

The new BMW F 900 R and F 900 XR. Table of contents.



1. Overall concept.	
Short version.	2
2. Drive.	9
3. Suspension.	13
4. Electrical system and electronics.	19
5. Design and colour concept.	24
6. Equipment program.	30
7. Engine output and torque.	36
8. Technical specifications.	37

1. Overall concept. Short version.



"With the F 900 R, BMW Motorrad is launching a significantly enhanced successor to the F 800 R. The new dynamic roadster is precise, intuitive and dynamic, offering purist riding fun at all times."

Michael Zweck, Project Leader F 900 R and F 900 XR



"The new F 900 XR is an adrenaline rush in touring form. Demonstrating unique performance combined with an active upright seating position and powerful design, it interprets long-distance sporty riding in a highly distinctive and future-oriented style – simply a genuine XR."

Michael Zweck, Project Leader F 900 R and F 900 XR

With the new **Dynamic Roadster F 900 R** and the **F 900 XR in the Adventure Sport segment**, BMW Motorrad is further expanding its product range for the popular mid-range. Both models offer sporty riding fun, straightforward handling and a unique range of equipment options, packaged to offer attractive value for money. Based on a powerful shared backbone, the two models differ significantly in terms of character and positioning.

The new BMW F 900 R – the Dynamic Roadster for purist riding fun.

Self-confident, sporty, active, focused on a dynamic experience – this is how fans of the BMW F 900 R could be described. The new dynamic roadster by BMW Motorrad conveys a sense of freedom and a modern lifestyle.

At the emotional level, sports-style and aggressive design meets inspiring performance in terms of engine output, torque and sound.

In addition, there are aspects such as a wide range of potential uses, a high level of suitability for everyday riding and ergonomics that make the F 900 R of equal interest to experienced sports riders and newcomers.

The new BMW F 900 XR – a genuine “XR” for the mid-range.

“XR” stands for an uncompromising mix of sportiness and touring capability. Having established this family with the BMW S 1000 XR, BMW Motorrad is now expanding it with the addition of a mid-range model. The design style and vehicle concept clearly refer to the kinship with the “big sister”.

The F 900 XR also demonstrates easy mastery of the Adventure Sport segment’s key qualities: sporty riding dynamics combined with upright, GS-like ergonomics, outstanding long-distance and passenger suitability and a design that conveys a powerful sense of character.

The new F 900 XR also benefits from the technology transfer from the upper class: Adaptive Cornering Light, Keyless Ride or Intelligent Emergency Call are all unique features in the mid-range.

In addition to sporty riders, the XR is also aimed at newcomers and motorcycle returnees due to its easy accessibility, low minimum seat height, A2 capability and attractive entry price.

Technology benchmark in the segment.

The two new models F 900 R and F 900 XR currently set the technological benchmark in the mid-range segment with their high-quality standard equipment (Connectivity, LED all round as standard) and their wide range of optional extras – in some cases unique in this class (including Adaptive Cornering Light, Keyless Ride, Dynamic ESA, Riding Modes Pro, Shift Assistant Pro, Intelligent Emergency Call, ABS Pro, MSR, DTC, DBC, RDC).

Drive featuring further developed 2-cylinder in-line engine with increased capacity and power along with new engine drag torque control.

In the new F 900 R and F 900 XR, enhanced riding dynamics are ensured by the further development of the 2-cylinder in-line engine first introduced in 2018 in the F 850 GS, now with 77 kW (105 hp) and an even fuller torque curve. The main factor here is an increase in capacity to 895 cc (previously 853 cc). With an ignition distance of 270/450 degrees and a new underfloor silencer system, the engine offers a particularly emotional sound.

In addition to the standard anti-hopping clutch, the new F 900 R and F 900 XR can be fitted with engine drag torque control (MSR) for the first time. It prevents the rear wheel from slipping as a result of abrupt throttling or downshifting, thereby ensuring even greater safety.

Two standard riding modes, ASC and ABS.

Riding modes Pro with DTC, ABS Pro, DBC and MSR as ex works options.

The new F 900 R and F 900 XR already offer the “Rain” and “Road” riding modes as standard. The standard trim also includes ABS and ASC Automatic Stability Control, which is disengageable.

With “Riding Modes Pro” as an ex works option, the sporty characteristics of the new F 900 R and F 900 XR can be experienced even more intensively. The additional riding modes “Dynamic” and “Dynamic Pro”, Dynamic Traction Control DTC and banking capable ABS Pro are available, along with Dynamic Brake Control (DBC) and the new engine drag torque control (MSR).

Chassis with steel bridge frame, lightweight plastic tanks and the electronic suspension Dynamic ESA as optional extras.

Like the GS models in the F Series, the new F 900 R and F 900 XR make use of a steel bridge frame that integrates the engine as a load-bearing element and a fuel tank that is now back in its classic position in front of the

rider. Front wheel control is taken care of by an upside-down telescopic fork, while the rear wheel is guided by a double-sided swinging arm with central suspension strut.

The light, plastic-welded fuel tanks with a capacity of 15.5 litres (F 900 XR) and 13 litres (F 900 R) are a world first in motorcycle construction. The bolt-on steel rear frame has also been newly developed for the F 900 R and F 900 XR in order to create a visually short and slim rear. While the new **F 900 R** is a dynamic roadster focusing on sporty use and therefore shorter spring travel, the new **F 900 XR** – with its somewhat longer spring travel – offers a noticeable increase in comfort and therefore an even wider range of potential uses.

With the BMW Motorrad Dynamic ESA (Electronic Suspension Adjustment), available as an optional extra and almost unique in these vehicle segments, it is possible to further enhance the dynamic riding experience, riding comfort and also touring and passenger suitability, since the damping of the rear spring strut is automatically adapted to the conditions depending on riding state and manoeuvres.

Adaptive Cornering Light unique in the mid-range segment as part of the optional extra Headlight Pro. Powerful LED lighting units all round as standard.

Even greater safety is offered by the Adaptive Cornering Light as a component of Headlight Pro, which is unique in the mid-range and comes as an optional extra ex works. Here, the rider benefits from improved illumination of the road when cornering for even safer riding at night. All lighting units in the new F models are based on LED technology as standard.

Perfectly readable colour 6.5-inch TFT screen with BMW Motorrad Connectivity as standard.

The BMW Motorrad developers attached great importance to optimum readability for the instrument cluster – even in difficult lighting conditions. In addition, information diversity, display quality and user-friendliness are unmatched. The graphics on the screen are visually adapted to the sporty on-road world. Additional Core screens are available in conjunction with the optional Pro riding modes. The standard BMW Motorrad Connectivity is a unique feature in the mid-range, offering the ability to conveniently talk on the phone, listen to music or navigate while riding.

Perfectly designed ergonomic triangles for dynamic riding fun and – in the case of the F 900 XR – excellent segment-specific wind and weather protection for touring and travelling.

As a dynamic roadster, the **F 900 R** offers a particularly sporty, active seating position.

Meanwhile the **F 900 XR** offers an impressively active yet relaxed riding position for touring and travelling. The front fairing including an adjustable windshield combines a sporty look with sound rider protection.

Various low and high seats along with the optional lowering feature also allow individual adjustment to various body heights.

Three powerful colour and style variants each for an unmistakable sense of character.

Three dynamic colour and style variants for the new F 900 R and F 900 XR ensure unmistakable characteristics.

The new **F 900 R** is available in Blackstorm metallic, San Marino Blue metallic and Style Sport in Hockenheim Silver metallic/Racing Red.

In addition to Light White, the new **F 900 XR** offers the two Style variants Style Exclusive in Galvanic Gold metallic and Sport in Racing Red.

The highlights of the new BMW F 900 R and F 900 XR:

- The new BMW F 900 R: the dynamic roadster for purist riding fun.
- The new BMW F 900 XR: a genuine "XR" for the mid-range.
- The powerful common backbone integrates the further developed 2-cylinder in-line engine with an increased capacity of 895 cc (previously 853 cc).
- Further enhanced output and torque: 77 kW (105 hp) at 8 750 rpm and 92 Nm at 6 500 rpm.
- More than 87 Nm torque in the relevant lower speed range from 4 500 to 8 500 rpm.

- 35 kW (48 hp) version available for licence class A2.
- High level of running smoothness due to two opposed counterbalance shafts.
- Two riding modes "Rain" and "Road" as well as ABS and ASC as standard.
- Riding Modes Pro with two further riding modes as well as Dynamic Traction Control (DTC), ABS Pro, Dynamic Brake Control (DBC) and engine drag torque control (MSR) as ex works options.
- Steel bridge frame for optimum rigidity, robustness and riding precision.
- Newly developed slim steel rear frame.
- World first in motorcycle construction: light, plastic-welded fuel tanks with a capacity of 13 litres (F 900 R) and 15.5 litres (F 900 XR).
- Front upside-down telescopic fork and aluminium double-sided swinging arm with rear central suspension strut.
- Spring travel: 135 mm (F 900 R) and 170 mm (F 900 XR) at front, 142 mm (F 900 R) and 172 mm (F 900 XR) at rear.
- Electronic suspension adjustment Dynamic ESA at rear as an ex works option.
- ABS Pro for even greater safety when braking at an angle as an ex works option.
- Sophisticated ergonomics and numerous seat alternatives.
- Fairing with practical wind and weather protection and adjustable windshield (F 900 XR).
- Adaptive Cornering Light unique in the mid-range as part of the ex works option Headlight Pro.
- Perfectly readable colour 6.5-inch TFT screen with BMW motorcycle connectivity as standard.
- Powerful LED lighting units all round as standard.

- Intelligent Emergency Call as an ex works option for swift assistance in emergency situations.
- Keyless Ride for convenient activation of the locking functions by remote control as an ex works option.
- **F 900 R** in dynamic roadster design with muscular front section, aggressive headlight graphics and short, slim rear section.
- **F 900 XR** in Adventure Sport look with striking contours and sporty, dynamic fairing.
- High-quality workmanship down to the last detail.
- Three powerful colour and style variants each for unmistakable roadster and adventure sport characters.
- Extensive range of optional extras and Original BMW Motorrad Accessories as well as rider equipment.



2. Drive.



“In the new F 900 R and F 900 XR, we were able to further improve the performance of the in-line 2-cylinder engine in terms of power, torque and emotional appeal in particular due to an increase in capacity. At the same time, we were able to maintain the positive characteristics such as running smoothness and low fuel consumption”.

Peter Hebel, Drive Development

Further developed 2-cylinder in-line engine with increased capacity, power and pulling power for sporty riding dynamics.

In the new F 900 R and F 900 XR, further development of the 70 kW (95 hp) 2-cylinder in-line engine first introduced in 2018 in the F 850 GS ensures even more powerful propulsion. The main development goals were a significant increase in power output to 77 kW (105 hp) at 8 500 rpm. With a maximum torque of 92 Nm, however, it was possible to achieve a fuller torque curve over the entire speed range.

The increase in performance and the fuller torque were mainly achieved by increasing the capacity to 895 cc (previously 853 cc) by enlarging the cylinder bore by 2 mm to 86 mm with a stroke of 77 mm. In addition, the cylinder heads were machined and new forged pistons were used (previously cast pistons).

Furthermore, engine now has a compression of 13.1:1, a crankshaft with 90 degree offset crankpins and an ignition distance of 270/450 degrees. This creates a particularly powerful, emotional sound – similar to that of a 90-degree V2 engine. The sound is rounded off by a completely new and very sporty underfloor silencer system made of stainless steel.

The new F 900 R and F 900 XR are also available ex works in reduced-output versions for the A2 licence class. For the first time, a separate type code with 70 kW/95 hp is required for the European A2 graded licence due to legal requirements in order to be able to offer throttling to 35 kW (48 hp) . A subsequent change between the 70 kW (95 hp) and 77 kW (105 hp) versions is not possible.

High level of running smoothness due to two opposed counterbalance shafts and dry sump lubrication for optimum operational reliability.

The engine of the new F 900 R and F 900 XR also absorbs unwanted vibrations via two counterweight shafts in front of and behind the crankshaft. In order to prevent unwanted churning losses and for maximum operational reliability, the engine is fitted with dry sump lubrication, which does not require a separate engine oil tank.

Two overhead camshafts, four valves per cylinder operated by rocker arms and anti-hopping clutch.

In the cylinder head of the new F 900 R and F 900 XR there are two overhead camshafts which are powered by a toothed chain, actuating four valves per cylinder via lightweight and therefore speed-resistant cam followers. The clutch is designed as a self-reinforcing anti-hopping clutch (wet clutch). It not only provides the rider with low operating forces at the adjustable clutch lever but also boosts riding safety by reducing engine drag torque – especially during braking manoeuvres with simultaneous downshifting.

New engine drag torque control (MSR) and Shift Assistant Pro as ex works options.

In addition to the standard anti-hopping clutch, the new F 900 R and F 900 XR can be equipped with engine drag torque control (MSR) for the first time. Electronically controlled, the MSR prevents the rear wheel from slipping as a result of abrupt throttling or downshifting. An anti-hopping clutch is opened from a mechanically preset threshold in order to prevent the rear wheel from stamping – for example when shifting down. However, if the tyre's available grip capacity is below this opening threshold, for example in wet conditions, the rear wheel could still exceed the static friction limit due to the engine drag torque and simultaneous activation of the rear wheel brake and

then slip. Thanks to MSR, the new F 900 R and F 900 XR detect this danger at an early stage. Depending on the coefficient of friction between the tyre and the road surface, the throttle valves are opened in milliseconds in such a way that the drag torque is compensated and the rear wheel remains in the static friction range. This results in further enhanced safety, especially on slippery roads.

BMW Motorrad also offers the Shift Assistant Pro as an optional extra for the new F 900 R and F 900 XR, enabling the 6-speed transmission to be shifted up and down quickly without clutch actuation.

Riding modes "Rain" and "Road" as well as ABS and ASC for a high degree of riding fun and safety come as standard.

The new F 900 R and F 900 XR also offer the two standard riding modes "Rain" and "Road" to be able to adapt to individual rider preferences.

The standard equipment also includes ASC (Automatic Stability Control, disengageable), which ensures a high level of riding safety. With the "Rain" and "Road" riding modes, riding characteristics can be adapted to most road conditions.

In "Rain" mode, throttle response is gentler and the control characteristics of ABS and traction control allow for a wet and therefore more slippery road surface.

In "Road" mode, the engine offers optimum throttle response, while ABS and traction control are set to achieve ideal performance on all roads.

If the optional electronic damping adjustment function Dynamic ESA is available, the rear damping is configured to the default setting of "Road" in both "Rain" and "Road" riding modes. In addition, the "Dynamic" damper setting is available, which can also be selected during riding.

Riding Modes Pro in conjunction with Dynamic Traction Control DTC, ABS Pro, Dynamic Brake Control (DBC) and engine drag torque control (MSR) as ex works option.

The new F models can be fitted with the "Riding Modes Pro" option as an ex works option. In addition to two (**F 900 R**) and one (**F 900 XR**) additional Core screens for the TFT display, this option includes the additional "Dynamic" and "Dynamic Pro" riding modes, Dynamic Brake Control (DBC) and the new engine drag torque control (MSR). ASC becomes disengageable Dynamic Traction Control DTC (Dynamic Traction Control) if required, while ABS becomes ABS Pro, dependent on banking angle.

In "Rain" mode, the throttle response is soft and the ABS Pro and DTC (Dynamic Traction Control) systems take into account a wet and therefore more slippery road surface in their control characteristics, as in the standard state. The newly added MSR engine drag torque control provides maximum support.

"Road" mode offers optimum throttle response, while ABS Pro and DTC are configured for ideal performance on all roads. MSR is also set to maximum here.

In "Dynamic" mode, the sporty characteristics of the new F 900 R and F 900 XR can be experienced even more intensively. The engine is tuned for optimum throttle response and the DTC and ABS Pro systems are configured for road use with high friction coefficients, while the lift-off detection for the front and rear wheels intervenes at a later stage. Intervention by MSR engine drag torque control is also reduced. The default setting for Dynamic ESA – if available – is the damper setting "Dynamic".

"Dynamic Pro" mode offers particularly sporty riders full potential for optimum adaptation of the vehicle to their own requirements: three throttle curves, three ABS settings and four DTC settings are available. This means that the level of control system intervention can be adapted to a very sporty riding style as required, including deactivation of the lift-off assistants and very late intervention of all control systems.

Dynamic Brake Control DBC increases safety when braking, even in difficult situations, by avoiding unintentional accelerator activation. As soon as the sensor cluster supplies a certain level of deceleration 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.

3. Suspension.



“By adjusting the steering head angle, offset and castor, we were able to achieve a particularly sporty suspension design for the road models. Optimum design of the respective ergonomic triangles allows pronounced segment-specific differentiation while at the same time offering great possibilities in terms of individualisation”.

Wolfgang Wallner, Suspension Development

Steel bridge frame for optimum stiffness, robustness and riding precision.

In terms of the suspension, too, the new F 900 R and F 900 XR are based on a completely newly developed concept – as were the GS models of the F series launched in 2018. The bridge frame integrates the 2-cylinder in-line engine as a load-bearing element and is made of deep-drawn and welded sheet steel parts.

Light fuel tanks welded from plastic as a world first in motorcycle construction.

Introduction of the new frame concept involved repositioning of the fuel tank. While the previous parallel twin models had a tank positioned in the area below the seat, the fuel tank of the new generation of the F series is now

located in the classic position between the seat and steering head. In contrast to the GS models of the F Series, the new F 900 R and F 900 XR are the world's first motorcycles to feature welded plastic fuel tanks with a capacity of 15.5 litres (F 900 XR) and 13 litres (F 900 R). Compared to a comparable steel tank, this means a weight saving of around 60 %. The XR tank weighs only 2.8 kg, for example.

Newly developed bolt-on rear frame.

The bolt-on steel rear frame has also been newly developed for the F 900 R and F 900 XR in order to create a visually short and slim rear. The attachment of the passenger footrests has also been altered as compared to the F 750 GS and F 850 GS. They are not attached to the rear frame but instead integrated into the support plate for the rider's footrests. Together with the short underfloor silencer, this results in a typical athletic look with a free-standing rear wheel.

Wheel control at the front via upside-down telescopic fork and at the rear via aluminium double-sided swinging arm with central suspension strut.

In the new F 900 R and F 900 XR, front wheel control is taken care of by a torsion-resistant upside-down telescopic fork with a slider tube diameter of 43 mm. The spring travel is 135 mm (F 900 R) and 170 mm (F 900 XR) respectively.

The rear wheels are guided by a double-sided aluminium swinging arm in conjunction with a directly articulated central strut. In addition to a hydraulically adjustable spring base ("spring preload"), the central strut also has adjustable rebound damping. The spring travel is 142 mm (F 900 R) and 172 mm (F 900 XR) respectively.

Segment-specific suspension geometry.

Adjustments in the area of the steering head (steeper steering head angle, a modified offset, increased castor as compared to the GS models) make for a particularly sporty suspension design. The more even wheel load distribution with a favourable centre of gravity, the high torsional stiffness of the main frame and a stiffer swinging arm result in a tangible increase in agility, precision and riding stability for the rider.

As a dynamic roadster, the new **F 900 R** is dedicated above all to sporty, active riding on winding country roads in terms of chassis design and ergonomics.

By comparison, with its longer spring travel and significantly more relaxed riding posture, the new **F 900 XR** offers a noticeable increase in comfort and therefore an even wider range of applications, especially on extended tours and journeys, even for two. Nevertheless, it was also possible to ensure that the new F 900 XR has a sufficiently high level of agility for sporty riding on bends. In the XR, for example, a higher level of fork offset with the same steering head angle results in shorter castor and therefore increased manoeuvrability. As compared to the F 900 R, a larger negative spring travel, different strut deflection and differently padded seat upholstery also ensure that the longer spring travel results in only 10 mm more seat height.

The suspension data at a glance:

	F 800 R	F 900 R	F 900 XR
Wheelbase	1 526 mm	1 518 mm	1 521 mm
Steering head angle	64°	60.5°	60.5°
Fork offset	42.5 mm	23 mm	31 mm
Wheel castor	100 mm	114.3 mm	105.2 mm
Front spring travel	125 mm	135 mm	170 mm
Rear spring travel	125 mm	142 mm	172 mm

Optimum ergonomics and segment-specific wind and weather protection for dynamic riding fun and enjoyable tours.

The two models F 900 R and XR differ significantly from each other in terms of seating posture as befits their specific segments. Both models offer a wide range of ergonomic adjustment options for riders of different sizes.

Even with the standard seat, the ergonomics triangle of the **F 900 R** is considerably more dynamic and has greater front-wheel orientation than the F 800 R. The footrests are 15 mm and 5 mm further to the rear by comparison, while the handlebars are 25 mm further forward.

The alternative high or extra high seat ensures that the rider's position is even sportier – not just for taller individuals: the upper body is oriented further forward while at the same time the knee angle is more open.

The frame is significantly narrower in the relevant front area (leg rest area) than in the F 800 R, blending organically into the overall vehicle contour.

The ergonomics triangle of the **F 900 XR** with a larger knee angle as compared to the F 900 R ensures an upright, more relaxed rider position, based on the GS. By comparison, the handlebars are 30 mm higher and 85 mm further back, while the footrests are 45 mm lower and 45 mm further forward.

The pillion seat position is also designed to be comfortable on the XR: the knee angle is suitable for long distances thanks to a 7 mm higher foam thickness in the standard seat and a modified footrest position (45 mm lower, 25 mm further forward).

Beginners and short adults appreciate the low seat heights. The standard seat height of the **F 900 R** is only 815 mm, in the **F 900 XR** it is just 825 mm.

	F 900 R	F 900 XR
Standard seat height	815 mm	825 mm
Inside leg length	1 820 mm	1 840 mm

The range of possible seat heights – unique in these two vehicle segments – extends from 770 to 865 mm for the **F 900 R** and 775 to 870 mm for the **F 900 XR**. This can be achieved by means of a large number of possible combinations of high and low seats (ex works or as accessories) and optional lowering.

Standard adjustable hand levers and higher handlebars (F 900 R) allow the two new F models to be further ergonomically adapted to individual requirements.

The **F 900 XR** has front fairing that masterfully manages the balancing act between sporty looks and sound rider protection from the head to the thighs.

The windscreen can also be adjusted in two stages with one hand while riding.

Both models can be fitted with windscreens in various versions using the program of Original BMW Motorrad Accessories.

Electronic suspension adjustment Dynamic ESA at the rear for optimum suspension set-up as an ex works option.

The dynamic riding experience, riding comfort and touring/passenger suitability of the new F 900 R and F 900 XR can be further enhanced by means of the optional BMW Motorrad Dynamic ESA (Electronic Suspension Adjustment) suspension.

Dynamic ESA, which is virtually unique in these vehicle segments, opens up a whole new dimension in terms of riding safety, performance and comfort since the damping of the rear shock spring strut is automatically adjusted to the prevailing circumstances by the millisecond depending on riding conditions and manoeuvres. Dynamic ESA does not operate as an autonomous system but communicates with other control systems such as ABS/ABS Pro and ASC or DTC.

Two damper set-ups are available, and these can also be changed while the vehicle is in motion. The "Road" setting is softer, more comfort and long-distance oriented. The "Dynamic" setting is tighter and thus supports a sportier riding style on asphalt. Dynamic ESA also allows the spring preload to be conveniently adjusted at the touch of a button on the handlebars (when the engine is running) – for solo rides with or without luggage and when carrying a pillion passenger.

BMW Motorrad ABS as standard. Riding Modes Pro with ABS Pro for even greater safety when braking at an angle.

A double disc brake with a diameter of 320 mm in conjunction with 4-piston radial brake calipers on the front wheel ensures superior, stable deceleration. A single disc brake with a diameter of 265 mm and a single-piston floating caliper is applied to the rear wheel. The new F 900 R and F 900 XR feature BMW Motorrad ABS and dynamic brake light as standard. The dynamic brake light can effectively signal to road-users behind that the motorcycle is braking. This additional brake light function warns following traffic in two stages when the brakes are applied strongly and in the event of an emergency brake manoeuvre.

As a further component that enhances motorcycle safety, the "Riding Modes Pro" option offers the ABS Pro function. ABS Pro goes further than BMW

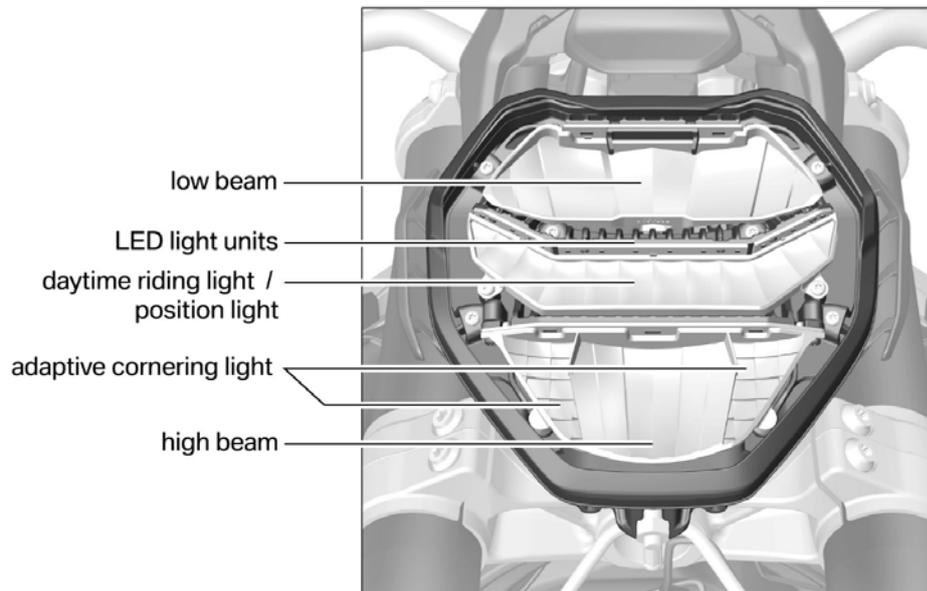
Motorrad ABS by offering increased safety when braking on bends in that ABS-supported braking is permitted in banking position. Here, ABS Pro prevents the wheels from locking even when the brakes are applied quickly; this reduces abrupt changes in steering force on shock-braking manoeuvres in particular and stops the motorcycle from rearing up unintentionally. The benefits of ABS Pro are increased brake and ride stability together with the excellent deceleration on bends.

In the "Rain" and "Road" riding modes, ABS Pro is designed for road use and for medium to low friction coefficients as well as optimum braking stability. Regulations sets in at an early stage.

In "Dynamic" driving mode, ABS Pro assumes that the road has a very good grip with a high friction coefficient. Accordingly, ABS Pro is designed for optimum deceleration, so intervention is late and rear wheel lift detection is reduced.

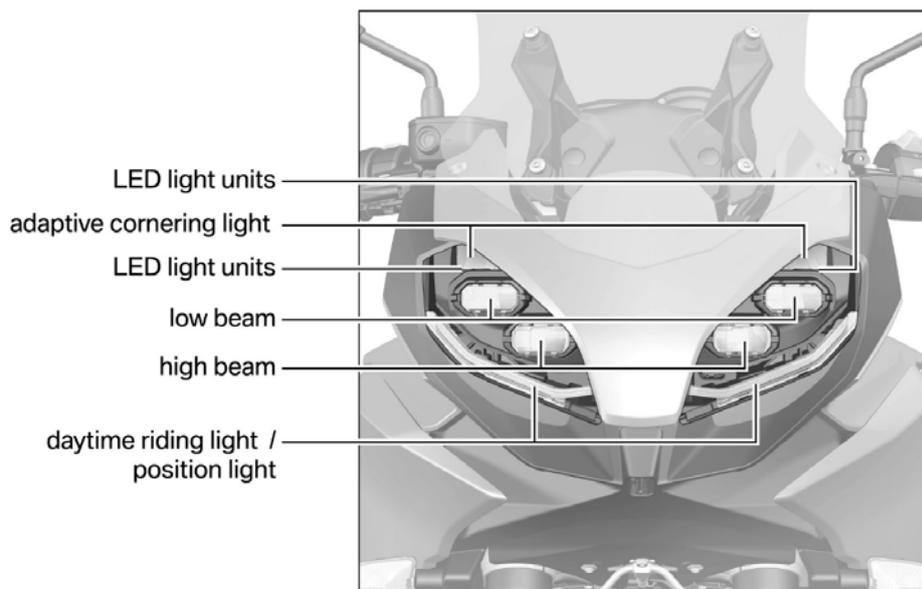
In the customisable "Dynamic Pro" riding mode for very sporty riding, the rider has an additional ABS setting to choose from in addition to the two previously described settings. Here, the rear wheel ABS and lift detection are deactivated and the banking angle function ABS Pro is not available.

4. Electrical system and electronics.



“In the F 900 R and F 900 XR, the Adaptive Cornering Light enters the mid-range. Iconic light guides with daytime riding light function give both models a strong sense of character and recognisability. Combined with all-round LED lighting and the standard TFT screen with connectivity, the R and XR clearly stand out from the crowd.”

Stefan Kollar, Electrical Development



Adaptive Cornering Light – unique in the mid-range – part of Headlight Pro as an ex works option. Powerful LED lighting units all round as standard.

The lighting units of the new F models are based on state-of-the-art LED technology. These include newly developed, striking LED main headlights (**F 900 R**: single headlight, **F 900 XR**: double headlight) with optimised low beam and high beam. The newly designed indicator and rear lights also make use of LED technology. The **F 900 R** also has an "R" integrated in the headlight, which is backlit in the case of the optional equipment item Headlight Pro.

Enhanced safety when riding at night is ensured by the **Adaptive Cornering Light** as an ex works option. In this case, further LED modules are added. The rider benefits from even better illumination of the road on bends, thereby ensuring even safer riding at night.

The Adaptive Cornering Light, which is unique in the mid-range, works by switching on additional LED elements in the main headlight that are fitted with their own reflectors, depending on banking angle. The turning light switches on automatically from a banking angle of more than 7° (**F 900 R**) or 10° (**F 900 XR**) and at speeds of over 10 km/h. The additional lighting effect can be perfectly experienced up to a banking angle of 25°.



A further component of the optional equipment item Headlight Pro: iconic light guides with daytime riding light function.

In the **F 900 R**, a crescent-shaped LED light guide, which also functions as the LED daytime riding light, provides the characteristic image of a BMW Motorrad dynamic roadster, ensuring a high level of recognisability.

The **F 900 XR**, on the other hand, has striking LED light guides on the right and left of the lower headlight edge, underlining its affiliation with the BMW Motorrad XR family.



Standard: Unmatched information diversity and functionality in the form of a large, perfectly readable 6.5-inch colour TFT screen with BMW Motorrad connectivity.

The new F 900 R and F 900 XR feature a large 6.5-inch colour TFT screen with BMW Motorrad connectivity as standard. The instrument cluster was developed using the existing platform used in other BMW Motorrad models and adapted to suit the F 900 R and F 900 XR. In this version, whose graphic display is based on the S 1000 RR supersports bike, the variety of information, display quality and – last but not least – user-friendliness are unmatched.

In addition to a wide range of functions and information, the BMW Motorrad developers attached great importance to achieving the best possible readability. The multi-controller on the left-hand handlebar panel enables quick, safe and convenient screen operation. It offers screen displays tailored to the sporty on-road world as standard. The optional equipment item “Riding Modes Pro” also includes additional displays (banking position, deceleration, lap timer, etc.).

It is also possible to make phone calls, listen to music and navigate 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 be used without installing an app. With an active Bluetooth connection to a standard smartphone, the rider can enjoy the fun of listening to music during travel. In addition, the free BMW Motorrad Connected App offers handy arrow-based navigation suitable for day-to-day use directly via the TFT screen. The arrow navigation is of particular interest to motorcyclists since it enables convenient organisation of day-to-day travel and short trips without the need for additional equipment.



Quick help in emergency situations – Intelligent Emergency Call as an ex works option.

For the new F 900 R and F 900 XR, the "Intelligent Emergency Call" option is now also available in the mid-range with an eCall system aimed at getting help to the scene as quickly as possible. If an emergency situation or an accident occurs, the intelligent emergency call is activated automatically or manually, thereby transmitting the position data of the motorcycle, and therefore the coordinates of the accident scene, which in turn sets the rescue chain in motion via the qualified BMW Call Center. The person concerned can speak to the BMW Call Center in their own language. eCall requires a mobile phone connection via the integrated SIM card to activate the rescue chain.

Keyless Ride – convenient activation of all locking functions by radio as an ex works option.

As in the case of other BMW Motorrad models, the Keyless Ride system available as an ex works option also replaces the conventional ignition steering lock in the new F 900 R and F 900 XR. This means that it is no longer necessary to use a regular key as before. The steering lock, ignition, fuel filler flap and alarm system are controlled by a transponder integrated in the vehicle key, which transmits a radio signal with vehicle-specific frequency. The key can therefore remain in the rider's clothes, for example.

5. Design and colour concept.



“As the successor to the successful F 800 R, the F 900 R is a new addition to the mid-range – completely redesigned, more mature, modern and dynamic, it has more capacity and output, and you can see that at first glance.”

Vianney Selosse, Designer BMW F 900 R



“We've created a bike that combines power with reliable sports touring properties and above all lots of riding fun, so it's an attractive overall package. It brings together the best of the sports, adventure and touring segments to produce an exciting new motorcycle – in a class which has not seen this kind of model from BMW Motorrad before.

Andreas Martin, Designer BMW F 900 XR and S 1000 XR

Purist, sporty, aggressive: the new dynamic roadster

BMW F 900 R.

The two new models of the BMW Motorrad F Series also strikingly express their strong character in terms of design style. The dynamic roadster **F 900 R** with its completely redesigned body appears much more dynamic than its predecessor, even when stationary. With its muscular front section, aggressive headlight graphics and short, slim rear section, the new "R" expressively symbolises its preferred range of uses at first sight: sporty riding on winding country roads.

Athletic, suitable for touring and geared up for adventure: the mid-range adventure sports bike – the new BMW F 900 XR.

The adventure sports bike shows itself to be a true all-rounder. Like its big sister the S 1000 XR, the F 900 XR combines the strong character traits and superior qualities of the BMW Motorrad GS, touring and sports segments to create a new dimension in the mid-range: Adventure Sport. The striking front view with twin headlights, the trim and designed in sporty, aerodynamic style and the short, compact rear section concisely convey the areas of use of the new "small XR" in terms of styling, too: sports and performance, touring and comfort, adventure and experience.

Quality workmanship in every detail.

The new F 900 R and F 900 XR feature clever design solutions, along with numerous high-quality details, surfaces and materials. The number of visible screw connections in the cockpit area has been kept to a minimum for aesthetic reasons: together with the tapered aluminium handlebars, a forged handlebar clamp and a steering head cover milled from the solid, this conveys a technological impression that is especially high-quality.

Functionality and aesthetics are also combined in the seats and numerous fairing parts. The "sports scar" is applied to a number of trim sections – a structured surface that perfectly combines high durability and sporty aesthetics. In the **F 900 R**, the standard seat is already covered with two different materials and has an ornamental seam along with the "F 900" inscription. As part of the Headlight Pro option, a backlit "R" in the headlight also ensures a particularly sporty appearance that promises a high level of recognition.

Original BMW Motorrad Accessories for an even more dynamic look and enhanced functionality.

Both the F 900 R and the F 900 XR can be upgraded even further by adding tailor-made Original BMW Motorrad Accessories.

In the **dynamic roadster F 900 R**, this is achieved by means of an engine spoiler finished in body colour and the Pure windscreen, which perfectly reinforces the aggressive design of the F 900 R front section as a small cockpit trim element. The passenger seat cover in body finish likewise emphasises the sporty character of the F 900 R. Thanks to an aerodynamic fin and a recessed "R", it creates a particularly sporty single-seater look. Milled, black anodised mirrors, rider footrests, hand levers and hand lever protectors add even more sporty flair.

The **adventure sports bike F 900 XR** can also be further enhanced in its sporty character traits. Milled footrests, hand levers and hand lever protectors are integral parts of the Original BMW Motorrad Accessories repertoire, as is the engine spoiler. Finished in body colour or a contrasting colour (Racing Red or Granite Grey metallic matt), it underlines the sporty, ambitious side of the F 900. The approximately 20 mm lower Sport windshield in clear-glass look or tinted reinforces the sporty, dynamic character of the XR, as does the tinted windshield in standard size.

Three striking colour and style variants each for unmistakable Roadster and Adventure Sport characters.

Three dynamic colour and style variants give the new F 900 R and F 900 XR unmistakable characteristics.

The new F 900 R: roadster feeling, from purist to sporty.

The purist, aggressive side of the new F 900 R is emphasised by the basic finish **Blackstorm metallic** with silver rims, fuel tank centre cover and radiator trim in Granite Grey metallic matt, along with a front wheel cover in Midnight Black matt.



The paint finish in **San Marino Blue metallic** combines rims, fuel tank centre cover finished in midnight black with the radiator trim in Granite Grey metallic matt along with the front wheel cover in body colour to create an overall impression that gives the new F 900 R a particularly sporty, extroverted look.



Style Sport in Hockenheim Silver metallic/Racing Red in combination with midnight black rims, front wheel covers in Hockenheim Silver metallic and gold anodised fixed fork tubes emphasises the sporty character of the new F 900 R. Additional sporty accentuations are provided by the passenger seat cover in Hockenheim Silver metallic and the "Sport" inscription on the radiator trim.



The new F 900 XR: touring style, refined or highly dynamic.

The dynamic qualities of the new F 900 XR are emphasised by the **Light White** colour scheme. Here, the silver rims, fuel tank centre cover and radiator trim in the contrasting colour Granite Grey metallic matt give the bike a superior look. The F 900 XR graphics on the radiator trim add a sporty accentuation.



Style Exclusive in Galvanic Gold metallic gives the new F 900 XR a particularly refined appearance. Rims finished in midnight black, Granite Grey metallic matt for the fuel tank centre cover and radiator trim along with additional hand protectors and the "Exclusive" inscription on the radiator trim also add high-quality technical accentuations.



Style Sport variant in Racing Red brings out the sporty DNA of the new F 900 XR. Striking red, contrasting surfaces such as fuel tank centre cover and radiator trim in Granite Grey metallic matt along with black rims and gold anodised slider tubes give the new F 900 XR a particularly sporty look. The "Sport" inscription on the radiator trim and the tinted Sport windscreen underline the bike's dynamic appeal.



6. Equipment program.



“The possibilities for the F 900 R and F 900 XR in terms of individual styling are virtually unlimited. BMW Motorrad makes sure of this by providing a uniquely comprehensive range of ex-works options and Original BMW Motorrad Accessories.

Dorit Mangold, Product Manager

Optional equipment and optional accessories.

In order to further customise the new BMW F 900 R and F 900 XR, a comprehensive range of optional extras and accessories is available, as well as the new BMW Motorrad Ride & Style range of rider equipment. Optional equipment items are supplied ex works and are integrated in the production process. Optional accessories are installed by the BMW Motorrad dealer or by customers themselves. These are also features which can be retrofitted.

Options.

Dynamic Package

- F 900 R:** Dynamic ESA, Headlight Pro (Adaptive Cornering Light, daytime riding light)
- F 900 XR:** Headlight Pro (Adaptive Cornering Light, daytime riding light), Shift Assistant Pro

Active Package

- F 900 R:** Shift Assistant Pro, Riding Modes Pro (DTC, MSR, DBC, ABS Pro)
- F 900 XR:** Riding Modes Pro (DTC, MSR, DBC, ABS Pro), case holder, heated grips

Comfort Package:

- F 900 R:** KeylessRide, heated grips
- F 900 XR:** KeylessRide, centre stand, Dynamic ESA

Touring Package

- F 900 R:** Preparation for navigation device, cruise control, centre stand, case holder
- F 900 XR:** Preparation for navigation device, cruise control

- Headlight Pro with Adaptive Cornering Light and daytime riding light
- Riding Modes Pro (DTC, MSR, DBC, ABS Pro)
- Dynamic ESA
- Keyless Ride
- Shift Assistant Pro
- Intelligent Emergency Call
- DWA alarm system
- RDC
- Cruise control
- Heated grips
- Hand protection (F 900 XR only)
- Power reduction 35 kW
- Seat, extra high (F 900 R only)
- Seat, low
- Lowered suspension
- Handlebars, high (F 900 R only)
- Windshield Pure (F 900 R only)

- Centre stand
- Case holder
- Preparation for navigation unit

Original BMW Motorrad Accessories.

Storage.

- Soft case (from Q3/2020)
- Case holder for soft case (F 900 R only)
- Touring case, lid finished in various colours (F 900 XR only)
- Liner for touring case (F 900 XR only)
- Case holder for soft case and touring case (F 900 XR only)
- Luggage bridge
- Bag for luggage bridge
- Topcase, small, 30 l
- Outer shell, topcase lid in various colours
- Liner for topcase
- Back pad for topcase, small
- Tank rucksack, small
- Tank rucksack, large
- Softbag, small, 30-35 l
- Softbag, large, 50-55 l
- Luggage roll, 50 l
- Luggage roll Atacama, 40 l
- Tension strap for luggage roll Atacama, lockable
- Pouch for smartphone
- Folding rucksack
- Pack bag set

Design.

- Engine spoiler (from Q3/2020)
- Passenger seat cover (F 900 R only)
- Milled mirrors (F 900 R only)
- Milled rider foot rests (from Q2/2020)
- Milled hand lever protectors (from Q2/2020)
- Milled handbrake and clutch levers, foldable (from Q2/2020)
- Windshield Pure (F 900 R only)

Ergonomics and comfort.

- Windshield, high (F 900 R only)
- Windshield Sport clear/tinted (F 900 XR only)
- Windshield, tinted (F 900 XR only)
- Centre stand
- Handlebars, high (F 900 R only)
- Heated grips
- Cruise control
- Riding Modes Pro (incl. ABS Pro, DTC, MSR, DBC)
- Shift Assistant Pro
- Seat, low
- Raised seat
- Comfort seat
- Seat, extra high

Safety.

- Alarm system
- Brake disc lock with alarm system
- LED auxiliary headlights (F 900 XR only)
- Hand protection (F 900 XR only)
- Crash bar
- RDC
- Protective glass for TFT screen
- First aid set, small
- First aid set, large

Navigation and communication.

- BMW Motorrad Navigator VI
- Navigation preparation retrofit
- BMW Motorrad Smartphone Cradle
- Holder for BMW Motorrad Navigator/smartphone cradle.
- USB adapter
- USB charger

BMW Motorcycle Rider Equipment Ride & Style.

XRide suit: A new suit that combines sporty riding fun with long-distance adventure. A combination of maximum wear comfort and comprehensive protection with the use of fall-resistant leather.

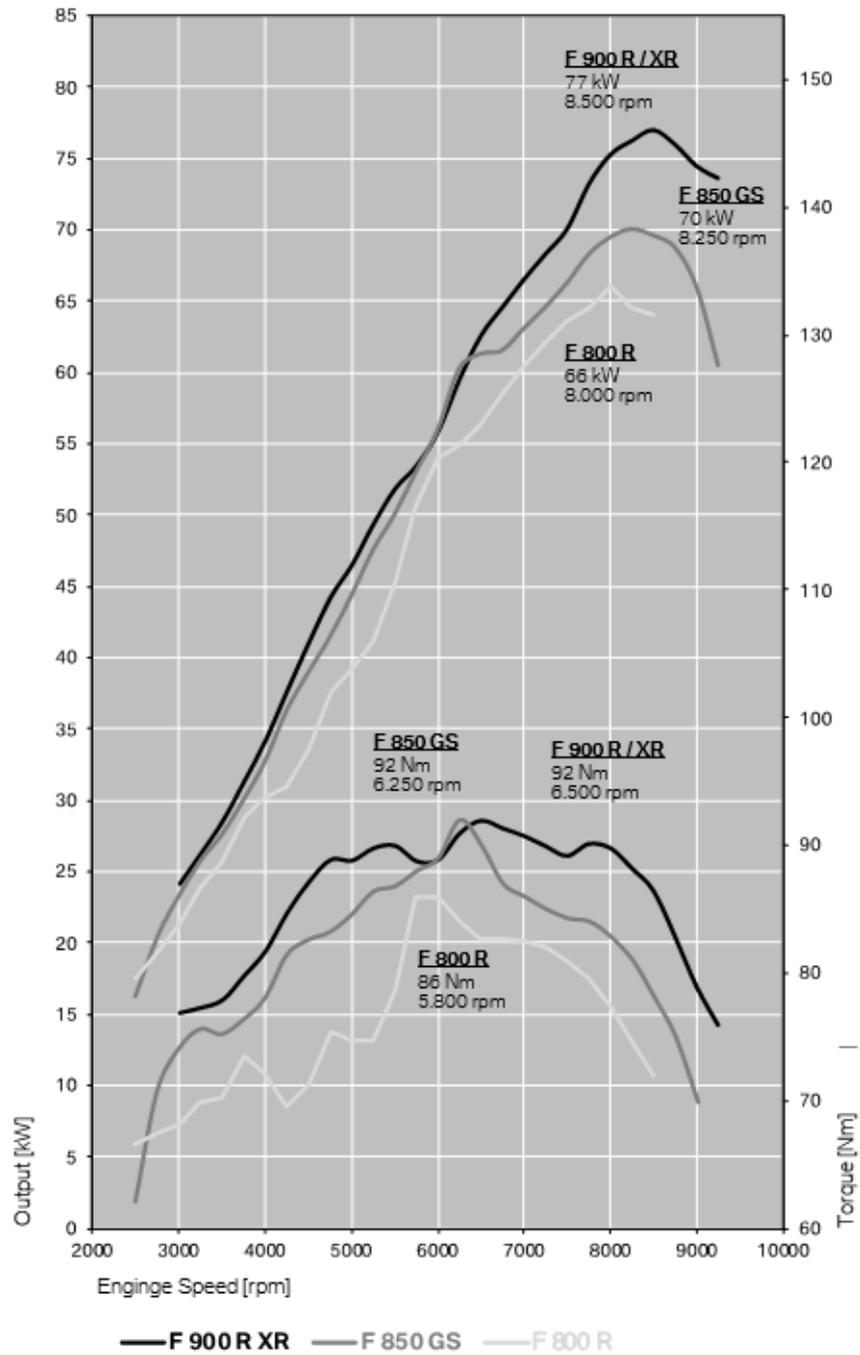
- Elastic and abrasion-resistant polyamide outer material
- Cowhide leather inserts in sensitive areas
- ErgonomicConcept: special choice of materials and coordinated design to maximise freedom of movement
- High proportion of stretch material
- 3D mesh in the back for a pleasant climate balance
- NP3 protectors close to the body at the shoulders, NP2 protectors at the elbows, hips and knees, NP-Pro-long back protector
- Various reflective inserts
- Numerous pockets, including a waterproof jacket pocket
- Leather trim on the inside of the trousers
- Leg end can be extended by opening an additional zip
- Waterproof outsert jacket and trousers in sporty design included with small pack size
- Sporty regular fit
- Sizes: women 34 –48, men 46-66, 98-118, 24-32



XRide Pro jacket: with white cowhide leather on the sleeves, this imitation jacket ensures a striking look. The same applies to the additional shoulder sliders made of a plastic-steel combination with BMW Motorrad inscription. Limited to 1,500 items, the jacket comes in sizes 46 to 60, with outsert jacket included.



7. Engine output and torque.



8. Technical specifications.



	F 900 R	F 900 XR
Engine		
Capacity	cc	895
Bore/stroke	mm	86/77
Output	kW/hp	77/105
at engine speed	rpm	8,500
Torque	Nm	92
at engine speed	rpm	6,500
Type	Water-cooled 2-cylinder 4-stroke in-line engine, four valves per cylinder activated by cam followers, two overhead camshafts and dry sump lubrication	
Compression		13.1/1
Fuel		Premium unleaded 95 RON
Valve control		DOHC (double overhead camshaft), cam followers
Valves per cylinder		4
Ø intake/outlet	mm	33.5/27.2
Ø throttle valve	mm	48
Engine control		BMS-M
Emission control		Closed-loop three-way catalytic converter, exhaust standard EU-5
Electrical system		
Alternator	W	416
Battery	V/Ah	12/12, maintenance-free
Headlamp		LED headlights (low and high beam) (Headlight Pro option: LED daytime riding light and Adaptive Cornering Light)
Rear light		LED brake light/rear light
Indicators		LED turn indicators
Starter	kW	0.9
Power transmission		
Clutch		Multiplate wet clutch (anti-hopping), mechanically controlled
Gearbox		Constant-mesh 6-speed gearbox, integrated in the engine housing
Primary ratio		1.821
Gear transmission ratios	I	2.833
	II	2.067
	III.	1.600
	IV.	1.308
	V	1.103
	VI.	0.968
Secondary drive		Endless O-ring chain with jerk damping in the rear wheel hub
Secondary ratio		2.588

		F 900 R	F 900 XR
Suspension			
Frame construction type		Steel bridge frame in monocoque design, load-bearing engine	
Front wheel control		USD telescopic fork Ø 43 mm	
Rear wheel control		Aluminium double-sided swinging arm, directly mounted central spring strut, hydraulically adjustable spring rest, adjustable rebound damping (option: Dynamic ESA)	
Spring travel, front/rear	mm	135/142	170/172
Wheel castor	mm	114.3	105.2
Wheelbase	mm	1,518	1,521
Steering head angle	°		60.5
Brakes	Front	Hydraulically activated twin disc brake, floating brake discs, Ø 320 mm, 4-piston radial brake calipers	
	Rear	Hydraulically activated single disc brake, Ø 265 mm, 1-piston floating caliper	
ABS		BMW Motorrad ABS as standard	
Wheels		Die-cast aluminium wheels	
	Front	3.5 x 17"	
	Rear	5.5 x 17"	
Tyres	Front	120/70 ZR 17	
	Rear	180/55 ZR 17	
Dimensions and weights			
Total length	mm	2,140	2,160
Total width not including mirrors	mm	815	860
Seat height	mm	815	825
		(Option Lowered suspension 770)	(Option Lowered suspension 775)
		(Option Seat, low 790)	(Option Seat, low 795)
		(Optional Accessory Seat, high 835)	(Optional Accessory Seat, high 840)
		(Optional Accessory Comfort seat 840)	(Optional Accessory Seat, high 840)
		(Option Seat, extra high 865)	(Optional Accessory Comfort seat 845)
			(Optional Accessory Seat, extra high 870)
DIN unladen weight, road ready	kg	211	219
Permitted total weight	kg	430	438
Fuel tank capacity	l	13	15.5
Performance figures			
Fuel consumption (WMTC)	l/100 km		4.2
Acceleration	0-100 km/h	3.7	3.6
Top speed	km/h		>200