650 and F 650 8T again feature a single-cylinder four-stroke power unit in upright arrangement. Developed jointly by BMW and Rotax in accordance with the original concept from BMW, the new liquid-cooled four-valve engine displaces 652 cc (39.77 cu in) and develops an output of 48 bhp (35 kW) at 6500 rpm. Maximum torque is 57 Nm (42 ft-Ib) at 5200 rpm. In accordance with the new two-tier driving licence regulations in Europe, the F 650 and F 650 8T are naturally also available with an output of 34 bhp (25 kW) at 5700 rpm in which case it has a maximum torque of 48 Nm or 35 Ib-ft at 4200 rpm.

Gearbox integrated in the engine housing

The five-speed gearbox is integrated within the two-piece light-alloy engine housing separated vertically into two halves. The engine housing covers with the clutch at the rear left and alternator at the rear right are also made of light alloy, while the chain pinion cover is plastic.

Made of cast light-alloy and designed in box configuration, the lowweight piston features three piston rings and is cooled at the bottom by splash oil. Pre-defined balance serves to reduce vibrations on the weight-optimised crankshaft made of heat-treated nitrate steel. The crankshaft runs in two high-load anti-friction bearings, just like the forged connecting rods.

Overhead camshafts and cup tappets

The two overhead camshafts (DOHC) made of forged steel run in' anti-friction bearings directly on the cylinder head and are driven by a timing chain straight from the crankshaft. A plastic tensioning bar and a hydraulic chain tensioner ensure a smooth and unproblematic flow of power. Direct power transmission from the camshaft via cup

tappets to the valves allows fast valve acceleration and keeps the engine revving smoothly even at high speeds.

Compensation shaft for superior smoothness and refinement

To reduce engine vibrations and increase running smoothness accordingly, the F 650 comes with a special compensation shaft. This shaft runs in two grooved ball bearings and is driven by gear drive with a direct 1: 1 transmission ratio straight from the crankshaft.

Oil is supplied to the engine by an intake pump and a high-pressure pump. Featuring dry sump lubrication, the engine of the F 650 does not have an oil sump as such. Instead, the oil reservoir required of about 1.5 litres is incorporated in the upper part of the tubular frame.

Fuel is supplied through two Mikuni constant-depression carburettors with a venturi measuring 33 mm (1.30") in width. Identical in design and configuration, the two carburettors have an idle, part load and full throttle system. The automatic choke is integrated in the left-hand carburettor.

As on all BMW motorcycles, the exhaust system is made of stainless steel polished at all visible points. Silencer volume is approximately 7.5 litres.

10,OOO-km (6,200-mile) service intervals

Like the new Boxer generation and all K-models, the F 650 comes with service intervals of 10,000 km or 6,200 miles substantially reducing the cost of ownership.

RUNNING GEAR:

Single-loop frame with load-bearing engine

The "backbone" of the F 650 is formed by a single-loop frame made of pressed section pieces and square tubing, the upper half of the frame housing the oil reservoir for dry sump lubrication of the engine. The frame is further reinforced by bolted-on round tubing, and the engine serves to provide an additional load-bearing function.

The front wheel runs on a conventional telescopic fork with a fixed tube diameter of 41 mm or 1.61 ". The rear wheel, in turn, is suspended on a delta-box swinging arm combining supreme rigidity with low weight.

Hydraulically adjustable spring strut

The centrally mounted spring strut is infinitely adjustable for spring pretension and outward-stroke damping. Spring pretension is adjusted hydraulically by means of an easily accessible adjustment wheel. The spring strut itself is connected to the rear-wheel swinging arm at its lower mounting point by way of a system of levers, the kinematic conditions obtained in this way providing progressive spring action.

Driven by a low-wear O-ring chain

The rear wheel of the F 650 is driven by an O-ring chain running at a transmission ratio of 1 :2.93 (teeth ratio 16:47). This specific type of drive chain comprises a permanent lubricant filling in the rollers, O-rings between the rollers and the outer covers preventing the lubricant from escaping. Properly maintained, an O-ring chain therefore guarantees optimum smoothness and minimum wear. Rubber mounts for compensating load change forces are integrated in the rear wheel chain gear support.

The brake system consists of a single-disc brake (diameter 300 mm/11 .81 ") with a two-piston floating calliper at the front and a single-disc brake (diameter 240 mm/ 9.45") with a single-piston floating calliper at the rear.

3 THE TWO-CYLINDER R SERIES MODELS: THE R 850 GS AND THE NEW R 1150 GS

Celebrating 20 years of outstanding success with BMW.s GS enduro models:
The new R 1150 GS with even more power and a six-speed gearbox

Launching the R 80 G/S in September 1980, BMW established an all-new market segment for enduro motorcycles, the segment of the large capacity touring enduro. Up to that point enduros had only one cylinder and engine capacity not exceeding 500 cc. The 50 bhp 800-cc two-cylinder Boxer featuring the BMW Monolever single swinging arm thus not only set a new benchmark, but also established a new trend at the time.

It was no surprise, therefore, that the R 80 G/S (with G/S standing for *Gelande/Strasse* in German or offroad/road in English) quickly became very popular among globetrotters and touring riders the world over.
In competition trim, it took French rider Hubert Auriol (1981 and 1983) and Belgian rider Gaston Rahier (1984 and 1985) to a total of no less than four victories in the Paris-Dakar Rally, the toughest long distance race in the world. Total production of the R 80 G/S between 1980 and 1987 amounted to 21,864 units, with 1,727 units of the
R 65 GS leaving the production line between 1987 and 1992.

In autumn 1987 the original model was succeeded by the R 80 GS and R 100 GS featuring the BMW Paralever double-joint swinging arm. Including the Paris-Dakar models, production of these new machines amounted to more than 42,387 units by 1995, another 3,003 units of the end-of-the-line R 80 GS Basic remaining in production until 1996 to conclude the era of BMW's "old" Boxer motorcycles with two-valve power units. Overall production of these enduro versions, therefore, amounted to a most significant 68,981 units.

R 1100 GS continues the impressive story of success

The second model in the new Boxer generation featuring four-valve power units was then presented by BMW at the Frankfurt Motor

Show in September 1993 - the R 1100 GS scheduled to arrive at the dealership in spring 1994. This enduro version of the new Boxer, also lauded as the Range Rover in the enduro motorcycle world, continued the success of BMW's GS models in a most impressive manner, no less than 45,000 units (including the R 850 GS) being built by summer 1999.

Continuing unchanged - the R 850 GS

Introducing the 1999 model year, the R 1100 GS was joined by the R 850 GS featuring an 848-cc power unit developing 52 kW/70 bhp at 7000 rpm and maximum torque of 77 Nm or 57 lb-ft at 5500 rpm. Reflecting the European regulations for multi-level motorcycle licences, there is also a special version developing maximum output of 25 kW/34 bhp. Apart from its engine, the R 850 GS is identical in terms of its technical features, looks and equipment with the
R 1100 GS and is thus remaining in production in the 2000 model year without any changes.

After six years of success in the market, the R 1100 GS is being replaced as of autumn 1999 by the new R 1150 GS. Featuring an even larger and more powerful engine, a new six-speed gearbox and an optical facelift, the original of all large adventure and long-distance enduros is well-prepared for the 20th year of success with BMW's GS motorcycles already able to look at a production volume of nearly 115,000 units coming off the assembly line in Berlin.

ENGINE AND TRANSMISSION

Torque even "beefier" than before

The heart of the new R 1150 GS is even stronger than that of the R 1100 GS, meaning that both power and torque have been increased significantly. Maximum output of the two-cylinder Boxer at 6750 rpm has therefore been boosted from 59 kW (80 bhp) to 62.5 kW
(85 bhp), while maximum torque is up from 97 to 98 Nm at 5250 rpm. An even more remarkable point is the increase in torque over the entire speed range, in particular between 3000 and 5000 rpm, with torque remaining consistently above 90 Nm all the way from 3000 to 6500 rpm, ensuring a substantial improvement in acceleration and pulling force.

Engine capacity increased by 45 cc, engine modified

A number of technical measures and improvements serve to provide this increase in power and performance:

Engine capacity, for example, has been increased from 1085 to 1130 cc by extending engine bore from 99 to 101 mm (3.90-3.98"), as on the R 1200 C. Stroke, in turn, remains unchanged at 70.5 mm or 2.78". This means that the R 1150 GS now features the cylinders of the R 1200 C (without the polished fins), including new pistons.

Features carried over from the R 1100 S are the cylinder heads including the spark plug covers as well as the crankshaft. Like the R 1100 S, the R 1150 GS (and all other Boxer models in future) furthermore comes with BMW's lighter cylinder head covers made of magnesium. Then there is also the new camshaft with valve timing serving even more than before to optimise the engine's torque curve.

Motronic MA 2.4 and fully-controlled catalytic converter fitted as standard worldwide

Like on the R 1200 C and R 1100 S, the digital engine management on the R 1150 GS is masterminded by Motronic MA 2.4 replacing the former MA 2.2 unit. And like every new BMW motorcycle launched since 1997 (K 1200 RS, R 1200 C, R 1100 S, and K 1200 LT), the new machine is fitted worldwide as standard with a fully-controlled three-way catalytic converter. Reflecting its increase in power and, as a result, the enhanced cooling requirements, the R 1150 GS comes last but certainly not least with the larger oil cooler already featured on the R 1100 RT.

New high-grade steel exhaust and silencer system contributing approximately 50 per cent to the increase in output

Approximately 50 per cent of the improved power and performance of the new R 1150 GS is attributable to the all-new exhaust and silencer system made of chrome-plated high-grade steel and requiring suitable modification of the aluminium engine oil sump protector. Like on the R 1100 S, the two exhaust manifolds extending out of the cylinders, increased in diameter from 38 to 45 mm (1.501.77") and connected with one another by an interference pipe,

extend directly in double-tube arrangement (previously two-in-one) into the advance silencer housing both the catalytic converter and the oxygen sensor. And like on a genuine enduro, the redesigned rear-end muffler has been moved higher up to a special, elevated position.

Sixth overdrive gear

Power transmission is now provided by a hydraulically operated single-plate dry clutch, like on the R 1200 C and R 1100 S. And the R 1150 GS also benefits from the new six-speed gearbox so far admired on the R 1100 S, ensuring a considerable improvement in shift comfort and precision versus the former five-speed gearbox. But contrary to the six-speed gearbox on the R 1100 S sports model, the six-speed gearbox featured on the enduro is now designed for comfortable touring, the sixth gear serving as an overdrive significantly reducing noise, vibrations and fuel consumption thanks to the substantial decrease in engine speed.

Like the R 1100 S, the R 1150 GS comes as standard with a 600 W alternator and a 14 Ah battery in the interest of lower weight. A 700 W alternator and a 19 Ah battery are however available as an option on request and are fitted as standard wherever the R 1150 GS is ordered by the purchaser with ABS or heated handles.

RUNNING GEAR:

Extra-light Telelever for even better handling

The R 1150 GS retains the frame concept of the R 1100 GS with the engine and transmission housing connected directly to the front and rear subframes as load-bearing components. The fastenings of the rear subframe on the reinforced transmission housing have been optimised to form one highly stable unit. The new footrest plates, in turn, also ensure additional stability.

Like the R 1100 S, the R 1150 GS also has an improved, lighter version of BMW's unique Telelever on the front wheel (see the Section on the R 1100 S for further details). Accordingly, the
R 1150 GS also benefits from the reduction of unsprung masses providing even better handling in practice.

The front wheel on the R 1150 GS comes with the existing, centrally positioned and adjustable spring strut on the front wheel with standard spring travel of 190 mm or 7.48" adjustable to five different levels plus spring pretension adjustment by means of a key wrench in the on-board toolkit.

The rear central spring strut with 200 mm or 7.87" spring travel has also been taken over from the former model. Offering infinite adjustment to any desired position, the rear spring strut features a wheel for hydraulic adjustment of spring pretension and an adjustment bolt for setting the outward stroke damper.

BMW Paralever redesigned
proven brake system optionally available with ABS

The BMW Paralever swinging arm has been redesigned for the R 1150 GS, following the standard already set for the R 1100 S. With the housing for the six-speed gearbox being enlarged and the Paralever mounts in the transmission housing modified accordingly, the length of the Paralever swinging arm is down from 520 to 506 mm (20.47 - 19.92"). Wheelbase and the entire running gear geometry nevertheless remain unchanged.

BMW's cross-spoke wheels (with a modified wheel hub at the rear) and the proven brake system have also been taken over from the R 1100 GS, with twin brake discs and four-piston fixed callipers on the front wheel and floating high-grade steel discs measuring 305 mm or 12.00" in diameter, and with a single-disc brake (diameter 276 mm or 10.89") featuring a two-piston floating calliper on the rear wheel. The brake pads on the front wheel previously made of an organic material are now made of sintered metal.

A special feature naturally available also on this new model is ABS with the same deactivation function as before for offroad riding conditions.

With a full tank and ready-to-go the R 1150 GS weighs exactly 249 kg or 549 lb. Its overall permissible weight, in turn, is 450 kg or 992 lb.

DESIGN, COLOURS AND EQUIPMENT:

The new face of the R 1150 GS

Even when making its first appearance in autumn 1993, the R 1100 GS received great attention in the motorcycle world. Particularly the characteristic, unmistakable and, indeed, daring design of the new machine immediately led to heated debates and split up the motorcycle scene into two camps. Hardly a motorcyclist anywhere could avoid becoming involved in one way or another, some 45,000 riders purchasing the R 1100 GS in the meantime and thus making a clear pledge to this outstanding machine.

Now, launching the 2000 model year, the new R 1150 GS offers not only significant improvements on the engine, running gear and transmission, but also a genuine facelift in the true sense of the word, since the "face" of the new machine definitely looks quite different and most distinctive - from the front.

Upper front wheel cover in new design

This new look starts almost inconspicuously with the lower, redesigned black wheel cover and continues a lot more visibly through the striking upper wheel cover typical of the BMW GS. The front wheel cover incidentally also serves as an air scoop for the oil cooler, as an additional mudguard and as a wind deflector providing the necessary downforce at high speeds.

Viewed from the side, you see clearly that the upper wheel cover, through its attractive new design, integrates the front end of the motorcycle even more smoothly into the sleek, flowing lines of the overall machine merging into the fuel tank. Indeed, it is this new design that significantly enhances the visual power of this outstanding machine.

Dual headlights with ellipsoid low beam

One might well say that the "eyes" of the new "face" come right in the middle of this facelift. The old, rectangular headlight has now been replaced by asymmetric dual headlights of the same kind as on the R 1100 S, the larger of the two featuring ellipsoid technology and a H7 bulb to provide the low beam and, accordingly, even better

illumination of the road ahead. The high beam, in turn, is emitted by a free-form headlight complete with an H 1 bulb.

Windshield adjustable and removable

The aluminium-silver-painted cover for the instrument cluster slightly further back in the cockpit is fitted directly above the dual headlights, giving them such a distinctive look that with a bit of imagination you might assume that the two headlight "eyes" are almost flirting with you ...

The new, fully transparent windshield optimised for streamlining and offering even better protection from wind and weather then comes right on top of the cover. It is not only adjustable to three different positions, but may also be removed entirely for the aficionado of real open-air motorcycling.

Cockpit rearranged

Set out in a new arrangement, more compact and clearer than ever before, the speedometer and rev counter as well as the telltales in the cockpit have been improved to an even higher standard. The optional Rider Information Display (RID) complete with digital clock and fuel gauge, and also showing both the gear in mesh and the oil temperature, has been moved from the right- to the left-hand side.

New handlebar switches and controls

Following their introduction on the R 1200 C and R 1100 S, the new handlebar switches and controls are now also featured on the R 1150 GS. All controls and switches are integrated into one unit on the handle, the handbrake lever as well as the lever for the hydraulic clutch may be set to four different positions. Overall width of the handlebar once again separated from its support in order to avoid vibrations has increased on account of the new controls and instruments from 890 to 903 mm (35.0 - 35.5").

The fuel tank offering a useful capacity of 22.1 litres or 4.9 Imp gals remains unchanged. A special roll-over valve prevents fuel from escaping should the worst come to the worst, and thus also avoids the risk of fire.

Two other features retained on the new machine are the luggage rack and the two-piece, highly comfortable seat adjustable in two steps at the rider's end to a height of 840 or 860 mm (33.1 or 33.9").

Apart from the front-end facelift, the redesigned exhaust and silencer system, the transmission housing, Paralever and footrests all interact with one another to give the new machine a significantly "younger"
look. And last but certainly not least, the R 1150 GS stands out in particular through the following new colours:

Night black is BMW's classical colour accentuating the supreme elegance of the machine's design. The Trinidad red seat, in turn, provides an attractive contrast and is also available on request in black.

Titanium-silver metallic underlines the outstanding value and character of the motorcycle, this being the first time that the GS comes in metallic paintwork. Again, the seat is available either in Trinidad red or black.

Mandarin is a modern colour clearly reflecting the signs of our times and serving to catch the attention of others also in terms of safety. The seat in this case is finished in black.

Standard features of the R 1150 GS include the combined ignition and handlebar lock with one standard key, the main stand, a sidestand with starter interrupter, a luggage rack, hazard warning
flashers, the fully-controlled catalytic converter and an electric power socket.

Wide range of options and special equipment

The options available straight from the factory include ABS anti-lock brakes with individual deactivation, heated handles, integrated hand protectors, case supports and the Rider Information Display.

Inter alia, the wide range of special equipment available from the BMW dealer comprises BMW system cases with inner bags to match, a topcase, a new tank bag, a twin bag, cylinder protection hoops and an anti-theft warning system.

4 THE R 1100 S:

The R 1100 S sports boxer enters the 2000 model year unchanged

In spring 1993 BMW launched the R 1100 RS, the first model in an all-new range of four-valve Boxer machines. This sports tourer was followed in due course by the R 1100 GS offroad machine, the
R 100 Rand R 850 R roadsters, the R 1100 RT tourer, and the
R 1200 C cruiser. Proving to be very successful in the market in their first 7 years, the new Boxers are now looking at a production run of more than 188,000 units at BMW's motorcycle plant in Berlin by summer 1999.

In September 1998 BMW launched the R 1100 S, thus extending the range to half a dozen proud models. Never before has the choice of BMW Boxers been as great as it is today.

Introducing the new R 1100 S BMW has reinstated a great tradition: In the '60s and '70s the letter "S" in BMW model designations already signified the special performance of BMW's sports machines starting out with the R 50 S (1960-1962) and the R 69 S (1960-1969). Then the very successful R 90 S (1973-1976) became a genuine milestone in BMW history 25 years ago as the first BMW motorcycle able to reach a top speed of 200 km/h (124 mph) and with sporting design combining such performance with equally outstanding looks. Features such as the orange paintwork, cockpit fairing with dual. instruments, the ducktail at the rear and perforated brake discs set new trends on the R 90 S. The history of the letter "S" on BMW's Boxer models nevertheless came to an end - for the time being - with the R 100 S (1976-1978) and R 100 CS (1980-1984).

Now proudly bearing the letter "S" once again, BMW's latest Boxer must obviously live up to a high standard. And indeed, while the
R 1100 S, like the R 1100 RS, comes within the sports-tourer segment, it does not, like the R 1100 RS, place the emphasis on touring, but rather focuses on sporting, dynamic performance. So although the rider and passenger can naturally take along cases and enjoy adequate touring qualities, the "S" on this machine clearly stands for sports.

The most powerful, lightest and agile Boxer

Through its emotional look alone, complete with semi-shell fairing, single-seat styling and silencers extending upwards beneath the rear end, the R 1100 S clearly stands out as a sporting, dynamic motorcycle. And this dynamic appearance is by no means misleading, since the machine comes with the heart of a genuine athlete beating even faster and with more power than on its sister models. And at the same time it is not only the most powerful, but also the lightest and most agile machine within the four-valve Boxer generation.

Since the R 1100 S is built not only to look fast and powerful, but also to offer appropriate performance on the road, it is indeed a fast machine without claiming to be a supersports motorcycle.

Instead, the R 1100 S is the new Sports Boxer, the most dynamic Boxer BMW has ever built. Production of the R 1100 S by summer 1999 amounted to more than 11,000 units.

ENGINE AND GEARBOX

The most powerful Boxer in the history of BMW motorcycles

The power unit of the R 1100 S is based on the two-cylinder fourvalve engine of the R 1100 RS with 1085 cc capacity providing maximum output on the RS of 66 kW/90 bhp at 7250 rpm and maximum torque of 95 Nm/70 Ib-ft at 5500 rpm.

BMW's objective in modifying this power unit for the R 1100 S was to increase output by a significant margin without noticeably restricting the machine's torque curve.

The result is maximum output of 72 kW/98 bhp at 7500 rpm, while the maximum torque of the R 1100 S has indeed been increased even further to 97 Nm or 71 Ib-ft.

This therefore hails the introduction of the most powerful Boxer ever built by BMW as a production machine throughout 75 years of motorcycle history.

The engine of the R 1100 8 stands out visibly at first sight from the other power units in the range by way of new cylinder head bolts with three protruding fins on the lower side and the designation "Magnesium" at the top. The significant reduction in weight provided in this way versus the aluminium version adds up on the two cylinder head covers to a total of 800 grams.

The following technical improvements and modifications make this increase in power and performance possible or were introduced in the process for the first time:

. Appropriate design of the pistons allowing an increase in compression from 10.7 to 11.3.

. Optimisation of intake air flow and the use of a plate air filter instead of a circular filter ensuring a better flow of air allowing the engine to "breathe" even more efficiently than before.

. Due to the increase in maximum engine speed from 7900 to 8400 rpm (where speed is then cut off, the engine requires new, forged connecting rods.

. Bosch Motronic MA 2.4, the digital engine management system also featured on the R 1200 C and K 1200 R8, has been further modified to provide a perfect match for the new machine. Introducing Motronic MA 2.4, BMW was incidentally the first manufacturer in the world to use a mobile diagnosis test computer (MoDiTeC) serving to keep service and repair times to a minimum.

. To improve the lubrication of highly exposed engine components such as the crankshaft and connecting rod bearings, oil circulation in the crankcase has been optimised by modifying the engine housing - an improvement now to be found on all other Boxer models, too. At the same time engine oil volume has been increased by 0.35 litres to 4.10 litres (together with a change of filter).

. About 70 per cent of the extra power comes from the R 1100 80S new exhaust and muffler system to be described in greater detail in the following.

New exhaust and muffler system helps to boost power and provides an even more sporting, dynamic look

Thanks to its increase in volume, the new exhaust and muffler system on the R 1100 S serves to reduce counter-pressure and thus helps to boost power and performance while at the same time providing that characteristic, throaty Boxer sound. With its two rear-end silencers resting directly beneath the tail section of the motorcycle for the first time on a BMW, the muffler system also offers a light, sporting and dynamic look.

Fully controlled three-way catalytic converter standard worldwide for the first time

The complete exhaust system is made of stainless steel throughout. The two exhaust manifolds now measuring 45 mm/1 .77" in diameter (R 1100 RS: 38 mm/1 .50") extending out of the cylinders are connected with one another by an interference pipe and merge into an extra-large pre-muffler beneath the motorcycle. As on the
K 1200 RS and R 1200 C, this pre-muffler houses the fully controlled three-way catalytic converter highlighted as a standard feature worldwide on BMW motorcycles.

From the pre-muffler another pipe extends into the left-hand rear silencer connected to the right-hand rear silencer by yet a further pipe. The two tail-end pipes finally discharge their emissions directly beneath the rear light cluster.

A perfect match for the machine's sporting performance: new six-speed gearbox

As on the K 1200 RS and R 1200 C, power is transmitted by a hydraulically operated single-plate dry clutch. Reflecting its sporting character, the R 1100 S - like the K 1200 RS - comes additionally with a new six-speed gearbox combining improved shift comfort with an even higher standard of all-round precision. And since the Paralever rear-wheel swinging arm rests in this case not on the gearbox housing, but rather on a newly developed main frame, the gearbox housing is even more compact than before reducing its noise-emitting surface to a minimum.

Gears are spaced out perfectly throughout the entire engine speed range, extra-small gear increments ensuring ideal use of all gears throughout the useful revs.

In the interest of minimum weight, the R 1100 S comes as standard with a smaller 14 Ah battery about 1.4 kg lighter than before as well as a somewhat less powerful, 0.97 kg lighter alternator generating 600 Watt output. As an option, however, the machine may also be fitted with a larger 19 Ah battery and a more powerful alternator generating 700 Watt (this upgraded power supply is standard on machines fitted with ABS or heated handlebars).

SUSPENSION AND RUNNING GEAR

Sports Boxer with even better handling and stability than ever before

The suspension and running gear offering even better handling and stability on the road provides a perfect match for the upgraded power and performance of the new Sports Boxer.

Suspension geometry of the R 1100 S reflects the more dynamic, sporting style of riding you would expect of this machine. Wheelbase has been increased to 1478 mm/58.19" (R 1100 RS: 1473 mm/58.0"), castor is exactly 100 mm/3.94" (111 mm/4.37"). The steering head angle is 65.0° (64.5°) and a rider weighing 85 kg is able to lean over the machine in bends to an angle of 50° (49°).

Extra-light Telelever

Like all Boxer models and the K 1200 RS, the R 1100 S also boasts the BMW Telelever, an innovative front wheel suspension system introduced on the R 1100 RS in 1993 and remaining unique to this day in the motorcycle world.

For the first time the R 1100 S featured an improved, even lighter version of the unique BMW Telelever. Applying a special production process with the pipes made of individual components, BMW's suspension engineers have been able to save about one kilo of weight on the entire unit, a significant reduction of unsprung masses on the front wheel contributing to the excellent riding behaviour of the R 1100 S.

Front spring strut adjustable from the rider1s seat for the first time

The front spring strut of the R 1100 S comes with a single-sleeve gas-pressure damper providing 110 mm/4.33" spring travel. The really new feature, however, is that a wheel between the front edge of the fuel tank and the upper fork bridge enables the rider to adjust the damping effect of the spring strut infinitely for its outward stroke. On the R 1100 RS, in turn, this adjustment is via a slotted bolt on the spring strut itself. The new option to set the position of the front spring strut on the R 1100 S right from the rider's seat is therefore a significant innovation not only with BMW ...

New main frame for even greater riding stability

The four-piece frame of the R 1100 S is all-new in every respect. Teaming up with the longitudinal control arm, the front frame made of die-cast aluminium serves to hold the front wheel in position.

Like on all the other four-valve Boxers, the engine and gearbox housing also serve as load-bearing elements. But at the same time the R 1100 S comes with a newly developed main frame made of welded aluminium components. The big advantage of this construction is that, via the engine and gearbox housing, it provides an extremely stiff connection between the front and rear wheel suspension, thus ensuring even greater riding stability in practice.

Made of a steel pipe structure, the rear frame not only supports the seat but also provides the foundation for the small luggage rack. .

Like all BMW motorcycles - with the exception of the R 1200 C and the chain-driven single-cylinder F 650 models - the BMW Paralever introduced on the R 100 GS in 1987 ensures optimum rear wheel suspension also on the R 1100 S. This double-joint swinging arm reduces load change reactions of the shaft drive, thus optimising rear-wheel grip at all times.
Again another special feature on the R 1100 S is that the Paralever rear-wheel swinging arm rests not on the gearbox housing, but rather on the main frame.

The central gas-pressure spring strut, in turn, is fastened at the bottom on the Paralever rear-wheel swinging arm and at the top on the main frame of the machine, thus allowing 130 mm/5.12" spring travel. Spring pre-tension is adjustable hydraulically by means of a wheel to 40 different positions, outward-stroke damping can be set infinitely by way of a slotted bolt.

New, even lighter wheels in delicate but sturdy five-double-spoke design

Matching the sporting and dynamic looks of the R 1100 S, this new machine, like the K 1200 RS, comes on new, even lighter 17 -inch cast aluminium wheels in delicate five-double-spoke design. Wheel dimensions are 3.50 x 17 at the front and 5.0 x 17 at the rear, tyre dimensions 120/70 ZR 17 up front and 170/60 ZR 17 at the rear.

As an option the rear wheel is also available in 5.50 x 17 with a 180/55 ZR 17 tyre.

Like the R 1100 RS, the front wheel comes with a double-disc brake system featuring four-piston fixed callipers. To save weight the two floating brake discs measuring 305 mm/12.00" in diameter are fastened directly to the wheel without an intermediate support in between. Diameter of the main brake cylinder is now only 16 mm/0.63" (R 1100 RS: 20 mm/0.79") in the interest of minimum brake lever operating forces.

As on the R 1100 Rand R 1100 GS, the rear wheel comes with a single-disc brake with 276 mm/1 0.87" disc diameter, plus a twin piston floating calliper.

Brake system optionally available with ABS

It almost goes without saying that the R 1100 S is available as an option with BMW ABS brakes. Introducing this sophisticated brake technology on the motorcycle in 1988, BMW was not only the forerunner in the market, but also remains almost exclusive in this respect to this very day, with hardly any other manufacturer being able to offer ABS on their motorcycles. BMW, on the other hand, has built far more than 200,000 motorcycles with ABS in the last 11 years alone.

DESIGN, COLOURS AND FEATURES

Styling and looks of the R 1100 S
Sporting, emotional, dynamic, unmistakable

The objective in creating the design of the R 1100 S was to give the machine an emotional and dynamic look combining those typical, unmistakable BMW characteristics with a standard of sporting performance new even with BMW.

. The unique design and character of BMW Boxer drive (engine and drive shaft) is to be seen clearly from every perspective.

. The new arrangement of the exhaust and muffler system allows not only greater power and performance, but also gives the tail end of the motorcycle a very light and sporting look.

. In its overall silhouette, the R 1100 S appears low, dynamic and compact, combining a look of sophisticated technology further down near the road with sensual shapes and design up at the top. This new style stretches the motorcycle's proportions up front and thus accentuates its urge to move forward full of dynamic power.

. The body is not just a combination of the fairing, fuel tank and seats, but rather forms a flowing, harmonious entity with an athletic waist around the rider's seat.

. The compact, almost crouching look of the motorcycle up front is further accentuated by the clear windscreen, the black-coloured direction indicator/hand protector units and the passenger seat cover (optional) stretching the lines of the machine.

. Even with the passenger seat cover in place, the R 1100 S clearly shows that it comes with an extra seat for a passenger. For the gap between the seat cover and the tail fairing offers a glimpse of the otherwise covered passenger seat, ensuring furthermore that the "hump" does not rise up too far.

. The functional design of the motorcycle leading to an asymmetric silhouette consciously developed into a unique styling feature. Accordingly, the headlight, instrument cluster and tank cover are all off-centre. This provides even better illumination of the road ahead, better use of space available in the cockpit and optimum use of fuel tank capacity (when parking the motorcycle on its sidestand). And at the same time it ensures a clearly unusual, but nevertheless very smooth and harmonious look for extra style and character. .

Semi-shell fairing and ellipsoid headlight

The four-piece, extra-sporting semi-shell fairing developed in the wind tunnel together with its integrated direction indicators and hand protectors comes with a clear windscreen and offers a high standard of protection from wind and weather.

Above the two openings for the oil cooler in BMW's typical kidney look, the all-new, asymmetric dual headlight forms the central point at the front end of the fairing.

The larger of the two headlights is an ellipsoid unit with an H 7 bulb serving as the low beam. Well known from the automobile world, this headlight ensures even better illumination of the road ahead, the high-beam unit consisting of a free-form headlight with an H 1 bulb. Through its design alone, this new headlight system contributes to the unique appearance of the R 1100 S.

Higher handlebar and extra-high windscreen available as an option

The handlebar is short and compact, two separate forged aluminium units fitting directly into the vertical tube beneath the fork bridge. Handlebar width is 680 mm/26.8" (with handlebar weights 760 mm/29.9"), a somewhat higher comfort handlebar being available as an option in conjunction with a higher windscreen.

Following their introduction on the K 1200 RS and R 1200 C, the new handlebar controls are now also featured on the R 1100 S. The proven concept has been retained, only the arrangement of the switches and their ease of control being improved once again. All switches are integrated in the handle unit itself, the handbrake lever

and the lever for the hydraulic clutch being adjustable to four different positions.

Finished entirely in black, the cockpit also exudes a powerful touch of dynamism. It is dominated by two newly designed instruments, the speedometer and rev counter, each with yellow figures and needles on a black background. The warning lamps required by the rider are housed at the left, the digital clock in the middle below the main instruments.

The fuel tank is fitted beneath a plastic shell and is made of aluminium for reasons of weight. Housing both the fuel pump and filter, it offers a capacity of 18 litres or almost 4 Imp gals, the fuel reserve light coming on as soon as the fuel level drops to 4-5 litres.

The Sports Boxer weighs in at a mere 229 kg/50S Ib

Ready-to-go in road trim the Sports Boxer weighs a mere
229 kg/505 Ib, making it the lightest model within BMW's new Boxer range. To reach this relatively light weight, the engineers had to incorporate a number of weight-saving improvements and modifications, some of which have already been mentioned.

Designed consistently for lower weight and thus not adjustable for height, the single-piece seat 800 mm/31.5" above the ground still gives both rider and passenger a standard of seating comfort quite appropriate for this kind of motorcycle. The cover on the passenger seat available as an option, in turn, ensures a sporting single-seat look. And beneath the removable seat cover there is a small luggage rack with integrated grab handles for the passenger on the tail section.

To reduce weight even further, the R 1100 S is the first BMW motorcycle using high-tech carbon fibre, in this case on the front end of the front wheel cover. Helping at the same time to reduce unsprung masses on the front wheel, this extra-light cover is designed to provide a successful compromise of splash protection and low lift forces.

The seat - sporting but comfortable

The R 1100 S comes with one single key for the ignition and handlebar lock, tank cover and seat.

Two hooks beneath the seat serve to hold two helmets safe and sound.

Again reflecting the sporting character of the machine, the rider footrests have been moved further back and further up compared with the R 1100 RS. Exchangeable studs bolted on to the bottom of the rider footrests inform the rider of his angle in bends, which may be up to 50° with a rider weighing 85 kg.

In conjunction with the seat, the specific position of the footrests and handles allows a sporting but nevertheless comfortable seating position.

The R 1100 S comes as standard inter alia with a side stand interrupting the starter, automatic cancellation of the direction indicators after a bend, hazard warning flashers and a fully controlled three-way catalytic converter.

Optional extras: from ASS all the way to a wider rear wheel

ASS, heated handles, a cover for the passenger's seat., a black painted power train, a main stand, a more powerful 700 Watt alternator complete with a larger 19 Ah battery (standard on models equipped with ASS and heated handles), case holders and a higher handlebar together with a higher windscreen are all available as optional extras. A further option is the wider rear wheel measuring 5.50 x 17 and fitted with a 180/55 ZR 17 tyre.

The sports package is ideal for the particularly sporting, dynamic rider. Comprising a handlebar damper and longer spring struts raising the motorcycle by 18 mm/O. 71" at the front and 20 mm/0.79" at the rear, the sport package increases side angle freedom in bends from 50 to 52°. Naturally, it also comes with a longer side-stand to match.

Special equipment: from cases all the way to a backpack on the passenger seat cover

An electric power take-off, motorcycle cases and inner bags, as well as a tank bag are all available as special equipment.

5 THE R 1200 C AND THE NEW R 850 C

The Avantgarde Cruiser
Components finished in graphitane instead of chrome

Two years after the introduction of the R 1200 C BMW is introducing the Avantgarde model, a new visual interpretation of the cruiser, for the 2000 model year. The Avantgarde versions of the R 1200 C and R 850 C form a clear contrast to the classic cruiser models: The parts otherwise glistening in chrome or aluminium silver are finished in graphitane or black (engine block/drive train) on the Avantgarde versions.

Graphitane, an all-new colour, combines the qualities of graphite and magnesium. A "darker" alternative to classic silver, graphitane has an even more modern touch and underscores the high-tech aura of this machine.

The components finished in graphitane, among them the slide tubes on the front wheel fork, the longitudinal control arm, the front subframe and the rear frame, provide the visual backdrop for the two body colours frost blue metallic and peach metallic. Coming with a touch of mother-of-pearl and metallic, these new paintwork colours, contrasting with graphitane, create a new, truly unique theme in cruiser riding.

New touring handlebar

The Avantgarde models come as standard with a new touring handlebar - a wonderful compromise of the high-rise handlebar on the classic cruiser models and the low sports handlebar available as an option. Clearly, the new touring handlebar is also available as an option on the classic models, which also come, depending on the customer, with the high and low handlebars.

Now with automatic cancellation of the direction indicators

As of the 2000 model year, all cruiser models come with automatic cancellation of the direction indicators.

Additional chrome parts available as special equipment

Starting with the 2000 model year, even more parts are available as special equipment in high-gloss chrome - for example the clutch and brake levers, the caps on the brake and clutch fluid reservoirs, and the tank cap.

In all other respects the R 1200 C and R 850 C are entering the 2000 model year unchanged.

BMW's first cruiser already the best seller within the range

It came, it was seen, and it won. Launched in September 1997, the R 1200 C hit the headlines from the start thanks to its unique looks alone, fetching numerous design awards for this spectacular machine. And then it aroused emotions even more the world over through its even more spectacular appearance with James Bond in
Tomorrow Never Dies.

In early 1999 the R 1200 C was voted "Cruiser of the Year" by the readers of motorcycle magazines in no less than 7 European countries.

In the "Best Product Designs of the Year 1999" awards presented by the Industrial Designers Society of America, BMW received the gold medal in the "Transportation" category for the R 1200 C. This great achievement was published in June 1999 by Business Week, the famous US business and financial magazine.

This fame and honour was then followed by an attribute clearly even more important, success in the motorcycle market. With worldwide sales exceeding 9,000 units, BMW's first-ever cruiser became the best seller in the BMW range in 1998, and by summer 1999

production of the R 1200 C and R 850 C amounted to more than 17,000 units.

The R 850 C - with the exception of the engine, identical to the R 1200 C

The R 850 C was launched in spring 1999. With its power unit displacing 848 cc, maximum output is 37 kW/50 bhp at 5250 rpm, maximum torque 71 Nm/52 lb-ft at 4750 rpm. There is even a special version with 25 kW/34 bhp engine output. And in all other respects the R 850 C is identical in terms of technology, looks and equipment with the R 1200 C.

POWER UNIT:

Given the challenge to find the right engine for the new cruiser, BMW's engineers logically opted for the Company's new flat-twin as the basic engine configuration, a Boxer of this calibre already comprising all the essential characteristics of a typical cruiser power unit: Superior development of power and torque for cruising in relaxed style, that typical two-cylinder sound as an acoustic message of superior stength and performance, and the ideal balance of all masses provided by the Boxer in the interest of optimum running smoothness. Yet a further point, of course, is that through its looks alone the Boxer engine conveys all the style and class of a BMW right from the start.

BMW's engine specialists also realised, however, that while the Boxer in its conventional form is most certainly a very muscular, sporting machine, it is still several thousand revs away from the ideal cruiser engine in the true sense of the word. Accordingly, the engineers decided to make some fundamental changes to the Boxer and its concept as a whole, thus turning a fast sprinter into an equally superior, but more relaxed muscle runner.

Increase in engine size

The first and most important step in creating the right kind of power base was to increase engine capacity, especially as the engine of a real cruiser can never be too large. So enlarging bore from 99 to 101 mm (3.90 - 3.98"), and extending stroke from 70.5 to 73 mm (2.78 2.87"), the Motorcycle Division's engine specialists were able to beef up the original power unit from 1085 cc to 1170 cc for the BMW
R 1200 C, in the process creating the largest BMW motorcycle engine ever built.

The torque curve - like the back of a buffalo

The obvious result of this exercise is that the engine now develops even more thrust with even greater superiority - but even that was not enough for BMW's specialists in establishing their own specific definition of the optimum cruiser. Rather, they also wanted to dedicate a kind of monument to this high-torque power unit, giving it a torque curve which, by way of analogy, follows the profile of a buffalo back. And the result is a power unit so independent of high engine speeds that it does not even require a rev counter.

Minor modifications in further support of the cruiser concept

BMW's engineers have succeeded in changing the fundamental character of the Boxer engine by introducing a whole range of small but important modifications, without changing the fundamental configuration of the four-valve Boxer engine in the process.

Among others, the following modifications are worth noting in this context:

- Reduction in valve diameter

(intake valves 34 mm (1.34"), outlet valves 29 mm (1.14") on the R 1200 C as opposed to 36 mm (1.42") and, respectively, 31 mm (1.22") on the R 1100 RS)

- New camshaft configuration

with shorter valve timing (2560 on the R 1200 C versus 3000 on the R 1100 RS) and shorter valve stroke (R 1200 C intake and outlet: 8.23 mm (0.32")/R 1100 RS intake: 9.85 mm (0.39"), outlet 9.4 mm (0.37").

- Intake system optimised for maximum torque

with intake manifold diameter measuring 35 mm (1.38") as opposed to an intake manifold diameter of 50 mm (1.97") on the R 1100 RS, thus ensuring optimum torque

A further feature in this context is the configuration of the throttle butterfly manifolds (diameter 35 mm (1.38") versus 50 mm (1.97") on the R 1100 RS), which are connected to one another and integrated in the intake system to provide sufficient space for an automatic choke function. Accordingly, this means that the R 1200 C, just like the K 1200 RS, is able to do without the usual choke lever on the handlebars.

- New programming of the Motronic engine management system

ensuring a significant improvement of the special Motronic control concept (MA 2.4 as on the K 1200 RS) and, accordingly, a torque curve optimised for maximum torque at low engine speeds.

A gentle giant

This process of "taming" the sporting Boxer for cool cruising in genuine style creates exactly the right machine for stress-free motoring on the highway, wherever that may be, an ample 61 bhp (45 kW) at just 5000 rpm providing ideal power and performance for the BMW R 1200 C. For what counts here in real-life cruising with lots of power available whenever you need it, is supreme torque at low speeds. Precisely this is why the engine develops its peak torque of 98 Newton-metres or 72 Ib-ft at just 3000 rpm. And throughout the entire range from 2500 to 4500 rpm, you constantly have more than

90 Newton-metres or 66 lb-ft at your fingertips as soon as you move to full throttle.

The full range of substantial torque and useful power extends on the BMW cruiser from 1500 rpm all the way, if really necessary, to 6500 rpm. Which means that when riding in the fifth and highest gear available on the BMW R 1200 C, you can accelerate smoothly and in style from a docile 50 km/h (31 mph) in city traffic all the way to the machine's top speed of more than 160 km/h (100 mph) without even changing gears in the process. And the very special feature of motorcycle cruising BMW-style is that you can always forget about the gearshift while riding, although if you wish you can shift gears quickly and powerfully at any time for even more superior style and performance.

That throaty, powerful Boxer growl

The exhaust system combines classic style with up-to-date technology, at the same time contributing through its precise balance to the engine's torque curve. A further important point is that a design concept environmentally friendly in two respects lurks behind the powerful look of the exhaust with its two short tail pi pes in highgloss chrome. This is the combination of a pre-muffler in the middle and two compact silencers at the side, reducing drive noise to the strict European standard now in force of 80 dB(A). And at the same time the system still maintains that typical BMW sound also characteristic of a cruiser, that is the throaty growl of power and muscle.

Fully controlled catalytic converter fitted as standard in all countries

As another outstanding feature, the pre-muffler of the R 1200 C comes with BMW's fully controlled three-way catalytic converter fitted as standard on BMW motorcycles worldwide.

Hydraulic clutch and the new five-speed gearbox

Power is transmitted on the BMW R 1200 C by a hydraulically operated single-plate dry clutch leading straight into the new fivespeed gearbox derived from the newly developed six-speed box on the K 1200 RS. It excels through its superior shift comfort and precision, just as it is even more compact then before, since the swinging arm on the R 1200 C is mounted not on the gearbox, but rather on the frame itself. And yet a further advantage is that service intervals are up from 20,000 to 40,000 km.

This new five-speed gearbox naturally features exactly the right gear increments for a cruiser: The first two gears are extra-short and close to one another for fast sprinting on winding country roads, while fifth gear has a much longer transmission ratio for ideal cruising between 80 and 120 km/h, with maximum torque and optimum power at the rider's disposal whenever he needs it.

Like all BMW Boxers, the rear wheel is obviously driven by a drive shaft running in this case in the hollow swinging arm of the Monolever and featuring not only two universal joints, but also a torsion damper.

THE SUSPENSION AND RUNNING GEAR:

Extra-long wheelbase for that typical cruiser style

Long wheelbase is simply ideal for a cruiser in creating the qualities typical of such a motorcycle. After all, cruising means riding in a calm and relaxed style both on straights and winding roads. And unerring directional stability is far more important under such conditions than the process of spontaneously shifting your riding position from one low angle to another.

A further advantage of the extra-long wheelbase is that it provides ample space for the rider himself, allowing him to adopt a superior posture on his machine. This is precisely why BMW's engineers creating the cruiser have moved the rider's saddle-shaped seat even further to the back, while placing the footrests a lot further up front.

This creates a comfortable seating position between the two wheels making even transcontinental tours a genuine pleasure without tempting the rider to try his hand at any kind of foolhardy racing ambition.

Growing as described, the wheelbase of this BMW Boxer has increased from a short 1473 mm or 58.00" on the very sporting
R 1100 RS by almost 20 cm to 1650 mm or 64.96" on the R 1200 C.
Reflecting this longer wheelbase, the overall length of the new machine has increased accordingly, from 2175 mm or 85.63" on the R 1100 RS to 2340 mm or 92.13" on the R 1200 C.

New dimensions and a new concept

It is only obvious that these new dimensions also called for a new design concept fundamentally different from the start. Accordingly, the frame of the R 1200 C is made of dynamically styled cast aluminium up front and a rather inconspicuous steel tube structure at the rear, with the engine and transmission serving as a load-bearing element in between.

Over and above its actual function as such, the front frame section made of light alloy and finished in pearl-gloss chrome-plating like the housing of a classic camera, also serves as an important design feature clearly demonstrating its additional function with the two air intakes for the oil coolers further behind being clearly visible, just like the air outlets.

The Telelever also serving as an important design feature

The front end of the frame also accommodates the upper mounting point for the front-wheel Telelever. For it was obvious from the start that the R 1200 C, like all models in BMW's new Boxer generation
and also like the new K 1200 RS introduced in the meantime, was to come with this highly innovative, exclusive front wheel geometry (see also the detailed description in the chapter on the R 1100 RS). And
since the triangular control arm fully visible in this case is also an important design feature, it now comes in polished aluminium for the first time on the R 1200 C.

The damper tubes on the Telelever fork with its low steering angle of 60.5° typical of a cruiser are finished in the same high-gloss effect. Front-wheel castor, in turn, is relatively short at 86 mm or 3.38" in view of the long wheelbase serving to maintain directional stability and in the interest of good handling. The spring action required is ensured by a central spring strut with coil springs and a singlesleeve gas-pressure damper, spring travel amounting to 144 mm or 5.67".

Extra-long Monolever instead of the Paralever

Apart from the lower angle of the Telelever fork, the rear-wheel swinging arm extended in length by 90 mm or 3.54" also contributes to the much greater wheelbase of the BMW R 1200 C. Since a long swinging arm is just as efficient in balancing the reaction of the shaft drive as a short, but more complex double-joint single swinging arm, the BMW Paralever, BMW's suspension and running gear experts have chosen a longer version of the original single swinging arm, the BMW Monolever, for the R 1200 C for reasons of function and design. Here, too, smooth and superior suspension is ensured by a central spring strut with a single-sleeve gas-pressure damper mounted on the swinging arm. Yet a further feature is that pretension of the coil spring may be adjusted mechanically according to load conditions, spring travel being exactly 100 mm or 3.94".

New high-comfort sprint strut

A new, even softer and more comfortable spring strut has been fitted since November 1998. The original, harder spring strut more suited for riding with a full load will be available as of the 2000 model year with an additional hydraulic spring as the optional touring strut.

A retrofittable comfort strut is being prepared as an option for owners of an R 1200 C built before November 1998, who regard the "old" spring strut as too hard.

Two rear-end silencers

Last but not least the extended Monolever provides sufficient space for the right kind of tail silencer, which could not have been fitted if the motorcycle featured a Paralever. Accordingly, this was the first new BMW motorcycle to enter the market in more than 10 years with two tail silencers running on either side.

The long wheelbase of the R 1200 C not only ensures a smooth and quiet style of riding, but is also absolutely essential for a cruiser, the extra length providing the basis for a low seat position of just 740 mm or 29.13" just right particularly for the short rider.

Stylish and strong: BMW cross-spoke wheels

With the wheels always being crucial to the character of a motorcycle, its particular look and performance, BMW's designers and running gear experts creating the new machine also made a great effort to find the right kind of wheels. The solution, accordingly, is a positive combination of traditional looks and modern technology, the wheels of the BMW R 1200 C coming in classic wire spoke design finished in this case in the modern high-gloss chrome of the BMW cross-spoke wheel - a very stable structure that has clearly proven its merits in no less than 12 years ever since the launch of the R 100 GS. In this case the wire spokes do not extend through the rim base, but rather connect a ring on the outside of the rim with the hub in the middle. The big advantage of this design is that it creates a self-contained rim base allowing the use of tubeless tyres.

Highly efficient brake system with optional ABS

Although dynamic riding characteristics are not so significant on a motorcycle of this type, optimum brake response and stopping power is still a crucial feature of every BMW motorcycle, even if it is a cruiser. And precisely this is why the R 1200 C comes with extralarge and powerful brakes, the two perforated stainless-steel discs on the front wheel measuring 305 mm or 12.00" in diameter, as on the R 1100 GS. Brembo four-piston fixed callipers then hold the brake discs firm and tight whenever necessary, interacting with the

single brake disc at the rear (dia 285 mm/11.22") featuring a twopiston floating calliper (as on the R 1100 GS).

It almost goes without saying that the R 1200 C - like all of BMW's two-cylinder models - is available as an option with ABS, standard on the R 1100 RT and, of course, on all of BMW's four-cylinders.

The obvious conclusion, based on all the features presented, is that the Telelever running gear of the R 1200 C sets new standards in the cruiser segment. The R 1200 C allows the rider not just to cruise along in style, but also to enjoy a really dynamic riding experience on winding country roads. Or, to put it in even more simple terms, the BMW R 1200 C is a cruiser that still enables you to enjoy all the pleasures of riding a genuine motorcycle wherever you are and wherever you go.

DESIGN AND MODEL FEATURES:

The specific design philosophy underlying a BMW motorcycle is always of great significance - also when it's a cruiser. Accordingly, the design of the machine must reflect the basic values of the brand, giving the motorcycle its own specific identity. Precisely this is why the R 1200 C, in its design, interprets all of BMW's traditional values, such as innovation, clarity in model features and styling, functions which are both sensible and meaningful, and superior reliability all round. And added to all this we then have the most important factor: emotion.

Ultra-modern technology plus a touch of nostalgia

A further point is that the R 1200 C combines the most advanced technology with all the nostalgic attributes and features typical of a cruiser. It does not seek to present or represent a specific era in the history of the motorcycle, but rather focuses, in its core values, on BMW's almost 75 years of motorcycle tradition, without making a "historical" message in the process.

The springs - right there in front of you

Despite the compact look of the entire motorcycle oriented around the classic triangular frame in the mid le, certain points and spaces
have intentionally been left open to create a feeling of transparency when admiring the R 1200 C in its silhouette from the side. You can clearly see the Telelever spring components at the front and the Monolever at the rear creating a feeling of lightness, of a machine reduced to the essential. A genuine cruiser, a motorcycle in its purest form.

The materials used on a cruiser are selected not just for the specific purpose they have to fulfill, but also for their design and appearance, in this way presenting not only the spirit of the times, but also the character of the rider and his machine. Precisely this is why the
R 1200 C comes exclusively with the most sophisticated, top-quality materials all round.

Quite unique through its Boxer engine alone

The unique position of the BMW R 1200 C in the fiercely contested cruiser segment is emphasized from the start in both technical and visual terms by the unparalleled flat-twin power unit standing out,
also in a quite literal sense, on either side of the motorcycle. And the newly designed cylinder head covers are of course chrome-plated for extra style.

The quest for clear design reduced to what really counts is also expressed by the high cruiser handlebars made of 25-mm high-gloss chrome-plated tubing and contributing significantly to the rider's upright, relaxed posture on his machine. Further features to be mentioned in this context are the new-generation handlebar controls and instruments giving the R 1200 C the same high standard as the K 1200 RS. The philosophy in this case was to retain the proven concept, but at the same time to further improve the arrangement of switches and, accordingly, the overall standard of control ease offered to the rider. All controls are therefore integrated in the handle unit, while you will look in vain for the choke lever still typical even today of so many motorcycles. For like the new BMW K 1200 RS, the

R 1200 C comes with automatic choke control. The hydraulic clutch, in turn, enables the rider to set the clutch lever to four different positions just like the handbrake lever also finished in pearl-gloss chrome and offering a choice of four different settings.

Concentrating on the essential

The only instrument on the R 1200 C above the high-gloss chromeplated round headlight is the speedometer fitted on the left and housing the oil pressure and fuel reserve telltales. Again, as a reflection of the machine's particular style, the numbers on the speedometer come in the retro look of the 1950s.

With the 1200-cc Boxer engine offering all the qualities of a genuine sledgehammer, there is no need for a rev counter on the R 1200 C. Indeed, all the additional information required by the rider is provided by 7 telltales fitted flush at the right and in two rows on an aluminium plate. The dual-function ignition and handlebar lock, in turn, comes right in the middle between the speedometer and telltales, the key featuring a matte-silver handle as yet another plege to the glorious classic days of motorcycling.

The underlying philosophy to reduce everything on this new motorcycle to the essential also comes to bear in the design of the seat, the very comfortable rider's seat intentionally being conceived for the rider alone as a genuine monoposto. Reflecting the overall design of the R 1200 C, the seat is shaped like a saddle and is finished in top-quality leather. As of the 1999 model year there has also been an optional comfort seat with an extra 20 mm padding for even smoother riding.

The passenger seat serving also a rider backrest

A small, again leather-covered seat cushion for a passenger accompanying the rider on short trips is featured right behind the rider's seat as such. A special touch in this case is that when riding solo the rider can move up this seat cushion to a vertical position, using it as a backrest with inclination manually adjustable to three different angles. With the seat bottom moved up, the rider has direct

access to a pearl-gloss chrome-plated cast aluminium rack serving as a luggage support.

Individual components with clearly recognisable functions

Most of the components on the BMW R 1200 C are, as already mentioned, specially accentuated in their styling and thus clearly recognisable in their function. One example is the air duct on the intake side with its high-gloss chrome-plated air intake cover beneath the tank and the pearl-gloss chrome-plated frame at the front. The latter also houses the two oil coolers, clearly displaying this additional function by the openings for drawing in and expelling cooling air.

The tank with its high-gloss chrome-plated filler cap positioned to the right is yet another characteristic feature of the R 1200 C further enhanced in its looks by the matte-chrome-plated components arranged around the tank as such - the cast aluminium frame and the air intake covers. Since a cruiser is not built for covering long distances at high speeds, the tank itself is a bit smaller than usual although its capacity of 17 litres (3 3,4 Imp gals), with 4 litres reserve, may be regarded as quite sufficient for a motorcycle of this type.

Top-quality materials and surfaces

The sophisticated but relaxed elegance of the BMW R 1200 C is also underlined by the careful use of materials providing a perfect match for this unique cruiser.

Consistent use of hot-galvanised steel plate on the tank, wheel covers and side panels is more than "just" the come-back of old traditions. Steel plate is very strong and long-lasting in everyday use and provides the ideal foundation for high-quality paintwork retaining its perfect gloss throughout a long running life.

Lines applied with a calm and experienced hand

All parts and components of the R 1200 C are painted in a very elaborate process with painstaking care: No less than two layers of

clear topcoat ensuring lasting gloss throughout a long running life come on top ot the primer, filler and the actual surface colour. And it almost goes without saying that the cruiser, like all BMW motorcycles, benefits from a special paint application method already well-known to the connoisseur visiting BMW's motorcycle production plant in Berlin-Spandau, where female workers show incredible skill and dexterity in applying colour-coordinated lines along the tank and on the wheel covers.

Lots of chrome and polished aluminium

Reflecting all the values of a superior cruiser, the BMW R 1200 C comes with a lot of chrome finished to the highest quality standard in three layers of copper, nickel and, finally, the chrome plating itself. So regardless of whether the chrome surface is in high gloss or matte, this combination of materials ensures lasting quality throughout a long running life even under the toughest conditions.

Polished aluminium is to be found, for example, on the longitudinal Telelever arms, adding additional gloss and style to that typical cruiser look.

Seats finished in leather

The rider's saddle and the passenger's seat cushion are both finished in top-quality weather-proof leather. Taking on a certain patina in the course of time just like the saddle on a horse, this leather nevertheless retains its superior quality and offers that wonderful experience of a natural material throughout many years of hard riding in all climates.

THE BMW CRUISER WORLD

Everything you and your motorcycle need for cruising in genuine style ...

For many years BMW has offered the widest range of both motorcycle equipment and rider wear offered by any motorcycle manufacturer.

Following sports models, tourers and off-roaders, the cruiser entered the BMW line-up as an entirely new kind of machine. And it is particularly here that equipment and accessories go far beyond purely functional requirements, creating a lifestyle of their own.

Accordingly, an entire range of features tailor-made for the R 1200 C in both optical and functional terms is available to supplement this outstanding new machine: the cruiser world.

Special equipment and options for the R 1200 C

Far more than other motorcyclists, cruiser enthusiasts attach very great importance to an individual, customised machine.

The first point was to improve seating comfort for the passenger on long distances. This is ensured by a larger seat offering all the creature comforts your passenger will desire. And if the leather grab strap is not enough, you can also retrofit a chrome-plated railing on the R 1200 C. As of the 1999 model year there has also been a specially cushioned comfort seat for the rider with an extra 20 mm padding.

Heated handles, lower handlebars and a small windshield

Heated handles are very pleasant and convenient on cool days. And if you do not always want to brave the wind rushing by in an upright position with the standard high-rise handlebars, you have the choice of a lower and wider version creating an even more active feeling of

riding in style. In the interest of even greater streamlining comfort and to provide better protection from wind and weather, the BMW R 1200 C is furthermore available with a small windshield, two further options being an on-board power take-off and an engine protection hoop naturally finished in high-gloss chrome-plating. Ever since the 1999 model year chrome-plated exhaust covers have also been available as special equipment.

The cruiser baggage system:
from saddle bags all the way to the tank bag

The superior long-distance comfort is further accentuated by a set of bags matching the motorcycle in stylish design, such a wide range of bags and cases always having been typical of BMW. Instead of solid plastic cases, the R 1200 C comes with saddle bags made of waterrepellant, impregnated leather fitted on integral supports next to the rear wheel. A stable plastic backplate ensures vibration-free attachment and offers a functional and attractive storage space concept in conjunction with the leather bags. Tidiness and convenient use of the lockable saddle bags is ensured by additional, water-tight inner bags made of a particularly hard-wearing material with a canvas-look surface. Then there is also a canvas-ware/ leather roll-up bag as well as a small, water-repellant bag fitting on the tank as a backpack and most suitable for strolling in town.

Rider equipment and accessories for the R 1200 C

The lucky rider of the R 1200 C can also express his or her pledge to cruising by choosing the right wear from head to toe. Because BMW's accessories and clothing experts have created a wide range of rider wear and equipment simply perfect for this new machine.

An ideal match for the R 1200 C: cruiser helmet and goggles

With the BMW system helmet, a fully enclosed integral helmet, not really matching the cruising concept in proper style, BMW's designers and engineers have developed a very special, open helmet (a jet helmet) allowing you to really feel the wind rushing by your face.

Made of a special thermoplastic material, the shell of the helmet is painted at the top. The lower part of the shell, in turn, is finished in leather, again in the right colour matching the leather seat upholstery. All visible metal parts on the helmet are made of pressure-cast aluminium, the surface of the helmet thus reflecting the structures to be found on the motorcycle itself. Inside, the helmet is finished in leather and colour-matched silk acetate. Finally, a special chin strap with push-button lock always keeps the cruiser helmet firmly in position.

Again as a reflection of cruiser motorcycling, the cruiser goggles efficiently protect your eyes from wind, stones, dust or insects. And special cruiser sunglasses are also available for the discerning rider.

Traditional and functional: the *Canyon* leather suit

The two-piece *Canyon* leather suit combines traditional design with modern and functional details. Opening via two zippers, the jacket fits tightly and snugly on your body. When cruising in relaxed style on a warm summer day, in turn, the rider can open the jacket on the outer zipper, creating not only a breezy effect, but also an entirely new, much more casual look in blouse-like style. Made of high-quality cowhide, the suit comes complete with protectors on the shoulders, elbows and knees, a back protector and hip protectors being retrofittable if desired.

The *Canyon* jacket is also avalable in a special ladies' style and may be combined with the *Endeavour* ladies' pants.

For ladies only: the *Endeavour* leather suit

The *Endeavour* leather suit is strictly for ladies. A three-piece combination made up of the jacket, waistcoat and trousers, this suit in three-layer look is stylish and refined at the same time. True to its name, the waistcoat is cut tightly round the waist to accentuate your figure. The catches and buttons come in an aluminium look reflecting the special design of the R 1200 C. Again in the interest of extra safety, this suit also features shoulder, elbow and knee protectors, with back and hip protectors being retrofittable on request.

In that special jeans look: the *Maverick* and *Denim* motorcycle suits

Denim is a perfect match for American-style cruising - especially when it comes with leather appliquees like BMW's new two-piece *Maverick* suit in black jeans look. In cooperation with fabric experts from Schoeller, a specialist Swiss manufacturer, BMW has made this classic cotton material suitable for the motorcycle. Reinforced by Kevlar and Dynafil fibres, this material developed exclusively for BMW and now marketed as IlnoTex" offers outstanding protection from abrasion. And once again, the suit comes with shoulder, elbow and knee protectors, with hip and back protectors being retrofittable. Accordingly, you can now enjoy motorcycle tours on hot summer days even in casual clothes without a bad conscience. In a suit that looks and feels like jeans but offers all the passive safety of a genuine motorcycle suit. Since spring 1999 BMW has therefore been offering the *Denim* motorcycle suit in classic jeans blue.

Ideal for cruising in genuine style: the *Dusty* dust coat

Introducing the cruiser, BMW is also bringing back the motorcycle coat. Indeed, the *Dusty* cruiser dust coat comes in the same style as the classic riding coat worn by cowboys way back when. And again reflecting the tradition of horse riding, the idea here, too, is to button up the two sides of the coat round your legs left and right before getting on to your horse or motorcycle. Water-repellant cotton fabric provides certain protection in bad weather, although this dust coat fitting conveniently into an integrated bag when not required cannot replace genuine rainwear. In the interest of added safety at night, reflector strips come in the colour-coordinated shoulder areas.

Cruiser gloves and boots

It goes without saying that the range of cruiser wear also includes your hands and feet. Accordingly, there are not only light summer gloves *(Ranger)* and Gore- Tex gloves *(Indian Summer)* for cool days, but also two different kind of boots: short boots *(Ranger)* for short trips or a ride into town and long boots *(Rambler)* in classic style for

long tours. Getting into the long boots is easy thanks to the zipper at the side, while laces at the back keep the boots resting firmly on your legs.

The cruiser backpack

Riders who do not wish to take along the cruiser saddle bags on a short trip may opt for the compact, 1 O-litre (0.35 cu ft) cruiser backpack complete with waist belt and two additional bags at the side, which also fit on the belt individually. The material is waterrepellant canvas fabric with leather trimming, again reflecting the special style of the cruiser.

The cruiser lighter

The most outstanding features of the gale-proof cruiser gas lighter are the matte chrome plating, a watertight screw-on cap and the top cover reflecting the design of the R 1200 C's cylinder protection covers.

The cruiser pocket watch

Since cruising also means escaping the pressure of everyday life, the cruiser pocket watch in savonette design is actually intended for use only when, once in a while, you have to be really punctual also in your leisure time. The face of the watch designed like the cruiser speedometer, a wind-up wheel shaped like the trip counter reset button, a watertight brass housing and the mechanical movement visible through a small window in the face all express features typical of the BMW R 1200 C cruiser itself: value, honesty and quality.

Other outstanding highlights in the cruiser collection

The cruiser collection also comprises the following items specially made for the R 1200 C: cruiser shirt, cruiser cap, leather waistcoat, windcheater, kerchief, T-shirt, sweat-shirt, leather belt, braces, keybag, tie-pin and lapel-pin. And to provide the final touch, all these accessories and T-shirts come in beautifully embossed high-quality tin cans.

6 THE R 1100 RT:

Entering the 2000 model year without any changes

As the fourth model in its new generation of Boxer machines, BMW launched the R 1100 RT tourer in autumn 1995. By summer 1999 production had already exceeded 41,000 units, making the R 1100 RT the world leader in the tourer segment. And now the R 1100 RT is entering the 2000 model year without any changes.

Combining traditional virtues with future-oriented innovations

Like all of BMW's new Boxers, this full-fairing tourer follows in the footsteps of its predecessor: Launching the R 100 RT in 1978, BMW became the first manufacturer to introduce a genuine production tourer with full fairing developed in the wind tunnel, in this way establishing the tourer segment. Up to the end of the 1995 model year, production of the R 100 RT and R 80 RT amounted to more than 60,000 units - a clear sign of outstanding success in the market.

Applying vast experience and competence in this area, BMW has re-defined the tourer concept in general. Proven virtues of the classic RT models such as excellent protection in wind and weather as well as ideal riding characteristics for long distances, plus the robust design and reliability of the machine have been maintained, futureoriented innovations have been added.

As a result, the new machine meets the highest standards also in terms of up-to-date engine technology combining superior performance with environmental compatibility, active riding safety and road comfort naturally also meeting the highest standards. And last but not least, the R 1100 RT establishes the benchmark in the tourer market through its outstanding agility and supreme handling.

The R 1100 RT is surprisingly nimble and light-footed in dense city traffic, while offering sporting performance on winding country roads. Indeed, it is also very agile on Alpine passes and offers extreme riding comfort on long stretches of motorway.

POWER UNIT:

Same performance data and characteristics as the R 1100 RS

In terms of its performance data and characteristics, the power unit of the R 1100 RT is identical to that of the R 1100 RS: The air- and oil-cooled two-cylinder Boxer machine displacing 1085 cc, with four valves per cylinder and Digital Motor Electronics (Bosch Motronic 2.2), develops a maximum output of 66 kW (90 bhp) at 7250 rpm and a maximum torque of 95 Nm (70 lb-ft) at 5500 rpm.

The five-speed gearbox and clutch are also the same as on the R 1100 RS, the only difference being the final drive ratio of 1 :2.91 on the R 1100 RT, compared with 1 :2.81 on the RS model.

The chrome-plated exhaust system made of rustproof stainless steel is also the same as on the R 1100 RS.

Fully-controlled catalytic converter either standard or optional

In Germany, Austria, Switzerland, Japan and the USA a fully-controlled catalytic converter is fitted as standard. In all other countries it is available as an option.

RUNNING GEAR:

Telelever and Paralever ensure superior riding safety and road comfort

Like the other models in the range, the R 1100 RT benefits from the outstanding riding safety and road comfort provided by the BMW Telelever, an entirely new front wheel suspension concept (see also the detailed description in the chapter on the R 1100 RS), as well as the BMW Paralever, the proven double-joint swinging arm on the rear wheel propelled by drive shaft.

The front wheel features the same central spring strut as the roadster model, while the central spring strut at the rear, as on the GS, can be

adjusted for spring tension hydraulically by a hand wheel and for outward damping by an adjustment bolt (infinite adjustment in both cases). This ensures optimum adaptation of the suspension to various loads.

Spring travel, as on all of BMW's new road Boxers, is 120 mm (4.72") at the front and 135 mm (5.31") at the rear.

The main components of the R 1100 RT's frame come from the R 1100 GS, the rear subframe and supports for the pillion footrests are the same as on the R 1100 RS.

The suspension geometry, on the other hand, ie, wheelbase, caster, and steering assembly angle (see the section on specifications), have been slightly modified versus the other models.

Brakes fitted as standard with ABS

Like all Boxers in the BMW range, the front wheel comes with a double-disc brake featuring four-piston fixed callipers and floating stainless steel discs measuring 305 mm or 12.00" in diameter. The rear wheel, as on the enduro and roadster models, is fitted with a single-disc brake (disc diameter 276 mm or 10.87") and a two-piston floating calliper.

To ensure optimum use of this highly efficient braking system in all situations, the R 1100 RT (like the K 11 00 LT as of the 1996 model year) comes worldwide as standard with ABS or, to be more specific, the special electrohydraulic anti-lock brake system developed by BMW. To be even more specific, this is of course ABS 11, BMW's second generation of ABS brakes introduced in 1993 first on the R 1100 RS and then on the K 1100 models.

MODEL FITMENTS:

Full fairing for perfect form and function

In its styling and design, the R 1100 RT ensures supreme harmony of form and function. Full fairing, for example, provides not only excellent protection from wind and weather, but also an unmistakable, elegant look at first sight.

With its integrated headlight rounded off at the corners and the oil cooler in BMW's discreet "kidney" look, the fairing was developed and optimised in its streamlining in BMW's wind tunnel. With the windshield in its lowest position and the system cases fitted as standard, overall air drag (Cd x A) is only 0.494 - an excellent figure considering the very good protection from wind and weather offered by the fairing.

Windshield electrically adjustable

The extra-large windshield is electrically adjustable for rake by 22° and for height by 155 mm or 6.10", thus guaranteeing an optimum, individualised riding position depending on the height of the rider and his style of riding. Adjustment is just as easy as on the K 1200 LT by means of a toggle switch on the left of the handlebars.

Two special windshields - one of them higher, the other both higher and wider - are available as special equipment as of the 2000 model year.

The two rear-view mirrors are fully integrated in the fairing, serving at the same time to protect the rider's hands. The front direction indicators are fitted directly in the mirror housings.

Warm air supply to the handles

The fairing of the R 1100 RT features a special warm air supply with individual on/off control: Warm air emerging from the oil cooler can be directed as an option straight to the two handles, air flow being controlled by two flaps in the cockpit opening and closing according

to the rider's individual requirements. A small, lockable storage compartment on the left-hand side of the fairing also serves to accommodate a cassette radio available as special equipment.

26-litre fuel tank providing a long cruising range

As befits a genuine tourer, the R 1100 RT comes with a large fuel tank with a capacity of 26 litres or 5.7 Imp gals providing a long cruising range. As soon as the fuel level drops to about four litres, a telltale comes on and the bottom light in the rider information display (RID) goes out to inform the rider accordingly.

Made of forged aluminium and highly stable steel tubes, the twopiece tourer handlebars are 775 mm or 30 1/2" wide, feature ideal ergonomic design and therefore allow an upright, comfortable and fatigue-free riding position. As on the R 1100 Rand R 1150 GS, the handlebars are mounted separately to avoid vibrations. The handbrake lever, in turn, may be adjusted to four different positions.

Seat adjustable for height

The seat also serves to offer the driver and passenger maximum riding com~ort. Like on all of BMW's Boxers, the seat on the R 1100 RT is split up into two halves and is adjustable for height for the rider. And as on the R 1100 RS, the various seat heights available are 780 mm (30.7"),800 mm (31.5"), and 820 mm (32.3").

For design reasons the seat covers feature a different surface structure: While the rider's seat comes with somewhat coarser surface grain, the surface on the passenger's seat is finished in fine grain matching the surface of the side panels and case covers. The footrest unit, in turn, is fully integrated in the fairing by an aluminium plate, the foot shift lever being adjustable to two different positions. A folding handle facilitates the process of moving the machine on to its main stand and back on to its wheels.

System cases and luggage rack fitted as standard

As you would expect of a genuine, sophisticated tourer, the R 1100 RT comes as standard with case supports and a luggage rack, plus two system cases each with a capacity of 33 litres or 1.16cuft.

Like the storage compartment, the central ignition and handlebar lock, and the seat lock (where the rider may also fasten his helmet), these cases can be opened and closed with one single key.

It almost goes without saying that the R 1100 RT comes with standard features such as a main stand, side-stand with automatic starter interruption, hazard warning flashers, a socket (power takeoff), on-board tool kit, and a tyre service kit.

In road trim, that is with fuel, oil, cases, tools - as well as with ABS fitted as standard - the R 1100 RT weighs 282 kg or 622 lb. Given its maximum permissible weight of 490 kg or 1080 Ib, this means a service load of 208 kg or 459 lb.

Options and special equipment

Over and above the wide range of standard fitments, the options available from the factory include heated handles as well as a radio installation kit including two loudspeakers and a second power takeoff.

Special equipment available from the BMW dealer comprises an antitheft warning system, a second power take-off, a cassette radio, soft rubber handles, and a cylinder protection hoop. Then, for taking along ample luggage, there's also a topcase with inner bag with a capacity of 30 litres or 1.1 cu ft, inner bags for the system cases fitted as standard, and a tank bag.

Two special windshields - one “just” higher, the other both higher and wider - are available as of the 2000 model year.

7 THE R 1100 R AND R 850 R

Roadster models entering the 2000 model year without any changes

As the third model in the new Boxer generation, BMW introduced the R 1100 R in autumn 1994, thus launching a roadster version representing the classic, "naked bike" without a fairing. You might therefore call this a genuine, grass-roots machine of the type BMW has always offered in all model series. Technically and optically almost identical with the R 1100 R, the R 850 R entered the market at the same time as the first model of a new Boxer generation with a downsized engine.

Production of these roadster models up to summer 1999 amounts to more than 43,000 units. And now both models are entering the 2000 model year without any modifications.

In spring 1997 the roadster models were given a facelift, meaning a new face and a new cockpit. Since then they have also featured a larger, chrome-plated headlight. The headlight support and the all new instrument support are made of aluminium, the chrome-plated instrument console housing not only the speedometer, but also the rev counter. Right at the top in the middle comes a small analogue face clock which, like the other two instruments, is surrounded by a polished stainless-steel ring.

Entering the 1998 model year, these two roadster models are now more attractive than ever before thanks to yet another facelift. As an example, the rear-view mirrors and supporting arms, as well as the handlebar weights, are now chrome-plated, the brake and clutch lever as well as the passenger grab handle and oil cooler covers are finished in silver paintwork. The footrest plate comes in silver powder coating polished at the surface, the rear frame section is also finished in silver powder. The direction indicator flasher housings and their support arms are in white aluminium paintwork, all these features coming together to ensure a truly glossy appearance.

Superior torque

In principle, the drive system and running gear of the R 1100 R are based on the technical features of the R 1100 RS and R 1100 GS. Once again, therefore, this new machine is driven by BMW's air- and oil-cooled flat-twin Boxer featuring Digital Motor Electronics (Bosch Motronic MA 2.2) with a displacement of 1085 cc and four valves per cylinder.

Like the R 1100 GS, the R 1100 R features a power unit built not so much for maximum output (as in the case of the R 1100 RS), but rather for extra torque and pulling force. And it also comes with the high-rise exhaust system of the R 1100 GS.

The change in power arid output characteristics versus the R 1100 RS is provided by the same measures as on the R 1100 GS.

Accordingly, the engine specifications of the R 1100 R are a maximum output of 59 kW (80 bhp) at 6750 rpm and a maximum torque of 97 Nm (71 Ib-ft) at just 5250 rpm.

In Germany the R 1100 R is optionally available for insurance reasons with a maximum output of 57 kW/78 bhp.

The R 850 R: BMW's first new Boxer with a downsized engine

The R 850 R, the entry-level model leading into the new Boxer generation, comes with an 848-cc power unit almost identical in technical terms with the engine of the 1100 cc models. Maximum output is 52 kW or 70 bhp at 7000 rpm, maximum torque 77 Nm (57 Ib-ft) at 5500 rpm. And in accordance with European driving licence regulations, a 25 kW (34 bhp) version has been available since spring 1995.

The final drive ratio of the R 850 R is 1 :3.36 (R 1100 R 1 :3.00). Another difference between the two models is the diameter of the intake and outlet valves in the engine, while all other technical features, data, dimensions and weights are the same on both the

R 1100 Rand R 850 R. Accordingly, there is no need for specific reference to the R 850 R in the following description.

A totally unique and independent look

The R 1100 R roadster not only offers superior power and performance, but also looks great in its unique, unmistakable appearance. Among other things, it comes with a rounded steel plate fuel tank with a capacity of 21 litres (4.6 Imp gals).

Adjustable seat with a minimum height of only 760 mm (29.9")

The two-piece stick-on seat offers ample space plus excellent riding comfort for both the rider and passenger. And as with the other models of the new Boxer generation, the rider's seat is again adjustable for height: from 760 to 780 and 800 mm (29.9 - 30.7 31.5").

Wider handlebar for easy handling

Made of forged aluminium, the two-piece handlebar is 729 mm (28.7") wide and contributes to the rider's ergonomic seating position while at the same time making the motorcycle very easy to handle. As on the R 1150 GS, the handlebar is mounted separately to avoid vibrations and may be tilted to the front.

Weighing 235 kg or 518 lb in road trim, the R 1100 R comes with the three-spoke light-alloy wheels of the R 1100 RS. Wheel and tyre dimensions are also the same as on the R 1100 RS, and are described in greater detail in the specifications.

Cross-spoke wheels available as an option

As an option, the R 1100 R is available with the cross-spoke wheels of the R 1150 GS, although in this case front wheel diameter is not 19 inches (as on the GS), but rather 18 inches.

The front wheel brake operated by a handbrake lever adjustable to four different positions is the same as on the R 1100 RS, while the

rear wheel brake comes from the R 1150 GS (again, details are to be found in the descriptions of these two models).

Advantages of the BMW Telelever

It goes without saying that the R 1100 R offers all the advantages of the BMW Telelever, the new front wheel suspension described in detail in the chapter covering the R 1100 RS. A central spring strut is fitted at both front and rear, respectively, outward-stroke damping on the rear spring strut being infinite, while spring pretension may be set to 7 different positions. Spring travel is the same as on the
R 1100 RS and R 1100 RT, that is 120 mm/ 4.72" at the front and 135 mm/5.31" at the rear.

Due to the lower front wheel load, a handlebar damper is fitted on the R 1100 R to improve ride comfort on extremely bad roads.

In terms of its major components, the frame of the R 1100 R comes from the R 1100 GS.

Optionally available with ABS and catalytic converter

The R 1100 R also meets the strictest demands in terms of riding safety and environmental compatibility and is available as an option with ABS anti-lock brakes as well a fully controlled catalytic converter (the latter being fitted as standard in Germany, Switzerland, and the USA).

Options and accessories

Options available from the factory are heated handles, cross-spoke wheels, a case and luggage rack, a windshield, and, as additional instruments, a rev counter and a clock (the latter being fitted as standard in Germany). As a further option, the Telelever track control arm, alternator cover, crankcase left/right, gearbox housing, oil cooler lines, and starter cover all come finished in black.

Accessories available from the BMW dealer include a windshield and an anti-theft warning system, BMW system cases, inner bags for these cases, and cylinder protection hoops.

8 THE R 1100 RS

Sports tourer entering the 2000 model year unchanged

The beginning of 1993 marked the start of a new era in BMW's 70year motorcycle history: On the Spanish island of Lanzarote, BMW presented the R 1100 RS, the first model in an all-new Boxer generation, to the international motorcycle press. This sports tourer then entered the market in spring 1993, creating quite a stir in the motorcycle world.

By autumn 1999, production of the R 1100 RS amounted to approximately 25,000 units. And now the R 1100 RS is entering the 2000 model year without any changes.

POWER UNIT:

Environmentally compatible and easy to service

BMW's motorcycle managers and engineers started considering in the mid-eighties what an all-new BMW Boxer for the future should look like. And naturally, this also meant an all-new engine.

One point obvious from the very beginning was that the new Boxer was to offer more power and torque than its predecessor. Accordingly, there was no doubt that it had to have four - and no longer two - valves per cylinder. Top priority was also given to the improvement of fuel economy, the minimisation of exhaust emissions and engine noise, as well as the ease of maintenance offered by the new machine.

The air- and oil-cooled two-cylinder Boxer combines even more power with an even better torque curve from low engine speeds. Its specifications are therefore most impressive: 1085 cc capacity, 90 bhp (66 kW) at 7250 rpm, maximum torque 95 Nm (70 ft-lb) at 5500 rpm.

There was no doubt from the very beginning that only a four-valve power unit would be able to provide the superior performance, emission management and fuel economy taken for granted with the new engine. Accordingly, two intake valves in each cylinder guarantee an optimum cylinder charge and fuel/air flow.

Thanks to the symmetrical arrangement of the two outlet valves, the spark plugs with their three electrodes have ample room in the middle of the cylinder head. Featuring specially contoured pressure edges at the sides, the roof-shaped combustion chambers are extremely compact.

To ensure optimum cooling particularly on the hot exhaust section, the outlet valves in the cylinder head are tilted to the front in the direction of travel, thus having the full benefit of the air flowing around the cylinders. For even greater efficiency, the cylinder bank developing temperatures of up to 300°C (570°F) is cooled by oil flowing between the two outlet valves.

The advantage of this additional oil cooling is that both the valves and valve seat rings now have a much longer service life. In addition, the intervals between valve adjustment are up from 7500 to 10000 km.

New valve control keeping the engine slender and compact in design

Since the valve control system used on the former Boxer (featuring a central camshaft, tappets, very long push rods and rocker arms) would have been quite unsuitable for a four-valve power unit on account of its inadequate strength and stiffness, BMW's engineers had to take a new approach in designing the valve drive system.

Classic valve drive systems with one overhead camshaft (OHC) or a double overhead camshaft (DOHC) and cup tappets, as used on BMW's K Series engines, had to be ruled out from the start since they would have increased the width of the Boxer engine by approximately 4 centimetres, in this way making it quite impossible for the

rider to take bends at an angle of up to 49°, as required in the brief given to BMW's engineers.

A vertical drive shaft, in turn, would have been too elaborate, difficult to service and expensive. Accordingly, BMW's engineers eventually opted for the following solution:

Via a chain, an auxiliary shaft with a reduced ratio of 2: 1 is driven directly from the crankshaft. Located deep within the engine beneath the crankshaft, this auxiliary shaft running at half the crankshaft speed incorporates a further chain on either side driving the respective camshafts running within the right and left-hand cylinder heads at the back next to the inlet valves.

While the use of an auxiliary shaft may appear to be a kind of "detour", the advantage in this case is that the sprocket within the cylinder head is smaller than usual and therefore keeps the cylinder head slender (although even so, space within the cylinder head is very limited). A light-alloy sub-frame is bolted directly to the cylinder head to accommodate the valve drive.

The camshaft and rocker arms run directly on the sub-frame. Contrary to the conventional design, the camshaft is no longer made in one single piece - instead, the cams are sintered and forced on to the specially hardened and heat-treated steel shaft.

Working against the cup tappets, the rotating cams transmit the forces converted from a rotary to an up-and-down motion via push rods to the forged rocker arms. The rocker arms, in turn, transmit this drive force to the valves to be opened with a pressure of 27 kg or 59 *V2* lb. They also feature adjustment bolts for the pivoting slides driving the valves in pairs.

This special valve control system referred to as a high-camshaft design offers yet another advantage with the new Boxer: It makes the engine look particularly dynamic with its wedge-shaped cylinder heads pointing downwards like an arrow.

The two typical Boxer cylinders sticking out at the sides are made of cast light alloy. To obtain a larger outside surface and thus to dissipate heat more efficiently, they have special cooling fins on the outside.

Inside, the cylinders are finished with a high-strength, low-wear, extra-smooth layer of Gilnisil, a special nickel silicon lining ("Gil" stands for the manufacturer, the Italian company Gilardoni) minimising frictional losses on metal surfaces running against each other. Further advantages of this design are minimum oil consumption, high strength and stability also at high speeds and, as a result, a long running life.

Each featuring three piston rings (one for removing the oil, two for compression and sealing), the two pistons in box shape are made of cast light alloy. Measuring 99 mm (3.9") in diameter, the pistons weigh almost a third less than the former pistons in the old Boxer. This slim design reduces mass forces and allows higher running speeds, a pleasant side-effect being the reduction of vibrations.

A world innovation in motorcycle technology: the intentionally fractured conrod boss

The connecting rods of the new Boxer are made with the fracture or crack technology introduced for the first time on BMW cars. Accordingly, this is the first time in the history of motorcycle engine production that the large conrod boss encompassing the crankshaft is intentionally fractured and not simply sawn in half.

The advantage is that the two surfaces along this intentional fracture provide a perfect fit when subsequently re-joined.

Indeed, when subsequently bolted together the fracture lines provided by this cracking technology form a larger common surface with even better alignment of the two halves than with a sawn conrod. Unlike the former design, there is no need for adjustment pins or bolts to provide a perfect fit. The substantial advantages of this new crack technology are therefore greater precision, a better fit, lower weight, quicker machining, and easier fitting.

Representing the "heart" of the new engine, the crankshaft is made of one piece of top-quality heat-treated steel and runs in two slide bearings, the rear bearing being of double collar design. The advantage in the event of repairs is that there is no need for timeconsuming alignment of the bearing and crankshaft.

The crankshaft drives the alternator and the layshaft controlling the valves and the two oil pumps, and extends directly into the fivespeed gearbox.

Intake system

Through a snorkel beneath the tank, fresh air is drawn into the intake system air chamber, where it is cleaned by a paper filter. From the pure air chamber downstream of the filter, the air then flows on through two specially designed intake manifolds via the intake valves into the two combustion chambers. In their length and shape, the intake manifolds are designed to provide superior output and an optimum torque curve thanks to the resonance within the intake system.

Digital Motor Electronics

To further enhance engine output and torque while at the same time reducing fuel consumption and exhaust emissions, it was obviously necessary from the start to equip the engine with an electronic management system. Doing this, BMW's engineers were able to resort to the Digital Motor Electronics already featured on the fourvalve power units of the K 100 - to be more precise, they have decided to use Bosch Motronic MA 2.2.

The advantages of the new engine with electronic fuel injection are obvious:

- Improved performance thanks to the special design of the intake system
- Better engine response ensured by the significant reduction of flow losses within the intake manifold

- Superior economy and reduction of fuel consumption: whenever the throttle butterfly is closed and when the engine is in overrun above 2000 rpm, the supply of fuel is totally interrupted
- Grid control for extra smoothness and refinement
- Superior ease of service provided by a diagnostic chip memorising any defects subsequently read out by the BMW Diagnostic Tester
- Superior reliability and failsafe functions built into the Motronic system, allowing further - albeit restricted - operation of the engine in the event of a deficiency - Absolutely no wear in the case of electronic systems - Ideal conditions for using a fully controlled catalytic converter

Motronic and its systems:
The fuel supply system

Housed in the fuel tank, the electric fuel pump conveys fuel to the electromagnetic injection valves within the throttle butterfly manifold, a pressure regulator keeping the pressure required for the injection process consistent. Fuel is discharged into the two intake manifolds through the two electronically controlled intake valves. It is injected intermittently, ie, once every rotation of the crankshaft simultaneously into the two intake manifolds. The compression ratio of 10.7.1 requires unleaded premium fuel (95 ROM).

The ignition

The ignition system consists of the terminal stage and coils. The ignition angle specified by the control unit is communicated by the system as a high-voltage pulse to the two spark plugs.

The control unit and sensors

The sensors determine the engine's current operating conditions, the information obtained in this way being fed into the control unit where it is compared with the data stored in the CPU's (Central Processing Unit's) EPROM. This comparison of data shows the exact amount of fuel required and the duration of the injection period.

Three-way catalytic converter available as an option

The three-way catalytic converter fitted as an option (and standard in Germany, Switzerland, the USA and Japan) is the most efficient emission control system available today. The process of conversion, reduction and oxidation is however only possible as long as the lambda 1 engine data are strictly observed. This stochiometric ratio between the amount of fuel actually supplied and the amount of fuel theoretically required is based on an air:fuel mixture of 14:1. To maintain this mixture regardless of runnin~ conditions, the oxygen sensor (sometimes also referred to as the lambda probe) measures the amount of oxygen in the exhaust gas emitted by the engine.

Oxygen sensor fitted upstream of the catalytic converter

On the engine of the new Boxer the oxygen sensor is fitted upstream of the catalytic converter and is therefore activated quickly and efficiently. The optimum operating temperature of the ceramic probe is 600°C or 1112°F, temperatures in the region of 300°C ensuring that the sensor will be activated within seconds. To provide an even faster response, the sensor is heated by a 12 W heating system.

Immediately after the engine has been started, the oxygen sensor is switched off until the engine reaches its normal operating temperature, the fuel/air mixture being enriched in this start or warmup phase in order to make the engine run smoothly. When the engine is in this operating condition, engine speed is increased by the choke adjusting the position of the throttle butterfly. As soon as the engine has reached its normal operating temperature, this assistance is of course no longer required.

The catalytic converter is recyclable

The three-way catalytic converter used on the new engine is already well known from the K 100 Series, the precious metals required for oxiidation (platinum and palladium) as well as reduction (rhodium) beihg applied to a metal substrate. As is generally known, oxidation converts carbon monoxides into carbon dioxide, and hydrocarbons

into carbon dioxide and water. The withdrawal of oxygen then allows the breakdown of nitric oxides into nitrogen and carbon dioxide.

Compared with a ceramic-based catalytic converter, the metallic converter offers advantages in terms of both space and time: It is smaller and responds more quickly, since the metal substrate is more efficient in absorbing the heat from the exhaust gas.

The catalytic converters are recyclable and are taken back after their service life by BMW workshops.

Made completely of stainless steel and chrome-plated in addition, the exhaust system is extremely resistant to corrosion.

Measured according to the ECE standard, the new engine develops a noise level of 79 dB(A), the current limit in the European Union (EU) being 80 dB(A).

The clutch and gearbox

The clutch is a single-plate dry clutch with the lowest possible inertia for a smooth and easy gearshift. Made of metal plate, the flywheel incorporates the starter gear.

The dog-shift five-speed gearbox is derived from the gearbox already featured on the K-models.

700-Walternator

The new generation of BMW Boxers comes with a new alternator offering particularly high output: Operating with regulator voltage of 14 V, the new alternator develops 50 amps equal to an output of 700 Watt. A particularly important point is that the new alternator generates a surplus output of up to 70 Watt even at idling speed, in this way ensuring a very good battery charge at all times.

RUNNING GEAR:

The BMW Telelever - a brand-new front wheel suspension concept

The progressive design of the running gear is hardly visible from the front, but stands out clearly from the side, where the first thing to catch your eye is the BMW Telelever, an all-new front-wheel alignment and bearing system providing a synthesis, as it were, of the telescopic fork and swinging arm.

With its main tube measuring only 35 mm or 1.38" in diameter, the telescopic fork pivots on a ball joint in a slide tube on the longitudinal control arm at the bottom and a fork bridge within the frame of the motorcycle at the top. A central spring strut providing 120 mm (4.72") spring travel measured perpendicular to the road, connects the longitudinal control arm with the front section of the frame. As of the 1997 model year, the spring strut is infinitely adjustable on the output stroke by way of an adjustment bolt.

The telescopic fork shafts now only contain fluid to lubricate the two tubes running inside one another, and no longer comprise any spring or damper components. As a result, the response of the telescopic fork to road and riding conditions is particularly smooth and soft, the fixed tubes running in slide bushes with teflon coating for minimum friction.

The maintenance-free ball joints running without any play within the slide tube and fork bridge efficiently transmit the steering movements on the telescopic fork. The other ball joint bolted on to the longitudinal control arm feeds most of the forces generated when applying the brakes into the stable engine housing. The longitudinal control arm, in turn, is fitted on a swivel mount on either side of the engine housing, meaning that the telescopic fork on the BMW Telelever system is only required for guiding the front wheel and, of course, for steering (maximum lock angle 32° on each side).

The advantages of the BMW Telelever

- Compared with conventional wheel guidance systems, the wheel alignment geometry achieved in this way substantially reduces the dive effect of the telescopic fork. In fact, it works like a mechanical anti-dive system, ensuring that spring travel remains adequate even when braking in an extreme situation.

- Even with the springs strongly compressed, the wheelbase and castor remain largely unchanged throughout the motorcycle's spring travel. This guarantees superior stability in all situations, ie, also when applying the brakes in a bend.

- The substantial overlap of the fixed-position tubes and long slide tubes further enhances the Telelever's outstanding stability.

- The absence of fork springs no longer required helps to minimise frictional forces and ensures an excellent response of the telescopic fork.

- Compared with a conventional telescopic fork, the centrally mounted spring strut allows greater flexibility in tuning the springs and dampers and provides a progressive kinematic response of the entire spring and damper system.

- With its anti-dive and superior longitudinal rigidity, the BMW Telelever offers ideal conditions for anti-lock brakes and excellent ABS control.

- Since the space between the front wheel and the engine is smaller than with a conventional telescopic fork, the entire power unit has been moved further to the front to provide optimum frontto-rear weight distribution (52.7 per cent at the front, 47.3 per cent at the rear).

- The entire Telelever system requires no maintenance or oil change. Only the ball joints have to be checked after 100,000 km or 62,000 miles.

The BMW Paralever - proven rear wheel geometry

The rear wheel suspension is already well-known to the connoisseur, since it features BMW's proven Paralever concept. The double-joint swinging arm made of aluminium, which debuted in BMW's new offroad GS models in 1987, reduces the load change response of the drive shaft and therefore ensures optimum rear wheel grip at all times.

Unlike BMW's existing models with Paralever technology, the spring strut is mounted in this case in a central position, allowing spring travel of 135 mm or 5.31". Damper action on the outward stroke is adjusted by a bolt, spring pretension is infinitely adjustable (hydraulic).

Engine and transmission housing with load-bearing function

The entire front end of the frame is made of chill-cast aluminium for extra stability. Securely fastened to the engine housing, the front subframe holds the central spring strut of the Telelever in position. The frame itself is very light, easy and inexpensive to produce, and allows maximum precision in production. It also offers ideal conditions for the Telelever, as only direct forces have to be transmitted at this point (and not any twisting forces generating torque in one or the other direction). The big advantage of this concept is that it allows numerous variations of the motorcycle's suspension geometry, the front subframe being additionally supported by two steel tubes leading to the rear end of the engine housing.

The rear subframe is a steel-tube structure connected both to the transmission and engine housing. A transverse bridge between the upper tubes of the frame supports the spring strut at the top, while at the bottom the spring strut is connected directly to the monolever swinging arm.

Brakes with ABS fitted as an option

The highly efficient Brembo brake system is the same as on the K 100 models, meaning that the front wheel features the same hydraulically operated double-disc brake with four-piston fixed callipers. Mounted in floating arrangement, the stainless-steel discs with compensation for uneven wear and sintered metal brake linings to eliminate fading even in wet conditions measure 305 mm (12.00") in diameter and 5 mm (0.20") across. The swept area is 100 cm2, brake piston diameter 32 and 34 mm (1.26 and 1.34"), respectively.

The rear wheel features a single-disc brake with two-piston fixed callipers (diameter: 38 mm/1 .50"). The disc measures 285 mm (11.22") in diameter and 5 mm (0.20") in width; its total swept area is 40 cm2. BMW ABS anti-lock brakes are available as an option to significantly increase safety when applying the brakes.

Excellent riding characteristics

The ideal centre of gravity of the Boxer engine, the relatively low weight for a sports tourer of just 239 kg/527 Ib with tools, tyre service kit, fuel and oil, the light but ultra-stable frame, and the new Telelever combined with the proven Paralever and its centrally mounted spring strut, all come together to provide excellent riding characteristics. Handling is smooth, crisp and secure, tracking stability absolutely excellent.

As is appropriate for a sports tourer of this calibre, the R 1100 RS allows a sporting style of riding without requiring the rider or passenger to compromise on riding comfort or touring amenities. The maximum load of 211 kg/465 Ib is another outstanding feature, again making the machine very suitable even for long tours.

FEATURES, STYLING AND COLOURS:

Sports fairing developed in the wind tunnel

True to its concept as a sports tourer, the BMW R 1100 RS comes with a fairing developed for perfect streamlining in BMW's wind tunnel. The particular advantage of this fairing is that it combines relatively small dimensions with very low air drag and relatively good protection from wind and weather. Fitted as standard, the fairing improves the motorcycle's drag coefficient (Cd x A) to 0.400 with the rider leaning forwards, and to 0.439 with the rider sitting upright.

All fairing components are marked to indicate the specific type of synthetic material used, and can be fully recycled.

As an option the R 1100 RS is also available with a full all-round fairing extending down beneath the cylinders and largely encompassing the engine housing. In this case there is also an additional panel in front of the slide tubes.

The fuel pump with fuel level sensor and fuel filter is fitted in the 23litre (5.1 Imp gal) fuel tank.

An advantageous feature carried forward from the K 1100 Series is the combined ignition/handlebar lock in the upper fork bridge, allowing the front wheel to be secured both in left and right-hand lock after removing the key. A new improvement is the two-sided key, which may be inserted into the lock on either side. The same key also fits the tank cap and seat lock, and touring cases may be ordered with the same locks allowing the rider to use one key all round.

The ergonomics package

One of the most outstanding innovations on the R 1100 RS is the ergonomics package fitted as standard. In this way the motorcycle can be modified individually for the rider, different purposes and riding conditions, and various ergonomic requirements.

In all, the ergonomics package comprises three components:

1. Adjustable fairing windshield

The fairing windshield is adjustable by means of a rotating knob throughout a range of 20° and is streamlined to minimise drag resistance. The lowest position is intended above all for cruising on highways and country roads, the topmost position offers optimum wind protection at high speeds.

2. Adjustable handlebar

Incorporating forged precision teeth, the adjustment mechanism allows adjustment of the handlebar in 7 stages by up to 20 mm (0.79"), plus three adjustment angles at increments of 6° each. The adjustment mechanism is easily accessible, requiring the rider to merely loosen one bolt.

3. Adjustable seat

The adjustable seat is subdivided into two sections. The rider's section may be adjusted in three stages by a total of 40 mm (1.57"), thus allowing the rider to choose a seat height of 780 mm (30.71 "), 800 mm (31.50"), or 820 mm (32.28").

Clearly standing out as the two most important instruments, the speedometer and rev counter are fitted right in the middle of the cockpit, exactly in the rider's line of vision.

An instrument cluster with numerous functions is fitted a bit lower down, providing a clear indication of the following items:
Direction indicators, idling speed, high-beam headlight, fuel reserve (as soon as the fuel level has dropped to approximately 4 Itr/0.9 Imp gals), oil pressure, battery on charge (from the alternator), ABS telltale.

Information display with oil temperature and fuel gauges, telltale for the gear in mesh, and clock

The R 1100 RS also comes as standard with BMW's rider information display: In a special housing fitted in the right-hand interior fairing panel, this liquid-crystal display indicates the oil temperature, fuel

level, time, and the gear currently in mesh. The interior fairing panel on the left, in turn, houses three switches for the hazard warning flashers, heated handles and ASS cancellation switch standard ever since the 1994 model year.

9 THE FOUR-CYLINDER K SERIES MODELS THE K 1200 LT

Luxury tourer entering the 2000 model year unchanged

It is fair to say that hardly any other brand is so closely connected with the tourer motorcycle, through its heritage and image, as BMW.

Long-distance touring qualities, superior comfort for the rider and passenger, standard fitment of a luggage rack and touring cases, good protection from wind and weather, a high-torque power unit and agile riding qualities - these are the features already characteristic of the BMW R 100 RT entering the market in 1978 as the first production motorcycle in the world featuring a full tourer fairing developed in the wind tunnel.

The R 100 RT remained in production until 1995. Together with its smaller R 80 RT sister model (1982 - 1994), worldwide sales of the RT with its two-valve flat-twin power unit exceeded more than 60,000 units. And its successor in BMW's new generation of four-valve boxers, the R 1100 RT launched in 1995, is also among the best sellers within the BMW range, production by summer 1999 exceeding 41,000 units and making the R 1100 RT the world's leader in the tourer segment.

When BMW launched the four-cylinder K-Series supplementing the R-Series back in 1983, it did not take long - to be precise, only one year - until the K 100 RT entered the market. Then, two years later in 1986, the K 100 RT was further developed to become the K 1 00 LT luxury tourer joined between 1990 and 1996 by the three-cylinder K 75 RT.

In early 1992 the K 1 00 LT was replaced by the K 11 00 LT. In all, the K 100 RT, K 75 RT, K 100 LT, and K 1100 LT account for a production and sales volume of more than 80,000 units by the end of 1998.

launch of the K 1200 l T in September 1998 market introduction in spring 1999

The successor to the K 11 00 LT, the K 1200 LT, made its world debut in September 1998 at the INTERMOT Show in Munich and was introduced into the market in spring 1999.

As was already the case with the K 1200 RS and R 1100 S sports tourers, BMW has consistently continued its new model policy also with the K 1200 LT. The idea is to broaden the model range and, in this way, to make even greater distinctions between the individual models - in this case beween the R 1100 RT tourer and the
K 1200 LT luxury tourer.

Introducing the K 1200 LT, BMW is redefining the concept of the luxury tourer in terms of technology, design, comfort and equipment, now placing the emphasis even more clearly on luxury.

From now on the K 1200 LT plays the role of the BMW 7 Series in the luxury tourer market, combining elegant looks with superior power, safe, dynamic and agile riding characteristics, supreme comfort also on long distances, ample storage space, and luxurious features.

It goes without saying that the K 1200 LT is an environmentally friendly and safe motorcycle through and through, a fully controlled catalytic converter and ABS being fitted as standard worldwide.

The K 1200 LT is entering the 2000 model year without any changes.

Right from the start this outstanding BMW machine was voted "Tourer of the Year" in no less than five European countries. Indeed, the US motorcycle magazine *Ridereven* gave the K 1200 LT the title of "Motorcycle of the Year".

Production of the K 1200 LT by summer 1999 amounts to more than 7,000 units.

POWER UNIT:

The K 1200 RS power unit modified to all the characteristics and qualities of a luxury tourer

Basically the only legacy brought forward from the K 11 00 LT to the new K 1200 LT is the four-cylinder power unit which, like on the K 1200 RS, is even larger, more powerful and up-to-date than before.

The power unit of the K 1200 LT also displaces 1171 cc. Maximum output is 72 kW/98 bhp at 6750 rpm, maximum torque 115 Nm/85 Ib-ft at just 4750 rpm. And more than 100 Nm/74 Ib-ft is constantly available throughout the speed range between 2800 and 6800 rpm.

The engine of the K 1200 RS has nevertheless been thoroughly modified for the K 1200 LT. The objective of the many technical modifications introduced was to tune the output and torque of the engine perfectly to the demands made of a luxury tourer.

Modifications to the cylinder charge and combustion process serve above all to provide an even better charge at low engine speeds. Precisely this is why the power unit of the LT comes with longer intake manifolds with a smaller diameter and smaller throttle butterflies (34 mm/1 .34" in diameter versus 38 mm/1 .50" on the RS).

Modified valve timing ensures optimum use of this dynamic charge process provided by the redesigned intake manifolds above all at low engine speeds. Indeed, the new camshaft timing provides not only a better cylinder charge and, accordingly, higher torque, but also smoother idling and extremely consistent and smooth development of power with a very high level of torque throughout.

New exhaust and silencer system with fully controlled catalytic converter

The new stainless-steel exhaust and silencer system with specially matched pipe lengths and chamber volume contributes to these superior power and performance characteristics. The four pipes on the fan-type manifold optimised in length merge into the pre-muffler housing the fully controlled catalytic converter. (The K 1200 RS comes with a dual catalyst due to its higher throughput.)

Like the RS, the LT also comes with two radiators arranged for an optimum flow of air rushing by. The flow of cooling air, in turn, ensures that warm exhaust air passes the rider without warming him up in the process. And whenever necessary, two fans are switched on automatically.

It almost goes without saying that the Motronic MA 2.4 Digital Motor Electronics (for details in this context and on the BMW MoDiTec diagnostic system, see the description of the RS power unit) has been specially modified for the LT. Like the RS and the R 1200 C, the LT also comes with automatic choke featuring an electronically controlled throttle butterfly adjuster, meaning that there is no need for a choke lever.

Benefitting from the very low level of engine speeds, the engine develops its power in very relaxed, superior style, and is also very quiet in the process. This low noise level is ensured not least by a four-chamber resonance damper applying the Helmholtz resonator principle, which means that the intake funnel and air collector are geared to one another in such a way in terms of flow dynamics that any annoying noise is virtually eliminated.

Five-speed gearbox matching the high torque at low engine speeds

Like the RS, the LT incorporates a hydraulic clutch (with the clutch lever adjustable to four different positions) for conveying power to the newly developed five-speed gearbox.

The gearbox itself has also been matched to the particular performance characteristics of a luxury tourer of this calibre, thus offering all the qualities for both brisk riding and smooth cruising. Fifth gear serves as an overdrive reducing engine speeds by a significant margin. As an example, engine speed at 130 km/h or 81 mph is a mere 4000 rpm, dropping even further to only about 3000 rpm at 100 km/h or 62 mph.

Reversing aid for easier manoeuvring

To make manoeuvring an easy exercise even on slopes, the K 1200 LT is fitted - quite appropriately for a luxury tourer, one might say - with an electric reversing aid activated by the electric starter featuring in this case not only a power take-off leading to the engine, but also a gear connecting the starter to the gearbox drive shaft.

This reversing aid can be activated only with the engine running and the gearbox in idle. Turning a knob above the shift lever, the rider provides a direct flow of power through the gear on the starter to the gearbox drive shaft. Then, pressing the starter button, he uses the starter motor to back up at a speed of 1.2 km/h or 0.75 mph. For safety reasons the motorcycle will move backwards only as long as the rider keeps the starter button pressed down. To avoid any undue exhaustion of the battery in this process, the electronic management system raises idle speed to 1500 rpm while the motorcycle is backing up.

Idle speed is also increased under other riding conditions likely to discharge the battery, for example when riding in town or in stopand-go traffic with the lights, radio, seat heating or heated handles switched on. In all cases the battery charge manager, as the unit is called, detects the change in riding conditions and raises idle speed from 950 to approximately 1350 rpm.

RUNNING GEAR:

Riding comfort and dynamic performance setting a new standard in the luxury tourer market

Generally a luxury tourer is characterised by long spring travel and extremely comfortable suspension tuning usually detrimental to the machine's performance and dynamic riding qualities.

Offering the K 1200 LT to discerning riders the world over, BMW wishes to combine the apparent contrasts of comfort and dynamic riding qualities in an ideal manner, thus setting a new standard in the luxury tourer market. Despite its substantial unladen weight of 378 kg/833 Ib with a full tank and a generous service load of 222 kg/490 Ib (giving the machine a maximum permissible weight of 600 kg/1323

Ib), the K 1200 LT is not only absolutely safe, but also surprisingly agile and dynamic in its riding qualities.

The BMW Telelever and an extended Paralever for extra comfort and safety on the road

The benefits offered by BMW Telelever technology are of particular significance with a luxury tourer requiring soft and comfortable suspension and damping. With a conventional telescopic fork a soft suspension may cause unpleasant dive effects above all when applying the brakes in front of a bend, with a negative effect on riding qualities and directional stability. The BMW Telelever (see the detailed description of the Telelever in the section on the R 1100 RS), in turn, excels by its sensitive response and comfortable spring action above all on bumpy roads, at the same time preventing the motorcycle from "diving" excessively when applying the brakes. On the road, this means significant advantages in terms of comfort, active safety and dynamic riding.

The K 1200 LT comes with an appropriately tuned spring strut at the front with 102 mm/4.0" spring travel. The RS handlebar damper is also featured on the LT, where, in contrast to the RS, the handlebar rests on separate bemings in order to neutralise any sway forces.

The high level of riding comfort offered by the LT is also ensured by the Paralever swinging arm extended by 80 mm or 3.15" versus the RS. This longer wheelbase is not only essential for giving the rider
and passenger generous space and freedom of movement, but also helps to enhance directional stability and reduce dive movements.

Spring travel on the rear strut is 130 mm or 5.12" and may be adjusted to load conditions by the hydraulic spring base setting. The wheel for adjusting the spring strut is within easy reach beneath the seat.

RS frame concept ensures vibration-free riding also on the LT

It is fair to say that of all types of motorcycles, a luxury tourer should really be absolutely free of vibration. Precisely this is why the new LT comes with the same frame concept as the RS, where the engine is not connected rigidly to the frame as a load-bearing element, but rather rests separately in a central, ultra-stiff cast aluminium frame in

order to avoid the transmission of any vibrations. (for a more detailed description of this technology, see the section on the K 1200 RS). As a result, no vibrations are able to reach the handlebar, the body of the motorcycle, the seats or footrests.

Bumper and impact system to prevent body damage

The K 1200 LT comes with a bumper and impact system preventing the motorcycle from toppling over and falling all the way to its rearview mirrors. And the front bumper and impact cover extending out of the fairing on both sides features a substrate system underneath taking up forces acting on the bumper and impact strip and conveying them straight to the central frame.

Should the motorcycle ever topple over, the bumper/impact system will take up the energy and avoid any damage to the body of the machine. The bumper caps themselves are easy to replace, just as it is easy to exchange any of the substrate units should they be deformed.

Contrary to the conventional rear subframe with case supports for removable cases to be found on all other BMW models, the steeltube rear subframe on the LT comes with additional, extra-strong base supports holding the floor sections of the cases fitted firmly to the motorcycle itself. In conjunction with the impact strips on the case covers, this provides efficient protection against damage - for example if the motorcycle should topple over or when manoeuvring also at the rear. Forces are conveyed by the impact strip smoothly and consistently to the covers on the cases and, as a result, to the rear subframe.

New rear-wheel brake with four-piston fixed calliper

To cope with the higher weight and extra load of the LT, the new rear-wheel brake comes with a four-piston fixed calliper and a floating brake disc measuring 285 mm or 11.22" in diameter. The front wheel, in turn, features the same brake system as on the RS.

Only luxury tourer with ASS fitted as standard

Like the K 1200 RS and R 1100 RT, the K 1200 LT also comes as standard with ABS - making it the only luxury tourer in the world with this standard feature.

The K 1200 LT furthermore features the same wheels as the RS: extra-light, almost delicate 17 -inch cast aluminium wheels in five double-spoke design. And to take up the extra load and weight, the front wheel has been reinforced.

DESIGN, ERGONOMICS, COMFORT AND EQUIPMENT:

The design concept of the K 1200 LT:
Luxury and comfort, dynamic performance, power and superior style

The underlying philosophy of the new K 1200 LT is to re-interpret the concept of the luxury tourer along BMW's specific lines. Through its looks alone, the new machine must symbolise luxurious comfort and dynamic riding characteristics, demonstrating the calibre of this very special motorcycle right from the start. In its design, the LT is intended to convey an aura of luxury and comfort, of dynamism, power and supremacy.

This timeless design is borne out by the clarity and balance of the machine's specific shapes and contours. Lines and arches starting at the front continue consistently along the machine all the way to the tail section - for example the rising line of the windshield reflected by the dropping horizon of the topcase. It is this harmony of the motorcycle's principal lines and details that creates a unique oneness, it is this harmony that emphasizes the high quality of the machine's design.

First-ever implementation of an all-round motorcycle body concept

The dominating factor in implementing this design was for the first time to create a complete, all-round motorcycle body concept. The fairing, fuel tank, seats, cases, topcase and even the exhaust system are no longer individual components grouped around the engine and

the frame, but rather integral parts of a complete, all-inclusive motorcycle body.

The side view:
Sporting, low and crouched at the front, stretched and elegant throughout

Seen from the side the K 1200 LT stands out through its balance of proportions all centring on the rider's seat. At the front it creates a sporting, low and crouched appearance, while in all the motorcycle is stretched and elegant, again revealing the perfect balance of its design.

The almost delicate aluminium front wheel in five double-spoke design (as on the RS) gives the frontal area a touch of transparency and lightness. The front part of the mudguard is finished in body colour, visibly extending the body of the machine and one again accentuating the stretched line of the K 1200 LT.

The large direction indicators at the front well-integrated in the side line of the machine have exactly the right dimensions for a motorcycle of this size and calibre. The main feature in this area is the characteristic, almost "soft" contour rising up from the headlight to the tank cover, thus accentuating the angled side line of the windshield and creating an additional flair of power and performance. The very sporting angle of the windschield in its lower position, in conjunction with the design of the windshield support, gives the LT a sporting, ducked appearance from the front.

The main visual feature from the side is the cooling air outlet in the side fairing. Bearing testimony to the legendary BMW 507 roadster or the current Z3, the air outlet optimised for streamlining is embellished by a chrome-plated grid cover proudly displaying the BMW logo.

The impact strips delineate the silver-coloured lower section of the fairing from the actual body of the motorcycle. Somewhat lower down, slots offer a view of the engine block, showing the observer that this is a K-Series BMW.

The visible section of the cast aluminium frame right in the middle of the motorcycle, together with the footrest plates, forms one unit merging into the adjacent surfaces.

Through their upholstery and surface quality, all of the black textile components again form one area with a consistent feel and look, showing clearly that this is a very pleasant, comfortable place for the driver and passenger.

The covers on the cases are distinctly structured on their surface in order to create a touch of lightness. Here again, the impact strips form the horizon, the dynamic rear edge and the interesting design of the grab handles for the passenger making the case covers another eye-catcher from the side. The surface of the topcase, in turn, exudes a particular touch of class and sophistication through its upholstered sections, forming one unit together with the backrest for the passenger.

The stainless-steel muffler is covered by a high-gloss chrome-plated panel and again merges smoothly into the body of the machine.

The frontal view: unmistakable, dynamic elegance

From the front the LT is characterised by the tandem headlights already well-known from the RS, the BMW kidney grille just below, and the merging body lines at the side. All together, these features create a frontal view of unmistakable, dynamic elegance.

The rear view: consistent in design, clear in structure

Seen from behind, the body concept of the K 1200 LT excels by its clear, consistent structure, the cases, topcase and rear light cluster forming one complete, integral unit. In the interest of streamlining, the rear end of the case cover serves as a spoiler - and since the cases are an integral part of the motorcycle's body, they are separated from the number plate only by a narrow joint. The joint leading to the topcase, on the other hand, is far larger, since the topcase may be moved on the rear support. The rear light cluster is fitted flush into the stretched rear section, again forming one unit together with the direction indicators. As a result, the functions of this all-red light strip - the direction indicator, three rear lights and two brake lights - only become visible when the lights themselves are activated.

Cockpit design following the standard set by BMW cars

The cockpit of BMW's new luxury tourer, as on BMW cars, excels in particular through its tidy and clearly structured design emanating a feeling of tranquility and completeness. With the central area being
covered on top, the rider is pleasantly disconnected from the unrest otherwise conveyed by the view of the road rushing by.

Apart from the speedometer, rev counter, fuel gauge, water temperature gauge, gear indicator, digital clock, and map reading light, all the telltales for all major functions are grouped within the cockpit. Again, they only become really visible when activated,
ensuring that the cockpit only provides information the rider actually needs at any given point in time. And whenever necessary, the rider can obtain any further information by means of switches on the grab handles.

In terms of looks, the handlebar also belongs to the cockpit area. Neither cables nor lines disturb the calm, almost peaceful atmosphere you will find here, since they are covered by a handlebar panel again in graphite colour.

Offering the very best in ergonomics, comfort and equipment

More than any other kind of motorcycle, a luxury tourer, through its concept alone, is expected to offer the very best in ergonomics, comfort and equipment. This is where the rider and his (or her) passenger are really supposed to feel at home.

Particularly the long wheelbase (see also the section on the motorcycle's running gear) of the new K 1200 LT provides the foundation for generous seating. Indeed, seat length is a particularly important point, since in this case the rider and passenger sit independently of each other with substantial freedom of movement, and are not directly behind one another, as is the case with other motorcycles. Indeed, the rider sits upright and relaxed with his knees at an angle of almost 900, while the passenger is able to lean back slightly, resting on the backrest.

It goes without saying that a luxury tourer must offer outstanding protection from wind and weather. So here, too, tests carried out by BMW in the wind tunnel provide new solutions. One of these

solutions is the use of transparent, adjustable wind deflectors controlling the side flow along the motorcycle and thus offering the rider variable climate conditions.

BMW has also taken a new approach in the important area of storage elements integrated in the design of the motorcycle and offering superior comfort and convenience thanks to the new locking concept.

A comprehensive sound system comprising a radio, cassette recorder and loudspeakers rounds off the wide range of standard features.

Same handlebar controls as on the K 1200 RS

Disconnected to avoid the transmission of any vibrations and covered at the top for good looks, the steel-pipe handlebar extends far up towards the rider, allowing him to assume a comfortable, upright seating position. The LT boasts the same, newly developed handlebar controls already featured on the K 1200 RS. The rider is thus able to operate all the controls without taking even one hand off the handlebar. Indeed, he can even operate the radio and hazard warning flashers, as well as optional extras such as the heated handles, on-board computer or cruise control, without moving his hand off the grip. The clutch, in turn, is operated hydraulically, the clutch and handbrake levers being adjustable to four different positions.

Adjustable seats for rider and passenger

Through its looks, the space available, seating comfort and style, the two-piece, separate seat bench on the LT enters a new dimension in the motorcycle world. In the interest of optimum legroom, the rider's seat is narrower at the front and extends further out at the rear for extra comfort.

The rider's seat merges at the end into a short, integrated backrest pleasantly supporting the rider's back without restricting the passenger's freedom of movement.

The pull-out knob for adjusting the seat is to be found beneath the left-hand case cover. With the rider's seat opened, all you have to do

is turn the knob from one position to the other in order to set the height of the rider's seat to 770 or 800 mm (30.3 or 31.5"), respectively. Throughout this entire process a gas-pressure unit will keep the seat bench open. The kneepads are softly upholstered and help to protect the rider from any heat transmitted by the engine.

The passenger's seat is wide, offers excellent support all the way to the passenger's thighs, plus significant freedom of movement. And since the passenger sits higher than the rider, he has a full, unobstructed view of the road and landscape ahead. A feature crucial to passenger comfort is of course the backrest specially upholstered and angled to the rear. Indeed, the backrest may be moved back another 25 mm or approximately 1.0", simply by moving back the topcase.

The final feature supplementing the seat comfort enjoyed by both rider and passenger is the wide footrests with extra-large rubber supports.

Electrically adjustable windshield and wind deflectors

Both the fairing and the windshield were developed in the wind tunnel and then refined in thorough riding tests. Throughout this process the objective was not only to offer optimum protection of the rider's upper body, legs and feet, but also good climate control all around the rider.

The windshield is available in two heights - either a lower version or a special version 180 mm/7.1" higher. Via the left-hand grab handle the entire windshield may furthermore be adjusted infinitely to exactly the right position, this electrical adjustment range amounting to 120 mm/4.7" on the lower and 137 mm/5.4" on the higher version.

Transparent wind deflectors are fitted on both sides of the windshield, interacting with the mirror casings to protect the rider's hands and arms from wind and weather.

Two additional wind deflectors are fitted beneath the rear-view mirrors. Adjustable according to specific requirements, these deflectors allow the rider to enhance his protection from wind and weather to an even higher level or to feed in cool wind on hot days.

24-litre (5.3 Imp gal) fuel tank for a long cruising range

With a capacity of 24 litres, the plastic fuel tank beneath the tank cover allows a long cruising range. A rollover valve inside the tank prevents fuel from spilling should the motorcycle ever topple over. The lockable tank cap, in turn, is on the right-hand side beneath a tank filler flap merging with the surface panel.

Topcase able to accommodate two helmets

Offering 50 litres (1.75 cu ft) capacity, the topcase provides ample space for luggage and can even accommodate two integral helmets. With its handle in the middle, it is easy to open and close, and it goes without saying that the topcase is fully lockable.

To protect items during transport, the lower half of the topcase is lined inside by high-quality carpeting. Within the topcase cover, in turn, you will find a special section for the motorcycle's on-board literature, an interior light and a mirror.

Forming an integral part of the motorcycle's body, the topcase is not simply connected to the rear end of the motorcycle by a rapid-action clamp, but is rather firmly bolted on. After removal of the carpeting, however, this bolt may easily be opened and the topcase taken off. And to offer the passenger even more space whenever necessary, the entire topcase may be moved back by 25 mm or almost 1.0",

Sophisticated case system

Featuring two cases with a capacity of 35 litres or 1.23 cu ft each, the LT comes with total, lockable storage space of 120 litres or 4.2 cu ft. Like the topcase, these side cases are also part of the motorcycle's body and are not removable. To allow convenient and easy exchange of the rear wheel, however, the numberplate support can be removed in a simple and quick operation without even taking off the brake calliper.

A special feature of the storage boxes at the sides is the unique lock concept: After pressing in the lock cylinder, a lever resting flUsh within the upper section of the cases opens up and moves out. This lever serves to apply the actual locking forces, acting via a gear on three anchors integrated in the cover and serving to press down the

seal consistently and with equal pressure. At the same time the outer skin of the case cover overlaps the seal area and protects it from splashwater. The result is convenient single-handed operation and watertight storage compartments.

Thanks to this concept it is not necessary to keep the cases locked at all times, enabling the rider and his passenger to access the cases during a stop without having to use the ignition key. The floor inside the cases features a loading sill keeping baggage or the inner bags securely in position while riding and preventing small objects from falling out when opening the cover. A self-rolling tape holds the cover in position while loading, and the grab handles for the passenger are in an ergonomically favourable position at the top end of the case covers.

Like on the front side fairing, impact strips on the case covers prevent damage should the motorcycle ever topple over.

Storage box in the tank cover

A lockable storage box is provided in the tank cover, within direct access from the rider's position. The radio with cassette recorder
and a torch are fitted beneath the watertight cover, leaving a bit of space in front for small items such as a purse or mobile phone.

Sound system complete with radio and cassette recorder

BMW's new luxury tourer comes as standard with an all-new sound system comprising a high-quality radio and cassette recorder fitted beneath the tank cover. As an option, the system may be upgraded to an even higher level by the addition of a CD changer. Further features of this sound system are four 20 Watt sets of loudspeakers consisting in each case of a wide-band speaker and a tweeter.

The front loudspeakers in the cockpit are installed in closed boxes, the rear loudspeakers are integrated in either side of the topcase. The removable aerial is fastened on the left-hand rear subframe.

All functions of the sound system may be activated by illuminated buttons on the central control panel complete with a digital display in the tank cover, immediately in the rider's line of vision. Some of these functions, such as volume or the station buttons, may be controlled

by the rider also on the left-hand handle and by the passenger on the right side of the topcase.

Optional extras: from seat heating all the way to a CD changer

Over and above the wide range of standard fitments, the LT is also available with various options straight from the factory.

Apart from heated handles as an almost "natural" feature on BMW motorcycles these days, the K 1200 LT comes for the first time with optional electric seat heating operating in two separate stages for the rider and passenger and even comprising the backrest behind the passenger. The switches for the heating are on the right-hand side of the respective seat.

Soft-Touch seats available as an option only in conjunction with seat heating offer an extra 20 mm/0.79" upholstery for even greater seating comfort. The on-board computer, in turn, incorporates a digital display on the left side of the cockpit, providing information on fuel consumption, the range still remaining on the fuel in the tank, your average speed so far, and the outside temperature.

Cruise control keeps the motorcycle at a speady speed when cruising in relaxed style on the *autobahn* or highway. And the aficionado of good music wishing to enjoy his favourite COs also while riding can opt for a CD changer fitted in the right-hand case. Here again, the rider can choose either individual titles or a maximum of six COs by remote control from the left-hand handle.

The K 1200 LT may also be customised in its looks and appearance by a chrome package comprising a number of items from the footrest supports all the way to the rear-view mirror housings.

Starting with the 2000 model year, the topcase is also available with a chrome-plated railing incorporating an additional brake light. And to make sure that this precious machine cannot fall into the hands of thieves, the K 1200 LT is also available with a new anti-theft warning system switching on and off with maximum comfort and convenience by radio remote control. To allow manual operation of the system, in turn, there is also an electronically coded key delivered to the owner together with his machine. A new system of sensors determines even the slightest deviation from the data memorised when the motorcycle

was parked, preventing the fuel supply and deactivating the starter in the event of any unauthorised movement. The movement alarm then sets off a powerful siren and switches on all four direction indicators.

Special equipment:
from an intercom system all the way to a tank rucksack

Beyond the options fitted at the factory at the customer's request, the BMW motorcycle dealer is able to offer an even wider range of special equipment.

As an example, the LT comes with an intercom system with electronic units and wiring fully integrated within the motorcycle. The system control unit is housed in the tank compartment above the cassette recorder and merely has to be supplemented by the microphone and loudspeaker installation kits for BMW System Helmet 4. All the rider has to do is put the helmet feed wire into a socket in the tank cover, while the passenger inserts his helmet feed pin into a socket on the topcase. Then rider and passenger can control the volume of their helmet loudspeakers by the radio controls beneath the tank cover.

Apart from the intercom and sound system, a mobile phone (with automatic acceptance of calls only) may also be connected on additional sockets in the control unit. Reception of calls is automatic, while the active calling function is via a button on the left handle.

The mobile phone or a walkie-talkie may both be housed in the tank compartment and even a CB radio may be fitted, the radio unit itself going inside one of the two cases.

Extra-large footrests for the passenger are available as an additional feature, with adjustment for height by up to 50 mm or almost 2.0" by means of a rapid-action fastener. Then there is also a beverage can holder clicking on to the handlebar by means of a rapid-action lock. And over and above the two electric sockets featured as standard, two further sockets may be added on request.

It almost goes without saying that removable inner bags made of topquality materials are available for the side cases and topcase. Small items such as your purse, ID cards or keys go conveniently into a tank bag fitting exactly on to the cover panel and holding a map at the top within a clear-view pocket.

10 THE K 1200 RS

Sports tourer entering the 2000 model year without any changes

The BMW sports tourer is also continuing on the road to success, with production from the launch of the K 1200 RS in spring 1997 until summer 1999 exceeding 16,000 units. Now the K 1200 RS is entering the 2000 model year without any changes.

The customer preferring a less sporting, but rather a more comfortable seating position, has had the choice since summer 1998 of a comfort handlebar and comfort seats available as options or retrofittable special equipment.

The comfort handlebar moves the handles 40 mm or almost 1.6" closer to the rider, thus allowing a more upright seating position. The new comfort seats, in turn, offer both rider and front passenger the opportunity to keep their knees at a larger angle, seat height being increased by 20 mm/0.79" (either 790 or 820 mm/31.1 0 or 32.3") for the rider and by 10 mm/0.39" for the passenger.

From the R 100 RS to the K 1200 RS

In 1976 BMW launched the first production motorcycle in the world with aerodynamic fairing developed in the wind tunnel. And whether it was the K 100 RS in 1983 or the R 1100 RS in 1993, BMW's sports tourers then set new standards time and again, quickly becoming the most successful machines of their type.

Since, as the old saying goes, all good things come in sets of three, BMW launched the new K 1200 RS as the third and so far most significant evolutionary step in the 13-year career of this sports tourer for the 1997 model year. Not only the "heart" of the K 1100 RS, the four-cylinder power unit, has become even larger and more powerful, but rather the suspension is almost brand-new and the motorcycle features have been renewed entirely from the ground up - meaning that the K 1200 RS is an all-new motorcycle also in terms of its looks.

The K 1200 RS excels through its dynamic, emotional, unmistakable design. Even at very first sight, therefore, it clearly reveals its high standard in terms of function and ergonomics.

The debut of the Telelever in a K-model, a new frame concept with the engine totally separated to avoid any vibration, a new six-speed gearbox, standard fitment worldwide of a fully-controlled dual catalyst and ABS, the adjustable windshield, handlebar, seat, and rider footrests - these are the most outstanding innovations featured on the K 1200 RS.

The K 1200 RS is even more dynamic, sporting, and comfortable than the K 1100 RS, while at the same time it retains the superiority and touring qualities so typical of BMW. Weighing 285 kg or 628 Ib in road trim, for example, and with maximum permissible weight of 500 kg or 1102 Ib, BMW's new machine offers a service load of no less than 215 kg or 474 lb.

Dynamic performance K 1200 RS-style means in particular superior muscle at all speeds, ultra-powerful and seemingly effortless torque and acceleration, and freedom from any vibrations possibly affecting the rider and passenger. This is also reflected by the dynamic behaviour of the running gear, the motorcycle's precise and agile handling in bends, and its virtually perfect stability in all situations on the road. And last but not least, this supremacy also comes out in a brake system which, thanks to ABS, offers optimum safety at all times.

POWER UNIT:

The biggest and most powerful so far in the history of BMW motorcycles

For the second time BMW's development engineers have enlarged the size of their four-cylinder power unit. Increasing stroke from 70 to 75 mm (2.76-2.95"), they have enlarged the overall displacement of the engine to 1171 cc, making the power unit of the K 1200 RS, together with that of the K 1200 LT, the largest - and most powerful - in the history of BMW motorcycles so far.

Another first-time achievement:
an engine developing more than 100 bhp

The launch of the K 1200 RS also marked another first-ever achievement, this being the first BMW motorcycle engine in the history of the Company to exceed the voluntary limit imposed so far of 74 kW/100 bhp. For now there is also a special version developing no less than 96 kW/130 bhp at 8750 rpm.

Now worldwide with 130 bhp Or
an optional 98 bhp

Following the introduction of the standard homologation rules for motorcycles in the member states of the European Union in 1998 dispensing with any power restrictions, BMW has decided to offer the K 1200 RS worldwide with maximum output of 96 kW/130 bhp. A 72 kW/ 98 bhp version is however available as an option in accordance with the relevant insurance categories in Germany. This engine reaches its maximum output at a relatively low 7000 rpm.

In the lower engine speed range the two power units hardly differ in their output curves, rising up quickly and consistently to 6000 rpm. From there the 96 kW/130 bhp version continues to develop even more power up to almost 9000 rpm, giving the K 1200 RS supreme performance on the road. The engine is not cut off electronically until it reaches 9400 rpm, as opposed to the speed limit of 9000 rpm on the K 1100 RS.

Maximum torque up once again by approximately 10 per cent

Both versions of the engine benefit from an increase in maximum torque by approximately 10 per cent - certainly a very significant point, considering that maximum torque was already most substantial at 107 Nm or 79 Ib-ft at 5500 rpm. Indeed, the entire torque curve has become "beefier", both versions of the engine now developing
1 00 Nm or 74 Ib-ft from just 3500 rpm.

The 72 kW/98 bhp engine develops torque even more rapidly from a speed of 3500 rpm, reaching its peak of 118 Nm or 87 Ib-ft, like the K 1100 RS, at just 5500 rpm, which means fascinating power and pulling force from moderate engine speeds.

The even more dynamic sports version developing a maximum output of 96 kW/130 bhp achieves not only this higher power at higher engine speed, but also requires higher engine speed to develop its maximum torque of 117 Nm or 86 Ib-ft, a peak reached at 6750 rpm.

In technical terms the 130-bhp version differs from its 98-bhp counterpart by shorter intake manifolds with a larger diameter and a modified control map for the electronic engine management.

Refinement and free-revving performance also improved

As a result of the increase in engine size and the wish to improve not only the engine's performance, but also its running smoothness, refinement, response and free-revving riding characteristics, several modifications were obviously required.

To begin with, all moving parts inside the engine were checked with utmost care for any possible reduction in weight. After all, every single gram above the minimum limit means less agility, refinement, and smoothness. Accordingly, shaft diameter of the 16 valves has been reduced from 6 to 5 mm in order to save weight and reduce flow resistance in the intake duct. The new box-type pistons with lighter piston pins, in turn, also help to reduce the masses accelerated when giving gas.

With engine size being increased by a larger stroke, an obvious requirement was to use a new crankshaft which also had to be stronger and stiffer than the old one. And this also meant using pistons with shorter compression lift, while the connecting rods are still made of forged steel, as before.

Engine compression has increased from 11.0: 1 to 11.5: 1, serving not only to provide extra power, but also more torque - and at the same time this enhances the engine's thermal efficiency, which means greater fuel economy, too. Valve timing, the valve drive system, the auxiliary shaft and air purge from the engine block have also been changed completely, the auxiliary shaft bearings have been modified, and the volume of the airbox increased from 6 to 7 litres.

Ram charge effect ensuring an optimum supply of air

Since an optimum supply of fuel and air to the cylinders is absolutely essential for genuine power and performance, the engine of the
K 1200 RS uses the ram charge effect to draw air into the intake system. In other words, the engine draws in the air required for combustion through an opening in the front end of the fairing, a procedure which provides two advantages: First, the air at this point is cooler than the air, say, beneath the tank and therefore contains more oxygen molecules. Second, the air rushing by the motorcycle is pressed (or "rammed") even more efficiently and with greater force into the intake system.

Two radiators and one oil cooler guarantee healthy operating temperatures

The radiator of the new, even more powerful engine has also been modified in the interest of maximum efficiency and function. As a result, the K 1200 RS comes with a twin-radiator system (previously only one radiator), the two radiators being positioned at exactly the right point for an optimum flow of air. So while the overall radiator surface as such is smaller, overall efficiency of the radiator system is a lot better than before. Whenever necessary, two fans cut in automatically at low speeds or when the machine is at a standstill. Warm air coming out of the radiators flows through discharge grids

on both sides of the fairing, thus passing by the rider without creating any unpleasant effect.

Another new feature is the oil cooler with thermostat control, ensuring not only that the engine quickly reaches its normal operating temperature, but also that the oil itself never gets too hot when running under full load or in hot summer weather.

The third generation of Digital Motor Electronics: Motronic MA 2.4

While electronic engine management is still quite unusual with motorcycles - as opposed to cars - BMW is now introducing the third generation of its Digital Motor Electronics on the power unit of the K 1200 RS. This sophisticated control system is indeed absolutely ideal in meeting important requirements such as the reduction of fuel consumption and exhaust emissions, and obviously provides exactly the right technical foundation for the use of a fully-controlled threeway catalytic converter.

Over and above these improvements, the new Motronic MA 2.4 offers a number of trendsetting innovations certainly worth mentioning.

First-ever electronically controlled automatic choke

The K 1200 RS is the first motorcycle in the world incorporating an automatic choke with electronically controlled throttle butterfly adjustment (TBA). Since, therefore, there is no longer the usual choke lever, the rider benefits from even greater comfort and control ease, optimum idle speed stability, and the good feeling that he cannot make any mistakes in controlling the choke.

Last but not least, the automatic choke significantly improves the engine's emission behaviour in the warm-up phase.

MoDiTeC: the first-ever mobile test computer

Introducing Motronic MA 2.4, BMW also became the first manufacturer in the world to use a mobile test computer (MoDiTeC),

a laptop-size tester, for the motorcycle. In the workshop, the BMW dealer connects MoDiTeC to the motorcycle by way of a diagnostic plug and is able, as a result, to perform a 100 per cent check of all electronic modules and the electrical system. After selecting the items he wishes to consider, the mechanic is guided by the display and a catalogue of symptoms all the way to a clear analysis of any defects, receiving all the technical information he needs in the process. And at the same time the diagnosis system presents the individual steps to be taken by the mechanic.

BMW MoDiTeC is not only a diagnosis and measuring system, but also an electronic information unit helping to speed up service and repair work.

Electric power supply on the K 1200 RS is now even more efficient and substantial than before, the optimised alternator delivering 720 W in order to meet all requirements.

Dual catalytic converter fitted as standard worldwide

Creating the exhaust and silencer systems of the K 1200 RS, BMW's development engineers have really established a new benchmark. For this sophisticated system not only fulfills the strictest noise emission standards in the world, but also combines optimum power and torque characteristics with equally outstanding emission control - and it does this equally well with both versions of the engine.

Enlarged in their diameter, the four exhaust pipes form one fanshaped manifold exactly tuned to the new engine. In each case two of the stainless-steel pipes merge straight into the two fullycontrolled three-way metal-based catalytic converters positioned directly next to each other. Introducing this dual-catalyst concept featured worldwide as standard on the K 1200 RS, BMW is indeed once again paving the way into the future of emission management technology.

The extra-large rear muffler also made of stainless steel comes complete with an aluminium cover easy to replace whenever necessary.

Newly developed six-speed transmission

The K 1200 RS is the first-ever BMW motorcycle to feature a sixspeed transmission. With increments between gears on this new transmission obviously being smaller, the result is an even smoother, more direct flow of power from one gear to the next. Shift comfort and precision have also been improved significantly, the new gear lever mechanism supporting the rider's shift movements and allowing the gears to come into mesh with even greater precision.

Another advantage of the new gearbox is its optimised noise control, the Paralever rear-wheel swinging arm now resting on the central frame, and no longer in the gearbox housing. The gearbox itself is more compact, noise-emitting surfaces are far smaller. And the service intervals for the gearbox have been doubled from 20,000 to 40,000 km.

RUNNING GEAR:

A significant innovation from the new Boxer generation: the BMW Telelever

One of the most significant innovations in running gear technology was now featured for the first time also in a K-model: the BMW Telelever.

This unique front-wheel guidance system made its very successful debut back in 1993 in the R 1100 RS and has clearly substantiated its merits in the meantime in the subsequent models of BMW's new Boxer generation.

A detailed technical description of the design and functions of the BMW Telelever is provided in the chapter on the R 1100 RS.

Clearly, the Telelever had to be modified in order to provide a perfect match for the four-cylinder power unit, the forks and longitudinal control arms being all-new. With the longitudinal arms resting in this case not on the engine block - as with the Boxer - but rather on the

frame of the motorcycle (for details, see the technical description of the frame), the arms are rectangular in shape, and no longer look like a letter A.

As on the Boxer models, a central gas-pressure spring strut provides both the necessary spring and damping action, with spring travel measured vertically to the road of 115 mm or 4.53".

Anti-dive compensation on the K 1200 RS is 90 per cent - which is much more than on the new Boxers for road use only, with anti-dive compensation reduced to just 70 per cent.

Although 100 per cent anti-dive compensation would have been possible in technical terms, BMW's development engineers intentionally did not go this far, since they believe that while braking the rider should still receive certain feedback telling him how great the anti-dive effect really is.

Handlebar damper almost entirely free of friction in the interest of optimum riding safety

The newly developed handlebar damper suppresses all vibrations around the handlebar centrepoint, which might otherwise have a negative effect on riding safety. The special feature in this context is that the handlebar damper is almost entirely free of friction, meaning that the motorcycle offers optimum directional and tracking stability, handling and agility.

All this is made possible by the special design of the dual piston: whenever the handlebar is moved slowly, oil flows through both parts of the two-piece piston. With the flow cross-section being relatively large and hydraulic damper forces small, the dynamic inner pressure within the handlebar damper and, accordingly, pressure behind the seal crucial to friction on the piston rod remain at a minimum.

As soon as handlebar movements exceed a certain level, on the other hand, the two halves of the dual piston merge with one another, significantly restricting the flow cross-section and increasing the hydraulic damper forces.

Improved once again: the BMW Paralever

Featured for the first time in the R 100 GS back in 1987, the Paralever now fitted on all BMW motorcycles - with the exception of the new R 1200 C and the chain-driven single-cylinder F 650 models - ensures optimum guidance of the rear wheel. A double swinging arm, it substantially reduces the load change response of the drive shaft, in this way ensuring optimum traction of the rear wheel at all times.

On the K 1200 RS the Paralever swinging arm rests on the new frame, and no longer on the transmission housing itself.

Like the new Boxers, the K 1200 RS features a gas-pressure spring strut resting on the frame on the right-hand side, slightly offset from the centrepoint of the motorcycle. On the opposite side, in turn, the spring strut is now connected to the frame at roughly the same point as the swinging arm itself, and no longer rests on the final drive, as is the case with the K 1100 RS. This configuration and the inclined position of the spring strut ensures ideal progression in spring and damper action, the entire rear wheel suspension responding more sensitively and significantly improving riding comfort. The gaspressure spring strut allows 150 mm or 5.91" of spring travel and can be adjusted for spring pre-tension and outward-stroke damping with the help of the tools in the kit.

Entirely new frame concept to avoid vibrations and maintain supreme riding stability

As already mentioned when describing the engine of the K 1200 RS, the increase in engine capacity means even more power than with the former four-cylinder models. Given the previous design concept of the K-models, where the engine was connected firmly to the frame as one of the load-bearing components, it was impossible to separate the engine perfectly by means of elastic mounts in order to avoid vibrations, since this would have detracted from the motorcycle's riding stability.

Seeking to solve this conflict of interests between riding comfort and riding safety, ie, trying to avoid unpleasant vibrations on the one hand and achieve supreme riding stability on the other, BMW's development engineers eventually created an all-new frame concept.

Cast aluminium frame forming a stiff backbone
Engine specially mounted to avoid vibrations

A compact cast aluminium frame fitting snugly around the engine now resting on special mounting points to avoid vibrations altogether, forms the flexurally and torsionally-stiff backbone between the Telelever and the Paralever. At the rear, the frame incorporates the so-called "silent blocks", extra-large rubber mounting points for the engine, as well as the rear frame section made of steel pipes and the Paralever swinging arm. At the front the Telelever longitudinal arm rests on a swivelling bearing point; this is also where the silent blocks on the front engine mounts are supported on the frame head by steel bars.

Welded out of four sections, the die-cast aluminium frame is referred to in technical terms as a "free-form casting" allowing in each case an optimum design making full use of the space available in the interest of supreme stiffness and rigidity. The thickness of each wall, for example, may be varied according to specific strength and stability requirements. The hollow frame, in turn, features reinforcement baffles inside forming a kind of honeycomb structure maintaining maximum rigidity within the most compact dimensions.

Engine fitted higher up to allow an even more extreme riding angle in bends

In the interest of sporting performance with riders leaning over to an extreme angle in bends (up to 50 ^{0} on the K 1200 RS as opposed to 46 ^{0} with the K 1100 RS), the engine is now fitted approximately three centimetres higher.

Beautiful and light: wheels in five-spoke design

The lighter 17 -inch cast aluminium wheels in almost delicate (but very sturdy) five-double-spoke design provide a perfect match for the
K 1200 RS.

Brake system carried over from the K 1100 RS

Offering virtually perfect function and optimum efficiency, the brake system of the K 1100 RS also featured on the new Boxer series has been carried over to the new motorcycle without any significant modifications.

Accordingly, the front wheel features a hydraulically operated doubledisc brake with four-piston fixed callipers. Mounted in floating configuration, the stainless-steel discs measuring 305 mm or 12.00" in diameter are however, in the interest of lower weight and, as a result, lower unsprung masses, fastened directly to the spokes of the aluminium wheel, and no longer toa brake disc support. The rear wheel, in turn, comes with a single-disc brake featuring two-piston fixed callipers and a brake disc measuring 285 mm or 11.22" in diameter.

ABS standard worldwide

Like the R 1100 RT and K 1200 LT, the K 1200 RS also comes as standard worldwide with BMW's second-generation ABS originally launched in 1992.

Ideal partnership of the Telelever and ABS

Since brake forces at the contact point between the front tyre and the road can only be used in full with wheel load at a maximum, the Telelever featuring the only really effective anti-dive concept provides ideal conditions for perfect interaction with ABS. In other words, as long as the suspension and dampers have their full effect even when applying the brakes on a bumpy surface, the wheel thus maintaining its full contact with the ground, the brakes will ensure optimum deceleration and stopping power.

DESIGN AND FEATURES:

Once again a distinct face in the crowd

From the front, the K 1200 RS looks sporty and muscular. And, as is appropriate for a BMW, it once again has a new, different and unmistakable face - quite simply, a distinct face in the crowd. The typical K-RS design features come out again in the windshield pillars and hand protectors with their integ~ated direction indicators, as well as the aerodynamically optimised front area.

New headlight with "double-eye effect"

The face of the machine is dominated by the new tandem headlight offering innovative light technology to be explained in greater detail later after this description of the motorcycle's design. With the low beam switched on, the headlight also offers the beholder a powerful image of the motorcycle coming closer, creating a kind of "doubleeye effect".

A powerful and dynamic appearance

Seen from the side, the K 1200 RS again looks powerful and dynamic. At the front the complex unit formed by the fairing and the fuel tank follows immediately behind the front wheel with its delicatelooking five double spokes. This is where the touring character of the machine comes out most clearly, showing the direct interaction of ergonomics, wind and weather protection.

A harmonious blend of function, ergonomics, and aesthetic design

Whether it's the transition from the tank to the seat, the particular design of the tank cover and fairing reflecting the anatomy of the rider's knee, or the side radiator air nozzles indicative of the perfect flow of air - the side view of the K 1200 RS reflects the harmonious blend of function, ergonomics, and aesthetic design.

Two small, shop-window-like cutouts on either side of the fairing show once again quite clearly that this is where the four-cylinder K-engine with its unique looks does a reliable job, as usual. Right behind the fairing, the rear section of the new cast aluminium frame with the footrests at the bottom provides a technical highlight blending perfectly with the overall styling of the machine. Rising slightly from front to rear, the seat has a slender look particularly where the passenger sits, merging into the high, somehow lightlooking rear end. And last but not least, the passenger grab handle, direction indicators, rear light and number plate support form one compact unit creating a particularly clear-cut design around the rear wheel really accentuating the machine's styling in this way with its muscular stance on the road.

Right in front of the rear subframe on the left-hand side, the cylindrical, large-volume rear muffler again follows a clear line, characterising the sporting side of the K 1200 RS. Even the case supports, the cases themselves and the luggage rack available as an option blend harmoniously with the overall looks of this sports tourer.

Optimum ergonomics and streamlining

Inter alia, BMW motorcycles excel through their carefully conceived, ergonomic design and outstanding tourer comfort.

As an example, BMW's motorcycle development specialists use the most advanced computer simulation methods in the interest of optimum ergonomics. This allows them to systematically examine the basic concept as well as all kinds of modifications right from the beginning, in the first step of the development process. Accordingly, not only the windshield, handlebar, clutch pedal, brake pedal, and seat are adjustable on the K 1200 RS, but also the rider footrests as well as the gearshift lever.

Fairing with an adjustable windshield

With its somewhat smaller frontal area, the fairing of the K 1200 RS looks more delicate than that of the K 1100 RS, but nevertheless offers good protection from wind and weather. With the rider leaning

forward on the motorcycle, overall air resistance Cd x A is 0.38, while with the rider sitting upright the overall drag factor is 0.42.

The windshield adjusts easily and conveniently to two different positions: a more dynamic, sporting position and a higher, more upright setting for comfortable touring.

As on various other BMW motorcycles, the direction indicators on the K 1200 RS also serve as hand protectors. And thanks to the sporting, slimmer and more dynamic design of the fairing, the rearview mirrors can be perfectly positioned on the handlebar to provide optimum visibility to the rear.

Greater light intensity thanks to the new tandem headlight

Right in the middle of the fairing comes the headlight with its new light technology, the tandem headlight.

While conventional headlights incorporate a parabolic reflector with a scatter lens to eliminate any deficiencies, the headlight reflector used here applies free-form technology calculated and designed with utmost precision by a computer. The H 7 bulb for the low beam comes right in the middle, with a small spot reflector incorporating an H 3 bulb for the high beam just in front and added on to the low beam whenever required.

It is this configuration with the high beam in front of the low-beam reflector that leads to the term "tandem headlight". On the road, it ensures not only better illumination to the side and round bends, but also a much higher standard of light intensity in general.

A cockpit telling the rider everything he needs to know

Again totally re-designed, the cockpit is clear and logical in its structure and graphic presentation, giving the rider all the information he needs to know at first glance. As the largest instrument, the rev counter next to the speedometer dominates the cockpit, emphasizing the sporting character of the K 1200 RS.

Two further analogue-face instruments show you the coolant temperature and fuel level. And apart from a digital clock and gear display there are several telltales and warning lights, one of which comes on when the fuel level in the 21-litre (4.6 Imp gal) fuel tank drops to four litres (0.9 Imp gals).

Adjustable handlebar for sports riding or comfortable touring

Measuring 700 mm or 27.6" across, the handlebar of the K 1200 RS is adjustable to three different fore-and-aft and height positions, the adjustment process as such being very simple and requiring only the tools already on board. Accordingly, the rider can choose between a more sporting or touring-oriented seating position, as is befitting for a genuine sports tourer.

Optimised handlebar controls

The new K 1200 RS also introduced a new generation of BMW handlebar controls. Proceeding from the existing ergonomic concept, the arrangement of the controls and switches has been optimised where necessary, thus ensuring even greater comfort than before. On the left-hand side, for example, the push button for the horn is now placed in an even better and more ergonomic position, while the now illuminated - switch for the hazard warning flashers fitted as standard has moved from the cockpit to the handlebar and is therefore even easier to reach. On the right-hand side, in turn, the light switch is in a new, again even more accessible, position. And the switch for the heated handles available as an option is now integrated into the handlebar control unit on the right.

The logical position of the thumb-operated direction indicator switch, on the other hand, remains unchanged, ie, on the left-hand side of the handlebar for the left, on the right-hand side of the handlebar for the right direction indicator. And both direction indicators are cancelled, as before, by the switch on the right. There is also, as in the past, an automatic indicator cancelling function activated out of town at speeds over 50 km/h after about 10 seconds or in town after a distance of approximately 210 metres.

The clutch and brake pedals are anatomically designed and may now be adjusted to no less than four different positions. Hydraulic operation of the clutch keeps operating forces consistently at a low, comfortable level.

Seat and footrests also individually adjustable

The contoured design of the comfortable seat around the rider and the way the seat merges into the tank and fairing gives you the feeling of sitting not so much on the motorcycle, but right inside the machine. The rider has more body contact with the K 1200 RS and, accordingly, feels even more a part of it. Even when accelerating and braking all-out, this relieves a lot of pressure from your body.

Once again, the height of the single-piece seat may easily be adjusted in the rider's area between 770 and 800 mm (30.3 and 31.5"). In conjunction with the footrests also adjustable by way of three bolts, the rider may choose his knee angle according to his own personal taste, the overall range of adjustment being 30 mm or 1.18" in horizontal and 26 mm or 1 .02" in vertical direction. The specific position of the footrests for the passenger also ensures superior seating comfort, giving the passenger a comfortable ride even on long distances.

SPECIAL EQUIPMENT AND ACCESSORIES:

From the baggage range all the way to the anti-theft warning system

Although the K 1200 RS comes with a very wide range of standard features to begin with, it is nevertheless available with an attractive choice of special equipment and accessories. Just some examples are the case supports with luggage rack, cases, heated handles, an anti-theft warning system, a tank bag, as well as inner bags for the side cases.

Ever since the 1998 model year, the rear wheel has been optionally available in new, wider 5.50 x 17 MTH size with an 180/55 ZR 17 tyre.

11 THE 2000 COLOUR RANGE

F-models:	Colour:	Seat:
F 650	Flame red	Black
	Deep black	Black or Orange
	Jupiter orange	Black
	Blue metallic	Black
Special vers	Silver metallic	Black
F 650 ST	Lahar grey metallic	Black or Blueberry
	Flame red	Black
Special vers	Ocean green	Light grey
Special vers	Deep black	Black
Special vers	Blue metallic	Black

R-models:	Colour:	Seat:
R 1100	Mystic red metallic	Black
and	Pacific blue metallic	Black
R 850 R	Graphite metallic	Navy blue
	Graphite metallic/ Frost blue metallic with yellow decals	Black
R 850 GS	Marrakech red	Black
	Night black	Black or Trinidad red
	Arctic silver/Dakar yellow	Black
R 1150 GS	Night black	Black or Trinidad red
	Titanium silver metallic	Black or Trinidad red
	Mandarin	Black
R 1100 RS	Marrakech red	Black
	Night black	Black or Red
	Arctic silver/Night black	Black

R 1100 S	Night black	Black or Orange
	Brilliant red	Black
	Mandarin	Black
	Titanium silver metallic/ Mandarin	Black
R 1100 RT	Opal blue metallic	Black
	Graphite metallic	Black or red
	Tundra green metallic	Black
	Amarena red metallic	Black
	Night black	Black
	Neon blue metallic	Black
R 1200 C	Night black	Black or Canyon
R 850 C	Brown and Ivory	Navy blue, Canyon brown or Black
	Steel blue metallic	Navy blue
	Tartan green metallic	Orange
R 1200 C	Frost blue metallic	Black
Avantgarde and R **850 C** **Avantgarde**	Peach metallic	Black

K-models: Colour:		**Seat:**
K 1200 RS	Marrakech red	Black
	Arctic silver metallic/ Pacific blue metallic	Black
	Graphite metallic	Black
K 1200 LT	Canyon red metallic	Black
	Basalt grey metallic	Black
	Champagne metallic	Black

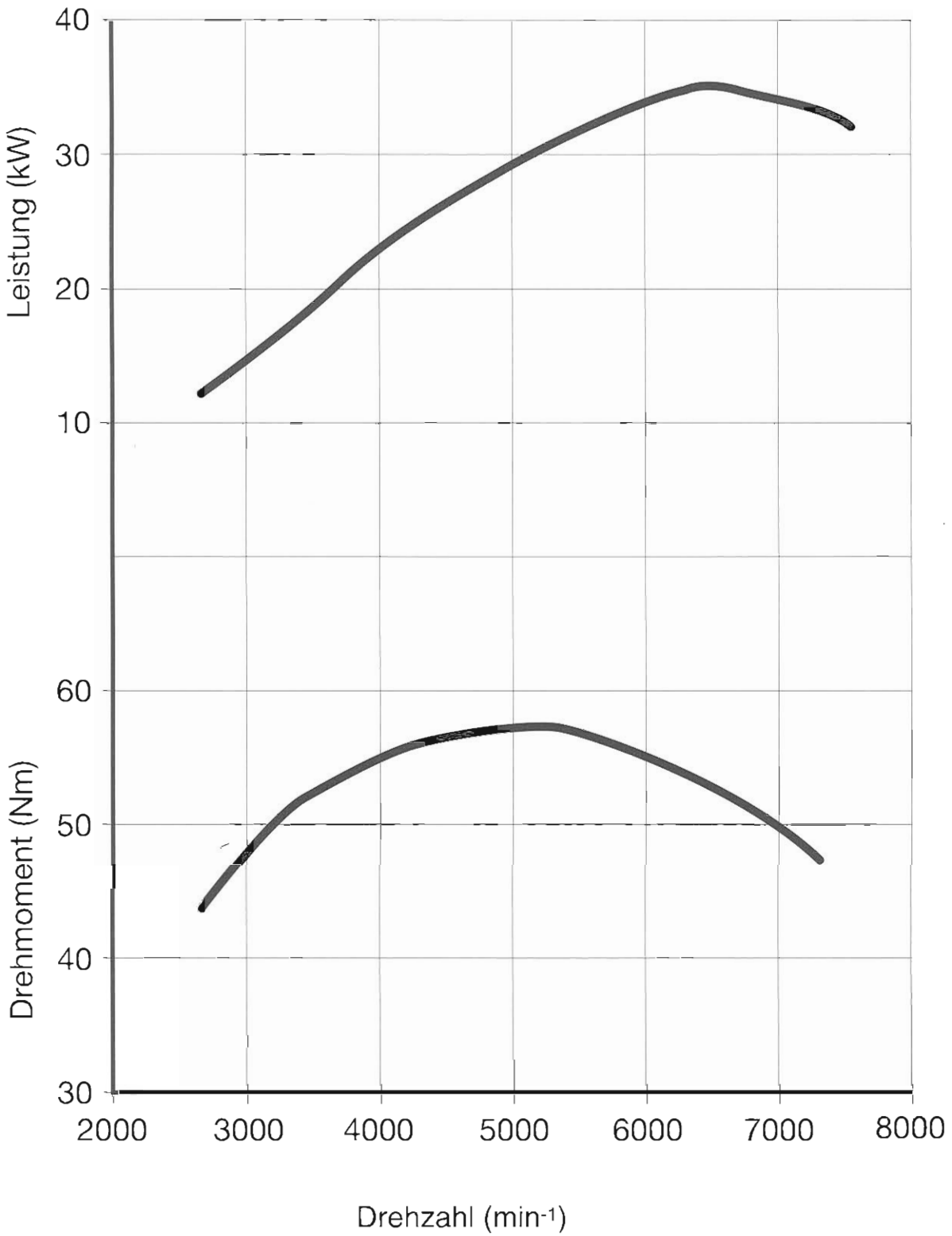
	SPECIFICATIONS BMW MOTORCYCLES		F 650	F 650 25 kW/34 bhp	F 650 ST	
Engine	Cubic capacity	cc	652			
	Bore/stroke	mm	100/83			
	Max output	kW/bhp	35/48	25/34		
	at	rpm	6500	5700		
	Max torque	Nm	57	48		
	at	rpm	5200	4200		
	Design					
	No of cylinders		1			
	Compression ratio/fuel grade		9.7/N			
	Valve control		DOHC			
	Valves per cylinder		4			
	Intake/outlet dia	mm	36/31			
	Fuel supply		Mikuni-Carburettor			
	No of carburettors/dia		2/33			
Electrical system	Ignition		contact-free high-tension capacitor ignition			
	Alternator	W	280			
	Battery	V/Ah	12/12			
	Headlight	W	H 4 55/60			
	Starter	kW	0.9			
Power transmission, Gearbox	Gearbox		5-speed gearbox with dog-type shift			
	Gear ratios	I	2.75/2.94			
		II	1.75/2.94			
		III	1.31/2.94			
		IV	1.05/2.94			
		V	0.88/2.94			
Suspension	Rear-wheel drive		O-ring chain 5/8 x 1/4			
	Clutch		Multi-plate clutch in oil bath			
	Type of frame		Single-loop tabular frame			
	Spring travel front/rear	mm	170/165		170/120	
	Wheel castor	mm	116		110	
	Wheelbase	mm	1480		1465	
	Steering assembly angle	°	62			
	Brakes	Front	single disc brake, dia 300 mm			
		Rear	single disc brake, dia 240 mm			
	Wheels		wire spoke wheels			
		front	2.15 x 19		2.15 x 18	
		rear	3.00 x 17		3.00 x 17	
	Tyres	front	100/90-19 57 S		100/90 – 18 56	
		rear	130/80-17 65 S		130/80 – 17 65	
Dimensions and weights	Length, overall	mm	2180		2160	
	Width with mirrors	mm	880		880	
	Handlebar width	mm	800		760	
	Seat height	mm	800		785	
	Weight, unladen with full tank	kg	191		191	
	Max permissible weight	kg	371		371	
	Fuel tank (reserve)	ltr	17.5/2		17.5/2	
Performance	Fuel consumption					
	90 km/h (56 mph)	ltr	3.8	3.8		
	120 km/h (75 mph)	ltr	5.3	6.3		
	Acceleration					
	0–100 km/h (62 mph)	sec	6.2	–		
	standing-start km	sec	28.9	–		
	Top speed	km/h	163	145		

	SPECIFICATIONS BMW MOTORCYCLES		R 1100 RS	R 1100 RT	R 1150 GS	R 850 GS
Engine	Cubic capacity	cc	1085		1130	848
	Bore/stroke	mm	99/70.5		101/70.5	87.5/70.5
	Max output	kW/bhp	66/90		62,5/85	52(25)/70(34)
	at	rpm	7250		6750	7000(5000)
	Max torque	Nm	95		98	77(60)
	at	rpm	5500		5250	5500(2500)
	Design		flat-twin		flat-twin	flat-twin
	No of cylinders		2		2	2
	Compression ratio/fuel grade		10.7/S		10.3/S	10.3/S
	Valve control		HC		HC	HC
	Valves per cylinder		4		4	4
	Intake/outlet dia	mm	34/29		34/29	32/27
	Fuel supply		Motronic MA 2.2		Motronic MA 2.4	Motronic MA 2.2
Electrical system	Alternator	W	700	700	600	700
	Battery	V/Ah	12/19	12/19	12/14	12/19
	Headlight	W	H 4 55/60		H 1/H 7	H 4
	Starter	kW	1.1			
Power transmission, Gearbox	Gearbox					
	Gear ratios	I	4.16/2.81	4.16/2.91	2.05/2.82	4.16/3.20
		II	2.91/2.81	2.91/2.91	1.6 /2.82	2.91/3.20
		III	2.13/2.81	2.13/2.91	1.27/2.82	2.13/3.20
		IV	1.74/2.81	1.74/2.91	1.04/2.82	1.74/3.20
		V	1.45/2.81	1.45/2.91	0.9 /2.82	1.45/3.20
		VI			0.7 /2.82	
Suspension	Rear-wheel drive		BMW Paralever			
	Clutch		Single-plate dry clutch rotating in opposite direction			
			dia 180 mm	dia 180 mm	dia 165 mm	dia 180 mm
	Type of frame		Tubular space frame, engine serving as loadbearing component			
	Spring travel front/rear	mm	120/135	120/135	190/200	
	Wheel castor	mm	111	122	115	
	Wheelbase	mm	1473	1485	1509	
	Steering assembly angle	°	65.9	62.8	64	
	Brakes	Front	dual-disc brake, dia 305 mm	dual-disc brake, dia 305 mm		
		Rear	single-disc brake, dia 285 mm	single-disc brake, dia 276 mm		
	Wheels		Light-alloy wheels		Cross-spoke wheels	
		front	3.50 – 17		2.5 x 19	
		rear	4.50 – 18		4.0 x 17	
	Tyres	front	120/70 – ZR 17		110/80 H 19 TL	
		rear	160/60 – ZR 18		150/70 H 17 TL	
			Tubeless			
Dimensions and weights	Length, overall	mm	2175	2195	2196	
	Width with mirrors	mm	920	898	920	
	Handlebar width	mm	738	898	903	
	Seat height	mm	780/800/820	780/800/820	840/860	
	Weight, unladen with full tank	kg	239	282	249	
	Max permissible weight	kg	450	490	450	
	Fuel tank	ltr	23	25,2	22,1	
Performance	Fuel consumption					
	90 km/h (56 mph)	ltr	4.3	4.7	4.5	4.6
	120 km/h (75 mph)	ltr	5.2	5.6	5.7	5.7
	Acceleration					
	0–100 km/h (62 mph)	sec	4.1	4.3	4.3	-
	standing-start km	sec	23.7	24.3	24.7	-
	Top speed	km/h	215	196	195	185

	SPECIFICATIONS BMW MOTORCYCLES		R 1100 R	R 850 R	R 1200 C	R 850 C
Engine	Cubic capacity	cc	1085	848	1170	848
	Bore/stroke	mm	99/70.5	87.5/70.5	101/73	87.5/70.5
	Max output	kW/bhp	59/80	52(25)/70(34)	45/61	37(25)/50(34)
	at	rpm	6750	7000 (5000)	5000	5250(4250)
	Max torque	Nm	97	77 (60)	98	71(66)
	at	rpm	5250	5500 (2500)	3000	4750(2750)
	Design		flat-twin	flat-twin	flat-twin	flat-twin
	No of cylinders		2	2	2	2
	Compression ratio/fuel grade		10.3/S	10.3/S	10,0/S	10.3/S
	Valve control		HC	HC	HC	HC
	Valves per cylinder		4	4	4	4
	Intake/outlet dia	mm	34/29	32/27	34/29	32/27
	Fuel supply		Motronic MA 2.2	Motronic MA 2.2	Motronic MA 2.4	Motronic MA 2.4
Electrical system	Alternator	W	700	700	700	700
	Battery	V/Ah	12/19	12/19	12/19	12/19
	Headlight	W	H 4 55/60	H 4 55/60	H 4 55/60	H 4 55/60
	Starter	kW	1.1	1.1	1.1	1.1
Power transmission, Gearbox	Gearbox		5-speed gearbox with dog-type shift			
	Gear ratios	I	4.16/3.00	4.16/3.36	2.05/2.54	2.05/3.36
		II	2.91/3.00	2.91/3.36	1,60/2.54	1.60/3.36
		III	2.13/3.00	2.13/3.36	1.27/2.54	1.27/3.36
		IV	1.74/3.00	1.74/3.36	1.04/2.54	1.04/3.36
		V	1.45/3.00	1.45/3.36	0.80/2.54	0.80/3.36
Suspension	Rear-wheel drive		BMW Paralever		BMW Monolever	
	Clutch		Single-plate dry clutch rotating in opposite direction, dia 180 mm		dia 165 mm	
	Type of frame		Tubular space frame, engine serving as loadbearing component			
	Spring travel front/rear	mm	120/135		144/100	
	Wheel castor	mm	127		86	
	Wheelbase	mm	1487		1650	
	Steering assembly angle	°	63		60.5	
	Brakes	Front	dual-disc brake, dia 305 mm		dual-disc brake, dia 305 mm	
		Rear	single-disc brake, dia 276 mm		single-disc brake, dia 285 mm	
	Wheels		Light-alloy wheels		Cross-spoke wheels	
		front	3.50 – 17		2.5 x 18	
		rear	4.50 – 18		4.0 x 15	
	Tyres	front	120/70 – ZR 17		100/90 – ZR 18	
		rear	160/60 – ZR 18		170/80 – ZR 15	
Dimensions and weights	Length, overall	mm	2197	2197	2340	
	Width with mirrors	mm	898	898	1050	
	Handlebar width	mm	729	729	775	
	Seat height	mm	760/780/800	760/780/800	740	
	Weight, unladen with full tank	kg	235	235	256	
	Max permissible weight	kg	450	450	450	
	Fuel tank	ltr	18.9	18.9	17.5	
Performance	Fuel consumption					
	90 km/h (56 mph)	ltr	4.6	4.6	4.8	4.6
	120 km/h (75 mph)	ltr	5.9	5.7	5.9	5.9
	Acceleration					
	0–100 km/h (62 mph)	sec	4.3	5.0	5.8	6.9
	standing-start km	sec	24.6	26.0	27.9	29.7
	Top speed	km/h	197	187	168	155

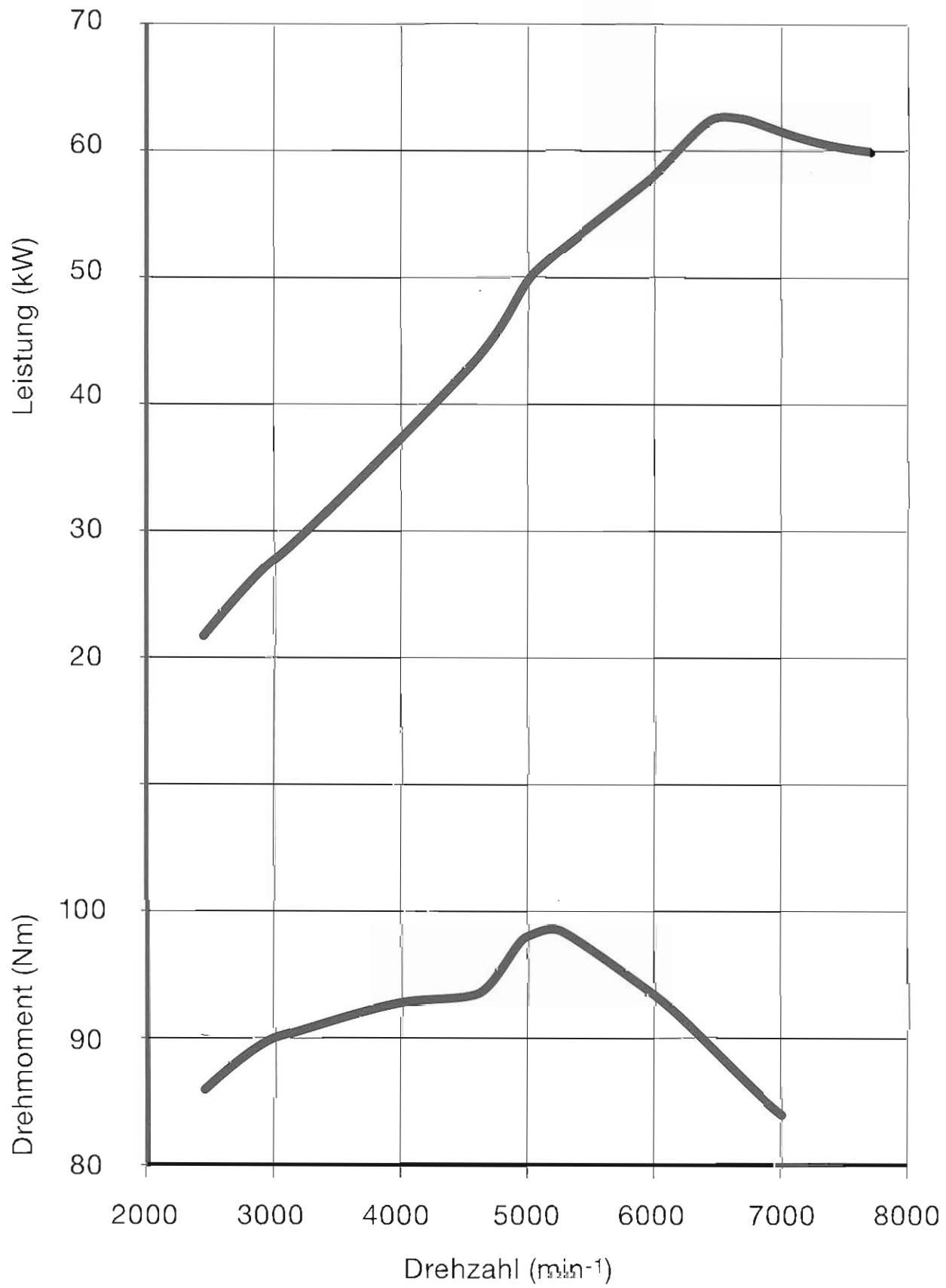
	SPECIFICATIONS BMW MOTORCYCLES		R 1100 S	K 1200 RS	K 1200 RS	K 1200 LT
Engine	Cubic capacity	cc	1085	1171		1171
	Bore/stroke	mm	99/70.5	70.5/75		70.5/75
	Max output	kW/bhp	72/98	72/98	96/130	72/98
	at	rpm	7500	7000	8750	6750
	Max torque	Nm	97	118	117	115
	at	rpm	5750	5500	6750	4750
	Design		flat-twin	inline		inline
	No of cylinders		2	4		4
	Compression ratio/fuel grade		11.3/S	11.5/S		10.8/S
	Valve control		HC	DOHC		DOHC
	Valves per cylinder		4	4		4
	Intake/outlet dia	mm	34/29	26.5/23		26.5/23
	Fuel supply		Motronic MA 2.4	Motronic MA 2.4		Motronic MA 2.4
Electrical system	Alternator	W	600	840		
	Battery	V/Ah	12/15	12/19		
	Headlight	W	H 1/H 7/55	H 7/55 W H 3/55 W		
	Starter	kW	1.1	0.7		
Power transmission, Gearbox	Gearbox					
	Gear ratios	I	2.05/2.75	3.86/2.75		2.05/2.75
		II	1.60/2.75	3.02/2.75		1.60/2.75
		III	1.27/2.75	2.39/2.75		1.27/2.75
		IV	1.04/2.75	1.96/2.75		0.96/2.75
		V	0.90/2.75	1.70/2.75		0.70/2.75
		VI	0.80/2.75	1.51/2.75		
Suspension	Rear-wheel drive		BMW Paralever			
	Clutch		Single-plate dry clutch rotating in opposite direction dia 165 mm			Single Plate dry clutch dia 180 mm
	Type of frame		cast aluminium frame, tubular space frame, engine serving as loadbearing	cast aluminium frame		
	Spring travel front/rear	mm	110/130	115/150		102/130
	Wheel castor	mm	100	124		109
	Wheelbase	mm	1478	1555		1633
	Steering assembly angle	°	65.0	62.75		63.18
	Brakes	front	dual-disc brake, dia 305 mm			
		Rear	single-disc brake, dia 276 mm	dia 285 mm	dia 285 mm	dia 285 mm
	Wheels		Light-alloy wheels	Light-alloy wheels		
		front	3.50 – 17	3.50 x 17 MTH 2		
		rear	5.00 – 17	5.00 x 17 MTH 2		
	Tyres	front	120/70 – ZR 17	120/70-ZR 17		120/70-ZR 17
		rear	170/60 – ZR 17	170/60-ZR 17		160/70-ZR 17
Dimensions and weights	Length, overall	mm	2180	2250		2508
	Width with mirrors	mm	880	850		1080
	Handlebar width	mm	760	680		826
	Seat height	mm	800	770/800		770/800
	Weight, unladen with full tank	kg	229	285		378
	Max permissible weight	kg	450	500		600
	Fuel tank	ltr	18	20.5		23.4
Performance	Fuel consumption					
	90 km/h (56 mph)	ltr	4.3	4.9		4.3
	120 km/h (75 mph)	ltr	5.2	5.8		5.7
	Acceleration					
	0–100 km/h (62 mph)	sec	4.0	4.1	3.7	5.6
	standing-start km	sec	22.8	–	–	26.6
	Top speed	km/h	226	225	245	197

BMW F 650 und F 650 ST 35 kW/48 PS M 2000/1



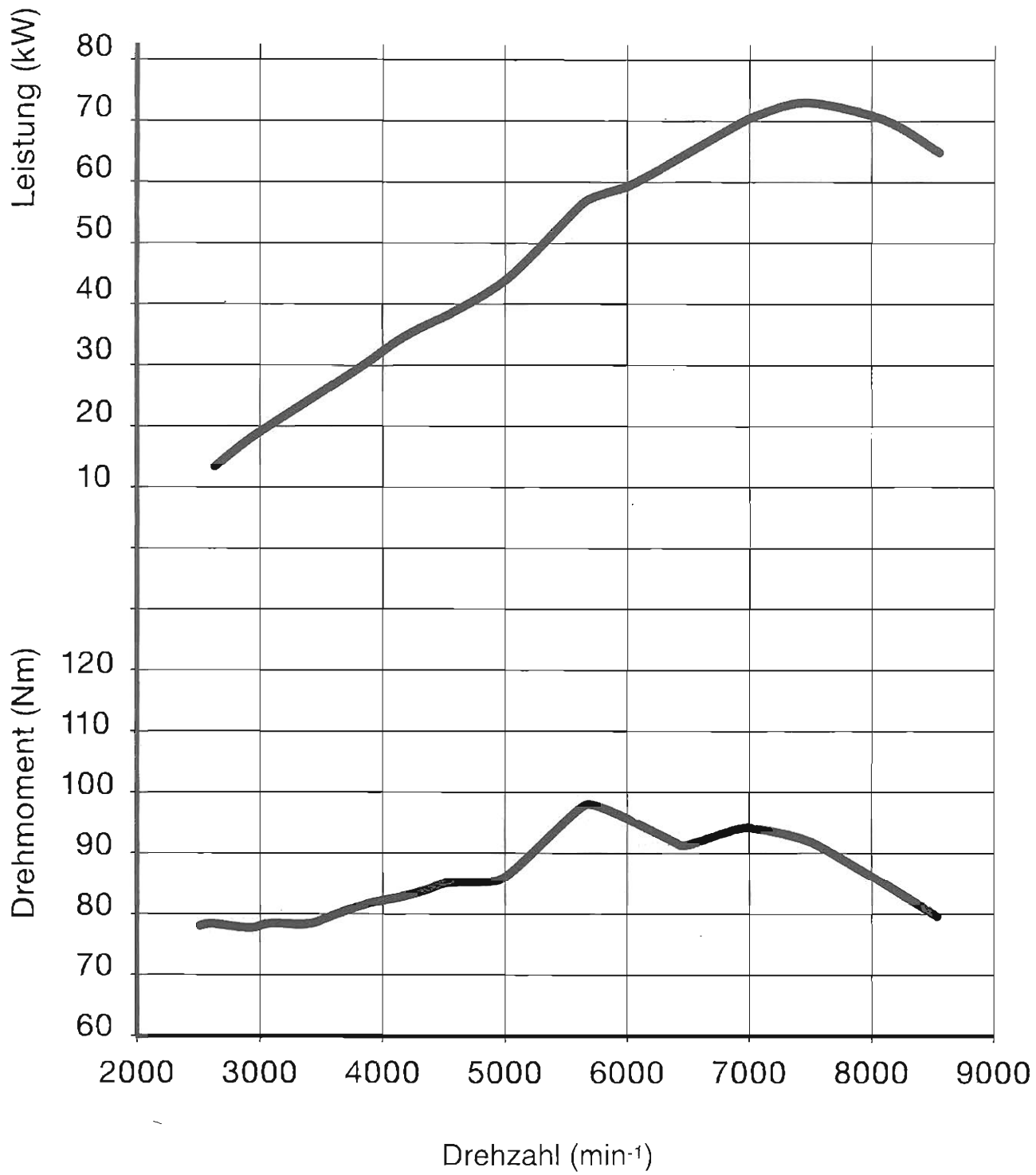
BMW R 1150 GS

M 2000/2

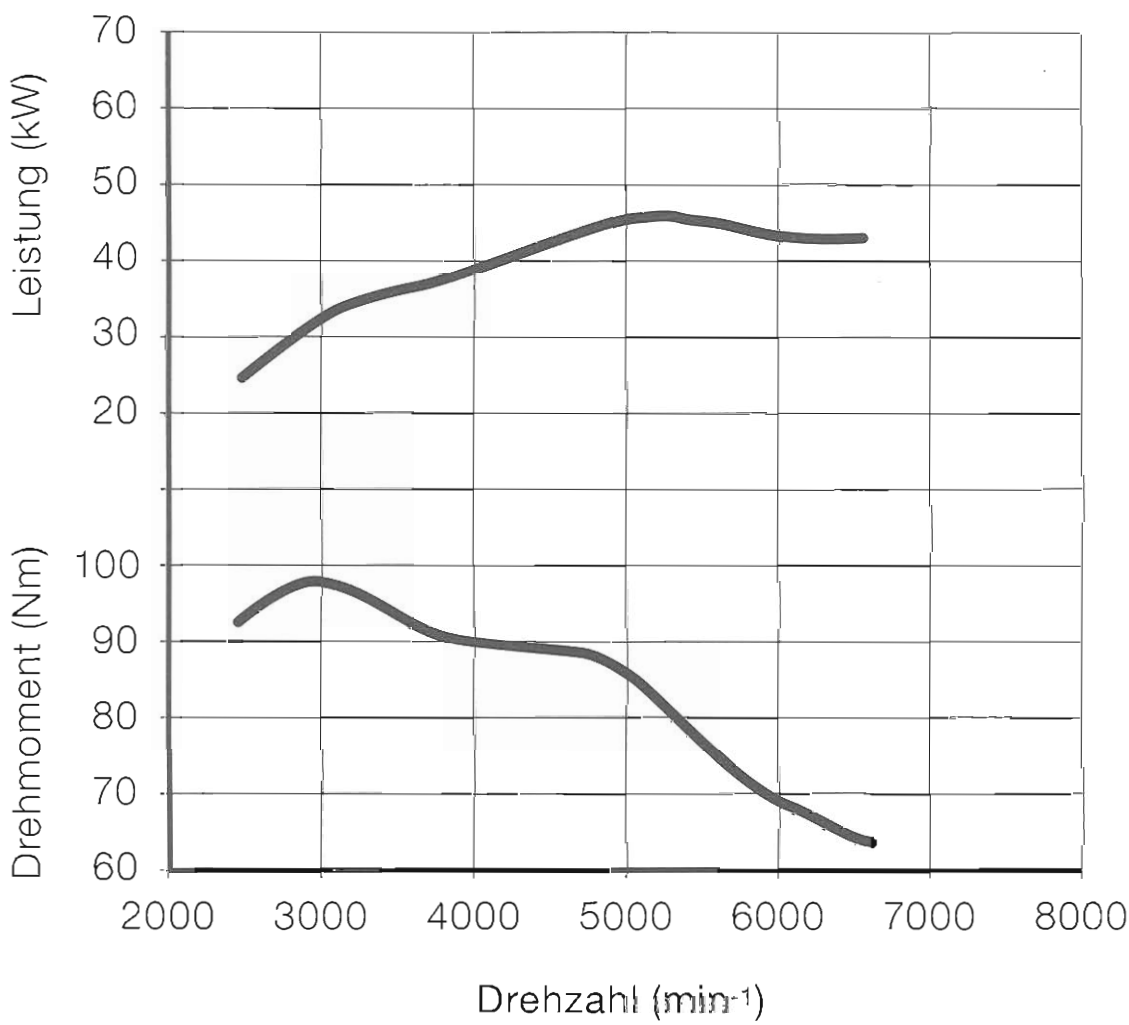


BMW R 1100 S

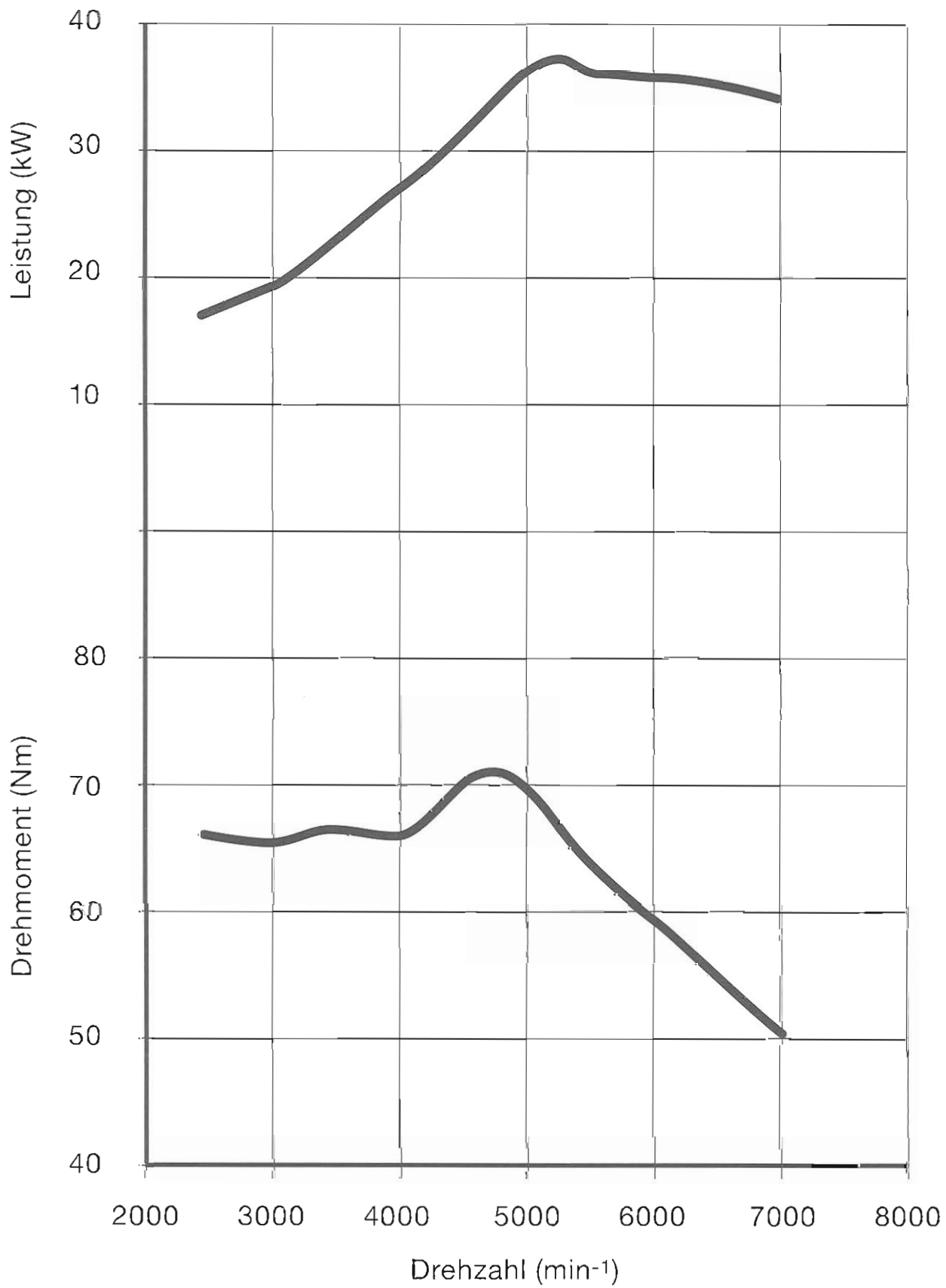
M 2000/3



BMW R 1200 C | M 2000/4

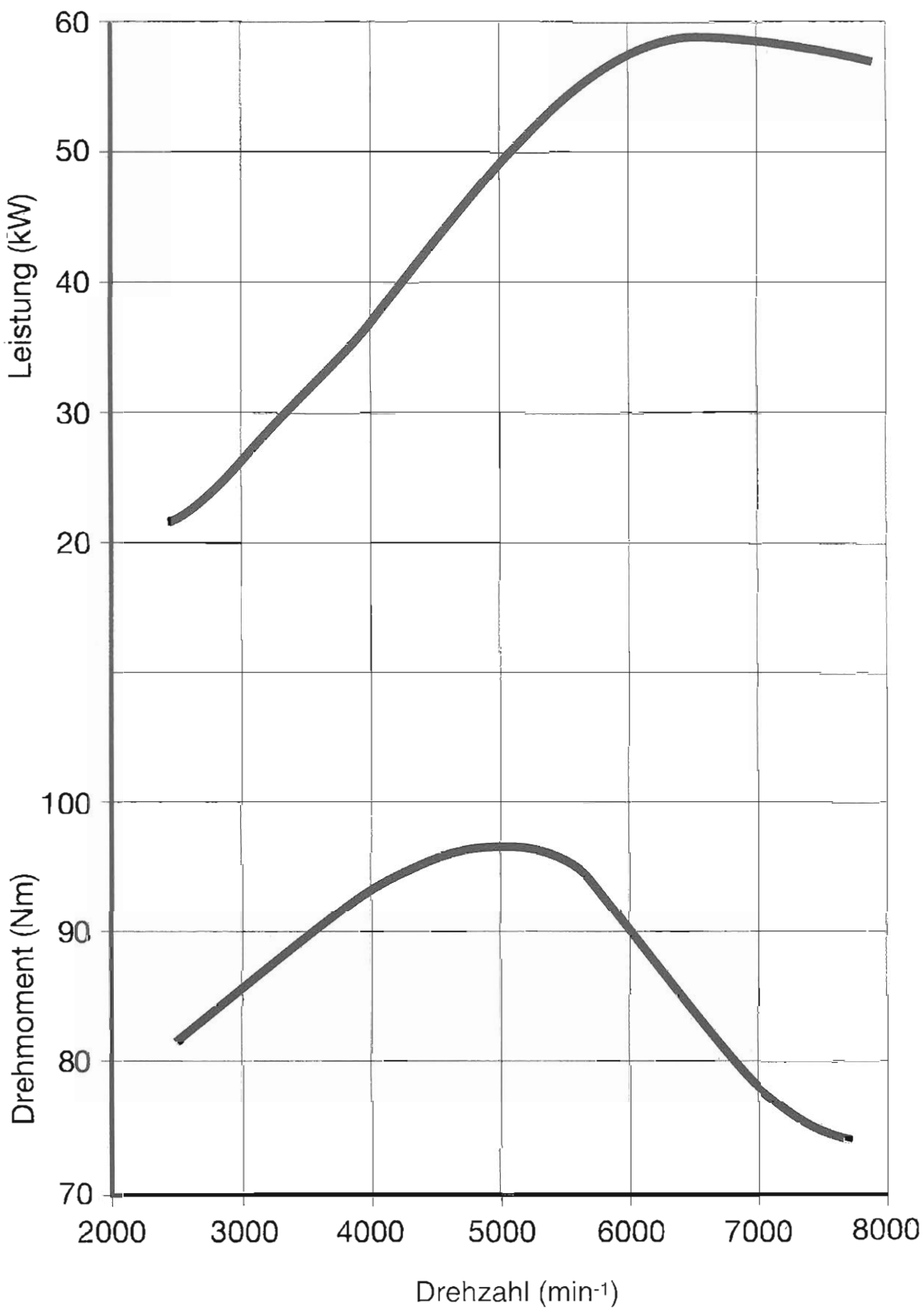


BMW R 850 C | 37 kW/50 PS | M 2000/5

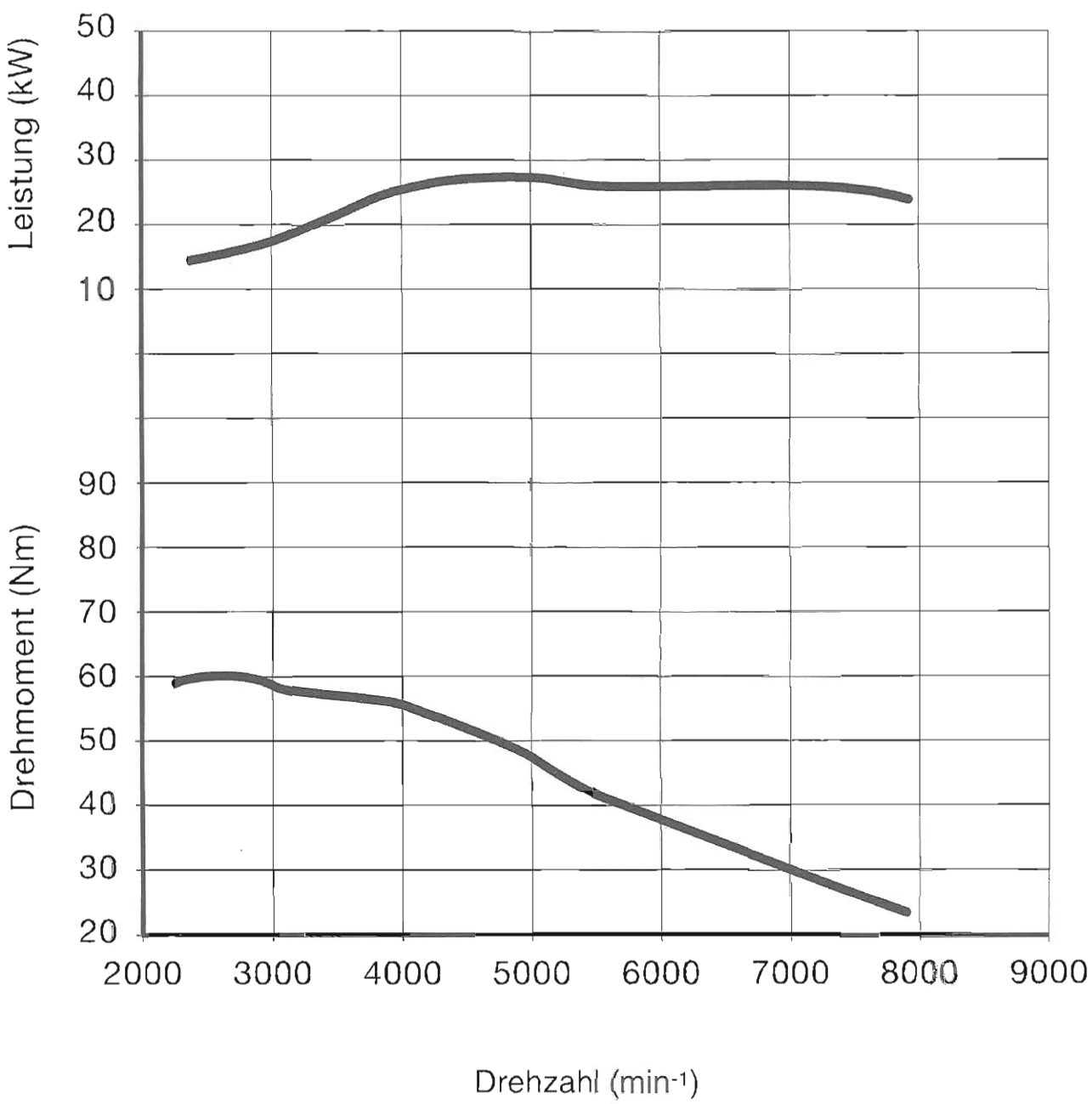


BMW R 1100 R

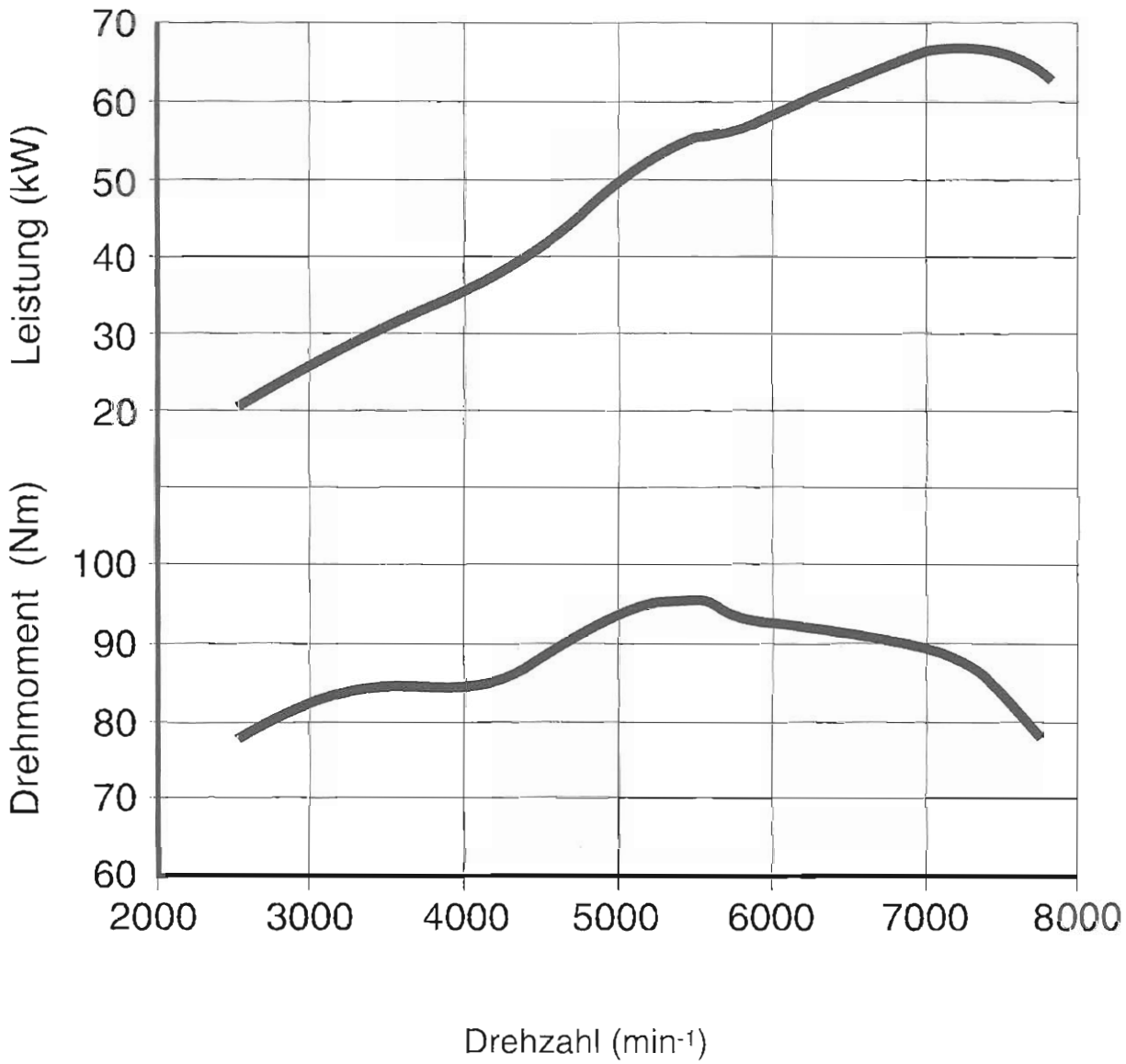
M 2000/6



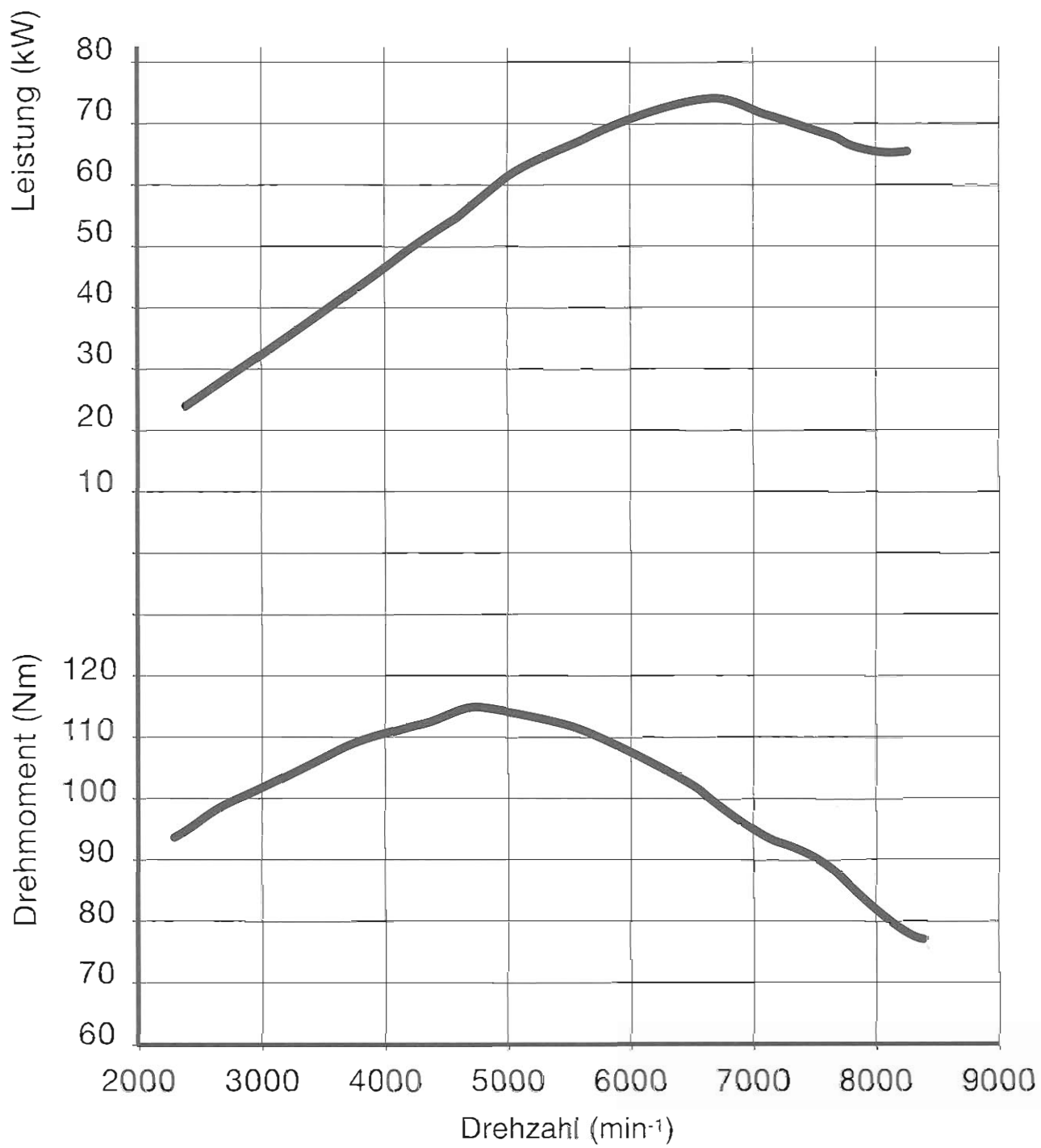
BMW R 850 R und R 850 GS	52 kW/70 PS	M 2000/7



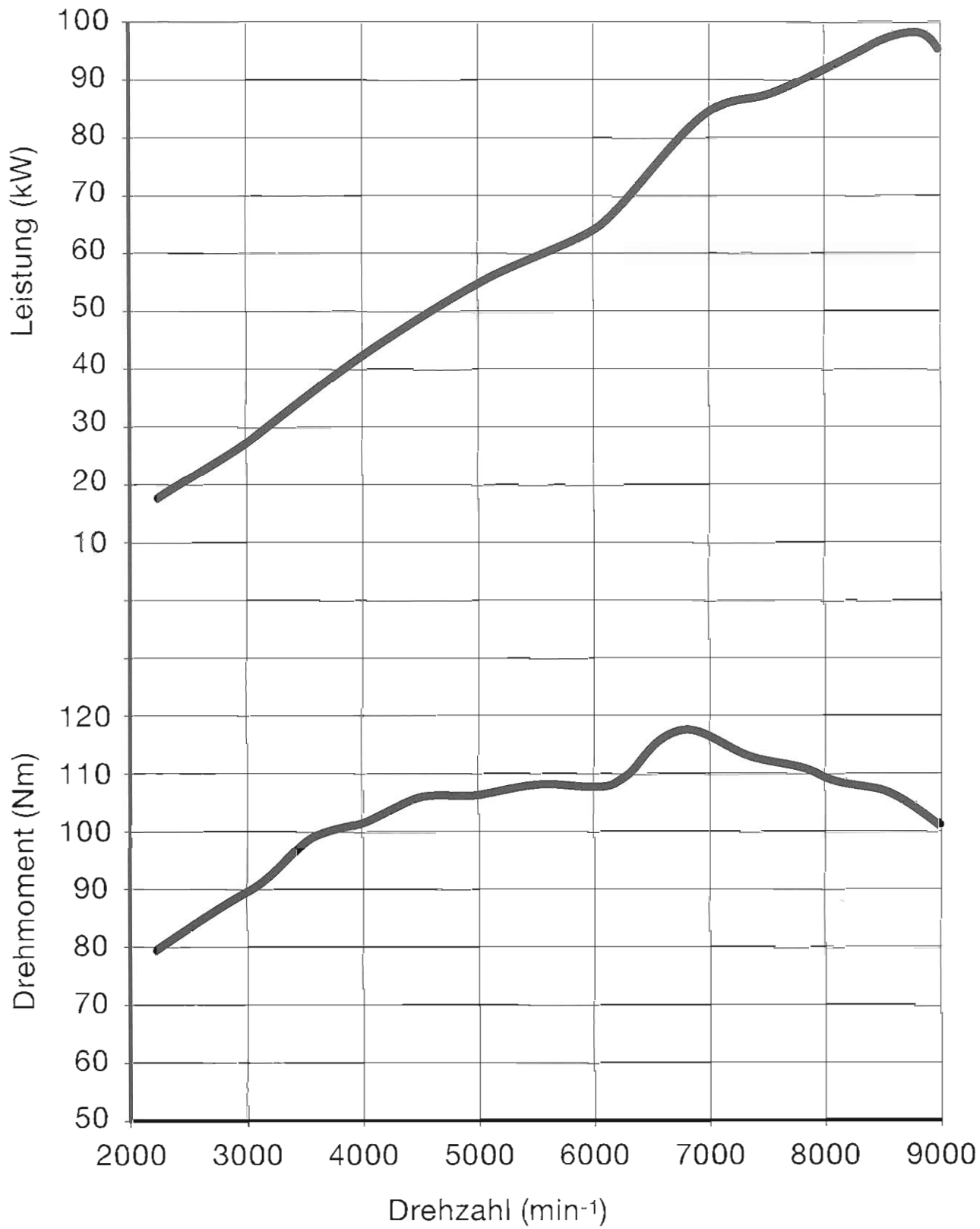
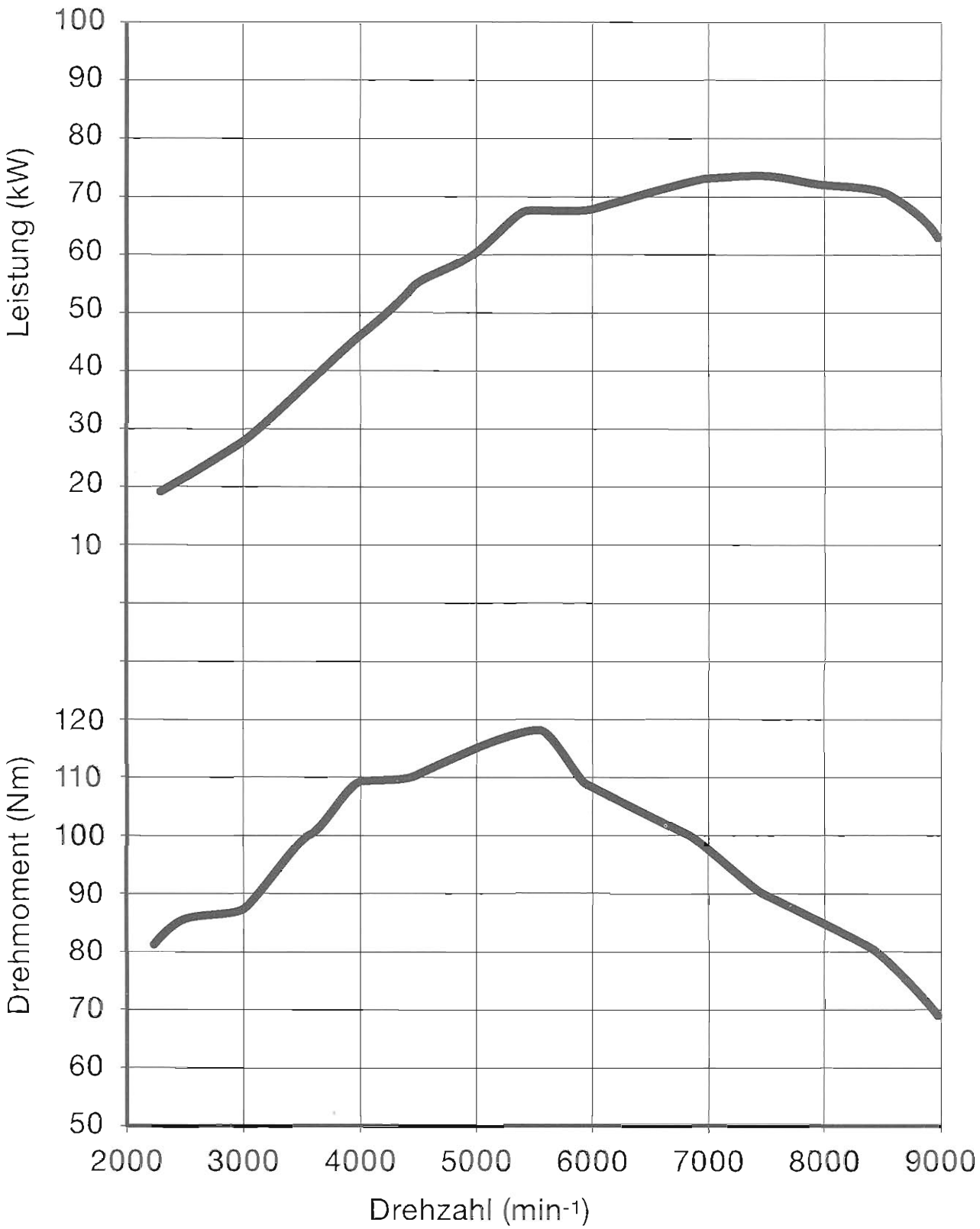
BMW R 1100 RS und R 1100 RT | M 2000/8



BMW K 1200 LT | M 2000/9



BMW K 1200 RS | 96 kW/130 PS | M 2000/10



BMW K 1200 RS	72 kW/98 PS	M 2000/11