

Rider's Manual (US Model)

G 450 X



BMW Motorrad



The Ultimate
Riding Machine

Motorcycle/Retailer Data

Motorcycle data

Model

Vehicle Identification Number

Color number

First registration

Registration number

Retailer Data

Contact in Service

Ms./Mr.

Phone number

Retailer's address/phone number (company stamp)

Welcome to BMW

We congratulate you on your choice of a motorcycle from BMW and welcome you to the community of BMW riders.

Familiarize yourself with your new motorcycle so that you can ride it safely and confidently in all traffic situations.

Please read this Rider's Manual carefully before starting to use your new BMW motorcycle. It contains important information on how to operate the controls and how to make the best possible use of all your BMW's technical features.

In addition, it contains information on maintenance and care to help you maintain your motorcycle's reliability and safety, as well as its value.

If you have any questions concerning your motorcycle, your authorized BMW Motorrad retailer

is always happy to provide advice and assistance.

We wish you many miles of safe and enjoyable riding

BMW Motorrad.

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General instructions

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Overview

Chapter 2 of this Rider's Manual will provide you with an initial overview of your motorcycle. All maintenance and repair work carried out on your motorcycle will be documented in Chapter 10. Proof of the maintenance work performed is a prerequisite for generous treatment of claims. When the time comes to sell your BMW, please remember to hand over this Rider's Manual; it is an important part of the motorcycle.

Abbreviations and symbols



Indicates warnings that you must comply with for reasons of your safety and the safety of others, and to protect your motorcycle against damage.



Special information on operating and inspecting your motorcycle as well as maintenance and adjustment procedures.



Indicates the end of an item of information.



Instruction.



Result of an activity.



Reference to a page with more detailed information.



Indicates the end of accessory or equipment-dependent information.



Tightening torque.



Technical data.

OA

Optional accessories
BMW optional accessories can be purchased and installed at your authorized BMW Motorrad retailer.

AS

Alternative standard equipment
Motorcycle parts included with the motorcycle which can be used as an alternative to the installed parts. The corresponding information on installation must be observed.

Operating definition

This motorcycle has been designed to withstand the common loads encountered in offroad use.

However, it is not suitable for the following operating conditions:

- Continuous operation with a high percentage of constant driving
- Driving at continuous full throttle
- Riding with passenger and/or luggage
- Longer trips at engine speeds over 8000 rpm

Technical data

All dimensions, weights and outputs in the Rider's Manual refer to the Deutsches Institut für Normung e. V. (DIN) and comply with its tolerance regulations. Versions for individual countries may differ.

Currentness of this manual

The high safety and quality standards of BMW motorcycles are maintained by constant development work on designs, equipment and accessories. Because of this, your motorcycle may differ from the information supplied in the Rider's Manual. In addition, BMW Motorrad cannot guarantee the total absence of errors. We hope you will appreciate that no claims can be entertained on the basis of the data, illustrations or descriptions in this manual.

Overviews

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General view, left side

- 1 Headlight range adjustment (below instrument cluster) (➡ 41)
- 2 Adjuster for damping characteristic, front suspension (rebound stage) (➡ 38)
- 3 Secondary fuses (➡ 75)
- 4 Main fuse (behind side panel) (➡ 76)
- 5 Fuel filler opening (➡ 52)
- 6 Adjuster for damping characteristic, front suspension (compression stage) (➡ 38)
- 7 Battery

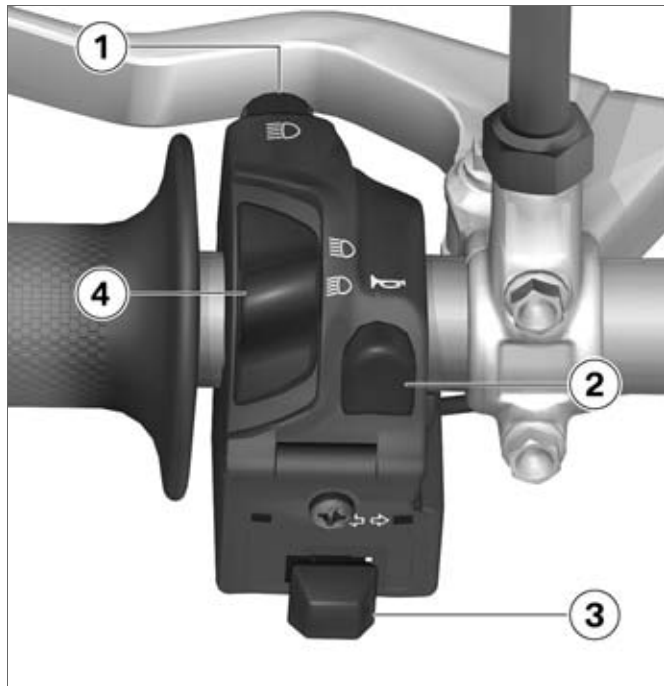


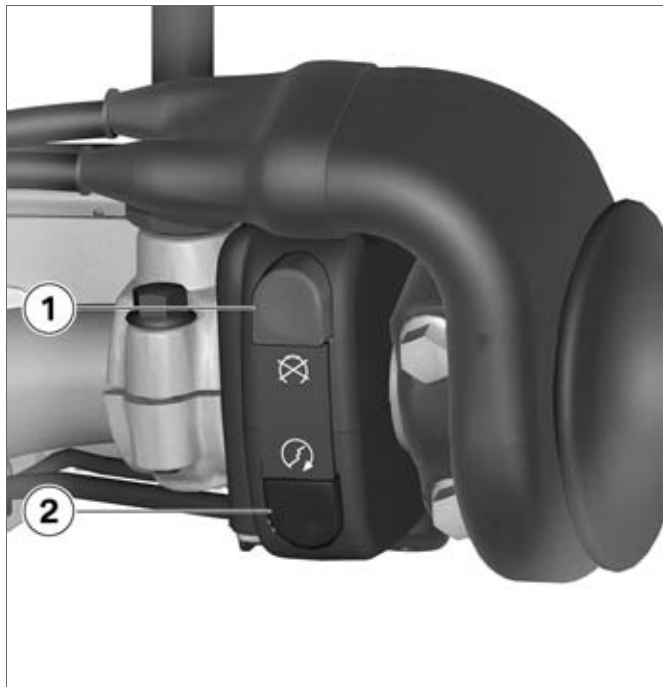
General view, right side

- 1** Adjuster for damping characteristic, rear suspension (compression stage) (➡ 38)
- 2** Brake-fluid reservoir, front (➡ 64)
- 3** Coolant fill location (behind side panel) (➡ 66)
- 4** Engine oil fill location (➡ 62)
- 5** Engine oil level indicator (➡ 61)
- 6** Brake-fluid reservoir, rear (➡ 65)
- 7** Adjuster for damping characteristic, rear suspension (rebound stage) (➡ 38)

Left handlebar fitting

- 1 Operating headlight flasher (→ 31)
- 2 Horn
- 3 Operating turn indicators (→ 31)
- 4 High-beam headlight switch (→ 30)



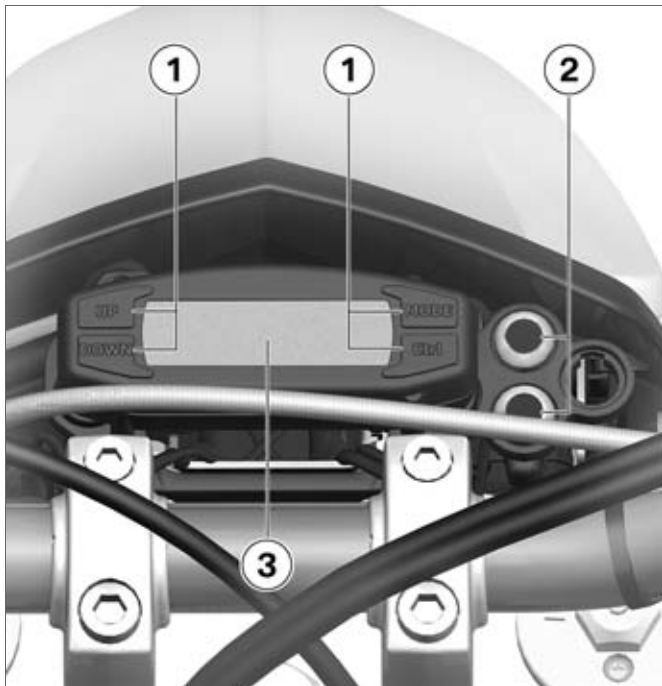


Handlebar fitting, right

- 1 Engine-Off button (→ 46)
- 2 Starter button (→ 46)

Instrument cluster

- 1 Operating the multifunction display (➔ 23)
- 2 Indicator lights (➔ 18)
- 3 Multifunction display (➔ 18)



Status indicators

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Status indicators

Multifunction display



- 1 Display dependent on mode selected; odometer shown here (➡ 23)
- 2 Speedometer

Indicator lights



- 1 High-beam headlight
- 2 Turn indicators

Warning indicators

Fuel down to reserve



– FUEL is displayed.



The fuel pump symbol is displayed.



A fuel shortage can lead to misfiring and to the engine dying unexpectedly. Misfiring can damage the catalytic converter, and the engine dying unexpected can lead to accidents.

Do not drive until the fuel tank is completely empty. ◀

Possible cause:

At the most, the fuel tank still contains the reserve fuel quantity.



Reserve fuel quantity

– min Approx. 0.8 quarts (min
Approx. 0.75 l)

- Refueling (➡ 52).

Engine speed too high



- SPEED MAX is displayed.
- The display flashes.



Extended driving at engine speeds over 8000 rpm can result in engine damage.

Avoid engine speeds over 8000 rpm. ◀

The motorcycle is not designed to be ridden for a longer time at engine speeds over 8000 rpm. The speed driven at indicates that the critical engine speed was exceeded.

Possible cause:

The motorcycle speed is continuously over 68 mph.

- Reduce speed to below 68 mph.
- Read the additional explanations on the fatigue strength and warranty on (➡ 44).

Operation

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Ignition and steering lock

Keys

This motorcycle is not equipped with an ignition switch. You are provided with two keys for the steering lock.

Switching on ignition



- Slide high-beam switch **1** upward, then press headlight flasher button **2**.

▶ The instrument cluster is automatically activated as

soon as the motorcycle drives off. ◀

- » High-beam headlight and all function circuits switched on.
- Push high-beam switch **1** downward.
- » High-beam headlight is switched off.



- Alternative: Briefly press starter button **3**.
- » Low-beam headlight and all function circuits switched on.
- » Engine starts if starter button is pressed and held.

Switching off ignition

The ignition automatically switches off after the motorcycle is stopped for a while.

Locking handlebars

- Turn handlebars to left.



- Turn cover **1** to side.
- Turn steering lock clockwise with key **2** while moving handlebars slightly.
- » Handlebars locked.
- Pull off key and turn cover over lock.

Instrument cluster

Activating instrument cluster



- Press Mode button **1**.

▶ The instrument cluster is automatically activated as soon as the motorcycle drives off. ◀

- » All segments are shown briefly.
- » The set tire size is shown briefly.
- » The instrument cluster is switched on.

- » With the ignition switched off, the instrument cluster also switches off after a short time.

Selecting function

In the delivered state, only the operating hours meter H and the odometer ODO are active. The following functions can also be activated:

- Odometer TR1
- Odometer TR2: can be changed manually, e.g. for adjustment to a road book
- Stopwatch S1: always active when the motorcycle is driving
- Stopwatch S2: operated manually
- Average speed A1: calculated from TR1 and S1
- Average speed A2: calculated from TR2 and S2
- Clock CLK
- Lap timer LAP
- Top speed MAX

Activating and deactivating functions

- Stop motorcycle.



- Press MODE button **1** repeatedly until operating hours meter H is displayed in left-hand half of multifunction display.
- Press and hold MODE button.
- » The instrument cluster switches into the setting mode and all active functions are displayed.
- » The first selectable function (odometer TR1) flashes.

- » The operating hours meter H and odometer ODO functions cannot be deactivated.



- Press MODE button **1**.
- » The function is applied without change and the next selectable function flashes.
- Press UP button **2**.
- » The function is activated and the next selectable function flashes.
- Press DOWN button **3**.
- » The function is deactivated and the next selectable function flashes.

- » After the desired functions have been selected, it is possible to choose between the mph and the km/h display.



- Press UP button **2**.
- » Km/h is activated.
- Press DOWN button **3**.
- » Mph is activated.
- Press MODE button **1** twice.

 The tire size was set before delivery of the motorcycle and should not be changed.◀

- » The tire size can be set within the first operating hour.
- Press MODE button **1** twice.

- » The first selectable function (odometer TR1) flashes again.
- Press and hold MODE button **1** or do not press any further button.
- » The current settings are applied.

Selecting readings



- Press MODE button **1**.
- Each time the button is pressed, all activated functions are displayed starting from the current display in the following order:

– Odometer TR1

- Odometer TR2
- Average speed A1
- Average speed A2
- Stopwatch S1
- Stopwatch S2
- Operating hours meter H
- Clock CLK
- Lap timer LAP
- Lap time memory (only for activated LAP timer)
- Top speed MAX
- Odometer ODO

Resetting odometer TR1



- Press MODE button **1** repeatedly until odometer TR1 is

displayed in left-hand half of multifunction display.

- Press and hold MODE button.
 - » Odometer TR1 is reset.
 - » Average speed A1 and stopwatch S1 are also reset.

Operating odometer TR2



- Press MODE button **1** repeatedly until odometer TR2 is displayed in left-hand half of multifunction display.



- Press UP button **2**.
 - » The value of the odometer is increased.
- Press DOWN button **3**.
 - » The value of the odometer is decreased.
- If the UP or the DOWN button is pressed and held, the speed is increased with which the odometer is changed.
 - » The changing of the odometer reading TR2 results in a change in the average speed A2.
- Press and hold MODE button **1**.

- » The odometer is reset.
- » The average speed A2 is also reset.

Resetting average speed A1



- Press MODE button **1** repeatedly until average speed A1 is displayed in left-hand half of multifunction display.
- Press and hold MODE button.
 - » Average speed is reset.
 - » Odometer TR1 and stopwatch S1 are also reset.

Resetting average speed A2



The average speed A2 is automatically reset when the stopwatch S2 or the odometer TR2 is reset.

Resetting stopwatch S1



- Press MODE button **1** repeatedly until stopwatch S1 is displayed in left-hand half of multifunction display.
- Press and hold MODE button.
 - » Stopwatch is reset.
 - » The odometer TR1 and average speed A1 are also reset.

Operating stopwatch S2



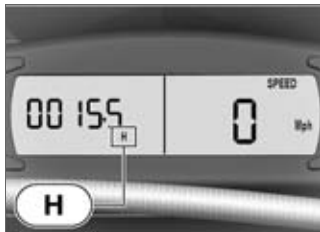
- Press MODE button **1** repeatedly until stopwatch S2 is displayed in left-hand half of multifunction display.



- Press UP button **2** with stopwatch stopped.
 - » Stopwatch runs starting from indicated time in steps of one second.
 - » If another function is selected while the stopwatch is running, S2 flashes in the display.
 - » The stopwatch continues to run after the instrument cluster has switched off.
- Press UP button with stopwatch running.
 - » Stopwatch shows the expired time.

- Press and hold MODE button **1** with stopwatch stopped.
 - » Stopwatch is reset.
 - » The average speed A2 is also reset.

Operating hours meter H



The measurement of the operating time H is always carried out with the motorcycle driving. The operating hours meter cannot be reset and is only displayed with the motorcycle stopped.

Setting clock CLK

- Switch on instrument cluster or bring motorcycle to a stop.



- Press MODE button **1** repeatedly until clock CLK is displayed in left-hand half of multifunction display.



- Press and hold MODE button **1**.

- » The hours flash.
- Set hours with UP button **2** and DOWN button **3**.
- Press MODE button.
- » The minutes flash.
- Set minutes with UP button and DOWN button.
- Press MODE button.
- » The seconds flash.
- Press UP or DOWN button.
- » The seconds are set to zero.



- Press MODE button **1**.
- » 0-24 for 24-hour display or 0-12 for 12-hour display is shown.

- Press UP button **2** or DOWN button **3**.
- » The display type changes each time the button is pressed.
- Press and hold MODE button or do not press any further button.
- » The settings are applied.

Operating lap timer LAP



- Press MODE button **1** repeatedly until LAP timer LAP is displayed in left-hand half of multifunction display.



- Press UP button **2** with LAP timer stopped.
 - » The LAP timer runs from the displayed time in second steps.
 - » If another function is selected while the lap timer is running, LAP flashes in the display.
 - » The LAP timer continues to run after the instrument cluster has switched off.
- Press UP button with LAP timer running.
 - » The LAP timer shows the expired time.
- Press DOWN button **3** with LAP timer running.

- » The displayed time is saved and the time measurement begins at zero.
- » A maximum of ten measurements can be saved. If the ten memory places are occupied, the DOWN button has no function.
- Press and hold MODE button **1** with LAP timer stopped.
 - » The lap timer is reset.
 - » Saved values are deleted.

Calling lap times

- Stop motorcycle.



- Press MODE button **1** repeatedly until LAP is displayed in both halves of multifunction display.
 - » The stopped time for the lap shown on the right-hand side is shown on the left-hand side of the multifunction display.



- Press UP button **2**.
- » The next lap time is shown.

Setting display color

- Switch on ignition and instrument cluster or stop motorcycle.



- Press and hold Ctrl button **4**.
- » The display color can vary between yellow and red.
- Press UP button **2**.
- » The share of red of the display color is increased.
- Press DOWN button **3**.
- » The share of yellow of the display color is increased.
- Press and hold Ctrl button **4** or do not press any further button.
- » The set display color is applied.

Lights

Low-beam headlight and parking light

The low-beam headlight and the parking light are automatically switched on with the ignition.

High-beam headlight



- Push high-beam switch **1** upward.
- » High-beam headlight is switched on.
- Push high-beam switch **1** downward.
- » High-beam headlight is switched off.

Headlight flasher



- Press button **1**.
 - » High-beam headlight is switched on as long as switch is pressed (headlight flasher).

Turn indicators

Operating turn indicator



- Press turn indicator button **1** toward left.
 - » Left-hand turn indicator is switched on.
 - » Indicator light of turn indicator flashes.
- Press turn indicator button toward right.
 - » Right-hand turn indicator is switched on.
 - » Indicator light of turn indicator flashes.

- Press turn indicator button in middle position.
 - » Turn indicator is switched off.
 - » Indicator light of turn indicator off.

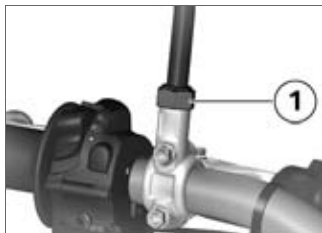
Mirrors

Adjusting mirrors



- Move mirror into desired position by twisting.

Adjusting mirror arm



- Loosen nut **1**.
- Turn mirror arm into desired position.
- Tighten the nut to the specified tightening torque, while holding the mirror arm to ensure that it does not move out of position.



Mirrors on handlebars

– 15 lb/ft (20 Nm)

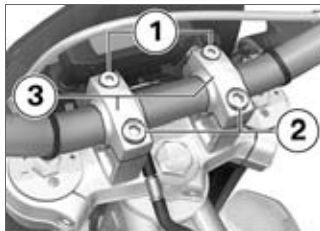
Handlebars

Adjusting handlebar spacing



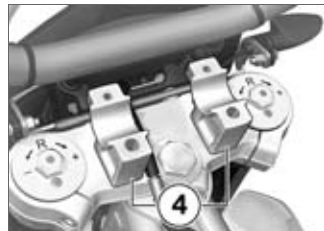
Incorrectly installed handlebar clamping blocks can separate from the fork bridge. Only install handlebar clamping blocks in the positions described in the following.◀

- Make sure ground is level and firm and park motorcycle.



- Remove the small screws **1**.

- Remove the large screws **2** while holding the handlebars in place.
- Take off the upper clamping blocks **3**.
- Remove the handlebars from the lower clamping blocks.



- Take off the lower handlebar clamping blocks **4**.



- Position of the lower handlebar clamping blocks for achieving the smallest distance to the driver.



- Position of the lower handlebar clamping blocks for achieving

the medium distance to the driver.



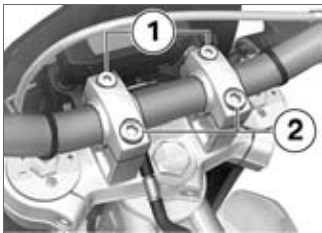
- Position of the lower handlebar clamping blocks for achieving the greatest distance to the driver.



- Place the handlebars and the upper handlebar clamping blocks **3** on the lower handlebar clamping blocks while holding the handlebars in place.
- Install large screws **2**, but do not tighten.



- Install small screws **1**, but do not tighten.
- Adjusting handlebar angle (→ 34).



- Tighten large screws **2** with torque.

 Handlebar clamping block with handlebars on fork bridge

– 28 lb/ft (38 Nm)

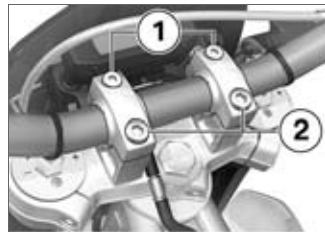
- » No gap may remain between handlebar clamping blocks on side of large screws.
- If necessary, loosen small screws **1** further and then tighten large screws **2** again with torque.
- Tighten the small screws **1** with torque.

 Handlebar clamp

– 14 lb/ft (19 Nm)

- » A gap remains between handlebar clamping blocks on side of small screws.

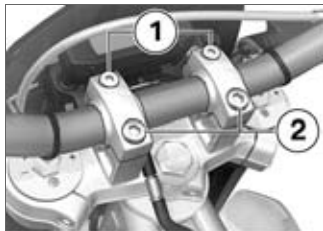
Adjusting handlebar angle



- Loosen small screws **1**.
- Loosen large screws **2**.



- Align marking for desired angle at notches **3**.



- Tighten large screws **2** with torque.

 Handlebar clamping block with handlebars on fork bridge

– 28 lb/ft (38 Nm)

- » No gap may remain between handlebar clamping blocks on side of large screws.
- If necessary, loosen screws **1** further and then tighten screws **2** again with torque.
- Tighten the small screws **1** with torque.

 Handlebar clamp

– 14 lb/ft (19 Nm)

- » A gap remains between handlebar clamping blocks on side of small screws.

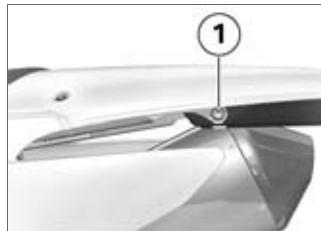
Spring preload

Adjustment on rear wheel

The spring preload on the rear wheel must be adjusted to the driver's weight. The factory setting is designed for a standard driver's weight of 187 lbs/85 kg. Minor weight differences can be compensated by adjusting the spring preload, however a corresponding spring must be installed in case of larger differences.

Adjusting static sag

- Completely unload motorcycle so that rear wheel hangs in air (e.g. using a lift stand).



- To ensure a clear read-off point during the following distance measurement, always guide the measuring tape centered over the screw **1** and read off the distance to the center of the screw.



- Measure distance **d** between screw **1** in rear fairing and upper edge of axle tube **2**.
- Remove lift stand and hold motorcycle vertical with assistance of another person.
- Remeasure spacing **d** between points **1** and **2** and calculate difference between measured values.



Static sag of spring strut

- Compression of rear-wheel springs



Static sag of spring strut

- 1.4...1.6 in (35...40 mm) (with operating materials and without load)

If the calculated value lies outside the target range:

- Adjust spring preload so that static sag is within target range.
- Adjusting spring preload for rear wheel (➡ 37).

Checking driving sag

- Adjusting static sag (➡ 35).
- Not the measured distance for the unloaded rear wheel.



- Load motorcycle with a driver in full protective clothing in normal seating position with assistance of another person. Rock up and down several times.
- Measure distance **d** between points **1** and **2** with assistance of another person. Calculate difference between this value and noted value for unloaded rear wheel.



Adjustment of spring preload dependent on loading

– Compression of rear-wheel springs

– 4.1...4.3 in (105...110 mm)
(Full tank of gas, with rider
187 lbs (85 kg))

If the calculated value lies slightly outside the target range:

- Adjust spring preload so that driving sag is within target range.
- Adjusting spring preload for rear wheel (➔ 37).

If the calculated value lies considerably outside the target range:

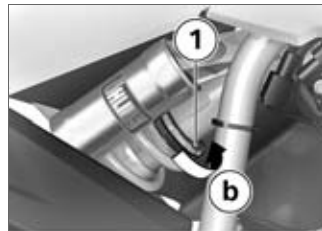
- A spring in accordance with the driver's weight must be installed. Contact a specialized workshop, preferably an Öhlins agency (www.ohlins.com).

Adjusting spring preload for rear wheel

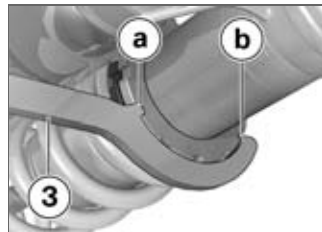
- Make sure ground is level and firm and park motorcycle.



- Adjust spring preload with adjustment rings **1** and **2**.



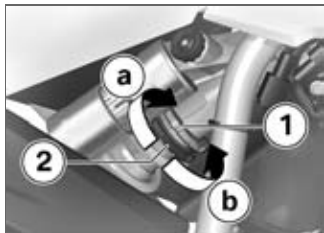
- To loosen locking, turn adjustment ring **1** with onboard tool-kit toward **b**.



- To turn the adjustment rings, mount the tools from the tool-

kit **3** so that hook **a** or hook **b** securely engages in a groove.

▷ The adjustment rings can be turned in both directions with the tool from the toolkit in the same position by selecting the corresponding hook.◀



- If you want to increase the spring preload, turn adjusting ring **2** in direction **a**.
- If you want to reduce the spring preload, turn adjusting ring **2** in direction **b**.
- To lock, tighten adjustment ring **1** with onboard toolkit in direction **a**.

 Locknut of spring base adjustment on upper spring plate

– 4 lb/ft (5 Nm)

- Adjust the damping characteristic to suit spring preload.

Damping

Setting

The damping must be adjusted to the road conditions and the spring preload.

- A rough road surface requires softer damping than a smooth road surface.
- An increase in spring preload requires firmer damping, a reduction in spring preload requires softer damping.

Adjusting front rebound stage

- Make sure ground is level and firm and park motorcycle.



- Use adjusting screws **1** on left and right to adjust the rebound stage. Make sure that the settings are identical on left and right.



- If you want to increase damping, use a screwdriver to turn

the adjusting screws on left and right in the + direction.

- If you want to reduce damping, use a screwdriver to turn the adjusting screws on left and right in the - direction.



Rebound stage, basic setting, front

- Turn top adjusting screw as far as it will go in the "+" direction, then back it off 12 clicks in the "-" direction.

Adjusting front compression stage

- Make sure ground is level and firm and park motorcycle.



- Adjust pressure stage via adjusting screws **1** on underside of front wheel forks on left and right. Make sure that the settings are identical.
- If you want to increase damping, use a screwdriver to turn the adjusting screws on left and right in the clockwise direction.
- If you want to reduce damping, use a screwdriver to turn the adjusting screws on left and right in the counterclockwise direction.



Compression stage, basic setting, front

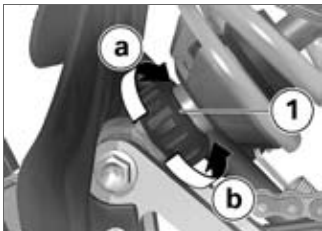
- Turn bottom adjusting screw as far as it will go in the clockwise direction, then back it off 10 clicks in the counterclockwise direction.

Adjusting rear rebound stage

- Make sure ground is level and firm and park motorcycle.



- Adjust the rebound stage by turning adjusting ring **1**.



- If you want to reduce the rebound stage, turn adjusting ring **1** in direction **a**.
- If you want to increase the rebound stage, turn adjusting ring **1** in direction **b**.



Rebound stage, basic setting, rear

- Turn lower adjustment wheel completely to right, then back 20 clicks. (Full tank of gas, with rider 187 lbs (85 kg))

Adjusting rear compression stage

- Make sure ground is level and firm and park motorcycle.



- Adjust the compression stage by turning adjusting ring **1**.



- If you want to increase the compression stage, turn adjusting ring **1** in the H direction.
- If you want to reduce the compression stage, turn adjusting ring **1** in the S direction.



Compression stage, basic setting, rear

- Turn upper adjustment wheel completely to right, then back 12 clicks (Full tank of gas, with rider 187 lbs (85 kg))

Headlight

Headlight range and spring preload

The headlight range generally remains constant due to the adjustment of the spring preload to the loading state.

Spring preload adjustment may only be insufficient when the motorcycle is very heavily loaded. In this case, the headlight range must be adjusted to the weight.

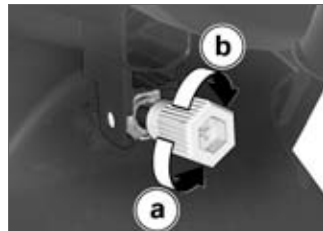
▶ If you are unsure whether the basic headlight setting is correct, consult a specialized workshop, preferably an authorized BMW Motorrad retailer. ◀

Headlight range adjustment



1 Headlight range adjustment

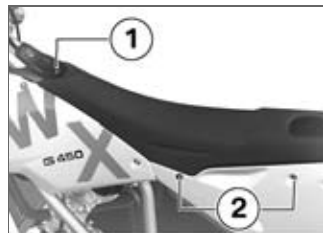
In the case of very high payloads, the available spring preload adjustment might not be adequate. To avoid blinding of oncoming traffic, the headlight adjustment can be corrected by turning the adjusting device.



- a** Increasing headlight range
- b** Decreasing headlight range

Seat

Removing seat



- Remove screw **1**.

- Remove screws **2** on left and right.



- Remove seat toward rear while lifting center fairing panel **3** at rear and guide out seat at position **4**.

Installing seat



- Lift center fairing panel **3** at rear and guide in seat at position **4**.



- Install screws **2** on left and right.

- Install screw **1** while pressing center fairing panel downward.

Riding

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Resistance to high engine speeds



Extended driving at engine speeds over 8000 rpm can result in engine damage. Avoid engine speeds over 8000 rpm.◀

Your motorcycle is not designed to be ridden for a longer time at engine speeds over 8000 rpm. Driving in the engine speed range over 8000 rpm can result in engine damage and is stored in the control unit. Warranty claims in case of engine damage with stored excess engine speeds will be rejected by BMW Motorrad.

To visualize the critical engine speed, the instrument cluster shows a corresponding warning in case a speed of 75 mph is continually exceeded.

Gear-speed assignment at 8000 rpm and standard gear ratio of rear-wheel drive:

- 1st gear: 25 mph
- 2nd gear: 37 mph
- 3rd gear: 53 mph
- 4th gear: 65 mph
- 5th gear: 78 mph

Safety instructions

Rider's equipment

Do not ride without the correct clothing. Always wear:

- Helmet
- Rider's suit
- Gloves
- Boots

This applies even to short journeys, and to every season of the year. Your authorized BMW Motorrad retailer will be happy to advise you and has the correct clothing for every purpose.

Speed

If you ride at high speed, always bear in mind that various boundary conditions can adversely affect the handling of your motorcycle:

- Settings of spring-strut and shock absorber system
- Imbalanced load
- Loose clothing
- Insufficient tire inflation pressure
- Poor tire tread
- Etc.

Top speed for tires



The maximum speed specified for the motorcycle may be higher than the maximum speed permissible for the tires. Excessively high speeds can lead to tire damage and accidents. Observe the maximum permissible speed for the tires.◀

Correct loading



Overloading and imbalanced loads can adversely affect the motorcycle's handling. Do not exceed the gross weight limit and observe the loading information.◀

Risk of poisoning

Exhaust fumes contain carbon monoxide, which is colorless and odorless but highly toxic.



Inhaling exhaust fumes therefore represents a health hazard and can even cause loss of consciousness with fatal consequences.

Do not inhale exhaust fumes. Do not run the engine in closed rooms.◀

Catalytic converter

If misfiring causes unburned fuel to enter the catalytic converter, there is a danger of overheating and damage.

For this reason, observe the following points:

- Do not run the fuel tank dry
- Stop the engine immediately if it misfires
- Use unleaded fuel only
- Comply with all specified maintenance intervals.



Unburned fuel will destroy the catalytic converter.

Note the points listed for protection of the catalytic converter.◀

Danger of overheating



Cooling would be inadequate if the engine were allowed to idle for a lengthy period with the motorcycle at a standstill: overheating would result. In

extreme cases, the motorcycle could catch fire.

Do not allow the engine to idle unnecessarily. After starting, ride off immediately.◀

Modifications for increased performance

Modifications to the motorcycle for the purpose of increased performance can result in the road permit and the insurance protection being voided. No warranty claims can be made for subsequent injuries or damage.



Modifications for increased performance can result in damage to the motorcycle and in accidents with injuries.

Do not make any modifications to the motorcycle.◀

Checklist

Use the following checklist to check important functions, settings and wear limits before you ride off:

- Brakes
- Front and rear brake fluid levels
- Clutch
- Clutch lever play
- Damping setting and spring preload
- Tread depth and tire inflation pressure

At regular intervals:

- Engine oil level (hourly)
- Brake pad wear (during every third stop for refueling)

Starting engine

- Fold up and secure side stand.
- Engage idle or pull clutch with gear engaged.



- Press starter button **2**.

▶ At extremely low temperatures it may be necessary to operate the throttle grip during starting. At ambient temperatures below 32 °F (0 °C), actuate the clutch after switching on the ignition.◀

» Engine starts.



- Press Engine-Off button **1**.
» Engine is switched off.

Running in

The first five hours

- While running in the motorcycle, vary the throttle opening and engine-speed range frequently.
- Avoid constant speeds over longer periods and accelerations up to the engine speed limit.



Top speeds during
break-in period

– ≤68 mph (≤110 km/h) (in 5th gear)

- Have the first inspection carried out after two operating hours.

Brake pads

New brake pads must be run in before they achieve their optimum friction force. This initial reduction in braking efficiency can be compensated for by exerting greater pressure on the levers.



New brake pads can extend stopping distance by a significant margin. Brake early.◀

Tires

New tires have a smooth surface. This must be roughened by riding in a restrained manner at various heel angles until the tires

are run in. This running in procedure is essential if the tires are to achieve maximum grip.



New tires have not achieved their full adhesion yet. There is a danger of accidents when driving at extreme angles. Avoid extreme angles.◀

Driving offroad

Tire inflation pressure



A tire inflation pressure reduced for offroad driving leads to poorer handling of the motorcycle on paved roads and can result in accidents. Ensure proper tire inflation pressure.◀

Rims offroad

BMW Motorrad recommends checking the rims for possible damage after riding offroad.

Dirt or mud on brakes



When the motorcycle is ridden on loose surfaces or muddy roads, the brakes may fail to take effect immediately because of dirt or moisture on the disks or brake pads. Brake early until the brakes are braked clean.◀



Driving on unpaved or dirty roads leads to increased brake pad wear.

Check the brake pad thickness more often and replace the brake pads sooner.◀

Spring preload and damping



Spring preload and damping values that have been changed for offroad use reduce handling characteristics on paved surfaces. Before returning to on-road use,

reset correct spring preload and correct damping.◀

Horn and turn indicators

BMW Motorrad recommends removing the horn for the duration of offroad driving. When using racing mufflers, the rear turn indicators should also be removed. The horn and turn indicators must be reinstalled before driving on public roads.

Increasing engine output

– with coding plug^{AS}



- Remove screws **1** and right side panel.



- Remove cable tie on cover cap **1**.



With the coding plug installed, the motorcycle is no longer approved for operation on public roads.

Do not drive on public roads with the coding plug installed.◀

- Activate output increase by installing coding plug **2** in place of cover cap **1**.



Engine output

- 41 hp (30 kW) (without coding plug)
- 52 hp (38 kW) (with coding plug)

- Before driving on public roads, remove coding plug and install cover cap.
- Secure connector with cable ties.



- Lay on right side panel and install screws **1**.

Possible gear ratios

A second chain pinion is included with the motorcycle for changing the gear ratio of the rear-wheel drive. Other pinions are available as spare parts from BMW Motorrad retailers. Please note that it may also be necessary to change the chain length depending on the gear ratio selected.



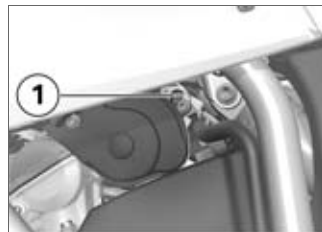
With the changed gear ratio of the rear-wheel drive, the

motorcycle is no longer approved for operation on public roads. Do not drive on public roads with a gear ratio other than that of the delivered state. ◀

The necessary work for replacing the pinion is described in the included Repair Manual on the RepROM.

Before driving on public roads, it must be ensured that the gear ratio of the rear-wheel drive matches the delivered state again (see "Technical Data").

Adjusting idle speed



- Adjust idling speed with screw **1**. Use speed measuring device to ensure proper adjustment.



Idle speed

– 1850...1950 min⁻¹

Brakes

How is the shortest braking distance achieved?

The dynamic load distribution between the front and rear wheel changes during braking. The heavier you brake, the more the front wheel is loaded. The greater the wheel load, the more braking force can be transferred. To achieve the shortest possible braking distance, the front brake must be applied quickly and with increasing force. This optimally utilizes the dynamic load increase on the front wheel. At the same time, the clutch should also be actuated. With the "forced braking" often practiced in which the brake pressure is generated as quickly as possible and with great force, the dynamic load distribution cannot follow the increased deceleration and

the braking force cannot be completely transferred to the road surface. The front wheel can lock up.

Descending mountain passes



There is a danger of the brakes fading if you use only the rear brakes when descending mountain passes. Under extreme conditions, the brakes could overheat and suffer severe damage.

Use both front and rear brakes, and make use of the engine's braking effect as well. ◀

Wet, soiled brakes

Moisture and dirt on the brake disks and the brake pads results in a decrease in the braking action.

Delayed or poorer braking action must be expected in the following situations:

- When driving in the rain and through puddles.
- After washing the motorcycle.
- When driving on roads spread with salt.
- After working on the brakes due to oil or grease residues.
- When driving on soiled roads or offroad.



Poor braking action due to moisture and dirt.

Brake until brakes are dry or clean; clean if necessary.

Brake early until the full braking action is available again. ◀

Parking your motorcycle

Placing on side stand



If the ground is soft or uneven, there is no guarantee that the motorcycle will rest firmly on the stand.

Always check that the ground

under the stand is level and firm.◀

- Switch off the engine.
- Pull handbrake lever.
- Dismount to left.



- Hold motorcycle with left hand while removing rubber holder **1** with right hand.

! The unloaded side stand automatically folds up and the motorcycle will fall over. Lock the side stand until the motorcycle is standing firmly.◀

- Fold down side stand as far as possible and hold with right foot.

! The side stand is designed to support only the weight of the motorcycle.

Do not lean or sit on the motorcycle with the side stand extended.◀

- Slowly place motorcycle on side stand.

! If the motorcycle is on the side stand, the surface of the ground will determine whether it is better to turn the handlebars to the left or right. However, the motorcycle is more stable on a level surface with the handlebars turned to the left than with the handlebars turned to the right.

On level ground, always turn the handlebars to the left to set the steering lock.◀

- Turn handlebars to full left or right lock position.
- Check that the motorcycle is standing firmly.

▶ On a grade, the motorcycle should always face uphill; select 1st gear.◀

- Lock steering lock.

Remove from side stand

- Unlock steering lock.
- Position motorcycle upright.
 - » Side stand automatically folds up.



- Secure side stand with rubber holder **1**.
- Grasp handlebars with both hands.
- Pull handbrake lever.
- Swing right leg over seat and sit down.

Refueling

 Fuel is highly flammable. Fire at the fuel tank can result in fire and explosion. Do not smoke. Never bring a naked flame near the fuel tank.◀

 Fuel expands when exposed to heat. When the tank is overfilled, fuel can escape and get onto the road. This results in a danger of falling. Do not overfill the fuel tank.◀

 Fuel attacks plastic surfaces, making them cloudy or unattractive.

Wipe off any fuel that gets onto plastic parts immediately.◀

 Leaded fuel will destroy the catalytic converter. Use only unleaded fuel.◀

- Make sure ground is level and firm and park motorcycle.



- Remove fuel cap cover **1**.



- Open tank cap **2** by turning counterclockwise.
- Fill tank with fuel of quality listed below.



Recommended fuel quality

- 89 AKI (95 ROZ/RON) (Super unleaded)



Usable fuel quantity

- Approx. 2.1 gal (Approx. 8 l)



Reserve fuel quantity

- min Approx. 0.8 quarts (min Approx. 0.75 l)

- Close fuel tank cap by turning clockwise.



- Replace fuel cap cover **1**.

Securing motorcycle for transport

- Protect all components along which straps are routed against scratching. For example, use adhesive tape or soft cloths.



The motorcycle can tip away to the side and fall over.

Secure the motorcycle against tipping away to the side.◀

- Push motorcycle onto transport surface, and do not place on side stand or center stand.



Components can be damaged.

Do not pinch components, e.g. brake lines or wiring harnesses. ◀

- Secure straps at front on both sides on lower fork bridge and tension.



- Secure straps at rear on both sides on frame and tension.
- Tension all straps evenly; motorcycle should be compressed as greatly as possible.

Accessories

General instructions..... 56

General instructions

BMW Motorrad recommends the use of parts and accessories for your motorcycle that are approved by BMW for this purpose. Your authorized BMW Motorrad retailer is the right place to go for genuine BMW parts and accessories, other BMW approved products, and expert advice on their installation and use.

These parts and products have been tested by BMW for safety, function and suitability. BMW accepts product liability for these products.

Conversely, BMW is unable to accept any liability whatsoever for parts and accessories which it has not approved.



BMW Motorrad cannot examine or test each product of outside origin to ensure that it can be used on or in connection with BMW motorcycles without

constituting a safety hazard. Nor is this guarantee provided when the official approval of a specific country has been granted. Tests conducted by these instances cannot make provision for all operating conditions experienced by BMW motorcycles and, consequently, they are not sufficient in some circumstances.

Use only parts and accessories approved by BMW for your motorcycle. ◀

Whenever you are planning modifications, comply with all the legal requirements. The motorcycle must not infringe on national road-vehicle construction and use regulations.

Maintenance

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General instructions

The 'Maintenance' chapter describes work involving the checking and replacement of wear parts that can be performed with a minimum of effort.

If special tightening torques are to be taken into account for assembly, these are listed. An overview of all required tightening torques is contained in the chapter "Technical Data".

The following provides an overview of all maintenance work that must be conducted after the corresponding number of operating hours. Work which must be carried out before and after offroad riding is also listed.

Information on additional maintenance and repair work is contained in the Repair Manual on CD-ROM (RepROM) also included with your motorcycle.

Special tools and thorough specialized knowledge are required to carry out some of the work described here. If you are in doubt, consult a certified workshop, preferably your authorized BMW Motorrad retailer.

Regular Maintenance

Running-in check

The running-in check must be carried out after two operating hours by a specialized workshop, preferably by a BMW Motorrad retailer. The detailed description is contained in the Repair Manual (on RepROM) in the section "Inspection instructions".

Work to be carried out

- Reading out fault memory
- Checking air filter insert
- Checking clean area of air filter for soiling
- Checking fuel system

- Checking exhaust system
- Checking threaded fasteners of frame, side stand and fairings for firm seating
- Checking cooling system
- Checking front and rear brake pads and brake disk for wear
- Visual check of brake lines, brake hoses and connections
- Checking front and rear brake fluid level
- Checking spring strut for firm seating and leaks
- Checking steering-head bearing
- Checking and bleeding telescopic fork
- Checking rear wheel swinging arm and bearing
- Lubricating swinging-fork pivot
- Checking drive chain, chain guide, sprocket and pinion
- Checking chain tension
- Checking tires and wheels

- Check throttle linkage for ease of movement, rubbing and kinking spots and for clearance

Basic service every ten operating hours

Basic service must be carried out after every ten operating hours. Please contact a specialized workshop for this purpose, preferably an authorized BMW Motorrad retailer. The detailed description is contained in the Repair Manual (on RepROM) in the section "Inspection instructions".

Work to be carried out

- All work of the running-in check, plus:
- Changing engine oil and filter
- Replacing air filter insert
- Checking valve clearance (after the first ten operating hours, then every 20 additional operating hours)

- Checking pressure loss (after the first ten operating hours, then every 20 additional operating hours)
- Checking spark plug
- Checking clutch cable and clutch lever play
- Checking charging state of battery

Extended service every 70 operating hours

Extended service must be carried out after every 70 operating hours. Please contact a specialized workshop for this purpose, preferably your authorized BMW Motorrad retailer. The detailed description is contained in the Repair Manual (on RepROM) in the section "Inspection instructions".

Work to be carried out

- All basic service work, plus:
- Conducting engine service
- Changing brake fluids
- Conducting service on fork leg
- Conducting service on spring strut

Maintenance for offroad use

Demanding requirements

Offroad use places demanding requirements on the motorcycle. To ensure fault-free operation and prevent premature wear, all required service and cleaning work must be carried out in accordance with the specifications of BMW Motorrad.

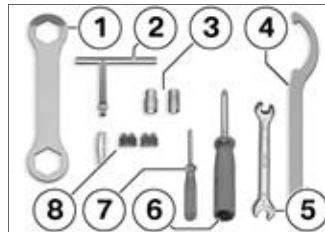
Under extreme operating conditions (e.g. in water and mud), above-average wear may result, which necessitates continuous checking of the wearing parts. In particular the chain, spring strut

and telescopic fork should be cleaned prior to every use.

Maintenance work for sports and competitive use

- Check air filter insert and housing of intake air muffler.
- Check cooling system.
- Check brake system.
- Check throttle operation for damage, ease of movement and adjustment.
- Check clutch operation for damage, ease of movement and adjustment.
- Check steering-head bearing.
- Check and adjust telescopic fork.
- Check and adjust spring strut.
- Check wheels and tires.
- Check rear wheel swinging arm and bearing.
- Check frame.
- Check drive chain, chain guide, sprocket and pinion.
- Checking chain sag (➔ 69).
- Adapt gear ratio.
- Adjust controls.
- Check alignment of rear wheel cover.
- Lubricate moving components on motorcycle.
- Lock threaded fastener of battery terminals.
- Check threaded fasteners and components for firm seating.
- Adjusting idle speed (➔ 49).
- Clean motorcycle, especially:
 - Cleaning slider tubes (➔ 70).
 - Cleaning spring strut (➔ 71).
- Lubricating chain (➔ 69).
- Rinse off dirt and deposits on brake calipers and brake pads at front and rear with plenty of water (garden hose).

Onboard toolkit



- 1** Box wrench
Wrench size: 27/30 mm
- 2** T-handle
Mount of socket wrench insert
- 3** Socket wrench insert, Allen head
Wrench sizes 8 and 10 mm
- 4** Hook wrench
- 5** Open-ended wrench
Wrench size: 10/13 mm
- 6** Reversible screwdriver with Phillips and straight blade

- 7 Small screwdriver with straight blade
- 8 Spare fuses with gripper
Miniature fuses, 7.5 A and 10 A

Engine oil

Checking engine oil level

- Check engine oil hourly if possible.



The engine can seize if the oil level is low, and this can lead to accidents.

Always make sure that the oil level is correct.◀



The oil level varies with the temperature of the oil. The higher the temperature, the higher the level of oil in the sump. Checking the oil level with the engine cold or after a short trip leads to misinterpretations and therefore to incorrect oil fill quantities.

To ensure that the display of the

engine oil level is correct, only check the oil level after a longer trip.◀

- Allow engine to idle until fan starts up, then allow to continue running for an additional minute.
- Switch off the engine.
- Make sure ground is level and firm and hold motorcycle at operating temperature vertically.



- Read off the oil level from the display **1**.



Specified level of engine oil

– between MIN and MAX marking (Vehicle is standing upright)

If oil level is below minimum quantity:

- Topping up engine oil (→ 62).

If oil level is above maximum quantity:

- Have oil level corrected by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Topping up engine oil

- Make sure ground is level and firm and park motorcycle.



- Wipe area around fill location clean.
- Remove cap **1** from engine-oil fill location by turning counter-clockwise.

 Both too little and too much engine oil can lead to engine damage.

Always make sure that the oil level is correct.◀

- Add engine oil up to specified level.

- Checking engine oil level (→ 61).
- Install cap of engine oil fill location by turning clockwise.

Brake system

Brake safety

A fully functional brake system is a basic requirement for the road safety of your motorcycle.

Do not ride the motorcycle if you have any doubts about the dependability of the brake system.

In this case, have the brake system checked by a specialized workshop, preferably by an authorized BMW Motorrad retailer.

 Incorrect working practices endanger the reliability of the brakes.

Have all work on the brake system carried out by specialists.◀

Checking brake operation

- Pull handbrake lever.
 - » Pressure point must be clearly perceptible.
- Press footbrake lever.
 - » Pressure point must be clearly perceptible.

Clear resistance point cannot be felt:

- Bleed brake circuit and check brake system for damage.

Brake pads

Checking front brake pad thickness

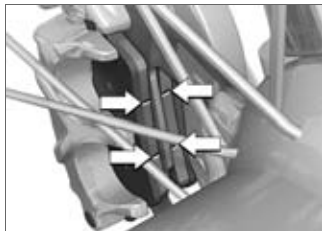
 Dropping below the minimum pad thickness leads to reduced braking performance and may result in damage to the brakes.

In order to ensure the operating reliability of the brake system, make sure that the brake pads are not worn beyond their minimum thickness.◀

- Make sure ground is level and firm and park motorcycle.



- Check brake pad thickness **1** with visual inspection. Viewing direction: above the wheel axle through the fork tubes onto the brake caliper. Turn front wheel until outer brake pad is visible through brake disk if necessary.



Front brake-pad wear limit

- min 0.04 in (min 1.0 mm)
(Only friction material without carrier plate. Wear markings (grooves) must be clearly visible.)

If the wear indicating mark is no longer clearly visible:

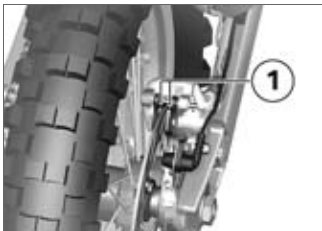
- Have the brake pads replaced by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Checking brake pad thickness at rear

 Dropping below the minimum pad thickness leads to reduced braking performance and may result in damage to the brakes.

In order to ensure the operating reliability of the brake system, make sure that the brake pads are not worn beyond their minimum thickness. ◀

- Make sure ground is level and firm and park motorcycle.



- Check brake pad thickness **1** with visual inspection.



Rear brake-pad wear limit

– min 0.04 in (min 1.0 mm)
(Only friction material without
carrier plate)

If brake pads are worn:

- Have the brake pads replaced by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Brake fluid

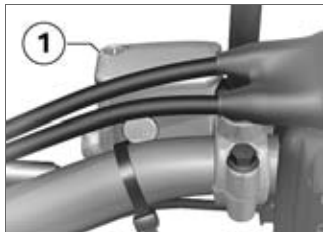
Checking front brake fluid level



A low fluid level in the brake reservoir can allow air to penetrate the brake system. This significantly reduces braking efficiency.

Check brake fluid level regularly. ◀

- Make sure ground is level and firm and hold motorcycle vertically.
- Move handlebars into straight-ahead position.



- Read off brake fluid level at front brake-fluid reservoir **1**.

▶ In the event of brake pad wear, the brake fluid level in the brake-fluid reservoir falls.◀



Front brake fluid level
(visual check)

– Brake fluid DOT4

– The brake fluid level must not fall below the MIN mark.
(Brake-fluid reservoir horizontal)

If brake fluid level drops below permissible level:

- Have the defect corrected as soon as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Checking rear brake fluid level



A low fluid level in the brake reservoir can allow air to penetrate the brake system. This significantly reduces braking efficiency.

Check brake fluid level regularly.◀

- Make sure ground is level and firm and hold motorcycle vertically.



- Read off brake fluid level at reservoir **1**.

▶ The brake fluid level in the brake-fluid reservoir drops due to brake pad wear.◀



Rear brake fluid level (visual check)

– Brake fluid DOT4

– No air bubbles may be visible in the sight glass. (Vehicle is standing upright.)

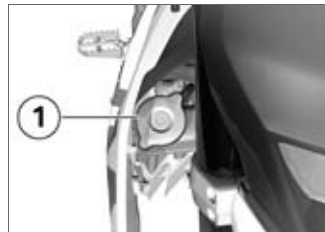
If brake fluid level drops below permissible level:

- Have the defect corrected as soon as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Coolant

Checking coolant level

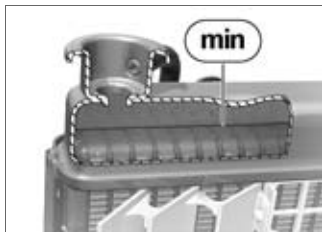
- Make sure ground is level and firm and hold motorcycle vertically.



! Danger of burns from escaping coolant.

The hot cooling system is pressurized. Allow the coolant to cool before opening the radiator cap.◀

- Open fuel tank cap **1** of cooled radiator by turning counter-clockwise.



Coolant, specified level

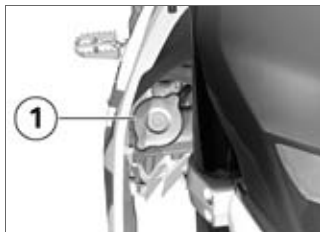
- Radiator antifreeze
- The upper plates are just covered with coolant (MIN level)
- 0.16 in (4 mm) (MAX level, over the upper plates)

If coolant level is too low:

- Add coolant.
- Close radiator cap by turning clockwise.

Topping up coolant

- Make sure ground is level and firm and park motorcycle.



Danger of burns from escaping coolant.

The hot cooling system is pressurized. Allow the coolant to cool before opening the radiator cap. ◀

- Open fuel tank cap **1** of cooled radiator by turning counter-clockwise.
- Pour in coolant up to specified level using a suitable funnel.
- Checking coolant level (➔ 66).

- Close radiator cap by turning clockwise.

Clutch

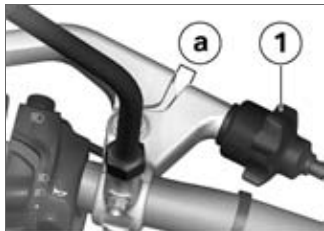
Checking clutch operation

- Pull the clutch lever.
- » Pressure point must be clearly perceptible.

If no clear pressure point can be felt:

- Have the clutch checked by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Checking clutch lever play



- Pull clutch lever until resistance is felt.
- Measure clutch lever play **a**.



Clutch lever play

- 0.04 in (1 mm) (Handlebars straight ahead, between handlebar fitting and clutch lever)

If clutch lever play is outside tolerance:

- Adjust clutch hand lever play with adjusting screw **1**.

Tires

Checking tire tread depth



The handling of your motorcycle can already change for the worse before the legally prescribed minimum tread depth is reached.

Have tires replaced even before the minimum tread depth is reached. ◀

- Make sure ground is level and firm and park motorcycle.
- Measure tire tread depth in main tread grooves with wear indicating marks.



Tires have wear indicators integrated into the main tread grooves. If the tire tread has worn down to the level of the marks, the tire is completely worn. The locations of the marks are indicated on the edge of the tire, e.g. by the letters TI, TWI or by an arrow. ◀

When the minimum tread depth is reached:

- Replace tires concerned.

Rims

Checking rims

- Make sure ground is level and firm and park motorcycle.
- Visually inspect rims for defects.
- Have damaged rims checked and, if necessary, replaced by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Checking spokes

- Make sure ground is level and firm and park motorcycle.
- Sweep across spokes with a screwdriver handle or similar item, paying attention to resulting series of notes.

If you hear an uneven series of notes:

- Have spokes checked by a certified workshop, preferably an authorized BMW Motorrad retailer.

Chain

Lubricating chain



Dirt, dust and insufficient lubrication will considerably shorten the service life of the drive chain.

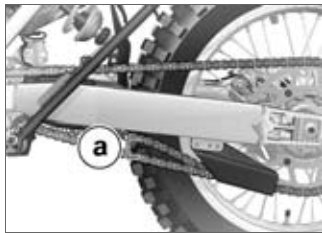
Clean and lubricate the drive chain regularly.◀

- Lubricate drive chain at least every five operating hours. After driving through water or dust and dirt, carry out lubrication earlier accordingly.
- Switch off ignition and engage Neutral.

- Clean drive chain with suitable cleaning agent, dry and apply chain lubricant.
- Wipe off excess lubricant.

Checking chain sag

- Make sure ground is level and firm and park motorcycle.
- Turn the rear wheel until the position with the lowest chain sag is reached.



An insufficient chain tension will result in loud chain noises and increased chain wear. The design of this motorcycle permits driving with a minimal

chain sag. Be sure to comply with the specified chain sag.◀

- Press chain upward and downward using a screwdriver and measure difference **a**.



Chain sag

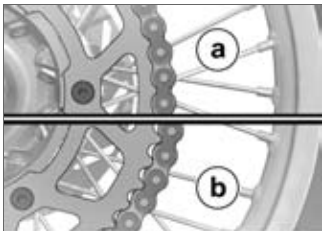
– 0.2 in (5 mm)

If the measured value is outside the permissible tolerance:

- Adjust chain sag as described on included RepROM.

Checking chain wear

- Make sure ground is level and firm and park motorcycle.



Increased wear.

If wear is identified on a component of the sprocket set, the entire set must be replaced.◀

- Pull chain toward rear at rear-most point of chain sprocket.
- » The teeth tips are located inside the chain links (a): The chain is OK.
- » The chain is being pulled out over the teeth tips (b): Consult an authorized workshop, preferably a BMW Motorrad partner.

Telescopic forks

Cleaning slider tubes

- Make sure ground is level and firm and park motorcycle.



- Wash out space between fork guards and slider tubes with plenty of water.
- In particular, make sure that already dried dirt in lower area **1** of slider tubes is removed. For improved accessibility, remove screws **2** and take off fork guard if necessary.
- Clean slider tubes on left and right with a damp cloth. To do

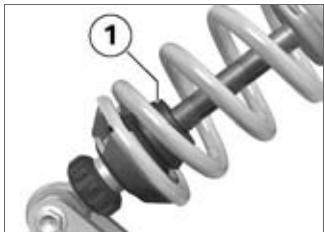
this, pull cloth between fork guard and slider tube on front side.



- Slide down sealing boots **1** on left and right.
- Remove dirt on sealing boots and slider tubes with dry cloth.
- Fill groove of sealing boots with grease.
- Molykote 111
- Slide up sealing boots.

Suspension strut

Cleaning spring strut



- Rinse off dirt and deposits with plenty of water (garden hose).
- Clean spring strut with a gentle cleaning agent.
- Slide up rubber stop **1** and clean area below it.
- Spray spring strut with oil after cleaning.
- Sliding and penetrating oil

Lamps

General instructions



A defective bulb places your safety at risk because it is easier for other users to oversee the motorcycle. Replace defective bulbs as soon as possible; always carry a complete set of spare bulbs if possible.◀



The bulb is pressurized and can cause injury if damaged. Wear eye and hand protection when replacing bulbs.◀



An overview of the bulb types installed in your motorcycle is provided in the chapter "Technical Data".◀



Do not touch the glass of new bulbs with your fingers. For installation, use a clean, dry cloth. Dirt deposits, in particular oil and grease, interfere

with heat radiation from the bulb. Overheating and therefore short service life of the bulbs are the consequence.◀

Replacing low-beam/high-beam bulb



- Release clamping straps **1** of bulb mask on left and right.
- Pull bulb mask forward on upper edge.



- Disconnect plug **1**.
- Pull off rubber cap **2**.



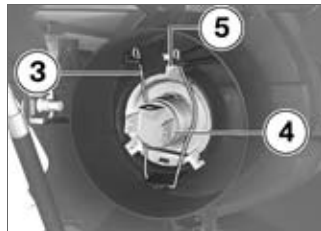
- Detach top and bottom of spring clip **3** from catch and fold to the side.
- Remove bulb **4**.

- Replace defective bulb.



Bulb for low-beam and high-beam headlight

– HS1 / 12 V / 35 W / 35 W



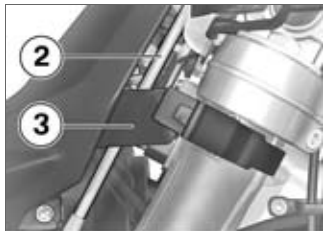
- Insert bulb **4** while ensuring correct position of lug **5**.
- Insert spring clip **3** into catch.



- Mount rubber cap **2**.
- Insert plug **1**.



- Pull retaining straps **1** around fork tubes and close.



- Make sure that brake hose **2** is routed within bulb mask **3**.

Replacing parking light bulb



- Pull bulb socket **1** out of the headlight housing.



- Pull bulb **2** out of socket **1**.
- Replace defective bulb.



Bulb for parking light

– W5W / 12 V / 5 W



- Push bulb **2** into socket **1**.



- Insert bulb socket **1** into headlight housing.

Replacing front and rear turn indicator bulbs



If it is not standing firmly, the motorcycle could topple in the course of the operations described below.

Make sure that the motorcycle is steady on its stand.◀

- Make sure ground is level and firm and park motorcycle.



- Remove screw **1**.



- Pull lens on screw connection side out of mirror housing.



- Press bulb **2** into socket and turn counterclockwise to remove.

- Replace defective bulb.



Bulbs for flashing turn indicators, front

– H6W / 12 V / 6 W



- Press bulb **2** into fitting and install turning clockwise.



- Insert inside end of lens into lamp housing and close.



- Install screw **1**.

Fuses

Replacing secondary fuse



- Open connector **1**.



- To do this, press together retaining clips **2** at top and bottom and pull off connector.



- Replacing defective fuse



Fuse for lighting system

– 10 A



Fuse for radiator fan

– 7.5 A



- Close connector **1**.

Replacing main fuse



- Disconnect connector **1**. Open cover **2** of starter relay.



- To do this, press together retaining clips **3** on left and right and lift cover.



- Replace defective fuse **4**. Use spare fuse **5** if necessary.



Main fuse

– 30 A



- Lay on cover **2**. Close connector **1**.

Battery

Maintenance instructions

Proper care, charging and storage increases the service life of the battery. The following points should be observed:

- Keep the surface of the battery clean and dry
- Do not open the battery
- Do not top up with water
- Observe the following charging information when charging the battery
- Do not turn the battery upside down

Charging battery

- Disconnect battery from on-board electrical system.
- Charge battery using a suitable charger.
- Comply with operating instructions of charger.
- Once battery is fully charged, disconnect charger's terminal clips from battery terminals.

▶ In the case of longer periods when the motorcycle is not being used, the battery must be recharged regularly. See the instructions for caring for your battery. Always fully recharge

the battery before returning it to use. ◀

Instrument cluster Replacing battery of instrument cluster



- Pull bulb socket **1** out of the headlight housing.



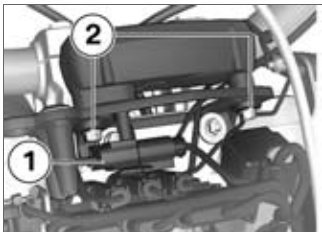
- Open clamping straps **2** on left and right.



- Remove screws **3**.

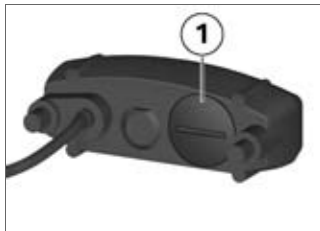


- Disconnect plug **4**.
- Remove bulb holder with front mudguard.



- Disconnect connector **1**.
- Remove screws **2**.

- Pull instrument cluster upward out of holders.

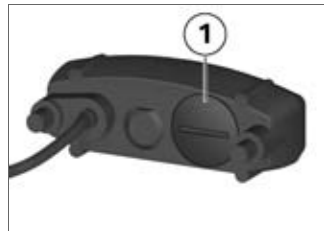


- Open battery compartment cover **1** by turning counter-clockwise.
- Remove battery.
- Replace drained battery.

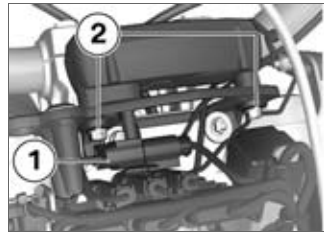


Battery design and nominal voltage

- CR 2430 lithium
- 3 V



- Mount battery compartment cover **1** and close by turning clockwise.



- Mount instrument cluster in holders.
- Install screws **2**.
- Close connector **1**.



- Lay on bulb holder with front mudguard.
- Close connector **4**.



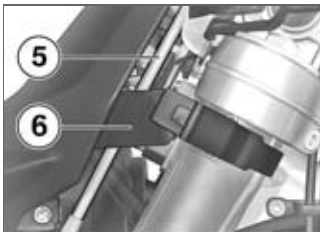
- Pull clamping straps **2** on left and right around fork tubes and close.



- Insert bulb socket **1** into headlight housing.



- Install screws **3**.



- Make sure that brake hose **5** is routed within bulb mask **6**.

Care

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Care products

BMW Motorrad recommends that you use cleaning and care products available at your authorized BMW Motorrad retailer. BMW CareProducts have been materials tested, laboratory tested, and field tested and provide optimum care and protection for the materials used in your motorcycle.

 The use of unsuitable cleaning and care products can damage motorcycle components.

For cleaning, do not use any solvents such as nitro-thinners, cold cleaning agents, fuel or similar, and do not use cleaning agents that contain alcohol.◀

Washing your motorcycle

BMW Motorrad recommends that you use BMW Insect Remover to soften and wash off insects and stubborn dirt from painted parts before washing the motorcycle.

To prevent stains, do not wash the motorcycle immediately after it has been exposed to bright sunlight and do not wash it in the sun.

Make sure that the motorcycle is washed frequently, especially during the winter months.

To remove road salt, clean the motorcycle with cold water immediately after every trip.

 After washing the motorcycle, after driving through water or in the rain, braking can be delayed due to damp brake disks and brake pads. Brake early until the brake disks

and pads are dry or braked until dry.◀

 Warm water intensifies the effect of salt.

Only use cold water to remove road salt.◀

 The high pressure of steam cleaners can damage seals, the hydraulic brake system, the electrical system and the seat. Do not use a steam jet or high-pressure cleaning equipment.◀

Cleaning sensitive motorcycle parts

Plastics

Clean plastic parts with water and BMW plastic care emulsion. This includes in particular:

- Windshields and wind deflectors
- Headlight lens made of plastic
- Glass of instrument cluster
- Black, unpainted parts

 If plastic parts are cleaned using unsuitable cleaning agents, the surfaces can be damaged.

Do not use cleaning agents that contain alcohol, solvents or abrasives to clean plastic parts. 'Fly sponges' or sponges with hard surfaces can also lead to scratches.◀

 Soften stubborn dirt and dead insects by covering the affected areas with a wet cloth.◀

Radiator

Clean the radiator regularly to prevent overheating of the engine due to inadequate cooling. For example, use a garden hose with low water pressure.

 Cooling fins can be bent easily.

When cleaning the radiator, ensure that the fins are not bent.◀

Rubber

Treat rubber components with water or BMW rubber protection coating agent.

 Using silicone sprays for the care of rubber seals can cause damage.

Do not use silicon sprays or other care products that contain silicon.◀

Storing motorcycle

- Clean the motorcycle.
- Remove battery.
- Spray the brake and clutch lever, and the main and side stand pivots with a suitable lubricant.
- Coat bare metal and chrome-plated parts with an acid-free grease (e.g. Vaseline).
- Park motorcycle in a dry room so that both wheels are unloaded. Appropriate auxiliary stands are available at your au-

thorized BMW Motorrad retailer.

 Before putting the motorcycle into storage, have the engine oil and the oil filter element changed by a specialist workshop, preferably an authorized BMW Motorrad retailer. Combine work for storing/returning to use with maintenance service or an inspection.◀

Returning motorcycle to use

- Remove the protective wax coating.
- Clean the motorcycle.
- Install a charged battery.
- Before starting: Observe checklist.

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Threaded fasteners

Mirror arm		Value	Valid
Mirrors on handlebars			
Locknut, M10 x 1.25		15 lb/ft (20 Nm)	
Handlebars		Value	Valid
Handlebar clamping block with handlebars on fork bridge			
M10 x 70		28 lb/ft (38 Nm)	
Handlebar clamp			
M8 x 30		14 lb/ft (19 Nm)	
Suspension strut		Value	Valid
Locknut of spring base adjustment on upper spring plate			
		4 lb/ft (5 Nm)	

Engine

Engine design	Single-cylinder, four-stroke engine, DOHC control, 4 valves, 2 actuated by bucket tappets and 2 by trailing valve levers, liquid cooling for cylinders and cylinder head, Integrated coolant pump and 5-speed transmission.
Displacement	449.5 cc (449.5 cm ³)
Cylinder bore	3.9 in (98 mm)
Piston stroke	2.3 in (59.6 mm)
Compression ratio	12:1
Rated output	41 hp (30 kW), at engine speed: 7000 min ⁻¹
– with coding plug ^{AS}	52 hp (38 kW), at engine speed: 9000 min ⁻¹
– with reduced output ^{OA}	26 hp (19 kW), at engine speed: 7500 min ⁻¹
Torque	32 lb/ft (43 Nm), at engine speed: 6500 min ⁻¹
– with coding plug ^{AS}	32 lb/ft (44 Nm), at engine speed: 7800 min ⁻¹
– with reduced output ^{OA}	22 lb/ft (30 Nm), at engine speed: 5750 min ⁻¹
Idle speed	1850...1950 min ⁻¹

Fuel

Recommended fuel quality	89 AKI (95 ROZ/RON), Super unleaded
Usable fuel quantity	Approx. 2.1 gal (Approx. 8 l)
Reserve fuel quantity	min Approx. 0.8 quarts (min Approx. 0.75 l)

Engine oil

Oil consumption	max 0.1 quart/hour (max 0.1 l/h)
Engine oil capacity	max 1.2 quarts (max 1.15 l), with filter change
Products recommended by BMW Motorrad	
Castrol GPS SAE 10W-40	$\geq -4^{\circ}\text{F}$ ($\geq -20^{\circ}\text{C}$)
Oil grades	Mineral engine oils with the API classification SF to SH. BMW Motorrad does not recommend using oil additives, as these can worsen the operation of the clutch. Ask your BMW Motorrad retailer for engine oils suitable for your motorcycle.

Permissible viscosity classes

SAE 5 W-40	$\geq -22^{\circ}\text{F}$ ($\geq -30^{\circ}\text{C}$), Operation at cold temperatures
SAE 10 W-40	$\geq -4^{\circ}\text{F}$ ($\geq -20^{\circ}\text{C}$), Operation at low temperatures
SAE 15 W-40	$\geq 14^{\circ}\text{F}$ ($\geq -10^{\circ}\text{C}$)

Clutch

Clutch design	Multi-disk oil-bath clutch
---------------	----------------------------

Transmission

Transmission design	Claw-shifted 5-speed transmission integrated in engine block
Transmission gear ratios	2.618, Primary gear ratio 2.462 (13:32 teeth), 1st gear 1.706 (17:29 teeth), 2nd gear 1.350 (20:27 teeth), 3rd gear 1.043 (23:24 teeth), 4th gear 0.880 (25:22 teeth), 5th gear

Rear-wheel drive

Type of final drive	Chain drive
Type of rear suspension	Two-arm aluminum swinging arm
Number of teeth of rear-wheel drive (Pinion/sprocket)	15/48

Running gear

Front wheel

Type of front suspension	Upside-down telescopic forks
Spring travel, front	11.8 in (300 mm), On wheel

Rear wheel

Type of rear suspension	Two-arm aluminum swinging arm
Type of rear suspension	Central spring strut with the coil pressure spring, rebound and compression adjustable
Spring travel, rear	12.6 in (320 mm), On wheel

Brakes

Type of front brake	Hydraulically disk brake with 2-piston floating caliper
Brake-pad material, front	Sintered metal
Type of rear brake	Hydraulically disk brake with 1-piston floating caliper
Brake-pad material, rear	Sintered metal

Wheels and tires

Recommended tire combinations	You can obtain an overview of the current tire approvals from your authorized BMW Motorrad retailer or on the Internet at www.bmw-motorrad.com .
-------------------------------	--

Front wheel

Front wheel design	Spoke wheel
Front-wheel rim size	1.60" x 21"
Front tire designation	90/90 - 21

Rear wheel

Rear wheel design	Spoke wheel
Rear-wheel rim size	2.15" x 18"
Rear tire designation	140/80 - 18

Tire inflation pressures

Tire pressure, front	17.4 psi (1.2 bar), Single rider, with cold tire
Tire pressure, rear	17.4 psi (1.2 bar), Single rider, with cold tire
Tire pressure for sport riding	14.5 psi (1.0 bar)

Electrical system**Fuses**

Main fuse	30 A
Fuse for lighting system	10 A
Fuse for radiator fan	7.5 A

Battery

Battery design	AGM (Absorptive Glass Mat) battery.
Battery voltage	12 V
Battery capacity	7 Ah

Spark plugs

Spark plugs, manufacturer and designation	NGK CR 9 EKB
Electrode gap of spark plug	0.03±0.01 in (0.8±0.1 mm), New

Bulbs

Bulb for low-beam and high-beam headlight	HS1 / 12 V / 35 W / 35 W
Bulb for parking light	W5W / 12 V / 5 W
Bulb for taillight/brake light	LED / 12 V
Bulbs for flashing turn indicators, front	H6W / 12 V / 6 W

Frame

Frame design	Steel bridge frame of high-strength stainless steel with bolted-on rear frame
Location of vehicle identification number	Right steering head

Dimensions

Motorcycle length	86.6 in (2200 mm), Front wheel to rear wheel cover
Motorcycle height	58.1 in (1475 mm), without driver at DIN unladen weight, across mirrors
Motorcycle width	31.7 in (806 mm), Across mirrors
Driver's seat height	
– with low seat ^{OA}	36.8 in (935 mm), without driver at unladen weight
	37.6 in (955 mm), without driver at unladen weight

Weights

Unladen weight	267 lbs (121 kg), DIN unladen weight, ready for road, 90 % full tank of gas, without OE
Permissible gross weight	617 lbs (280 kg)
Maximum payload	351 lbs (159 kg)

Riding specifications

Top speed	90 mph (145 km/h)
– with reduced output ^{OA}	73 mph (117 km/h)

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Reporting safety defects

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying BMW of North America, LLC.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or BMW of North America, LLC.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or write to: Administrator, NHTSA, 400 Seventh Street, SW., Washington, DC 20590. You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

BMW Motorrad Service

Advanced technology requires specially adapted methods of maintenance and repair.



If this maintenance and repair work is performed inexpertly, there is a danger of damage and associated safety risks. BMW Motorrad recommends having corresponding work on your motorcycle carried out by a specialized workshop, preferably by an authorized BMW Motorrad retailer. ◀

You can obtain information on the contents of the BMW Services from your BMW Motorrad retailer.

Have all maintenance and repair work carried out confirmed in the "Service" chapter in this manual. Your authorized BMW Motorrad retailer is supplied with all the latest technical information and therefore possesses the neces-

sary technical know-how. BMW Motorrad recommends that you refer any questions about your motorcycle to your authorized BMW Motorrad retailer.

BMW Motorrad Service Quality

BMW Motorrad means not only quality workmanship and high reliability, but also an outstanding quality of service.

To ensure that your BMW is always in optimum condition, BMW Motorrad recommends that you adhere to the regular maintenance schedule for your motorcycle, preferably having the work done by your authorized BMW Motorrad retailer. For generous treatment of claims submitted after the warranty period has expired, evidence of regular maintenance is essential.

Certain signs of wear, moreover, may otherwise not be noticed

until it is too late to correct them at moderate cost. The workshop personnel at BMW Motorrad retailers have thorough knowledge of your motorcycle and can take action before minor problems can turn into major trouble. By having the necessary repairs done properly and in good time, you save time and money in the long run.

BMW Motorrad Mobility Services - onsite breakdown service

With all new BMW motorcycles, BMW Motorrad Mobility Services protect you in the event of a breakdown with an extensive range of services such as breakdown assistance, motorcycle transportation etc. (differing regulations are possible in individual countries). In the case of a breakdown, you contact the Mobile Service of BMW Motorrad. Here you will find our specialists

ready to help with both advice and action.

Important country-specific contact addresses and the relevant after-sales service organization phone numbers as well as information on Mobile Service and the retail network can be found in the "Service Kontakt/Service Contact" brochures.

BMW Motorrad Service Network

With its worldwide service network, BMW Motorrad can attend to you and your motorcycle in over 100 countries around the globe. In Germany alone, there are approximately 200 authorized BMW Motorrad retailers ready to assist you.

All information concerning the international dealership network can be found in the brochure "Service Contact Europe" or

"Service Contact Africa, America, Asia, Australia, Oceania".

Maintenance work

BMW Pre-Delivery Check

The BMW pre-delivery check is carried out by your authorized BMW Motorrad retailer before it turns over the motorcycle to you.

BMW Running-in Check

The BMW running-in check must be carried out after two operating hours.

BMW Service

The BMW service must be carried out after every ten operating hours. The scope of the service may vary depending on the total operating hours driven by the motorcycle. Your BMW Motorrad retailer confirms that the service has been performed and enters the operating hours for the next service.

All maintenance work is described on the included RepROM.

Confirmation of maintenance work

BMW Pre-Delivery Check

Conducted

on _____

Stamp, Signature

BMW Running-in Check

Conducted

after hrs. _____

Odometer reading _____

Next service
at the latest

after hrs. _____

Stamp, Signature

BMW Service

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature**BMW Service**

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature**BMW Service**

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature

BMW Service

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature**BMW Service**

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature**BMW Service**

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature

BMW Service

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature**BMW Service**

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature**BMW Service**

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature

BMW Service

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature**BMW Service**

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature**BMW Service**

Conducted

after hrs. _____

Odometer reading _____

Next service

at the latest

after hrs. _____

Stamp, Signature

The table is intended as proof of maintenance and repair work, the installed optional accessories and any special campaign (recall) work carried out.

[illegible]

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Details described or illustrated in this booklet may differ from the motorcycle's actual specification as purchased, the accessories fitted or the national-market specification. No claims will be entertained as a result of such discrepancies.

Dimensions, weights, fuel consumption and performance data are quoted to the customary tolerances.

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The most important data for a filling station stop can be found in the following chart.

Fuel	
Recommended fuel quality	89 AKI (95 ROZ/RON), Super unleaded
Usable fuel quantity	Approx. 2.1 gal (Approx. 8 l)
Reserve fuel quantity	min Approx. 0.8 quarts (min Approx. 0.75 l)
Tire inflation pressures	
Tire pressure, front	17.4 psi (1.2 bar), Single rider, with cold tire
Tire pressure, rear	17.4 psi (1.2 bar), Single rider, with cold tire
Tire pressure for sport riding	14.5 psi (1.0 bar)

