

The new BMW R 1250 GS and the new BMW R 1250 RT. Table of contents.



1. Overall concept. (Short version)	2
2. Technology.	8
3. Design and colour concept.	19
4. BMW Motorrad Spezial.	25
5. History of the BMW 4-valve boxer engines.	29
6. BMW R 1250 GS.	32
7. BMW R 1250 RT.	36
8. Engine output and torque.	39
9. Technical specifications.	40

1. Overall concept. (Short version)



P90321740

The new BMW R 1250 GS and R 1250 RT – the fascination of travel and touring in a new dimension of engine power.

For more than 35 years, the boxer engine in the BMW Motorrad GS and RT models has stood for distinctive, powerful and reliable propulsion when it comes to setting off on an extended tour or a long-distance journey – or simply enjoying the satisfying pleasure of a short weekend trip. For more than 25 years, BMW Motorrad has used 4-valve technology in this connection, combined with electronic fuel injection and closed-loop catalytic converter technology in order to achieve the best possible power and torque delivery, efficiency and environmental compatibility.

Further advanced boxer engine with BMW ShiftCam Technology for an additional increase in power across the entire engine speed range, reduced emission and fuel consumption levels, optimised running smoothness and refinement.

With the extensively further advanced boxer engine, the new R 1250 GS and R 1250 RT not only achieve a whole new level of power and torque. It was also possible to significantly optimise refinement and running smoothness – especially within the lower engine speed range. What is more, the new engine offers improved emission and fuel consumption levels as well as a particularly satisfying sound. For this purpose, BMW ShiftCam Technology has been used for the first time in the serial production of

BMW Motorrad engines: this enables variation of the valve timings and valve stroke on the intake side. In addition, the intake camshafts are designed for asynchronous opening of the two intake valves, resulting in enhanced swirl of the fresh, incoming mixture and therefore more effective combustion. Other technical changes to the engine relate to the camshaft drive – now taken care of by a toothed chain (previously a roller chain) – an optimised oil supply, twin-jet injection valves and a new exhaust system.

Two riding modes, ASC and Hill Start Control as standard.

There are two riding modes available as standard in order to be able to adapt the motorcycle to individual rider preferences. The standard Automatic Stability Control ASC ensures a high level of riding safety due to the best possible traction. The set-off assistant Hill Start Control is likewise a standard feature in both models, enabling convenient set-off on slopes.

Riding Modes Pro, featuring additional riding modes, Dynamic Traction Control DTC, ABS Pro, Hill Start Control Pro and Dynamic Brake Assistant DBC (new), available as an optional equipment item ex works.

"Riding Modes Pro" is now available as an optional equipment item, featuring the additional riding mode "Dynamic", Dynamic Traction Control DTC, and in the RT 1250 GS also the riding modes "Dynamic Pro", "Enduro" and "Enduro Pro". DTC enables even more efficient and safe acceleration, especially in banking position. ABS Pro (part of Riding Modes Pro in the R 1250 GS, a standard feature in the R 1250 RT) offers even greater safety when braking, even in banking position. The new Dynamic Brake Control DBC provides additional safety when braking, also in difficult situations, by avoiding unintentional accelerator activation. By means of intervention in the engine control, drive torque is reduced during braking so as to make full use of the braking power at the rear wheel. This keeps the motorcycle stable and shortens the braking distance.

Electronic suspension Dynamic ESA "Next Generation" with fully automatic load compensation, now also for the R 1250 RT.

With the optional equipment item BMW Motorrad Dynamic ESA "Next Generation", damping automatically adapts to the situation according to riding state and manoeuvres, and there is also automatic compensation in all load states. This allows finely tuned adaptation of the motorcycle to riding states, achieving optimum damping comfort and a very stable ride response – this is now also available for the R 1250 RT.

LED headlamp for the R 1250 GS as standard and LED daytime riding light for both models as an ex works optional equipment item.

The new R 1250 GS now features the LED headlamp as standard. In addition to this, the LED daytime riding light is available as an optional equipment item for the R 1250 GS and also the R 1250 RT, which has halogen headlamps.

Connectivity: multifunctional instrument cluster with 6.5-inch full-colour TFT screen and numerous features as standard in the R 1250 GS.

The new R 1250 GS now has the equipment feature Connectivity as standard including a 6.5-inch full-colour TFT screen. In conjunction with the standard BMW Motorrad Multi-Controller, this means the rider can access vehicle and connectivity functions particularly swiftly and conveniently.

The R 1250 RT is fitted with a large 5.7-inch TFT colour screen. This is supplemented with an analog speedometer and rev counter.

Intelligent Emergency Call as an ex works option.

Ensuring the fastest possible assistance in the event of an accident or in situations of emergency and danger can save people's lives. The optional equipment item Intelligent Emergency Call summons assistance to the scene as quickly as possible. As before, this feature can be ordered for both models.

BMW Motorrad Spezial – high-quality customisation features as optional equipment items ex works.

BMW Motorrad Spezial is range of iconic customisation features that enhance both performance and value, available as optional equipment items ex works. The focus is on harmonious integration in the vehicle as a whole, use of the very highest-quality materials, elaborate manual workmanship and characteristic attention to detail.

The milled parts packages Option 719 Classic and HP are available for the new R 1250 GS and R 1250 RT, for example.

The new R 1250 RT can be additionally enhanced with Option 719 Wheels Classic or Sport, an exclusive seat and one of two Spezial paint finishes.

An HP sports silencer is likewise available ex works for the two new boxer models.

New attractive colours and style variants.

The new R 1250 GS showcases its travel and off-road prowess in two modern basic finishes and two striking style variants. The new R 1250 RT embodies its exclusive touring character in one basic colour, two style variants and two Option 719 Spezial finishes.

An overview of the highlights of the new BMW R 1250 GS:

- Further developed boxer engine with BMW ShiftCam Technology for variation of the valve timings and valve stroke on the intake side.
- Even more power across the entire engine speed range, optimised fuel consumption and emission levels, increased running smoothness and refinement.
- Increased output and torque: 100 kW (136 hp) at 7 750 rpm and 143 Nm at 6 250 rpm (previously: 92 kW (125 hp) at 7 750 rpm and 125 Nm at 6 500 rpm).
- Capacity increased to 1 254 cc (previously: 1 170 cc).
- Asynchronous valve opening on the intake side for optimised swirl and therefore more effective combustion.

- Camshaft drive now via toothed chain (previously roller chain)
- Optimised oil supply and piston base cooling.
- Knock sensor system for optimised travel suitability.
- Latest generation of BMS-O engine control and use of twin-jet injection valves for even more effective carburetion.
- New exhaust system for optimum performance characteristics.
- New additional front spoiler on the R 1250 RT.
- Two riding modes, ASC and Hill Start Control as standard.
- Riding Modes Pro, featuring additional riding modes, Dynamic Traction Control DTC, ABS Pro (standard in the R 1250 RT), Hill Start Control Pro and Dynamic Brake Assistant DBC, available as an optional equipment item ex works.

Electronic suspension Dynamic ESA “Next Generation” with fully automatic load compensation.

- In addition to standard adjustability of seat height (exception: HP style for the R 1250 GS), wide range of seat height variants ex works.
- LED headlamp for the R 1250 GS as standard and LED daytime riding light for both models as an ex works optional equipment item.

Connectivity: multifunctional instrument cluster with 6.5-inch full-colour TFT screen and numerous features as standard in the R 1250 GS.

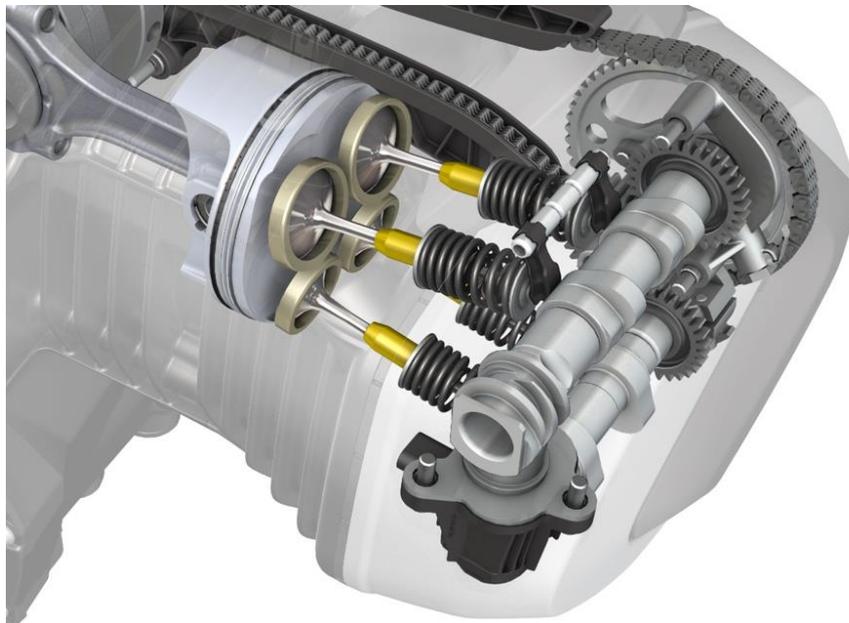
- Intelligent Emergency Call as an ex works option.
- BMW Motorrad Spezial – customisation features as optional equipment items ex works.
- Extended range of optional equipment items and BMW Motorrad Accessories.

- The new R 1250 GS: travel and off-road prowess in two modern basic finishes and two striking style variants.
- The new R 1250 RT: exclusive touring character in one basic colour, two style variants and Option 719 Spezial finishes.



P90321744

2. Technology.



P90321078

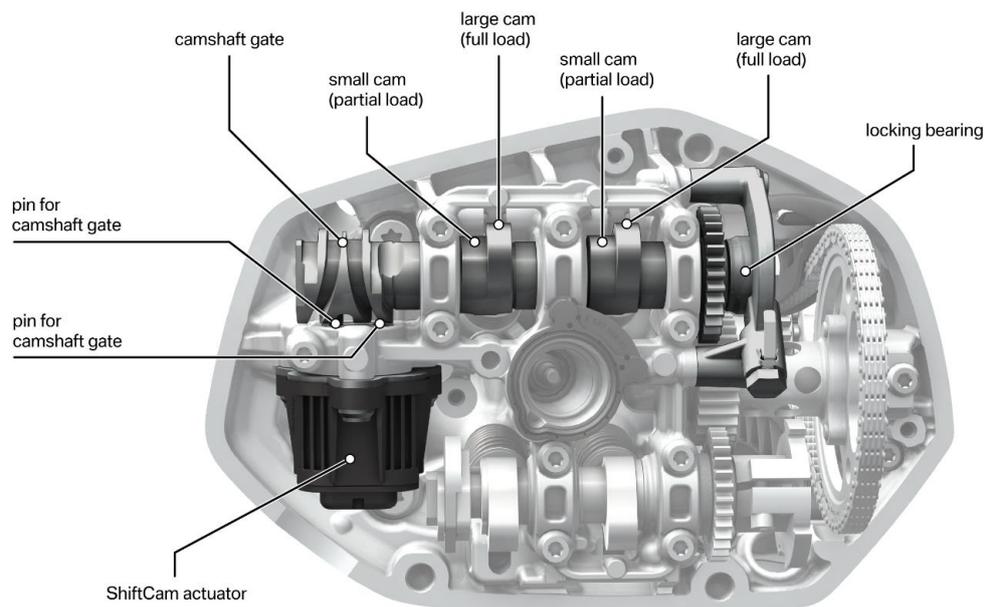
Further developed boxer engine with new top levels for output, torque, rideability and refinement.

While the previous boxer power unit itself provided supreme forward thrust in all situations, the boxer engine in the new BMW R 1250 GS and R 1250 RT takes this a significant step further. In the latest generation it has a capacity of 1 254 cc (previously: 1 170 cc). The ratio between bore and stroke is now 102.5 to 76 mm (previously: 101 to 73 mm). It has an output of 100 kW (136 hp) at 7 750 rpm and develops a maximum torque of 143 Nm at 6 250 rpm (previously: 92 kW (125 hp) at 7 750 rpm and 125 Nm at 6 500 rpm). With a 7 % capacity increase, the new boxer engine offers 14 % more torque and 9 % more output than its predecessor, making it the most powerful BMW boxer engine ever to be manufactured in serial production.

At its latest stage of development too, the boxer engine uses the well-established system of air/liquid cooling. So-called precision cooling means that the cooling fluid flows through the engine elements that are more heavily exposed to heat – namely the two cylinder heads and parts of the cylinders. Heat is dissipated via two radiators positioned at the left and right of the front vehicle section.

BMW ShiftCam Technology for increased power across the entire engine speed range, enhanced running smoothness and refinement as well as further optimised fuel consumption and emission levels.

The objectives in developing the new boxer engine in the R 1250 GS and R 1250 RT were to further enhance the already impressive output and torque figures of the predecessor model. This also involves a significant increase in refinement and running smoothness as well as optimised emission and fuel consumption levels.



P90321080

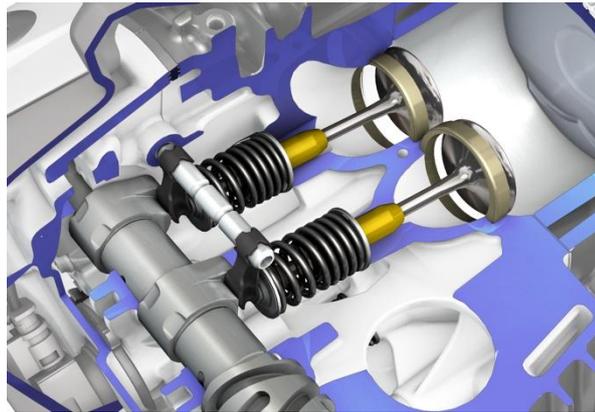
It was possible to achieve these enhancements by means of BMW ShiftCam Technology. This is a technology that is completely new to BMW motorcycles: its function is to vary the valve timings and valve stroke on the intake side. The core of the technology is a single-unit shift camshaft with two cams per valve to be activated: one partial-load cam and one full-load cam, each featuring cam geometry in optimised design. While the partial-load cam has been configured to ensure optimised fuel consumption and refinement, the full-load cam is designed for optimised output.

Axial shift of the intake camshaft means the intake valves are activated by either the partial-load or the full-load cam, depending on load and engine speed. The axial shift of the intake camshaft and the use of the partial-load or full-load cam are effected by means of a shifting gate on the camshaft and an electronic actuator which intervenes at this point.

Variation of the intake valve stroke and asynchronous valve opening.

The varied configuration of the cam geometry also enables variation of the intake valve stroke. While the full-load cam provides maximum valve stroke, the partial-load cam delivers reduced valve stroke. There is also a difference between the intake cams for the left and right-hand intake valve in stroke and angular position. This phase shift means that the two intake valves are opened to different degrees and on a time-staggered basis.

The effect of this phase shift is to create a swirl and therefore greater agitation of the fuel-air mixture flowing into the combustion chamber. This results in particularly effective combustion and better utilisation of the fuel as a result. Given the



P90321084

appropriate riding style, BMW ShiftCam Technology enables a reduction of fuel consumption by up to 4 % as compared to the already economical predecessor model.

The benefits of BMW ShiftCam Technology:

- Increased torque and pulling power across the entire engine speed range.
- Enhanced refinement and more even engine running when travelling at a constant speed due to optimum configuration of the partial-load cam geometry for the lower load range and engine speed range.
- Significant increase in peak output to 100 kW (136 hp) (previously: 92 kW (125 hp) / 125 Nm at 6 500 rpm)).
- Reduction of load change loss in the partial load range.
- Reduction of idling engine speed by 100 rpm.
- Reduction of exhaust emissions and optimised sound.
- Reduction of fuel consumption by 4 % as compared to the predecessor model.

Even more supreme ridability due to increased torque as well as tangibly improved running smoothness and refinement.

In practical terms, BMW ShiftCam Technology results in an even further significant improvement in ridability for the new R 1250 GS and R 1250 RT in comparison to the predecessor model. In addition to the considerable boost in peak output from the previous figure of 92 kW (125 hp) to the current level of 100 kW (136 hp), it is the drastic increase in torque and therefore pulling power that is particularly noticeable.

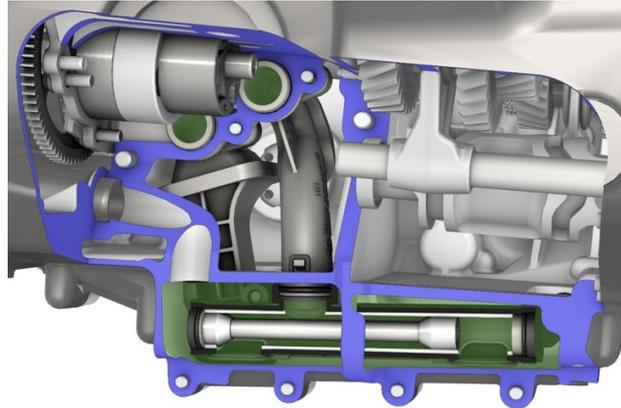
In the range from 2 000 to 8 250 rpm, for example, the level of torque now available is 110 Nm. Within the range that is especially relevant in terms of riding dynamics, namely 3 500 to 7 750 rpm, the impressive level of over 120 Nm is now available. This gives the new R 1250 GS and R 1250 RT even greater supremacy and pulling power than before, combining absolutely superior power delivery with remarkable top performance – whether riding alone or with a passenger, on winding country roads or covering long stages of a journey at a high average speed. In short: never before has a boxer engine provided this level of riding fun and refinement.

Cylinder head with vertical flow and camshaft drive now by means of toothed chain. Optimised oil supply and piston base cooling.

The engine of the new BMW R 1250 GS and R 1250 RT also features vertical flow. The advantage here is that the configuration of the intake channel no longer depends on the camshaft control, so it was possible to realise identical intake lengths for both cylinder sides. What is more, the fuel injector is now arranged so that the fuel is injected as directly as possible in front of the intake valves for optimum carburetion.

As before, the two camshafts per cylinder side are powered by a chain running in the shaft behind the cylinders (on the right-hand side of the engine via the counterbalance shaft and to the left via the crankshaft). The timing chain drives an intermediate shaft between the intake and exhaust camshaft and it is from here that power is transmitted to the camshafts via spur gear pairs. The control chain is now a toothed chain (previously: roller chain) with the aim of further reducing running noise. As before, the four valves are arranged at close angles to one another in order to achieve an optimum combustion chamber shape. The valve angle is 8 degrees on the intake side and 10 degrees on the exhaust side, while the disc diameters of the valves are 40 mm on the intake side and 34 mm on the exhaust side. The valve shaft diameter is 5.5 mm. As before, the valves are operated via light, speed-resistant rocker arms, the design of which was derived from the high-performance 4-cylinder engine of the BMW S 1000 RR. The valve clearance settings are made by means of replaceable shims.

The increase in output and torque and therefore riding dynamics as a whole also involves two back-up measures to ensure maximum operating reliability: the two pistons have base cooling using splash oil and the lubrication system has been fitted with variable oil intake.



P90321085

By means of a shifting piston in the intake area of the oil sump, the latter ensures optimum oil supply in all riding states.

Knock sensor system for optimised travel suitability. BMS-O engine control and twin-jet injection valves for even more effective carburetion.

Unlike their predecessor models, the new R 1250 GS and R 1250 RT have a knock sensor system in the form of two knock sensors. This allows the use of fuels with a rating of less than RON 95 – a particular advantage when travelling in the more remote corners of the planet. The new R 1250 GS and R 1250 RT are also fitted with a new digital engine control, the so-called BMS-O. Its main features are fully sequential injection, a compact layout and low weight. Carburetion is carried out by an electronic fuel injection system via throttle bodies with an opening width of 52 mm. Injection is via new twin-jet injection valves that support even greater refinement and further improved emission levels.

Counterbalance shaft for perfect mechanical running smoothness.

As in the previous models, the new engine also has a counterbalance shaft which runs at crankshaft rotation speed so as to eliminate unwanted vibrations. The counterbalance shaft is configured as a hollow intermediate shaft, inside which the clutch shaft runs at the same time. This ensures that the new engine in the R 1250 GS and R 1250 RT likewise runs comfortably and with low levels of vibration across the entire engine speed range. Nonetheless, the essential earthy boxer characteristics are still preserved.

Gearbox integrated in engine housing, including wet clutch with anti-hopping function.

The gearbox and clutch are integrated in the engine housing in the new boxer engine, too. This provides benefits in particular in terms of overall weight due to the omission of numerous bolt connections and sealing surfaces, but also in terms of the torsional response of the unit as a whole. In

addition to a design that saves both space and weight, this concept means that no additional gearbox volume is required.

Power transmission to the 6-speed gearbox, which has been further optimised in terms of gear shifting, is via a multi-plate wet clutch with eight friction discs. The clutch system is fitted with an anti-hopping mechanism. With this new drive generation, BMW Motorrad has thus especially addressed the wishes of riders with sporty ambitions who prefer country roads. The brake torque of the engine is now passed to the rear wheel at a reduced level during coasting. This prevents brief blocking or hopping of the rear wheel due to the dynamic wheel load distribution when applying the brakes heavily and changing down at the same time. In this way, the motorcycle remains stable and safely controllable during the braking phase.

New exhaust system for optimum performance characteristics.

Made completely out of stainless steel, the exhaust system of the new R 1250 GS and R 1250 RT is designed entirely for optimum output and torque in conjunction with BMW ShiftCam Technology and works according to the 2-in-1 principle. In this development area, a homogeneous output and torque curve and thus excellent rideability were once again regarded as requirements for supreme performance on country roads, off-road riding and extended touring activity.

The two manifold tubes and the interference pipe were redesigned in terms of shaping, length and diameter. Exhaust gas purification is taken care of by a closed-loop catalytic converter controlled by an oxygen sensor. In this way, the new R 1250 GS and R 1250 RT meet current exhaust standards and are excellently equipped for future requirements.

Two riding modes, ASC and Hill Start Control as standard.

Even in standard trim, the new R 1250 GS and R 1250 RT offer two riding modes for adaptation to individual rider preferences. Here, the standard Automatic Stability Control ASC ensures a high level of riding safety due to excellent traction. What is more, the riding modes "Rain" and "Road" allow adaptation of the bike's properties to most road surface conditions. The set-off assistant Hill Start Control is likewise a standard feature in both models, enabling convenient set-off on slopes.

Riding Modes Pro, featuring additional riding modes, Dynamic Traction Control DTC, ABS Pro, Hill Start Control Pro and Dynamic Brake Assistant DBC, available as an optional equipment item ex works.

As an optional equipment item ex works, the new R 1250 GS and R 1250 RT can be fitted with the option "Riding Modes Pro", featuring the additional riding mode "Dynamic", Dynamic Traction Control DTC, and in the RT 1250 GS also the riding modes "Dynamic Pro", "Enduro" and "Enduro Pro". DTC enables even more efficient and safe acceleration, especially in banking position. The riding mode "Dynamic Pro", and in the R 1250 GS "Enduro Pro", both activated by means of a coded plug, also each have customisation options that allow the character of the motorcycle to be adapted to individual needs, thereby further enhancing the fun of riding.

ABS Pro (part of the optional equipment item Riding Modes Pro in the R 1250 GS and a standard feature in the R 1250 RT) also offers even greater safety when braking, especially in banking position, while Dynamic Brake Control DBC provides the rider with extra support on brake manoeuvres. DBC increases safety when braking, even in difficult situations, by avoiding unintentional accelerator activation. By means of intervention in the engine control, the drive torque is reduced during braking, making full use of the braking power at the rear wheel. This keeps the motorcycle stable and shortens the braking distance. With the dynamic brake light (part of the optional equipment item "Riding Modes Pro" in the R 1250 GS, standard in the R 1250 RT), vehicles to the rear are made more aware of the fact that the motorcycle is decelerating.

The new optional equipment item Hill Start Control Pro goes beyond the functions of a comfort system such as Hill Start Control to facilitate stopping and setting off on a slope. Hill Start Control Pro offers the new additional function Auto HSC. The settings menu allows this additional function to be individualised in such a way that the parking brake is automatically activated on a gradient (greater than +/- 5 %) when the hand or foot brake lever has been activated, shortly after the motorcycle comes to a standstill.

Electronic suspension Dynamic ESA "Next Generation" with fully automatic load compensation, now also for the R 1250 RT.

An even higher level of riding safety, performance and comfort is achieved with the BMW Motorrad Dynamic ESA "Next Generation" (Electronic Suspension Adjustment), now also available as an optional equipment item for the R 1250 RT: here, the damping automatically adapts to the situation depending on riding state and manoeuvres, and there is also automatic riding position compensation in all load states. In terms of the technical background, signals from the rotational speed sensor and the two travel sensors at the front and rear enable comprehensive data collection and therefore finely tuned adaptation of the motorcycle to riding states. Based on additional parameters, riding states are detected such as compression,

acceleration and deceleration, and these are incorporated in the adaptation of damping forces, both at the rear spring strut and Telelever front wheel control. This adaptation is applied by means of electrically actuated regulation valves within the millisecond range. As a result, optimum damping comfort and a very stable ride response is ensured even in banking position.

Dynamic ESA “Next Generation” is pre-set to the “Road” damping characteristics in the standard set-up of the riding modes “Rain”, “Road” and “Dynamic”. At the press of a button – conveniently positioned on the handlebars so it can even be operated during travel – the rider can switch to the damping characteristics “Dynamic” in the riding modes “Rain” and “Road”, thereby selecting a tighter damping set-up. The tighter damping variant “Dynamic” is pre-set in the riding modes “Dynamic” and “Dynamic Pro”. Meanwhile the riding mode “Enduro” and “Enduro Pro” – additionally available for the R 1250 GS – are configured to include the damper setting “Enduro”, which is geared towards the loose surfaces to be anticipated.



P90321077

Sports suspension for the R 1250 GS HP as an optional feature.

The sports suspension optionally available for the style variant HP allows the new R 1250 GS to be optimised for more ambitious off-road use as before. The increased spring rate (“harder suspension”), longer spring struts and therefore longer spring travel lead to a significant enhancement of ride stability in off-road use, which is especially noticeable over gravel passages. This sports suspension benefits experienced off-road motorcyclists who know when to convert suspension reserves into increased performance without overtaxing the motorcycle or themselves. Heavy and tall riders will appreciate the advantages of this spare capacity due to the tighter suspension set-up, especially when riding off-road. This optional equipment item, only available in conjunction with Dynamic ESA, also includes all the new functions of automatic damping and load compensation.

Wide range of seat height variants.

With the new R 1250 RT the customer has a choice of three rider seat variants. The two-level seat is the standard version, with a seat height of 805/825. In addition there is the 760/780 mm and the 830/850 mm variant. As such, a total spectrum covering a height difference of 90 mm is offered between the lowest and highest seat variant ex works. All three variants can also be ordered with seat heating.

For the new R 1250 GS there are numerous seat height variants available as before – from the low-slung version with low seat (800 mm) through to HP style with sports suspension and Rallye seat (900 mm).

See and be seen even more effectively – LED headlamp for the R 1250 GS as standard and LED daytime riding light for both models as an optional equipment item ex works.

For decades now, BMW Motorrad has been regarded as a frontrunner when it comes to safety in connection with motorcycling. One shining example in the truest sense of the word is the LED headlamp which is now offered as a standard feature of the R 1250 GS. In addition to this, the LED daytime riding light is available as an optional equipment item for the R 1250 GS and also the R 1250 RT, which has halogen headlamps. The LED headlamp of the R 1250 GS illuminates the road with a hitherto unrivalled clarity, thereby ensuring additional perception in traffic. The light unit consists of two LED units for low and high beam and, in connection with LED daytime riding light as an optional equipment item, four additional LED units for daytime riding light and side light.

Connectivity: multifunctional instrument cluster with 6.5-inch full-colour TFT screen and numerous features as standard in the R 1250 GS.

Even in its standard version the new R 1250 GS has the equipment item Connectivity, which now shows the existing instrument cluster in the form of a 6.5-inch full-colour TFT screen. In conjunction with the standard BMW Motorrad Multi-Controller with integrated operation, it gives the rider fast access to vehicle and connectivity functions.

The new R 1250 GS now has the equipment feature Connectivity as standard including a 6.5-inch full-colour TFT screen. In conjunction with the standard BMW Motorrad Multi-Controller, this means the rider can access vehicle and connectivity functions particularly swiftly and conveniently.

This means it is possible to enjoy the convenience of making a phone call or listening to music during travel. If a smartphone and a helmet with the BMW

Motorrad Communication System are connected via Bluetooth to the TFT screen, for example, the rider can conveniently access media playback and telephone functions. These functions can also be used without the need to install an app. With an active Bluetooth connection to any standard smartphone, the rider can enjoy the pleasures of listening to music during travel. In addition, the freely available BMW Motorrad Connected App offers handy arrow-based navigation suitable for day-to-day use directly via the TFT screen. The BMW Motorrad Connected App can be downloaded free of charge from the Google and Apple app stores. It also comprises attractive additional functions such as route logging and the display of other travel statistics and information. In this way, logged routes can also be shared directly with other motorcyclists via the REVER community. The basic navigation system will be of particular interest to motorcyclists since it enables convenient organisation of day-to-day travel and short trips without the need for additional equipment.

The R 1250 RT is fitted with a large 5.7-inch TFT colour screen. This is supplemented with an analog speedometer and rev counter.

Intelligent Emergency Call as an ex works optional equipment item for further increased safety.

Ensuring the fastest possible assistance in the event of an accident or in situations of emergency and danger can save people's lives. For this reason, BMW Motorrad has developed an eCall system – "Intelligent Emergency Call" – which aims to get help to the scene of the incident as quickly as possible. This system is available as an optional equipment item ex works for the R 1250 GS and R 1250 RT.

Unrivalled scope of ex works optional equipment items and Original BMW Motorrad Accessories.

BMW Motorrad offers an unprecedented program of optional equipment items and accessories for the R 1250 GS and R 1250 RT. The range is virtually endless – from the preparation of the navigation unit for operation via Multicontroller through to various ergonomics options and extensive storage concepts.

3. Design and colour concept.



The new R 1250 GS: travel and off-road prowess in two modern basic finishes and two striking style variants.

The new BMW R 1250 GS conveys its refined character and universal talents with two new colours in the basic version and the style variants Exclusive and HP. The presence of a new power unit is demonstrated by means of newly designed cylinder head covers bearing the inscription "ShiftCam" as well as the pipe ducting of the new exhaust manifold system.

Basic version in Blackstorm metallic and Cosmic Blue metallic:

Each of the finishes Cosmic Blue metallic and Blackstorm metallic give the new R 1250 GS a pronounced modern appearance, combining the standard cast wheels in Granite Grey metallic matt with black brake calipers, a black rear frame, a silver main frame, silver handlebars and a silver drivetrain as well as a luggage bridge in White Aluminium matt with trim holder in Nürburg Silver. The Telelever slider tubes anodized in gold emphasise the off-road talents of the new R 1250 GS. The two body finishes are to be found on the central fuel tank cover and the front wheel cover. Here, the fuel tank side trim elements in Asphalt Grey metallic provide a touch of contrast. The radiator trim in galvanised plastic adds a quality accentuation, as does the new model inscription.



P90321752

P90321761

R 1250 GS Exclusive:

In the style variant Exclusive and the new colour combination Blackstorm metallic / Night Black, the new R 1250 GS blends classic understatement and masculine character with a commanding presence and elegance. The drivetrain coated in black matt provides the perfect counterpart to the main frame in Agate Grey metallic matt as well as the black rear frame and the black anodized tube handlebars. In addition, the trim holder at the front and the luggage bridge are finished in black, thereby adding an appropriate accentuation. Cast wheels in Night Black along with black anodized Telelever slider tubes reinforce the masculine, hands-on character of the new R 1250 GS. The body finish Blackstorm metallic is applied to the central fuel tank cover and the front wheel cover. Meanwhile the fuel tank side trim elements in Night Black combined with a graphic make for a fascinating contrast.

The innovative aspirations of the new R 1250 GS are underscored by a newly designed radiator trim, in this case made of stainless steel. Brake calipers in gold reinforce the exclusive touch of the new R 1250 GS.



P90321756

R 1250 GS HP:

In the style version HP the new R 1250 GS emphasises its sporty ambitions, dynamically showcasing its off-road expertise as a travel enduro with the colour combination Light White/Racing Blue metallic/Racing Red.



P90321767

Light White is to be found on the main frame and in combination with graphics on the fuel tank side trim elements and front wheel cover, while Racing Blue is applied to the central fuel tank cover.

The masculine, robust character of the travel enduro is borne out in the style HP by means of black matt for the power unit, black Telelever slider tubes and additional elements such as the extended front wheel cover and frame guard. In this colour variant, too, the tube handlebars, front trim holders and luggage bridge are finished in black. The new R 1250 GS also

reflects its enhanced off-road competence with a radiator guard, finely wrought cross-spoke wheels, a radiator trim in stainless steel and golden brake calipers. The new R 1250 S is also given a particularly sporty, agile and active riding look by means of a black rear frame and the Rallye seat in HP colour scheme.

The new R 1250 RT: exclusive touring character in three attractive colour versions and two style versions.

As compared to the predecessor model, the engine spoiler has been newly designed and an additional front spoiler has been added. Another striking visual feature is the pipe ducting of the new exhaust manifold system. Along with these body modifications, there are also three attractive colour and style variants as well as two additional special finishes available for the new R 1250 RT, each creating a powerfully distinctive character.

Basic version in Alpine White:

This traditional BMW Motorrad colour gives the R 1250 RT a timeless and at the same time dynamic look. As in all other versions, a newly designed model inscription is applied here. Cylinder head covers with the lettering "ShiftCam" – a reference to the new engine generation – set it apart from the predecessor model at first sight. The Silver metallic wheels and the drivetrain in Aluminium Silver metallic create fascinating contrasts. A distinctive touch is also provided by the central fuel tank cover and the knee cover in Slate Dark metallic matt, as well as components in contrasting black such as handlebar weights, the windshield trim element and brake calipers. The front and engine spoiler in Night Black matt give the engine section an especially prominent and dynamic emphasis.



P90321780

Option 719 Spezial finishes in Blue Planet metallic and Sparkling Storm metallic.



P90322012

A particularly intense metallic effect is created by the two Spezial colours Blue Planet metallic and Sparkling Storm metallic. The body colour is to be found on the central fuel tank cover, the left and right-hand fuel tank covering, the trim on the case lids, the front, rear and side trim section and also on the front spoiler, front wheel cover and

knee cover. Chrome elements such as the handlebar weights and windshield trim element underscore the luxurious character of the new R 1250 RT.

The engine spoiler finished in Night Black creates a fascinating contrast with the power unit in Aluminium Silver metallic. Silver-coated wheels and golden brake calipers emphasise the high-quality appearance of the new R 1250 RT. The elaborate hand-drawn lines likewise reflect the very highest level of craftsmanship. Every stroke of the brush is applied manually – so every motorcycle is a unique specimen.

In conjunction with the two Spezial paint variants, customers can also upgrade the new R 1250 RT with the Option 719 seat in brown. However, this seat is available in standard seat height and with seat heating only.



P90322011

R 1250 RT Sport:

In this style variant with the colour combination Mars Red metallic / Slate Dark metallic matt, the new R 1250 RT reveals its sporty, dynamic qualities. Here the new engine is highlighted by means of cylinder head covers in Agate Grey metallic matt, while the R 1250 RT Sport is fitted with a shortened windshield as a sporty feature, though customers can replace this with the standard windshield if they wish.



P90321791

The wheels in Asphalt Grey metallic matt and the drivetrain coated in black give the R 1250 RT a particularly powerful appearance. Parts such as the handlebar weights and windshield trim element are also finished in black.

The contrast colour Slate Dark metallic matt provides a

harmonious supplement to the body finish in Mars Red metallic on the central fuel tank cover, knee cover and front trim section.

An engine spoiler in black silk matt and front spoiler finished in Mars Red metallic homogeneously supplement the power unit with its black finish. Meanwhile brake calipers in gold add a fascinating technological accentuation, underscoring the active, sporty character of the R 1250 RT.

R 1250 RT Elegance:

This style variant emphasises the elegant appearance of the new R 1250 RT by means of a body finish in Carbon Black metallic. The wheels finished in Silver metallic with a drivetrain in Aluminium Silver metallic add a powerful contrast as well as a touch of refinement. Homogeneous accentuations are provided by the central fuel tank cover and knee cover in Granite Grey metallic matt.

Chrome elements such as the handlebar weights and windshield trim element underscore the exclusive touch of the new touring bike. The engine spoiler in Night Black matt prominently showcases the new power unit in combination with the front spoiler in body finish. Golden brake calipers round off the elegant appearance of the R 1250 RT in this style variant.



P90321785

4. BMW Motorrad Spezial:



BMW Motorrad Spezial Option 719 and HP customisation features as optional equipment items ex works.

BMW Motorrad Spezial is range of iconic customisation features, also available for the new R 1250 GS and R 1250 RT, which enhance both performance and value and are available as optional equipment items ex works. The focus in implementing these attributes is on harmonious integration in the vehicle as a whole, use of the very highest-quality materials, elaborate manual workmanship and characteristic attention to detail.

In addition to the Option 719 Spezial finishes in Blue Planet metallic and Sparkling Storm metallic, the milled parts packages Option 719 Classic and HP are available for the R 1250 GS and R 1250 GT, for example. Here, the very highest level of manufacturing precision is combined with filigree design – and using highly durable aluminium: hand levers and footrests are milled from a single block of aluminium, while cylinder head covers and front engine housing caps are made from a forging blank. Developed according to rigorous BMW Motorrad quality requirements, they always guarantee a perfect match.

The milled parts packages include cylinder head covers, ignition coil cover, oil filler plug and front engine housing cap, clutch and brake lever and the expansion tank cover.

In the new R 1250 GS the packages also include the footrests on the left and right, the footbrake and gearshift levers and milled mirrors.

Option 719 Milled Parts Package Classic – straightforward elegance with a purist aluminium look.

While most of the surfaces have a natural, untreated aluminium look, some areas are visually emphasised by means of a light grey anodized coating. This serves to underscore the refined, straightforward character of the milled parts package. In spite of this purist appearance, the surface is protected by means of a durable, colourless anodized coating.



P90322025

Milled Parts Package HP – sporty, dynamic flair through simple colouring with powerful accentuations.

Most of the surfaces are anodized in black, whereby some milled surfaces are emphasised with a natural aluminium look. Milled elements with a blue anodized coating and the blue plastic sliders on the cylinder head covers give the HP Milled Parts Package a sporty look.



P90322016

Option 719 cast wheels.

The high-quality Option 719 cast wheels for the R 1250 RT are available in two design variants:

"Classic" design: grey gloss, mill finished.

"Sport" design: black gloss, mill finished.



P90322028



P90322031

The detailed milling contours give the burnished wheel a strikingly refined design. The very highest quality and precision in the surface finishing technique makes the wheels highly resilient to environmental impact. Here, manufacturing technology and surface finishing technique have been combined to create a truly unique product.

HP sports silencer.

HP sports silencers by Akrapovič are available ex works for both new boxer models. The slip-on silencers in sporty design are made entirely of titanium, making them 0.5 kg lighter than the standard silencer.



P90322017



P90322020

Option 719 seat – the ideal supplement to the Option 719 paint finishes.

The elegant dark brown seat is offered with the Option 719 paint finishes Blue Planet metallic and Sparkling Storm metallic. The mixture of materials combined with decorative seams gives the seat a very exclusive, high-quality character. It is also possible to feel the premium character of the materials since the seat has a very distinctive haptic quality. The discreet marbling likewise enhances the seat visually in conjunction with the basic colour.

5. History of the BMW 4-valve boxer engines.



The R 100 RS saw its debut in September 1992, almost exactly 70 years after the R 32 – the first ever BMW motorcycle – and featured a completely reworked boxer engine. While serial production motorcycles with a boxer engine had been mainly air-cooled up to that point, BMW was now branching out into new territory with air/oil cooling.

1992: With the R 1100 RS, it was the first time BMW Motorrad put a 4-valve boxer into serial production.

There were a number of technical reasons why the decision was made to revise the existing design. Increasingly stringent noise limits were forcing motorcycle manufacturers not only to muffle air intake and exhaust noise as efficiently as possible but also to reduce the mechanical noise of the power unit itself to a technologically feasible minimum.

Another technical reason for the change was the increased stability of the engine in conjunction with a higher output. The oil cooling system was significantly more effective, particularly around the cylinder head where heat exposure was at its greatest. What is more, liquid cooling meant the engine was heated more evenly. A particular advantage of oil/air cooling was also to be seen during the cold-run phase: the use of oil as a coolant meant the engine heated up much more quickly than an air-cooled engine. The welcome result of this was reduced wear-and-tear and a longer lifetime.

The new boxer engine in the R 1100 RS had a displacement of 1 085 cc, with a bore of 99 mm and a stroke of 70.5 mm. The peak output was 66 kW (215 hp) at 7 250 rpm. For the first time in a volume-production boxer engine, BMW Motorrad applied four valves per cylinder in this engine. Designed in CIH (camshaft-in-head) configuration, one camshaft per cylinder was activated by means of a timing chain running behind the cylinders powered by a countershaft which was positioned underneath the crankshaft. The cam followers – now very short as compared to the previous design – ensured a much stiffer and thus more speed-resistant valve gear, providing the leeway required for increased output in the future. What is more, this configuration further reduced the level of mechanical noise. At the same time, the existing system of carburetion using a constant depression carburettor was replaced by a modern intake pipe injection system in conjunction with a Bosch Motronic. Together with the oxygen sensor, this now allowed the use of a closed-loop three-way catalytic converter, ensuring

the boxer was well equipped for the years to come in terms of emissions. The 5-speed, 3-stage planetary gear with separate oil supply was flange-mounted in the traditional BMW manner.

The air/oil-cooled 4-valve boxer demonstrated its enormous development potential over a period of 15 years.

This air/oil-cooled engine was developed successively in the course of the next 15 years. Displacement was increased from 1999 onwards to 1 130 cc in the R 1150 models, and from 2004 onwards the displacement volume available was as much as 1 170 cubic centimetres in the R 1200 models. The increase in displacement to 1 170 cc involved a significant reworking of the engine with a view to improving refinement and comfort even further. For this reason, it was the first time a BMW boxer engine was fitted with a counterbalance shaft: this rotated in the opposite direction from that of the crankshaft, virtually entirely eliminating first-order inertia torque by means of two equalizing weights offset by 180 degrees. No BMW boxer engine before had ever run as smoothly as that of the R 1200 models.

Three years after its debut – in autumn 2007 – this power unit underwent technological fine-tuning. Instead of the previous level of 98 hp (72 kW) , an output of 77 kW (105 hp) was now available to the R 1200 GS. With maximum torque increased to 8 000 rpm and an even broader engine speed range, it demonstrated even greater dynamic performance and sprint capacity in the upper half of the rotation speed range. The revised secondary ratio also gave it a good deal more pulling power than before. In order to do justice to this increased torque, the 6-speed gearbox was revised with enlarged bearing diameters.

2007/2009: The evolution from CIH to DOHC engine with overhead camshafts.

The next major step in the development of the R 1200 engine followed in 2009. It was fitted with a DOHC boxer engine which, in terms of design principle and basic structure, was very similar to the one that had powered the 98 kW (133 hp) HP2 Sport back in 2007. The new boxer engine now had two overhead camshafts per cylinder, having undergone selected revision and optimisation for its debut in the R 1200 GS. While the previous engine had provided supreme forward thrust in all conditions, the new R 1200 GS took a significant step further in this regard. With an output of 81 kW (110 hp) at 7 750 rpm, a maximum torque now increased by 500 to 8 500 rpm and thus an even broader engine speed range, the boxer exhibited even greater dynamic performance, sprint capacity and pulling power across the full engine speed range.

2012: The boxer switches to water cooling and has a shared housing for the engine and gearbox.

Three years later in 2012, BMW Motorrad presented for the first time in the R 1200 GS a successor engine that had finally been redesigned in all points, now with water as the coolant rather than oil – right on time to mark the 90th anniversary of the BMW Motorrad boxer engine with which it all began.

A change in the cooling system ensured the required level of performance as well as adhering to anticipated requirements of the future in terms of noise and exhaust emissions. The 92 kW (125 hp) boxer engine still featured air/liquid cooling, but here engine oil was replaced as a coolant by a glycol/water mixture. This ensured a high level of heat absorption capacity for more efficient heat dissipation. This so-called precision cooling involved only those engine elements that are particularly exposed to thermal stress. All in all, however, the engine still mainly used air cooling in addition, thereby preserving the characteristic appearance of the boxer engine. Two radiators were small and inconspicuously integrated in the vehicle as a whole for this purpose.

This was the first volume-production BMW Motorrad boxer engine in which the DOHC cylinder heads featured vertical rather than horizontal flow, however. Other world firsts in the history of the BMW Motorrad boxer engine at this point also included the integrated gearbox with wet clutch and anti-hopping function, together with a universal shaft now positioned on the left-hand side. With an output of 92 kW (125 hp) at 7 700 rpm and 125 Nm at 6 500 rpm, the new engine offered supreme engine and performance figures. Finally in 2018, the consistent, logical further development of this successful engine makes its debut in the new BMW R 1250 GS and R 1250 RT.

6. Accessories program BMW R 1250 GS.



Options are supplied directly ex works and are integrated during the production process. Original BMW Accessories are installed by the BMW Motorrad dealer or by customers themselves. These are also features which can be retrofitted.

Original BMW Motorrad Accessories.

HP Parts.

- HP sports silencer.
- HP covers for expansion tank (ML: Q1/2019).
- HP rider footrests, adjustable (ML: Q1/2019).
- HP engine housing cap, front (ML: Q1/2019).
- HP foot lever, adjustable (ML: Q1/2019).
- HP hand lever, adjustable (ML: Q1/2019).
- HP oil filler plug (ML: Q1/2019).
- HP abrasion pads for cylinder head covers (ML: Q1/2019).
- HP mirror (ML: Q1/2019).
- HP cylinder head covers (ML: Q1/2019).

Storage program.

- Vario case.
- Holder for Vario luggage system and topcase, large.
- Liner for Vario case.
- Aluminium case.
- Aluminium case, black.
- Holder for aluminium luggage system and Atacama luggage system.
- Holder for aluminium luggage system and Atacama luggage system, black.
- Liners for aluminium case.
- Carry handle for aluminium case/topcase.
- Vario topcase.
- Liner for Vario topcase.
- Back pad for Vario topcase.
- Aluminium topcase.
- Aluminium topcase, black.
- Liner for aluminium topcase.
- Back pad for aluminium topcase.

- Topcase, large, 49 l.
- Liner for topcase, large.
- Back pad for topcase, large.
- Luggage roll Atacama, 40 l.
- Side bags Atacama.
- Tank rucksack, large, 11-15 l (ML: Q1/2019).
- Tank rucksack, small, 8 l (ML: Q1/2019).
- Vario insert for tank rucksack.
- Softbag Sport, small.
- Softbag Sport, large.
- Bag for luggage bridge.
- Bag for passenger seat, 14-18 l (ML: Q1/2019).
- Luggage panel, passenger seat.
- Luggage roll, 50 l.

Design.

- LED turn indicator (not for USA/Canada).
- Rear silencer, chrome-plated.
- Footrest holder rear, black.
- Rear axle cover.
- Radiator trim elements "Style", black.
- Front wheel cover extension.
- Option 719 covers for expansion tank, Classic (ML: Q1/2019).
- Option 719 rider footrests, adjustable, Classic (ML: Q1/2019).
- Option 719 engine housing cap, front, Classic (ML: Q1/2019).
- Option 719 foot lever, adjustable, Classic (ML: Q1/2019).
- Option 719 hand lever, adjustable, Classic (ML: Q1/2019).
- Option 719 oil filler plug, Classic (ML: Q1/2019).
- Option 719 mirror, Classic (ML: Q1/2019).
- Option 719 cylinder head covers, Classic (ML: Q1/2019).

Ergonomics and comfort.

- Retrofit set – Riding Modes Pro.
- Retrofit heated grips.
- Shift Assistant Pro.
- Gear lever, adjustable.
- Gear lever, adjustable, black.
- Footbrake lever, adjustable.
- Enduro footrests, height-adjustable.
- Rider footrest, adjustable, black.
- Windshield Rallye.
- Windshield Rallye, tinted.
- Windshield, tinted.

- Rallye seat, high with luggage panel (seat height 890 mm).
- Rallye seat, low with luggage panel (seat height 860 mm, standard in R 1200 GS Rallye).
- Comfort seat, high (seat height 860/ 880 mm).
- Comfort seat, low (seat height 830/ 850 mm).
- Rider seat Exclusive, low (seat height: 820/840 mm).
- Rider seat Exclusive (seat height: 850/870 mm).
- Rider seat, Exclusive, high (seat height: 870/890 mm).
- Rider seat, high (seat height: 870/890 mm).
- Rider seat, low (seat height: 820/840 mm).
- Passenger seat Exclusive.
- Passenger seat Exclusive, narrow.
- Passenger seat Comfort.

Navigation and communication.

- BMW adapter cable for Apple iPhone/iPod.
- BMW adapter cable for micro-USB.
- BMW Motorrad dual USB charger with cable, 60 cm.
- BMW Motorrad dual USB charger with cable, 120 cm.
- Retrofit set – preparation for navigation unit.
- BMW Motorrad Navigator VI.
- Car kit for BMW Motorrad Navigator VI.

Safety.

- Brake disc lock with alarm system.
- Headlamp guard (ML: Q1/2019).
- LED additional headlight.
- Protective foil for 6.5-inch TFT screen.
- First aid set, large.
- First aid set, small.
- Safety screw for oil filler neck.
- Safety screw for oil filler neck, black.
- Frame guard.
- Hand protector.
- Hand protector "Style", Light White.
- Radiator guard.
- Enduro aluminium engine protection bar.
- Crash bar.
- Cylinder head cover protector.
- Retrofit set – RDC.
- Retrofit set – alarm system.

Maintenance and technology.

- Indoor motorcycle cover, large.
- Indoor motorcycle cover.
- Motorcycle cover.
- Mini foot pump.
- Tyre pressure travel set.
- Multifunction tool.
- LED torch.
- BMW Motorrad battery charger.
- On-board toolkit – service set.
- On-board toolkit – adapter for flush-fitting pencil coil.
- Sport lift stand, front.
- Lift stand, rear.
- Additional power socket.
- Motorcycle carpet.
- Motorcycle care set.
- Engine gloss spray, 300 ml.
- Rim cleaner, 500 ml.
- Gloss polish, 250 ml.
- Insect remover, 500 ml.
- Metal polish, 75 ml.
- Body + Bike shower gel, 250 ml.
- Seat care (for smooth imitation leather), 50 ml.
- Motorcycle cleaner, 500 ml.
- Original BMW Engine Oil ADVANTEC Ultimate 5W-40, 1 l.
- Original BMW Engine Oil ADVANTEC Ultimate 5W-40, 500 ml.

7. Accessories program BMW R 1250 RT.



Original BMW Motorrad Accessories.

HP Parts.

- HP sports silencer.
- HP covers for expansion tank (ML: Q1/2019).
- HP engine housing cap, front (ML: Q1/2019).
- HP hand lever, adjustable (ML: Q1/2019).
- HP oil filler plug (ML: Q1/2019).
- HP abrasion pads for cylinder head covers (ML: Q1/2019).
- HP cylinder head covers (ML: Q1/2019).

Storage program.

- Luggage roll, 50 l.
- Softbag, large 50 – 55 l.
- Softbag, small, 30 l – 35 l.
- Tank rucksack, 11 l.
- Vario insert for tank rucksack.
- Bag for luggage bridge.
- Topcase, small, 28 l.
- Liner for topcase, small.
- Back pad for topcase, small.
- Liner for touring case.
- Impact protection for touring case.
- Protective foil for touring case.
- Touring topcase in body finish, 49 l.
- Back pad for touring topcase, brown.
- Liner for touring topcase.
- Storage compartment for touring topcase.
- Additional brake light for touring topcase.

Design.

- Option 719 rear wheel, Classic.
- Option 719 front wheel, Classic.
- Option 719 rear wheel, Sport.
- Option 719 front wheel, Sport.
- Case strip, chrome-plated.
- Handlebar weights, chrome-plated.

- Touring topcase lid trim, chrome-plated.
- Rear axle cover.
- Option 719 covers for expansion tank, Classic (ML: Q1/2019).
- Option 719 engine housing cap, front, Classic (ML: Q1/2019).
- Option 719 hand lever, adjustable, Classic (ML: Q1/2019).
- Option 719 oil filler plug, Classic (ML: Q1/2019).
- Option 719 cylinder head covers, Classic (ML: Q1/2019).

Ergonomics and comfort.

- Rider seat, high, with seat heating, black, 830/850 mm.
- Rider seat, high, black, 830/850 mm.
- Rider seat, with seat heating, black, 805/825 mm.
- Rider seat, low, with seat heating, black, 760/780 mm.
- Rider seat, low, 760 / 780 mm.
- Passenger seat with seat heating, black.
- Retrofit set – Riding Modes Pro.
- Retrofit set – cruise control.
- Shift Assistant Pro.
- Windshield Comfort.
- Windshield, short.

Navigation and communication.

- BMW adapter cable for Apple iPhone/iPod.
- BMW adapter cable for micro-USB.
- BMW Motorrad dual USB charger with cable, 60 cm.
- BMW Motorrad dual USB charger with cable, 120 cm.
- Lightning music adapter (iPhone adapter).
- Retrofit set – preparation for navigation unit.
- BMW Motorrad Navigator VI.
- Car kit for BMW Motorrad Navigator VI.

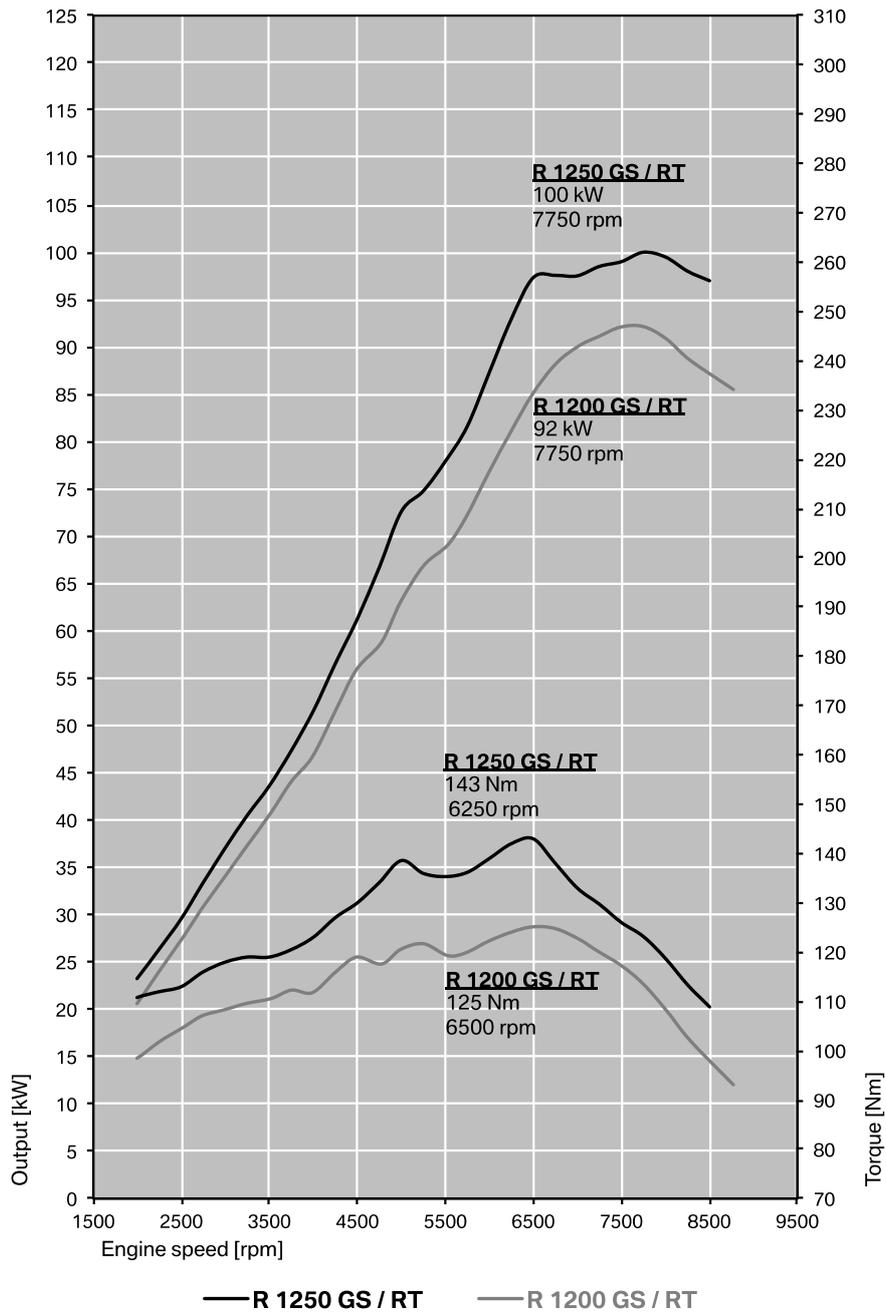
Safety.

- Brake disc lock with alarm system.
- Retrofit set – alarm system.
- First aid set, large.
- First aid set, small.
- LED additional headlight.
- Retrofit set – RDC.
- Safety screw for oil filler neck.
- Safety screw for oil filler neck, black.
- Cylinder head cover protector.

Maintenance and technology.

- BMW Motorrad battery charger.
- On-board toolkit – service set.
- On-board toolkit.
Adapter for flush-fitting pencil coil.
- Motorcycle carpet.
- LED torch.
- Mini foot pump.
- Sport lift stand, front.
- Lift stand, rear.
- Multifunction tool.
- Breakdown assistance set – tubeless tyres.
- Tyre pressure travel set.
- Additional power socket.
- Motorcycle care set.
- Engine gloss spray, 300 ml.
- Rim cleaner, 500 ml.
- Gloss polish, 250 ml.
- Insect remover, 500 ml.
- Metal polish, 75 ml.
- Body + Bike shower gel, 250 ml.
- Seat care (for smooth imitation leather), 50 ml.
- Motorcycle cleaner, 500 ml.
- Original BMW Engine Oil ADVANTEC Ultimate 5W-40, 1 l.
- Original BMW Engine Oil ADVANTEC Ultimate 5W-40, 500 ml.

8. Engine output and torque.



9. Technical specifications.



		R 1250 GS	R 1250 RT
Engine			
Capacity	cc		1,254
Bore/stroke	mm		102.5 x 76
Output	kW/bhp		100/136
at engine speed	rpm		7,750
Torque	Nm		143
at engine speed	rpm		6,250
Type		Air/liquid-cooled 2-cylinder 4-stroke boxer engine with two overhead, spur gear driven camshafts , a counterbalance shaft and variable intake camshaft control system BMW ShiftCam	
Compression			12.5/1
Fuel			Premium unleaded 95 RON
Valves per cylinder			4
Ø intake/outlet	mm		40/34
Ø throttle valve	mm		52
Engine control			BMS-O
Emission control		Closed-loop three-way catalytic converter, exhaust standard EU-4	
Electrical system			
Generator	W		508
Battery	V/Ah	12/11.8	12/16
Headlamp		LED	H7 12 V 55 W
Rear light			LED brake light/rear light
Starter	W		900
Power transmission			
Clutch		Wet clutch with anti-hopping function, hydraulically activated	
Transmission		Constant mesh 6-speed gearbox with helical gearing system	
Primary ratio			1.650
Gear transmission ratios	I		2.438
	II		1.714
	III.		1.296
	IV.		1.059
	V		0.943
	VI.		0.848
Secondary drive			Cardan
Secondary ratio		2,910	2,750

		R 1250 GS	R 1250 RT
Suspension			
Frame construction type	Two-section frame concept consisting of main frame with bolt-on rear frame, load-bearing engine		
Front wheel control	BMW Motorrad Telelever, central spring strut, Ø 37 mm		
Rear wheel control	Cast aluminium single-sided swing arm with BMW Motorrad Paralever, WAD spring strut, continuously adjustable spring preload by means of hand wheel, rebound-stage damping adjustable by hand wheel (Option: Dynamic ESA)		
Spring travel, front/rear	mm	190/200	120/136
Wheel castor	mm	100,6	116
Wheelbase	mm	1,514	1,485
Steering head angle	°	64,3	64.1
Brakes	front	Twin disc brake, floating brake discs, Ø 305 mm, 4-piston radial brake calipers	Twin disc brake, floating brake discs, Ø 320 mm, 4-piston radial brake calipers
	rear		Single disc brake, Ø 276 mm, 2-piston floating caliper
ABS	BMW Motorrad Integral ABS as standard (part integral), disengageable (option: ABS Pro)		
Wheels	Die-cast aluminium wheels		
	front	3.00 x 19"	3.50 x 17"
	rear	4.50 x 17"	5.50 x 17"
Tyres	front	120/70 R19	120/70 ZR 17
	rear	170/60 R17	180/55 ZR 17
Dimensions and weights			
Total length	mm	2,207	2,222
Total width including mirrors	mm	952.5	985
Seat height	mm	850/870 (800 to 900 possible)	805/825 (760 to 850 possible)
DIN unladen weight, road ready	kg	249	279
Permitted total weight	kg	465	505
Fuel tank capacity	l	20	25
Performance figures			
Fuel consumption (WMTC)	l/100 km		4.75
CO2	g/km		110
Acceleration	0-100 km/h	s	3.6
Top speed	km/h		200