

# The new BMW F 850 GS Adventure. Table of contents.



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# 1. Overall concept. (Short version)



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## **The new BMW F 850 GS Adventure: The boosted motorcycle powertool in the Adventure middle class.**

For more than ten years, the GS models in the BMW Motorrad F series have embodied the premium range in the middle class travel and adventure enduro segment. High-level touring capability, absolute long-distance suitability, sporty dynamic riding and superior offroad qualities are its outstanding strengths.

Following the newly developed BMW F 750 GS and F 850 GS presented in autumn 2017, the new F 850 GS Adventure now expands the premium BMW Motorrad range in this segment. Based on the dynamic and offroad oriented character of the F 850 GS, the new Adventure ideally unites agility and touring capability as well as increased offroad competence and outstanding long-distance qualities. Like the legendary boxer-engined BMW GS Adventure role models, the new F 850 GS Adventures now offers dedicated travel enduro riders, offroad oriented touring riders and globetrotters the perfect companion in the middle class for exploring the remote corners of the planet by motorcycle.

## **New, powerful and refined 2-cylinder in-line engine with 90 degree crankpin offset and 270/450 degree ignition spacing.**

The developers achieved a powerful and emotionally appealing sound by employing a crankshaft with a 90 degree crankpin offset and 270/450 degree ignition spacing. Vibrations are absorbed by the new engine's two counterbalance shafts. A self-amplifying, anti-hopping clutch not only provides a discernible reduction in the hand clutch operating force but also enhances safety on the road through the drop in engine drag torque. Power

transmission to the rear wheel comes from the six-speed gearbox with secondary drive that is now positioned on the left-hand side.

**The riding modes “Road” and “Rain” plus ABS and ASC ensure plenty of riding enjoyment and enhanced safety as standard. Pro riding modes available as optional equipment.**

The new F850 GS Adventure addresses individual rider requirements by offering “Rain” and “Road” riding modes as standard, while the combination of BMW Motorrad ABS and the ASC automatic stability control ensure a high level of safety. Thanks to the standard dynamic brake light, traffic behind the rider is made even more aware of the braking motorcycle. The F 850 GS Adventure can be fitted ex works with optional equipment, such as “Pro” riding modes and in turn the additional “Dynamic”, “Enduro” and “Enduro Pro” riding modes as well as the DTC dynamic traction control and banking capable ABS Pro.

**New sheet steel bridge frame, optimised suspension geometry and new positioning of the 23-litre fuel tank.**

The bridge frame of the new F 850 GS Adventure is made of deep-drawn, welded components. It integrates the 2-cylinder in-line engine as a co-supporting element and offers benefits in terms of torsional rigidity and robustness. The fuel tank has been placed in the classic position between the seat and the steering head, for optimised packaging and an improved centre of gravity. In the F 850 GS Adventure it holds 23 litres and permits a range of 550 kilometres and more in combination with the model's low fuel consumption.

**Sharper, even more masculine Adventure design, optimised ergonomics and increased globetrotter suitability.**

New, more masculine body design emphasises the F 850 GS Adventure's globetrotter suitability. A larger windshield, which can be adjusted in two stages, as well as hand protectors provide increased wind and weather protection. Wide enduro footrests, adjustable shift and foot brake levers as well as engine protection bars and a stainless steel luggage rack round off the F 850 GS Adventure's standard equipment. In addition to the basic version, the new F 850 GS Adventure is available in Exclusive and Rallye style variations.

**Unique range of optional equipment and accessories.**

The new F 850 GS Adventure is being launched with a range of equipment options that is unique for the middle class. Whether different seat heights, such as the seat bench for two (corresponds to standard F 850 GS seat bench), the case holder for the aluminium cases and trim panels, the new full

LED headlight as well as the LED additional headlight, the Connectivity equipment with 6.5 inch full colour TFT display or the intelligent emergency eCall, the list of fascinating features for maximising riding enjoyment and enjoying the thrill of the road is now virtually inexhaustible for middle class touring enduro motorcycles.

### **The highlights of the new BMW F 850 GS Adventure:**

- Powerful 2-cylinder in-line engine with a displacement of 853 cm<sup>3</sup> and 70 kW (95 hp) at 8 250 rpm and 92 Nm at 6 250 rpm.
- Very powerful, emotional sound due to crankshaft with 90-degree crankpin offset and 270/450-degree ignition spacing.
- New steel bridge frame for increased robustness and riding precision.
- New upside-down telescopic fork plus aluminium two-sided swinging arm with central spring strut for an even more sensitive response.
- ABS, ASC and the riding modes “Rain” and “Road” as standard.
- Riding modes Pro with ABS Pro and dynamic brake light, DTC and the new riding modes “Dynamic”, “Enduro” and “Enduro Pro” as optional equipment.
- Electronic suspension Dynamic ESA as an optional equipment item.
- New onboard electrical system with more powerful alternator and starter.
- LED headlamp as standard.
- LED daytime riding light and LED additional light as optional equipment.
- Connectivity with multifunctional instrument cluster including 6.5-inch full-colour TFT screen and numerous features as an optional equipment feature.
- “Intelligent emergency call” eCall for help as optional equipment.
- Optimised off-road and travel suitability along with improved wind and weather protection.
- Optimised ergonomics, especially for dedicated offroad riding.
- 23 litre fuel tank for ranges up to 550 kilometres and more.
- Enhanced GS Adventure profile due to new design.

- New colour along with the two style variants Rallye and Exclusive.
- A range of optional equipment and accessories that is unique in the middle class.



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## 2. Drive.



### **Newly, engineered 2-cylinder in-line engine with lots of character and high pulling power for dynamic riding enjoyment.**

For more than ten years, the GS models in the F series have embodied the premium range in the middle class Adventure segment. They have been characterised from the start by their convincing all-round qualities and as a paragon of riding enjoyment on tarmac surfaces as well as simple and safe controllability on off-road terrain. Following the newly developed BMW F 750 GS and F 850 GS presented in autumn 2017, the new F 850 GS Adventure now expands the premium BMW Motorrad range in this segment.

As before, the heart of the new F 850 GS Adventure is the in-line, 2-cylinder engine, which has, however, now been completely reengineered. The objectives of the developers were above all to achieve a significant increase in power and torque compared to the previous models. In addition, while developing the new engine, great importance was attached to optimising combustion so as to reduce the consumption rates.

The engine displacement is now 853 cm<sup>3</sup> (compared with 798 cm<sup>3</sup> in the previous model), resulting from a bore of 84 mm and stroke of 77 mm. The new F 850 GS Adventure generates 70 kW (95 hp) at 8 250 rpm and develops a maximum torque of 92 Nm at 6 250 rpm to deliver its supreme engine performance. In particular, the increased torque results in improved pulling power. The top speed is 197 km/h.

The new F 850 GS Adventure is also available ex works as a reduced power version for class A2 licence holders. In this case it generates 35 kW (48 hp) at 6 500 rpm. The maximum torque of 63 Nm is available at 4 500 rpm. Another output version is also optionally available for operation with regular fuel (RON 91) which is also the standard version in some countries. In this case output is 66 kW (90 hp) at 8 000 rpm and a torque of 86 Nm at 6 250 rpm.

### **Very powerful, emotional sound due to crankshaft with 90-degree crankpin offset and irregular ignition spacing.**

Also in the new F 850 GS Adventure, the 2-cylinder in-line engine is installed transverse to the direction of travel and liquid-cooled. In contrast to the engines of the previous model, however, its crankshaft has a 90 degree journal offset and a 270/450 degree ignition spacing (previous model had a 0 degree crankshaft journal offset and a 360 degree ignition spacing). This change is accompanied by a particularly powerful and emotional sound, similar to that of a 90 degree V2 engine.

### **Optimised smoothness created by two opposed counterbalance shafts and dry-sump lubrication.**

While the oscillating mass forces of the previous model was compensated for by a connecting rod fitted to the middle of the crankshaft with a defined arrangement of counterweights, unwanted vibrations in the new engine are eradicated by means of two counterbalance shafts.

These two opposed counterbalance shafts are arranged in front of or behind the crankshaft, a little below its axis, and are driven from the left of the crankshaft by the spur gears. In conjunction with the newly designed crankshaft and the ignition spacing of 270/450 degrees, this ensures much improved running smoothness while at the same time providing an excitingly powerful engine sound.

To prevent unwanted churning losses and to ensure maximum operational safety, even under tough offroad conditions, the engine of the new F 850 GS Adventure has dry-sump lubrication, which does not require a separate tank for engine oil. Any oil escaping from the main bearings is collected in a drain that is sealed off from the oil sump.

In this area, the lubricant is constantly pumped away by the oil pump and transported to the gearbox housing before it runs without pressure into the oil sump. The oil-feed pump then supplies the oil circulation from here. Its emphatically offroad character is reflected in the F 850 GS Adventure's underside protection, which protects the oil sump from any damage.

### **Two overhead camshafts and four rocker arm-operated valves per cylinder.**

The cylinder head of the new F 850 GS Adventure contains two rotating overhead camshafts driven by a tooth belt, which operate four valves per cylinder by means of light and therefore fixed-speed rocker arms. The timing chain drive is on the right-hand side of the engine.

The valve angles are dimensioned to support an optimised combustion chamber design, which results in the best possible power and torque exploitation as well as increased efficiency. They measure 11.2 degrees on the intake side and 13.3 degrees on the outlet side. The valves have a plate diameter of 33.5 mm (intake) and 27.2 mm (outlet). The compression ratio is 12.7:1.

Carburation is by means of intake pipe injection with next-generation BMS engine control. The rider's control signals are passed on directly by a sensor on the throttle grip via an e-gas system to the motor controller, which

regulates the angle of opening of the throttle valves so as to maximise controllability and optimise the response characteristics.

**Power transmission via anti-hopping clutch for a significant increase in riding safety.**

The entire power transmission of the new F 850 GS Adventure has also been subjected to complete reengineering. The primary drive arrangement on the right-hand side of the engine is responsible for transmitting the torque from the crankshaft to the clutch by means of spur gears.

This is now designed as a self-amplifying anti-hopping clutch (wet clutch). Not only does it allow the rider to benefit from discernibly reduced operating forces in the adjustable clutch lever but it also leads to a significant reduction in engine drag torque, resulting in a considerable plus in rider safety - particularly in the case of braking manoeuvres performed while changing down in gear.

**Six-speed gearbox now with secondary drive arranged on the left-hand side.**

Shift Assistant Pro for fast up and down gear shifting without using the clutch, available as optional equipment ex works.

In the interest of improved riding dynamics, the newly engineered six-speed gearbox now transfers the torque with an optimised transmission ratio spread to the secondary drive on the left (formerly right), in the form of an X-ring chain. For fast up and down gear shifting without using the clutch, BMW Motorrad now offers the Shift Assistant Pro, available as optional equipment ex works, for the new F 850 GS Adventure.

With this, it is possible to shift gears up without using the clutch, thus permitting perfect acceleration with virtually no interruption in traction force. Moreover, the Shift Assistant Pro also makes it possible to change down without using the clutch. This enables very fast gear shifting with a minimum of clutch use, resulting in a discernible reduction in undesirable load reversal effects on the back wheel and the jerk movements this can cause.

The undesirable effects of the independent movements of rider and passenger that are associated with conventional gear changing are considerably reduced using the Shift Assistant Pro. The Shift Assistant Pro also simplifies things considerably for motorcycling beginners. For sporty riders it allows for very fast shifting.



**Exhaust system now positioned on the right-hand side for optimised comfort.**

By positioning the secondary drive on the left-hand side of the motorcycle, it has been possible to move the exhaust system of the new F 850 GS Adventure to the right. This has advantages when the rider manoeuvres the motorcycle by hand, which is usually done from the left-hand side. The rear silencer is now positioned on the right and – like the entire exhaust system – made of stainless steel: this provides much more space, as well as reducing the risk of burns from the hot silencer. The new F 850 GS Adventure can also be fitted with an HP muffler with a highly sporty design, as optional equipment ex works.

**Riding modes “Rain” and “Road” plus ABS and ASC are fitted as standard ex works for a high degree of riding enjoyment and safety.**

The F 850 GS Adventure already comes with the two riding modes “Rain” and “Road” installed as standard, to allow the individual desires of the rider to be accommodated. Also included in the standard features is the ASC automatic stability control, which ensures a high degree of rider safety.

With the riding modes “Rain” and “Road”, the riding characteristics of the new F 850 GS Adventure can be adapted to the majority of road conditions.

In “Rain” mode, the throttle response is configured to be soft, while the control characteristics of the ASC or DTC and ABS or ABS Pro are based on wet and slippery road surfaces.

In “Road” mode, the engine permits an optimum throttle response, while the ABS and ASC control systems are configured for ideal performance on all roads. The same applies to the ABS Pro and DTC dynamic traction control systems, available as optional equipment. If the ESA electronic suspension adjustment (available as optional equipment) is fitted, damping at the rear takes place in the default “Road” setting.

**Pro riding modes in conjunction with DTC dynamic traction control and ABS Pro available as optional equipment ex works.**

The new F 850 GS Adventure can be equipped with the “Pro riding modes” option as optional equipment ex works. It additionally features the riding modes “Dynamic” and “Enduro” as well as the DTC dynamic traction control and the curve-optimised ABS Pro with dynamic brake light. The “Enduro Pro” ride mode, which is activated by means of an encoding plug, offers additional customisation options for altering the vehicle characteristics in accordance with rider needs and further increases the riding enjoyment available with the F 850 GS Adventure.

In “Dynamic” mode, the sporty side of the new F 850 GS Adventure is ready for intensive discovery on the road. The engine coordination then obeys optimum throttle response, and the DTC and ABS Pro systems are coordinated for road use with high frictional values. If fitted, the Dynamic ESA is set to the default “Road” configuration.

In “Enduro” mode, the offroad capabilities of the new F 850 GS Adventure can be experienced particularly impressively and intensively. This mode offers a soft engine response and the restrained intervention by the DTC allows an experienced rider to perform deliberate and controlled drifting. This characteristic, as with that of ABS Pro, is configured for loose surfaces and road enduro tyres, typical of terrain situations. The coordination of the Dynamic ESA function is set to meet the needs of terrain riding and configured with the “Enduro” setting.

Ambitious enduro riders can tap into the full off-road performance in “Enduro Pro” mode. This riding mode is configured for the use of lugged tyres and is activated by a specially coded plug. With “Enduro Pro” the rider can individually configure and combine characteristics such as throttle response, DTC and ABS Pro. Here too Dynamic ESA is modified for offroad use and is set to the “Enduro” value.



### 3. Suspension.

**Newly developed suspension with deep-drawn steel bridge frame for increased rigidity, robustness and riding precision. Optimised geometry for improved precision.**

In terms of suspension, the new F 850 GS Adventure also features a fully new concept. Even though the previous model already thrilled its riders with a high degree of riding precision, riding stability and light handling, the developers still gave top priority to optimising these characteristics in their technical specification.

The bridge frame developed for the new F 850 GS Adventure integrates the 2-cylinder in-line engine as a self-supporting element and is made of deep-drawn sheet metal parts that are welded together. The new frame in monocoque design has greater torsional stiffness than the predecessor model with tubular steel space frame.

The new frame concept involved a repositioning of the fuel tank. While the predecessor had a fuel tank located below the seat, the 23-litre fuel tank in the new F 850 GS Adventure is now located in the classic position between the seat and steering head. The reasons for this were mainly to with optimising wheel load fluctuations, the overall centre of gravity and the packaging of the vehicle as a whole. What is more, this made it possible to make the entire rear of the motorcycle slimmer, thereby optimising storage space under the seat.

The deliberate avoidance of aluminium as a material was due to the tough conditions in which an enduro vehicle often finds itself. Significant benefits are offered by steel as a rugged material and the design of the new main frame as well as the fact that the steel rear frame is bolted to the main frame – this applies especially when it comes to off-road use. The improved offroad ability can also be seen in the screwed-on pins of the passenger footrests.

The new F 850 GS Adventure has also undergone optimisation in terms of suspension geometry. The accuracy, riding precision and riding stability benefit from the newly dimensioned suspension geometry.

In addition to the modification of the wheelbase, the new F 850 GS Adventure is characterised by the somewhat flatter steering head in comparison to the previous model, as well as greater wheel castor values. The suspension geometry data compares with the previous model as follows:

Model / value	F 850 GS Adventure	F 800 GS Adventure
<b>Steering head angle</b>	62 degrees	64 degrees
<b>Wheel castor</b>	124.6 mm	117 mm
<b>Wheelbase</b>	1,593 mm	1,578 mm

**Wheel guidance at the front via new upside-down telescopic fork and at rear via double-sided aluminium swinging arm with central spring strut. Even more sensitive response characteristics with increased riding comfort.**

Particularly in the Adventure segment, suspension developers face challenging tasks. Not only must the suspension function well on tarmac-surfaced roads and in more sporty use, but it is also necessary to bring together the requirements of offroad and touring, including with a passenger, which often involve intensive use.

By accommodating this varied application spectrum in all of its facets, riders of the new F 850 GS can benefit from fully new wheel guides and spring shock absorber elements.

Front wheel guidance is now in the form of a new upside-down fork with 43 mm slide tube diameter. Compared with the previous model, the new telescopic fork is characterised by even further improved response characteristics. To meet the more stringent requirements of offroad use, the F 850 GS Adventure enables 230 mm of spring travel (210 mm when lowered). The sensitive slider tubes are protected from stone impacts by plastic guards that are integrated in the front wheel cover.

Rear wheel guidance takes the form of a double-sided aluminium swinging arm in conjunction with a directly linked central spring strut with travel-dependent damping, which also has an adjustable spring base and rebound stage damping that can be adjusted to suit personal requirements. The spring travel distance is 215 mm (195 mm when lowered).

**Dynamic ESA electronic suspension adjustment at rear for optimum suspension setup under all conditions as optional equipment works.**

With the BMW Motorrad dynamic ESA electronic suspension adjustment available as optional equipment, the dynamic riding experience, rider comfort and touring suitability of the new F 850 GS Adventure can be increased even further.

Dynamic ESA opens up further new dimensions of rider safety, performance and comfort, since the damping of the rear spring strut is automatically adjusted to the situation according to the riding conditions and manoeuvres.

From a technical point of view, the movement in travel and speed is recorded by means of a spring travel sensor in the central spring strut, which automatically sets the damping to suit the situation depending on the riding conditions. The damping of the spring strut is adjusted accordingly by means of electrically activated control valves. This damping adjustment occurs in the space of a few milliseconds. As a result, optimum damping comfort and a very stable ride response is ensured even in banking position.

Dynamic ESA does not function as a standalone system but communicates with the other control systems, such as ABS / ABS Pro and ASC or DTC. Moreover, Dynamic ESA is linked with the riding modes "Rain", "Road", "Dynamic", "Enduro", and "Enduro Pro".

In the riding modes "Rain", "Road", and "Dynamic", the central spring strut operates with a soft basic coordination. If the rider prefers a configuration for a more sporty riding style, he is able to combine these riding modes with the Dynamic ESA "Dynamic" setting, which results in a tauter shock absorber setting.

In the riding modes "Enduro" and "Enduro Pro", Dynamic ESA is coordinated for terrain use with the expected loose surfaces. The Dynamic ESA "Enduro" setting is defined accordingly. The damping characteristics of the central spring strut are coordinated for the special requirements of offroad riding with optimum traction and enhanced through cutting.

### **The wheels and tyres are tailored to the needs of travelling, adventure and offroad use.**

The F 850 GS Adventure is fitted with cross-spoke wheels with aluminium rim rings and a size of 2.15 x 21 at the front and 4.25 x 17 at the rear. The front wheel size favoured for sports-oriented offroad use is 21 inches; this grants high riding stability thanks to the larger gyroscopic forces, which offers distinct advantages on loose ground. The F 850 GS Adventure is equipped with enduro street tyres as standard. It has tubeless tyres sized 90/9021 at the front and 150/70-17 at the rear. In addition there are tyres with a distinct lugged profile which are homologated for intensive terrain use and can be ordered as free optional equipment ex works.

**Powerful brake system with standard BMW Motorrad ABS. “Pro riding modes” with ABS Pro and a dynamic brake light for even more safety when braking.**

A dual disc brake on the front wheel with a diameter of 305 mm ensures supreme and powerful deceleration in conjunction with a two-piston floating caliper. A single disc brake with a diameter of 265 mm is fitted to the rear wheel with a single-piston floating caliper. As with all BMW motorcycles approved for road use, the new F 850 GS Adventure is fitted as standard with BMW Motorrad ABS, which the rider can also deactivate if desired, for example in offroad situations.

Further safety enhancing features for motorcycles are available in the form of the Pro riding modes optional equipment, ABS Pro functions, and a dynamic brake light. The dynamic brake light can effectively signal to road-users behind that the motorcycle is braking. This additional brake light function, currently still limited to the EU and ECE region, warns traffic to the rear at two levels in the event of hard braking and even if an emergency stop is being performed. Level one is activated when the brakes are applied at speeds of up to 50 km/h. Here the brake light flashes at a frequency of 5 Hz. If the motorcycle approaches standstill (< 14 km/h), the second stage comes into effect, involving the additional activation of the hazard warning lights. These remain active until the vehicle is accelerated back up to a speed of at least 20 km/h.

ABS Pro goes one step further than the 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 to the rider are increased brake and ride stability together with the excellent deceleration on bends. In the riding modes “Rain” and “Road”, ABS Pro is dimensioned for road use and moderate to low frictional values, plus optimum braking stability. Control sets in early.

## 4. Electrical system and electronics.



### **See and be seen that much better - full LED headlight including LED daytime running light available as optional equipment 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 new F 850 GS Adventure.

In addition to this, the iconically designed LED daytime riding light is available as an optional equipment item.

Not only does the new LED headlamp light up the road with a beam that is unparalleled in its brightness and clarity, it also ensures better visibility in traffic. Furthermore it lends the middle-class premium adventure enduro an unmistakable look with its unmistakeable LED optical fibre in the form of an inverted tuning fork. In the standard version the light unit consists of two LED-E 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 – the multifunctional instrument cluster with 6.5-inch full-colour TFT screen and numerous features as an ex-works option.**

The new F 850 GS Adventure is equipped as standard with a completely new instrument cluster design, consisting of an analogue tachometer and a multifunctional display, alongside a number of control lamps.

Fast and even clearer information for the rider with minimum distraction from what is happening on the road are now possible thanks to the new optional equipment known as Connectivity, with which the instrument cluster is displayed in the form of a 6.5 inch full-colour TFT display. In conjunction with integrated operation via the BMW Motorrad multi-controller, it gives the driver quick access to vehicle and connectivity functions.



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It is also an easy matter to make telephone calls or listen to music while on the road. 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 is available for free 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.

**Fast assistance in the event of an emergency - the “Intelligent Emergency Call” function available ex works as optional equipment.**

Ensuring the fastest possible assistance in the event of an accident or in situations of emergency and danger can save people's lives. For the new F 850 GS Adventure there is an optional equipment function called “Intelligent Emergency Call”, it is an eCall system designed to bring assistance to an accident site as quickly as possible. If an emergency situation or an accident occurs, the intelligent emergency call is activated automatically or manually, sending the position data of the motorcycle, and therefore the coordinates of the scene of the accident, setting the rescue chain in motion via the qualified BMW Call Center. The person involved can speak to the BMW Call Centre in his own national language. eCall requires a connection to the mobile phone network in order to trigger the rescue chain.

The operating unit for eCall is located in the right-hand half of the handlebars and is both compact and ergonomically designed. In addition to the cover-protected SOS button for triggering or interrupting the emergency call, there is also an integrated microphone and speaker.

On the basis of a sophisticated sensor system designed to determine the nature of an incident, eCall takes into account three possible scenarios. First there is automatic activation that occurs in the event of a serious fall or collision. The emergency call function is immediately activated without delay and the accident victim/rider is taken care of by the BMW Call Center via audio connection until the emergency service arrives. Then there is the automatic activation in the event of a less serious fall or collision. In this case, the person affected has the option of pressing a button to discontinue the emergency call. Thirdly, it is possible to activate the function manually by pressing a button, for instance to obtain assistance for another person



involved in an accident. In this case the eCall is triggered manually by pressing the SOS button on the right handlebar end. In this case too, the caller has the option to discontinue the emergency call by pressing a button.

**Keyless Ride – convenient activation of all locking functions by wireless link, available as optional equipment ex works.**

As is already the case with other BMW Motorrad models, the Keyless Ride system available as optional equipment ex works replaces the conventional ignition/steering lock in the new F 850 GS Adventure. This means that it is no longer necessary to use a regular key. The steering lock, ignition, fuel filler flap and anti-theft device are all activated by the transponder integrated in the vehicle key, which transmits a wireless signal with a frequency specific to the vehicle. The key can therefore remain in the rider's clothes, for example.

As soon as the key is located within the vehicle reception area (distance < 2 metres), the steering lock can be unlocked. The steering lock is locked by keeping the button pressed down and placing the handlebars in end position. The ignition is activated by briefly pressing the button or keeping the button pressed down after releasing the steering lock. The ignition is switched off by means of a short or long press of the button. The alarm system (DWA) is automatically activated when the ignition is switched off and the steering lock is closed, as soon as the key leaves the reception area.

## 5. Design, ergonomics and colour concept.



### **More marked styling to emphasise the spirit of adventure.**

The new F 850 GS Adventure has been completely redesigned and has an even more dynamic and robust look which clearly signals that this bike is all about adventure and travelling the world. The new Adventure now has an even more masculine appearance and combines even more pronounced offroad skills with optimum touring capability. High-positioned air intake, amply proportioned spring travel, ground clearance, functionally designed surfaces and a precise panel alignment underline the robust offroad attributes of the new middle class GS Adventure. The Adventure-typical robust visual appeal is emphasised by equipment features such as engine protection bars and stainless steel luggage rack.

Like the big GS boxer Adventure it's appearance is absolutely authentic and conveys the pure and exciting spirt of adventure. The distinctive GS flyline is visible from all perspectives on the new F 850 GS Adventure, too. Iconic design features such as the asymmetric headlamp and the GS typical flyline clearly identify it as a member of the BMW Motorrad GS family. Starting from the front "beak" of the GS, the flyline extends over the fuel tank and seat to the rear, which is considerably more narrow and dynamic in design than the predecessor model.

### **Optimised ergonomics, improved wind and weather protection as well as a large fuel tank for high long-distance suitability.**

The new F 850 GS Adventure's offroad suitability is increased thanks to the new design of the fuel tank / seat area without any edges or corners. This is advantageous above all when riding offroad in a standing position. Here the Adventure rider is supported by conified and 15 mm higher handlebars, which also ensure an even more comfortable seated position. Adjustable hand levers for the clutch and front brake enable the rider to choose his own ergonomic setup.

The wider and offroad-optimised enduro footrests improve the bike's off-road riding capabilities. The adjustable foot brake lever insert permits optimum brake operation when riding offroad in a standing position. An adjustable shift lever rounds off the ergonomic adjustment package.

As is typical for an enduro, the new F 850 GS Adventure features generous spring travel distances and large ground clearance. Nevertheless, it isn't just tall people who feel comfortable riding them. This is ensured by the optimised

inner leg curve length, numerous available seat heights, and a refined ergonomic triangle around the handlebars, seat bench and footrests. Compared to the predecessor model the standard seat height has been reduced by 15 mm to 875 mm. The minimum seat height of 815 mm can be reached by lowering the suspension and installing a lower seat bench (optional equipment ex works).

In addition wind and weather protection was optimised to make long-distance riding even more comfortable. The new F 850 GS Adventure features a height-adjustable touring windshield as well as two side wind deflectors as standard. Compared to the standard windshield of the F 850 GS, the touring windshield of the F 850 GS Adventure can be adjusted in two positions improving wind and weather protection significantly. This is also optionally available for the F 850 GS.

The modular design of the available windshields within the GS range of the BMW Motorrad F series allows the rider to tailor his bike to his needs thanks a range of optional accessories. All in all, this allows the rider to increase the focus on his preferred characteristics in the new F 850 GS Adventure towards offroad use or travel comfort.

The 23-litre fuel tank of the new F 850 GS Adventure also meets the needs of long-distance adventure riders. In conjunction with the lower fuel consumption of the further improved power unit, ranges of up to 550 kilometres and more can now be achieved.

**Robust adventure character in three attractive colour versions and two style versions.**

Three dynamic colour and three style variations give the new F 850 GS Adventure its individual and characteristic features. The painted parts of both models have been deliberately kept to a minimum. They are located in the upper area of the motorcycle, where they form the interface between the rider and the motorcycle. The lower area of the motorcycle and the GS “beak”, on the other hand, are in black, to underline its robust offroad character.



BMW F 850 GS Adventure Rallye. Lupinblau metallic.

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BMW F 850 GS Adventure Exclusive. Granitgrau metallic.

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BMW F 850 GS Adventure. Icegrey uni.

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## 6. Equipment program.



The range of optional equipment and original BMW Motorrad accessories available for customising the new BMW F 850 GS Adventure is unparalleled in the middle class segment and has been considerably increased since the previous models.

Options are supplied directly ex works and are integrated during the production process. Optional accessories are installed by the BMW Motorrad dealer or by customers themselves. These are features which can be retrofitted, too.

### **Optional equipment**

#### **Comfort Package**

- Center stand, RDC, Keyless Ride, heated grips

#### **Touring Package**

- Cruise Control, case holder for aluminium cases, Dynamic ESA

#### **Dynamic Package**

- Pro riding modes incl. DTC, ABS Pro and Shift Assistant Pro

#### **Light package**

- LED turn indicators, LED headlight, LED daytime running light
- Connectivity incl. 6.5 inch TFT colour display
- Intelligent Emergency Call
- Keyless Ride
- Preparation for navigation unit
- Program map adaptation for RON 91 (F 850 GS only)
- Tyre pressure control (RDC)
- LED turn indicators.
- LED daytime riding light.
- Shift Assistant Pro.
- Cruise control
- Pro riding modes incl. DTC, ABS Pro and dyn. brake light
- Heated grips
- Alarm system (DWA)
- Power reduction 35 kW
- Lowered suspension
- Dynamic ESA (Electronic Suspension Adjustment)

- Seat bench for two, low
- Seat bench for two = standard seat bench F 850 GS with 860 mm seat height)
- Comfort seat bench (= standard seat bench F 850 GS Adventure)
- Off-road tyres
- Center stand
- Storage shelf with case holders
- HP sports silencer

## **Original BMW Motorrad Accessories**

### **HP Parts**

- HP handbrake lever
- HP clutch lever
- HP sports silencer
- HP sports silencer black

### **Storage program**

- Aluminium case
- Aluminium case, black
- Holder for aluminium luggage system
- Liners for aluminium case
- Carry handle for aluminium case/topcase
- Luggage net aluminium case
- Aluminium topcase
- Aluminium topcase, black
- Liner for aluminium topcase
- Back pad for aluminium topcase
- Tank rucksack
- Map compartment for tank rucksack
- Bag for luggage bridge
- Bag for passenger seat, 2.5-8 l
- Softbag, large 50 – 55 l
- Softbag, small, 30 l – 35 l
- Packing bag set
- Luggage roll, 50 l
- Folding rucksack
- Luggage roll Atacama, 40 l
- Side bags Atacama
- Tensioning strap for Atacama luggage roll, lockable
- Tensioning strap for Atacama side bags, lockable

## **Design**

- LED turn indicators

## **Ergonomics and comfort**

- Rider footrest, adjustable
- Rider footrest, adjustable, black
- Retrofit heated grips
- Retrofit Shift Assistant Pro
- Seat, black/grey
- Seat, low, black/grey
- Seat, black/red
- Seat, low, black/red
- Rally seat
- Wind deflector, tinted
- Touring windshield, tinted
- Windshield, large, clear
- Windshield, large, tinted

## **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
- BMW Motorrad Smartphone Cradle
- Holder for Smartphone Cradle

## **Safety**

- Brake disc lock with alarm system
- Retrofit set – alarm system
- Protective foil for 6.5-inch TFT screen
- Enduro aluminium engine protection
- First aid set, large
- First aid set, small
- LED additional headlight
- Headlamp guard (for offroad use only)

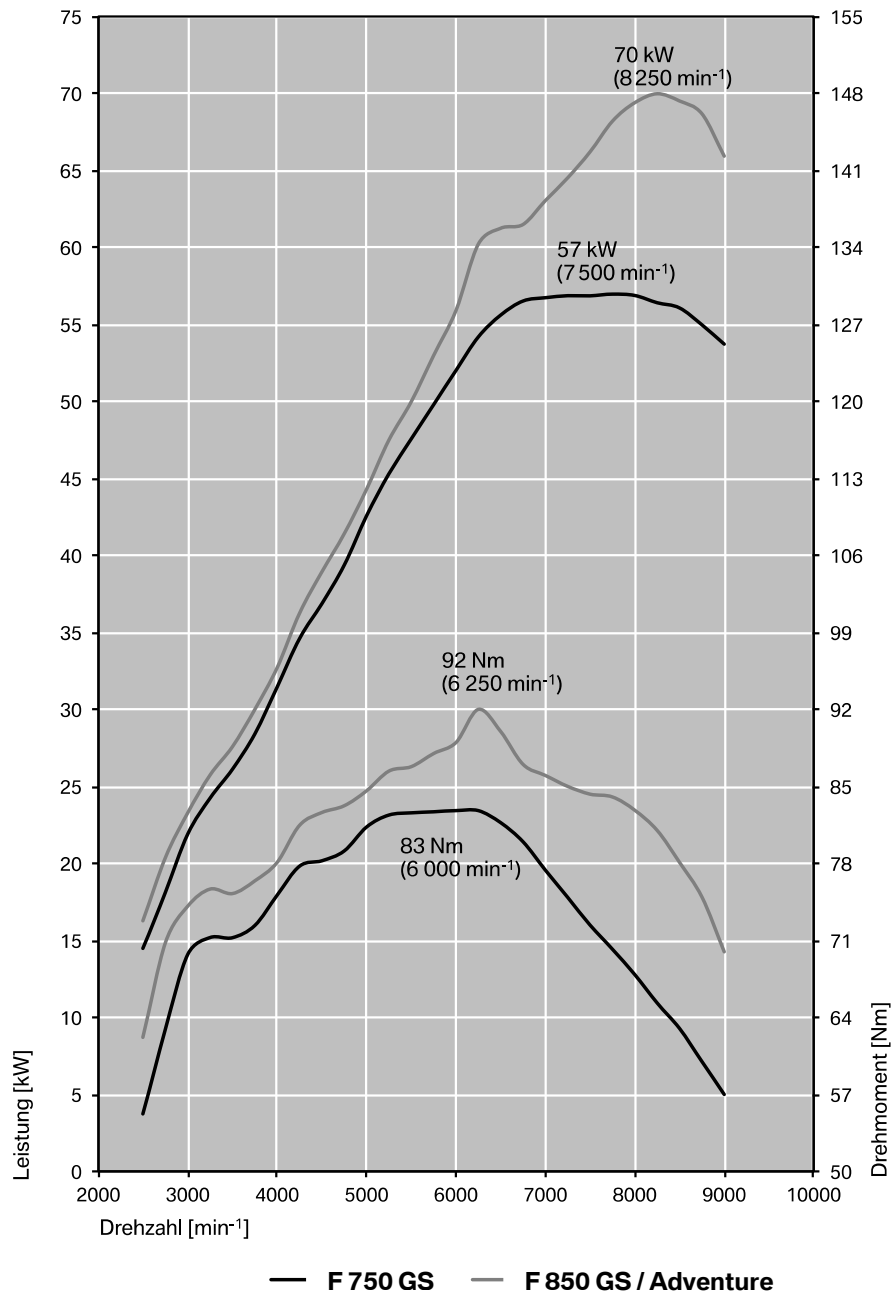
### **Maintenance and technology**

- BMW Motorrad battery charger
- Motorcycle carpet
- Motorcycle cover
- Indoor motorcycle cover
- Indoor motorcycle cover, large
- Automatic chain lubrication system
- LED torch
- Retrofit power reduction
- Mini foot pump
- Multifunction tool
- Breakdown assistance set – tubeless tyres
- Tyre pressure travel set
- Motorcycle care set
- Body + Bike shower gel, 250 ml
- Engine gloss spray, 300 ml
- Rim cleaner, 500 ml
- Gloss polish, 250 ml
- Insect remover, 500 ml
- Chain cleaner, 300 ml
- Chain spray, 300 ml
- Metal polish, 75 ml
- Motorcycle cleaner, 500 ml
- Seat care (for smooth imitation leather), 50 ml
- Original BMW Engine Oil ADVANTEC Ultimate 5W-40, 1 l
- Original BMW Engine Oil ADVANTEC Ultimate 5W-40, 500 ml





## 7. Output and torque.



## 8. Technical specifications.



F 850 GS Adventure		
Engine		
Capacity	cc	853
Bore/stroke	mm	84/77
Output	kW/hp	70/95
At engine speed	rpm	8,250
Torque	Nm	92
At engine speed	rpm	6,250
Type	Water-cooled 2-cylinder 4-stroke engine with four rocker arm operated valves per cylinder, two overhead camshafts and dry sump lubrication	
Compression		12.7/1
Fuel	Premium unleaded 95 RON (option: 91 (RON))	
Valve control	DOHC (double overhead camshaft), rocker arms	
Valves per cylinder		4
Ø intake/outlet	mm	33.5/27.2
Ø Throttle valves	mm	48
Engine control		BMS-M
Emission control	Closed-loop three-way catalytic converter, exhaust standard EU-4	
Electrical system		
Alternator	W	416
Battery	V/Ah	12/10
Headlamp	High beam/low beam: 12 V/55 W Halogen (OE: LED headlight incl. LED daytime running light)	
Rear light	LED brake light/rear light	
Starter	kW	0.9
Power transmission – gearbox		
Clutch	Multiplate wet clutch (anti-hopping), mechanically controlled	
Gearbox	Constant-mesh 6-speed gearbox, integrated in the engine housing	
Primary ratio		1.821
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, jerk damping in the rear wheel hub	
Secondary ratio		2.588

F 850 GS Adventure			
Suspension			
Frame construction type		Steel bridge frame in monocoque design, load-bearing engine	
Front wheel control		USD fork Ø 43 mm	
Rear wheel control		Aluminium double-sided swing arm, directly mounted central spring strut (F850 GS: Travel-dependent damping), spring rest hydraulically adjustable, rebound damping adjustable (Option: Dynamic ESA)	
Spring travel, front/rear	mm	230/215	
Wheel castor	mm	124.6	
Wheelbase	mm	1,593	
Steering head angle	°	62	
Brakes	Front	Hydraulically activated twin disc brake, Ø 305 mm, 2-piston floating caliper	
	Rear	Hydraulically activated single disc brake, Ø 265 mm, 1-piston floating caliper	
ABS		BMW Motorrad ABS as standard, disengageable	
Wheels		Cross-spoke wheels	
	Front	2.15 x 21"	
	Rear	4.25 x 17"	
Tyres	Front	90/9021	
	Rear	150/70 R17	
Dimensions and weights			
Total length	mm	2,300	
Total width including mirrors	mm	939	
Seat height	mm	875	
		(OE low seat 835)	
		(OE lowering 815)	
		(OE DSB lowering 860)	
		(Accessory: Rallye SB seat 890)	
DIN unladen weight, road ready	kg	244	
Permitted total weight	kg	455	
Fuel tank capacity	l	23	
Performance figures			
Fuel consumption (WMTC)	l/100 km	4.1	
CO2 emissions (WMTC):	g/km	98	
Acceleration	0-100 km/h	s	3.8
Top speed	km/h	197	