The new BMW S 1000 RR.

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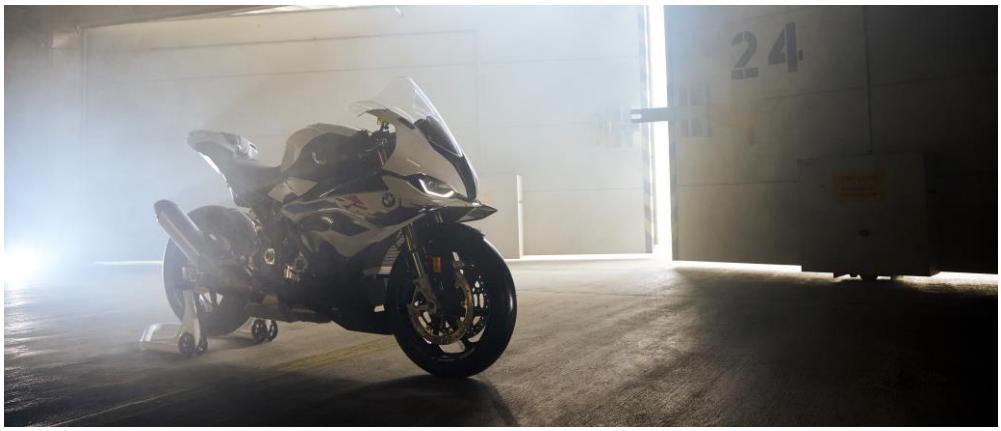
1. Overall concept. Short version.



"With a more powerful engine, advanced suspension and chassis, the new Brake Slide Assist and DTC Slide Control assistance systems as well as optimised aerodynamics with winglets and a redesigned rear end, we were able to raise the RR's performance to a new level." Wolfgang Wallner, Project Manager S 1000 RR

The new BMW S 1000 RR - even more dynamic thanks to comprehensive innovations to the engine, suspension, chassis, aerodynamics, design and assistance systems.
The supersports bike first presented in 2009 will now be available in a new edition featuring advanced engine and chassis, optimised aerodynamics with winglets, a new rear end and new assistance systems.

Advanced 4-cylinder engine that sets a new benchmark in terms of performance, torque and rideability.
The new RR features a 4-cylinder in-line engine based on the power unit of the current S 1000 RR. Peak power is now 154 kW (210 hp) at 13,750 rpm (does not apply to US machines), 2 kW (3 hp) more than the previous model. The maximum torque of 113 Nm is generated at 11,000 rpm. In spite of an increase in peak output, the usable engine speed range of the new RR is now significantly broader and more fulsome. The maximum engine speed is 14,600 rpm.

Dynamic Traction Control DTC with new Slide Control function using steering angle sensor.
The new feature of Dynamic Traction Control DTC is the Slide Control function. It allows the rider to select two preset drift angles for the traction control system when accelerating out of bends.

Technically, this is achieved using a steering angle sensor. Up to the respective leaning angle, the traction control system allows slippage at the rear wheel when accelerating out of a bend, thus enabling rear wheel drift. When the preset steering angle value is reached, traction control intervenes, reduces slip and stabilises the motorcycle.

Advanced "Flex Frame" and newly defined chassis and suspension geometry.
The heart of the chassis of the new RR is still the aluminium bridge frame, which is a welded construction of four gravity die-cast elements and integrates the engine, which is inclined forward by 32 degrees as before, as a supporting element. With the aim of optimising flexibility laterally, the main frame of the new RR was given several openings in the side areas. The focus was also on further increasing riding precision when developing the new chassis of the RR. The steering head angle has been flattened out by 0.5° and the offset of the triple clamps reduced by 3 mm. The new chassis geometry is accompanied not only by even better riding precision, but also by increased accuracy and clearer feedback from the front wheel.

ABS Pro with new Brake Slide Assist and ABS Pro "Slick" setting functions.
The new Brake Slide Assist function is an important and very helpful innovation for race track riders. As in the new DTC Slide Control function, this new system is also based on steering angle sensors and allows the rider to set a specific drift angle for so-called braking drifts while sliding into corners at a maintained speed.

Winglets, redesigned front and rear sections and attractive colour schemes for even more performance and sportiness.
As with the M RR, winglets on the new RR now ensure the best possible contact of the front wheel with the road - especially when accelerating. They generate aerodynamic downforce and thus additional load on the wheels. The advantages are that the bike's tendency to do a wheelie is reduced, you can break later and cornering stability is increased.

When it comes to design, the new edition of the RR benefits from a redesigned front section including winglets, a new, lighter and sportier-looking rear section and the three new colour schemes

Blackstorm metallic, Style Passion in Racingred non-metallic and the racing-oriented Lightwhite non-metallic/BMW M.

The highlights of the new BMW S 1000 RR:

• Increased output and torque: 154 kW (210 hp) at 13,750 rpm and 113 Nm at 11,000 rpm.

• Shorter secondary gear ratio for more traction at the rear wheel.

• Advanced "Flex Frame" with more flex.

• Chassis geometry with new values for steering head angle, offset, caster and wheelbase.

• M Chassis Kit as standard with adjustable swinging arm pivot point and raised rear end.

• Dynamic Traction Control DTC with new Slide Control function for drifts while accelerating using steering angle sensor.

• ABS Pro with new Brake Slide Assist function using steering angle sensor for braking drifts when approaching corners.

• ABS Pro Setting "Slick"

• Optimised aerodynamics with new front section, winglets, high windshield and partioning off of the lower triple clamp.

• M lightweight battery as standard.

• USB charging port in the rear section.

• Redesigned rear section and shorter number plate holder.

• Optimised wiring harness for removing the number plate holder.

• Clutch and generator cover in black.

• Easier rear wheel assembly due to loss-proof axle bushings and chamfered brake pads and brake anchor plate.

• M GPS Mouse Adapter as part of the BMW Motorrad original accessory range.

• New GoPro holder as part of the BMW Motorrad original accessory range.

• Three attractive paintwork finishes: Blackstorm metallic, Style Passion in Racingred non-metallic and Lightwhite non-metallic/BMW M.

2. Drive.

"With the advanced engine, we have succeeded in noticeably increasing the performance of the RR once again - and without any loss of rideability and suitability for everyday use." Emanuel Holze, Project Manager Drive

Advanced 4-cylinder engine that sets a new benchmark in terms of performance, torque and rideability. Shorter secondary gear ratio for more traction at the rear wheel.
The new RR features a revised 4-cylinder in-line engine based on the power unit of the current S 1000 RR. Peak power is now 154 kW (210 hp) at 13,750 rpm (does not apply to US machines) and thus 2 kW (3 hp) more than the previous model. The maximum torque of 113 Nm is reached at 11,000 rpm. In spite of an increase in peak output, the usable engine speed range of the new RR is now significantly broader and more fulsome. The maximum engine speed is 14,600 rpm. Increased rear wheel traction in all gears is also provided by a shorter secondary gear ratio through the use of a sprocket with 46 instead of 45 teeth (not for CHN, TWN and BRA).

Cylinder head with new intake port geometry modelled on the M RR engine. BMW ShiftCam technology for varying timing and valve lift.
With the aim of generating significantly increased peak power as well as achieving optimum power delivery across the rev range relevant for supersports riding on country roads as well as for race track use, the intake ducts have been redesigned. They feature the advanced channel geometry as used in the M RR, but have a cast surface (M RR: milled).

The advanced RR engine is equipped with
BMW ShiftCam Technology for varying the valve timings and the valve stroke on the intake side. This is a three-part intake shift camshaft that has two cams mounted on a shift segment for each valve to be actuated: a torque cam and a power cam, each with optimally designed cam geometry. The shift speed of the BMW ShiftCam of the new RR is 9,000 rpm as before (not for CHN and TWN).

By means of an axial displacement of the cam segment, the inlet valves are shifted from either the torque cam or the power cam in just 10 ms, depending on the load and speed. The axial displacement of the cam segment and thus the use of torque or power cam is effected via two shift cams on the cam segment and two electromechanical actuators. The different design of the cam geometry is used to vary the timing and the valve lift. While the full-load cam provides maximum valve lift, the partial-load cam delivers reduced valve lift.

The benefits of BMW ShiftCam Technology:

• Increased torque and pulling power in the lower and medium speed range while also increasing peak output.

• Optimum design of partial-load cam geometry for the lower to medium load and engine speed range.

• Reduction of load change loss in the partial load range.

• Reduction of exhaust emissions and optimised sound.

Intake system with new airbox and shorter intake funnels for optimised charge exchange at high engine speeds.
The new RR powerplant is equipped with a new airbox as on the M RR and it features variable intake funnels as before. For use in the new RR, however, the intake funnels have been shortened, as in the M RR engine, in order to optimise the charge change and thus power generation, especially at high engine speeds.

As before, the length of the intake funnels is varied in two stages via a map-controlled servomotor mounted on the airbox. The shorter intake passages are opened from an engine speed of 11,900 rpm since these are more favourable in terms of achieving maximum output.

Riding modes "Rain", "Road", "Dynamic" and "Race" as well as Dynamic Traction Control (DTC) with new Slide Control function via steering angle sensor technology and DTC Wheelie function.
In the new RR too, a distinction is drawn between two sets of riding modes: For country roads and for the race track. The new RR is fitted as standard with the four modes “Rain”, “Road”, “Dynamic” and “Race”, while the option “Pro Modes” offers “Race Pro 1”, “Race Pro 2” and “Race Pro 3” in addition. The latest generation of Dynamic Traction Control (DTC) with 6-axis sensor cluster, lean angle sensor and fine

adjustment for even more safety and performance when accelerating are also standard features.

The new feature of Dynamic Traction Control DTC is the Slide Control function. This is an extension of the DTC slip control. The central component of Slide Control is the steering angle sensor. Based on its signal, together with the wheel speeds and the sensor box signals, the slip angle at the rear wheel ("drift angle") is estimated.

Depending on the characteristics of the rear tyre, the road surface and the drive slip tolerated by the slip control, a slip angle is established. This is so small in the stable driving condition that it is not noticed by the driver. Slide Control now compares the current slip angle and comes up with a set value dependent on the DTC setpoint. If it looks as if this setpoint is going to be exceeded, Slide Control initiates a reduction of the drive slip.

When slick tyres are used on the race track, the rider is assisted in controlling power slides that occur in combination with the appropriate riding style and DTC setting. For this purpose, the new RR has two different settings with separately stored drift angles: DTC settings 3 and 2. These enable very experienced riders to make the best possible use of the rear tyre's potential and to influence the bike's racing line at the exit of the bend by using the throttle grip and the "drift angle". Analogous to this new Slide Control function, the steering angle sensor makes it possible to use the Brake Slide Control function, which is also new (see chapter Chassis).

As before, the DTC has four fixed basic settings for the respective riding modes "Rain", "Road", "Dynamic" and "Race". In the "Race Pro" riding modes, fine adjustment (+/- Shift) is also available. What is more, the "Pro Modes" option offers an adjustable DTC Wheelie function for the first time. It allows wheelies to be suppressed or limited with the aim of achieving maximum acceleration via front wheel lift-off detection.

Three adjustable throttle characteristics for optimum response, plus "Engine Brake" as part of the "Driving Modes Pro" optional equipment.

The new RR has two throttle curves already as standard: these are firmly linked to the riding modes “Rain”, “Road”, “Dynamic” and “Race”:

• Rain: soft throttle response, reduced drive torque in the lower gears.

• Road: optimal throttle response, reduced drive torque in the lower gears.

• Dynamic: optimal throttle response, reduced drive torque in the lower gears.

• Optimum throttle response, maximum drive torque in all gears.

In Race Pro 1 to 3 mode, the rider can select two additional combinations of throttle response and drive torque.

• Smooth throttle response and full drive torque.

• Direct throttle response and full drive torque.

As another element of the “Pro Modes” option, Engine Brake also offers a three-stage adjustment of engine drag torque during coasting.

Hill Start Control as standard and Hill Start Control Pro as part of the “Pro Modes” option for convenient hill starts.
Even in its standard trim the new RR offers the function Hill Start Control to facilitate starting on gradients. The option Hill Start Control Pro goes beyond the comfort system Hill Start Control by providing the 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.

Advanced Shift Assistant Pro for fast upshifts and downshifts without using the clutch. The shifting scheme can be easily reversed for race track use.
As before Shift Assistant Pro enables upshifting without clutch actuation and thus offers perfect acceleration almost without interrupting traction. It also allows downshifting without clutch or

throttle actuation in the load and speed ranges relevant for riding. This allows very fast gear changes and reduces clutch use to a minimum.

For use in the new RR, the Shift Assistant Pro has been improved in a few points. The rider's shift request is now implemented via a torque model and thus enables shifts in all operating ranges. At the same time, the reaction time to so-called claw or jaw hits has been optimised and the load change damping after gear changes has been improved. For use on the race track, the conventional shifting scheme (first gear down) can be changed in a few simple steps (first gear up).

Launch Control for perfect race starts.
The new RR also offers the rider Launch Control for active support on race starts. Activation is during standstill with the engine idling by pressing the start button for more than three seconds. The relevant information is displayed on the screen is the instrument. From the technical point of view, Launch Control also limits engine torque so that the maximum transferable drive torque is available at the rear wheel when setting off in first gear. When the rider shifts into second gear, the engine torque is corrected in line with the change in ratio so that the maximum transferable drive torque continues to be available at the rear wheel during this phase.

Pit Lane Limiter for precise speed control in the pit lane.
The Pit Lane Limiter enables the RR rider to limit speed when passing through the pit lane, regardless of mode. The pit lane limiter is also audibly perceptible and thus increases safety in the pit lane.

3. Suspension.

"Thanks to the further developed Flex Frame as well as the new chassis geometry, the new RR offers even better riding precision, accuracy and feedback from the front wheel." Sebastian Epp, Project Engineer Chassis

The RR was not only advanced in terms of increased drive performance, but also with regard to the the chassis and suspension. A revised main frame, modified chassis geometry as well as the new Brake Slide Assist system and the additional “Slick” ABS Pro Setting contribute significantly to the increased performance of the chassis and suspension.

Advanced "Flex Frame" with openings for optimised lateral flex.
The heart of the chassis of the new RR is still the aluminium bridge frame, which is a welded construction of four gravity die-cast elements and integrates the engine, which is inclined forward by 32 degrees as before, as a supporting element. With the aim of optimising flexibility laterally, the main frame of the new RR was given several openings in the side areas.

What has remained are the advantages of the frame due to its very narrow design. This significantly reduces the width of the bike in the area that is relevant for good knee contact, and it was possible to make the RR only about 20 mm wider than a V4 concept in this area. The rider benefits from being able to keep his thighs together closer to the bike and thus a more relaxed riding posture.

Further developed chassis geometry for even greater driving precision, accuracy and feedback.
The focus was also on further increasing riding precision when developing the new chassis of the RR. The steering head angle has been flattened out by 0.5° (66.4° instead of the previous 66.9°) and the offset of the triple clamps reduced by 3 mm. Accordingly, the caster was increased from 93.9 mm to 99.8 mm. At the same time, the wheelbase was extended to 1,457 mm. The adjustability of the swinging arm pivot point and the height of the rear end is due to the use of the M Chassis Kit and the fact that the bike is

used on the race rack and the chassis geometric adjustments that are often necessary there. The new chassis geometry is accompanied not only by even better riding precision, but also by increased accuracy and clearer feedback from the front wheel.

One-piece rear swinging arm with underslung sections and the rear wheel is easier to remove and install.
As before, rear wheel control is ensured by an underslung swinging arm derived from racing, which is gravity die cast. Suspension and damping is provided by a central spring strut with adjustable spring base, damping rebound and compression. The rebound and compression stage can still be adjusted by means of a ten-click scaling. The suspension strut is now height-adjustable for making individual adjustments and thus offers the perfect tuning option for a wide range of requirements. For easier removal and installation of the rear wheel, the axle bushings on the rear wheel on the right side are now mounted to prevent loss and the brake pads and the brake anchor plate are chamfered. The total suspension travel on the rear axle is 117 mm.

Front wheel control via new, fully adjustable upside-down telescopic fork with a slide tube diameter of 45 mm.
As in the predecessor model, the upside-down fork with a slide tube diameter of 45 mm offers a high degree of brake stability, as well as a stable response and transparent feedback.

The upside-down fork is fitted with so-called closed-cartridge inserts, i.e. separate hydraulic piston-cylinder systems, and is fitted with adjustment options for the spring rest as well as the damping rebound and compression stage. The total suspension travel is 120 mm.

Dynamic Damping Control DDC - electronic damping adjustment as an optional extra ex works.
The new edition of the legendary RR can also be equipped with the electronically controlled Dynamic Damping Control DDC suspension.

The basic settings of the DDC are linked to the riding modes "Rain", "Road", "Dynamic" and "Race". In "Rain" and "Road" mode, the DDC's tuning focus is on rich, pleasant damping and can thus be described as sporty-comfortable. The area of application of this

DDC damping characteristic "road" is preferably the country road with poor to good asphalt surface.

The "Dynamic" driving mode, on the other hand, is intended for very well-maintained country roads. The DDC damping characteristic "Road dyn." is available for this purpose.

In the "Race" riding mode, the basic damping is raised again for race track use and works with the "Track" characteristic.

In the "Race Pro" riding modes, on the other hand, the individually adjustable "Race" DDC damping characteristic optimally supports race track riding and provides an even richer and firmer damper setting. Here, the spring-damper elements provide the rider with optimum, crystal-clear feedback at all times with regard to the respective riding situation.

In addition, the suspension tuning can also be individualised in all riding modes. In the same way as with mechanical adjustment, the customer can make the suspension softer or stiffer simply by clicking in the configuration menu.

ABS Pro with new Brake Slide Assist and ABS Pro "Slick" setting functions. Dynamic Brace Assistant DBC as an element of the optional equipment item “Riding Modes Pro”.
Like its predecessor, the new RR has a brake system that is supremely effective on the road and on the race track. At the front there are two radially mounted 4-piston fixed calipers in conjunction with 320 mm steel brake discs which are 4.5 mm thick (forged and carbon fibre wheels: 5.5 mm). At the rear, deceleration is taken care of by a single-piston floating caliper with a 220 mm steel brake disc.

ABS Pro is already on board as standard. In contrast to conventional ABS systems, ABS Pro also offers extra safety when braking in bends. Even when braking fast in banking position, ABS Pro is able to prevent the wheels from blocking, thereby reducing the risk of falling when banking – even in the event of panic braking. In the “Race Pro” modes, the ABS function can be set to five different levels, with the ABS Pro function linked accordingly. A new feature of the current RR is the ABS Pro Setting "Slick" as part of the Riding Modes Pro option. This setting takes into account the use of treadless slick tyres.

The new Brake Slide Assist function is an important and very helpful innovation for race track riders. As in the new DTC Slide Control function (see Drive chapter), this new system is also based on steering angle sensors and allows the rider to set a specific drift angle for so-called braking drifts while sliding into corners at a maintained speed.

From a technical point of view, a slip angle (drift angle) is set using the steering angle sensor response by limiting the brake pressure at the rear wheel by the ABS Pro system and by controlling the rear wheel slip by the engine drag torque control (MSR).

Due to his position on the motorcycle and the application of force via the handlebars, the rider has a considerable influence on the drift behaviour during braking. Brake Slide Assist provides support to the rider for this partially unstable driving condition of drifting.

As a component of the “Pro Modes” option,
DBC Dynamic Brake Control provides the rider with additional support on braking manoeuvres. DBC increases safety when braking, even in difficult situations, by avoiding unintentional throttle activation. As soon as the sensor cluster supplies a certain deceleration value during braking, any simultaneous desire to accelerate on the part of the rider is detected as implausible and throttle valve opening is suppressed. This keeps the motorcycle stable and shortens the braking distance. After a certain delay, the hazard warning lights are turned on automatically.

Instrument cluster with large, perfectly readable 6.5-inch TFT display and numerous new functions. New rev counter display
The instrument cluster of the new RR has a total of four screens (Pure Ride with the main details and 3Core screens) and riders can choose what is displayed to suit their needs as before.

As a new comfort function, the last selected screen display appears after turning on the ignition again. The entire display is consistently designed with the focus on supersports use and its information diversity, display quality and, last but not least, user-friendliness are still unrivalled in the supersports segment.

In addition to a wide range of functions and information, the BMW Motorrad developers placed particular emphasis on the best possible readability of the 6.5-inch TFT display. It is linked to the Multi Controller on the left-hand handlebar panel and can be operated quickly, safely and conveniently from here.

The rider can choose between customised screen displays for various purposes. The Pure Ride screen, for example, provides all the necessary information for normal operation on the road, while the three Core screen displays are designed for the race track and provide a corresponding range of information. In addition, the rev counter is displayed here both in analogue form (Core 1 and 2) and in the form of a bar graph (Core 3).

In the course of the development of the RR, several new functions were added. For example, the new instrument cluster features an optimised display of the rev counter. It now has a dashed area and a solid red area that is directly controlled by the engine control unit. The dashed area is to be avoided in continuous operation, but can be approached briefly, whereas the continuous red area is blocked. This new display scheme applies, for example, to reduced warm-up speed, speed limitation due to diagnosed faults, Launch Control and when the engine is not at operating temperature. When the engine is at a standstill, the configuration for a warmed-up engine is always displayed. As soon as the engine is started, the currently

relevant areas are displayed. Another new function of the rev counter is that it flashes together with the shift light.

In addition, the factory setting is displayed to the RR rider under "Settings", e.g. for the suspension, by means of a marking (pie segment) (delivery status).

Further new functions of the instrument cluster are "comfort flashing deactivatable", preselection of the riding mode as well as navigation and entertainment as part of "Driving Modes Pro".

Alongside the digital display of speed, revolutions per minute, selected mode, settings for ABS Pro, DTC and DDC and the menus, it is also possible to access the following wide range of information on the screen (depending on the options fitted), for example:

• Current left/right lean angle.
• Maximum left/right lean angle.
• Current deceleration achieved in m/s^2.
• Maximum deceleration achieved in m/s^2.
• Torque reduction through DTC.
• Speed warning (display "SPEED" if a predefined speed is exceeded).
• Average speed.
• Average fuel consumption.
• Trip 1 and 2.
• Residual range.
• Total kilometres.
• Fuel tank level.

For riders using the new RR on the race track, the new instrument cluster offers additional and highly interesting data which can be accessed in a variety of screen display formats:

• Lap time and lap distance.
• Lap specific speeds (min, max, average).
• Active riding mode per lap.
• DTC setting value per lap.
• Lean angle left/right.
• Lean angle maximums left/right per lap.
• Maximum DTC torque reduction per lap.
• Maximum deceleration per lap.
• Number of gear shifts per lap.

• Average throttle grip position per lap.
• Total laps, total riding time and total distance.
• Best-ever lap.

and much more.

Optimised wiring harness for faster removal of the number plate holder. M battery and USB charging socket now standard.
As before, the number plate holder and the indicator and number plate lights form one unit and the functions of the brake and tail lights are integrated into the side indicator lights. The extremely compact grouping makes it easy to get the RR ready for track use in a few simple steps. Thanks to a modified wiring harness, which is now equipped with an LWS connector in this area, disassembly is now even quicker and easier.

Compared to the predecessor model, the standard equipment has also been expanded to include the previous optional extras M battery and the USB charging socket.

5. Aerodynamics and design.

"With the winglets, we were able to achieve an optimum balance of downforce and drag and thus improve the RR's performance once again." Johann Sievers-Paulsen, Body Development S 1000 RR

Super-sporty design by BMW Motorrad with newly designed front and rear sections and short number plate holder.
When it was launched in 2009, the RR already stood out thanks to its extremely compact layout and super-sporty design. This has not changed to this day and so the new RR delivers a perfect level harmony of super-sporty design and perfect function for road and race track use.

A newly designed rear section with hump cover, rear and the rear sections above and below make the current RR look even lighter, sportier and more dynamic. The shorter number plate is also new as well as the Endurance seat, which is available as part of the original BMW Motorrad accessory range. The hump cover is another innovation in this area and is available as an optional extra for the pillion seat.

Winglets: Brake later and accelerate earlier thanks to aerodynamic downforce.
One of the main areas of focus in the development of the RR was aerodynamics. This area has played a central role in the top motorcycle racing competitions, the MotoGP and Superbike World Championship, for several years now, the aim being to improve lap times even further. While for decades the developers of racing motorcycles concentrated almost exclusively on aerodynamic resistance ("drag") and thus essentially on the top speed achievable, today the focus is on other aerodynamic aspects for Superbikes and MotoGP bike with an output of well over 200 hp.

In addition to achieving the highest possible maximum speed, which is absolutely necessary for race victories, another goal, especially with these extremely powerful motorbikes, is to achieve

the best possible contact between the wheels and the road - especially when accelerating.

Wheelies are absolutely undesirable from a riding dynamics point of view, as the drive force in a wheelie is not converted 100 per cent into propulsion, but also to a considerable percentage into the rising of the front end of the motorbike. Accordingly, the traction control kicks in to stop the wheelie and thus reduces the driving force. Valuable tenths of a second are lost here.

The winglets on the front fairing of the new RR take this scenario into account as they generate up to 10 kg of aerodynamic downforce and thus an additional front wheel load depending on the speed. The additional wheel load on the front wheel counteracts the wheelie tendency during acceleration, the traction control system has to regulate less, more drive power is converted into acceleration and the rider achieves a faster lap time.

The BMW Motorrad developers countered the slightly increased aerodynamic resistance caused by the small additional frontal area and shape of the winglets with a newly designed high windshield. This helps improve the flow around the riders's helmet. A further aerodynamic improvement was achieved by partitioning off the lower triple clamp.

The dynamic design of the RR featuring a colour scheme with three individual characters: The basic variants in Blackstorm metallic, Style Passion in Racingred non-metallic and the racing-oriented colour scheme in Lightwhite non-metallic/BMW M. The now black covers for the alternator and clutch are common to all three paintwork finishes.

6. Equipment program.

Optional equipment and ariginal BMW Motorrad accessories.
An extensive program of optional equipment and Original BMW Motorrad accessories is available for customising the new RR. Optional equipment items are supplied ex works and are integrated in the production process. Original BMW Accessories are installed by the BMW Motorrad dealer or by customers themselves. These items can also be retrofitted.

Options.

• **M Package:** M paintwork, M footrest system, black fuel filler cap, M Carbon wheels with M tapes, M lettering and new clear coat, M sports seat. As an alternative to the M Carbon wheels, the customer can also choose the M forged wheels.

• **Dynamic Package:** Ride modes Pro, DDC Dynamic Damping Control, heated grips, cruise control.

• **Race Package:** M Endurance chain with M titanium sports silencer or M full titanium exhaust system (alternative product content).

Carbon package

- M Carbon front wheel mudguard.
- M Carbon rear wheel mudguard.
- M Carbon chain guard.
- M Carbon side trim le/ri
- M Carbon sprocket cover.

Milled parts package

- M folding clutch lever.
- M brake lever guard.

• **Alarm system.**

• Pillion seat cover.

• RDC.

• E-Call.

• Design option wheels for standard wheels

• Pro riding modes available as single special equipment

Special accessories.
Original BMW Motorrad accessories.

M Performance Parts.

- M axle protectors.
- M Carbon airbox cover.
- M Carbon rear wheel.
- M Carbon front wheel.
- M Carbon chain guard.
- M Carbon rear wheel cover.
- M Carbon front wheel cover.
- M Carbon sprocket cover.
- M Carbon fuel tank trim.
- M Carbon fairing side panel top.
- M Datalogger.
- M GPS Mouse Adapter
- M rider footrests.
- M rider footrest system.
- M seat.
- M seat high.
- M seat low.
- M pillion footrests.
- M folding handbrake lever.
- M remote adjustment for brake.
- M handbrake lever protector.
- M chain tensioner.
- M folding clutch lever.
- M clutch lever protector.
- M lithium-ion battery.
- M mounting stand receptacle.
- M engine protector.
- M oil filler neck.
- M cover kit.
- M fork clamp for stub handlebars.
- M forged wheel, rear.

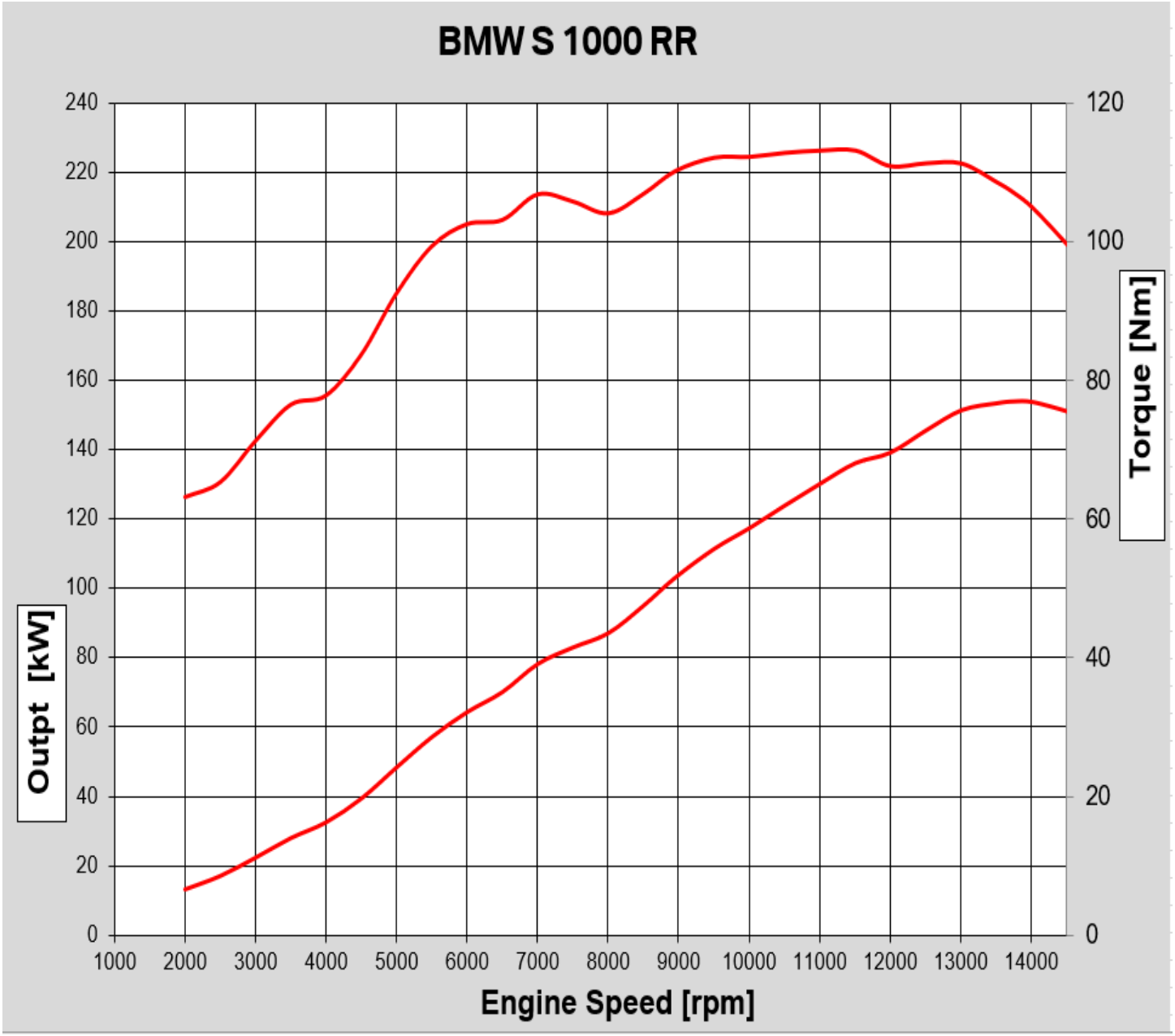
- M forged wheel, front.
- M Endurance Seat.

Storage program.
- Folding rucksack.
- Rear bag, 20 l.
- Tank bag, 1.5 l.
- Saddle bags, 21 l.
- Pouch for smartphone.
- Tank bag, 10 l.
- Bag for pillion seat, 10 l.

Ergonomics and comfort.
- Retrofit set – Riding Modes Pro.
- Retrofit set – heated grips.
- Activation code for Shift Assistant Pro.
- Pillion seat.
- Windscreen tinted.
- Windshield, high
- Windshield, high, tinted.
- GoPro holder.

Safety.
- Brake disc lock with alarm system.
- Retrofit set – alarm system.
- Protective foil for 6.5-inch TFT screen.
- First aid set, large.
- First aid set, small.
- Retrofit set – cruise control.
- Radiator guard.
- Retrofit set – RDC tyre pressure control.

7. Engine output and torque.



8. Technical specifications.

		BMW S 1000 RR
Engine		
Capacity	cc	999
Bore/stroke	mm	80/49.7
Output	kW/hp	154/210
at engine speed	rpm	13,750
Torque	Nm	113
at engine speed	rpm	11,000
Type		Water-cooled in-line 4-cylinder engine
Compression/fuel		13.3:1 / Premium unleaded petrol, octane rating 95-98 (RON) (knock control; rated power at 98 RON)
Valve/accelerator actuation		DOHC (double overhead camshaft), Valve actuation via single cam followers and variable intake camshaft control system BMW ShiftCam
Valves per cylinder		4
Ø intake/outlet	mm	33.5/27.2
Throttle valve diameter	mm	48
Engine control		BMS-O
Emission control		Closed-loop three-way catalytic converter
Electrical system		
Alternator	W	450
Battery	V/Ah	M Battery 12 V 5 Ah
Headlamp	W	LED low beam twin headlamp in free-form technology
		LED high beam free-form surface/modular design
Starter	kW	0.8
Power transmission – gearbox		
Clutch		Self-reinforcing multi-plate anti-hopping oil bath clutch, mechanically operated
Gearbox		Constant-mesh 6-speed gearbox
Primary ratio		1.652
Transmission ratios		
I		2.647
II		2.091
III		1.727
IV		1.500
V		1.360
VI		1.261
Rear wheel drive		Chain
Secondary ratio		2.706
Suspension		
Frame construction type		Aluminium composite bridge frame, engine self-supporting
Front wheel suspension		Upside-down telescopic fork, slide tube diameter 45 mm, spring preload, compression and rebound stage adjustable, DDC option: damping electronically adjustable
Rear wheel suspension		Aluminium underslung double-sided swinging arm with central spring strut, spring preload, adjustable compression and rebound stage, DDC option: damping electronically adjustable
Spring travel, front/rear	mm	120/117
Wheel castor	mm	99.8

Wheelbase	mm	1,457
Steering head angle	°	66.4
		BMW S 1000 RR
Brakes	Front	Twin disc brake, floating, Ø 320 mm, radial 4-piston fixed calipers
	Rear	Single-disc brake, Ø 220 mm, single-piston floating caliper
ABS		BMW Motorrad ABS Pro (part integral, disengageable)
Traction control		BMW Motorrad DTC
Wheels		Standard: Die-cast aluminium wheels M aluminium forged wheels as part of Race Package option M Carbon wheels as part of M Package option
	Front	3.50 x 17"
	Rear	6.00 x 17"
Tyres	Front	120/70 ZR17
	Rear	190/55 ZR17

Dimensions and weights		
Total length	mm	2,073
Total width with mirrors	mm	846
Seat height	mm	824
DIN unladen weight, fully fuelled	kg	Standard: 197 with Race Package option 195.4, with M Package option 193.5
Permitted total weight	kg	407
Fuel tank capacity	l	16.5

Performance figures			
Fuel consumption (WMTC)		l/100 km	6.4
CO2		g/km	149
Acceleration	0-100 km/h	s	3.2
Top speed		km/h	>300

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The BMW Group

With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises over 30 production sites worldwide; the company has a global sales network in more than 140 countries.

In 2021, the BMW Group sold over 2.5 million passenger vehicles and more than 194,000 motorcycles worldwide. The profit before tax in the financial year 2021 was € 16.1 billion on revenues amounting to € 111.2 billion. As of 31 December 2021, the BMW Group had a workforce of 118,909 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company set the course for the future at an early stage and consistently makes sustainability and efficient resource management central to its strategic direction, from the supply chain through production to the end of the use phase of all products.

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