Rider's Manual (US Model)

G 650 Xchallenge



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 11. 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.

OE Optional equipment
The motorcycles are assembled complete with all the BMW optional extras originally ordered.

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

ABS Anti-Lock Brake System.

Air Damping System

This motorcycle is equipped with an air-spring shock absorber system on the rear wheel. The functionality of this unit, called the Air Damping System, differs from the usual steel-spring shock absorber systems. Additional information on this system is provided from page (➠ 34).

Equipment

When you ordered your BMW Motorrad, you chose various items of custom equipment. This Rider's Manual describes optional equipment (OE) offered by BMW and selected optional accessories (OA). This explains why the manual may also contain descriptions of equipment which you have not ordered. Please note, too, that your motorcycle might not be exactly as illustrated in this manual on account of country-specific differences.
If your BMW is equipped with options or accessories not described in this Rider's Manual, then this equipment is described in a separate operating manual.

Technical data

All dimensions, weights and outputs in the Rider's Manual refer to the Deutsche 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.

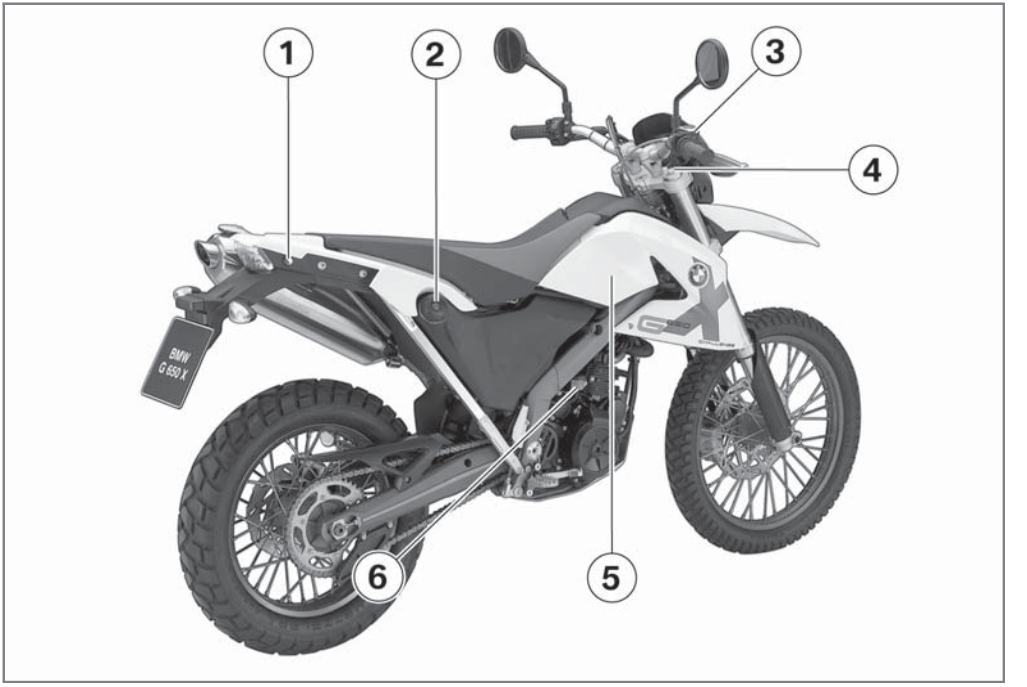
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General view, left side

1 Adjustment of front damping (compression) (➡ 39)
2 Air Damping System (➡ 34)
3 Onboard socket[OE] (➡ 58)
4 Adjustment of rear damping (➡ 40)
5 Level indicator (➡ 35)
6 Coolant level indicator (➡ 69)

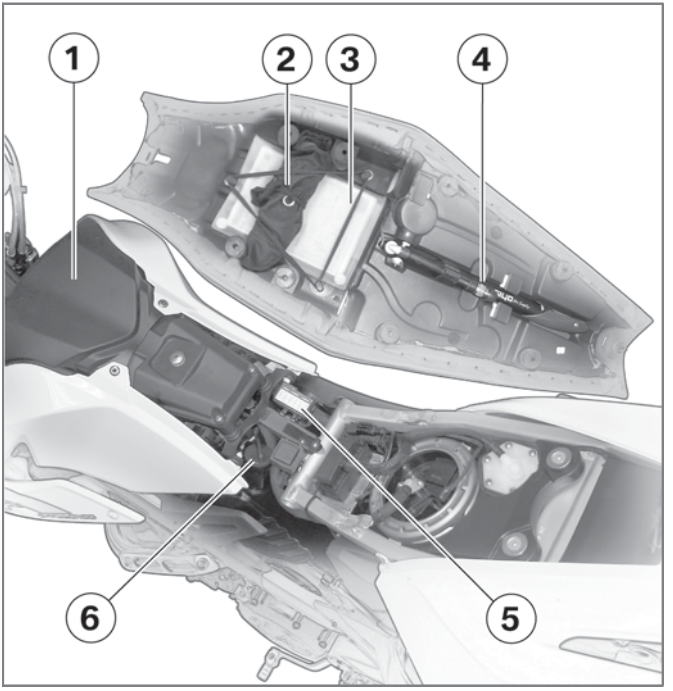

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BMW
G 650 X

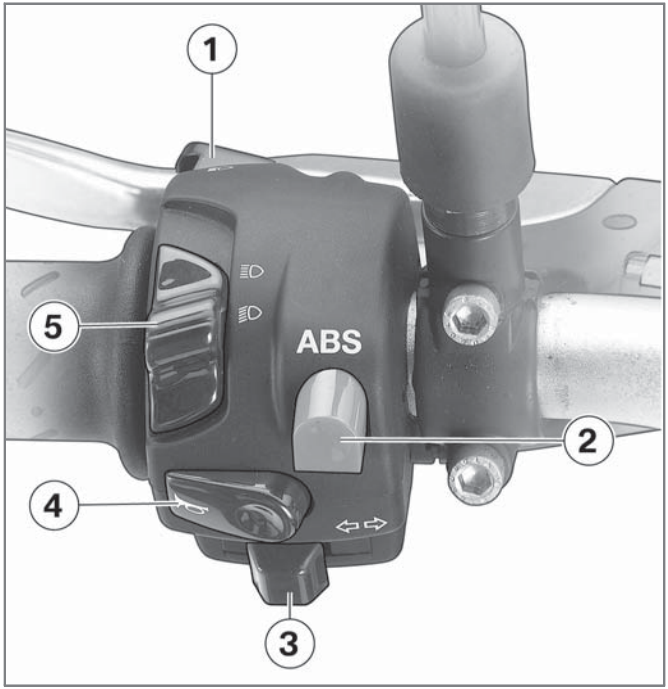
General view, right side

1 Seat lock (➠ 41)
2 Fuel filler opening (➠ 52)
3 Brake-fluid reservoir, front (➠ 67)
4 Adjustment of front damping (rebound) (➠ 38)
5 ABS fuses, under side panel (➠ 82)
6 Brake-fluid reservoir, rear (➠ 68)

Underneath seat

1 Air filter box (➡ 89)
2 Onboard toolkit (➡ 62)
3 Rider's Manual (US Model)
4 Air pump (➡ 34)
5 Fuse box (➡ 81)
6 Oil dipstick and engine-oil filler opening (➡ 81)



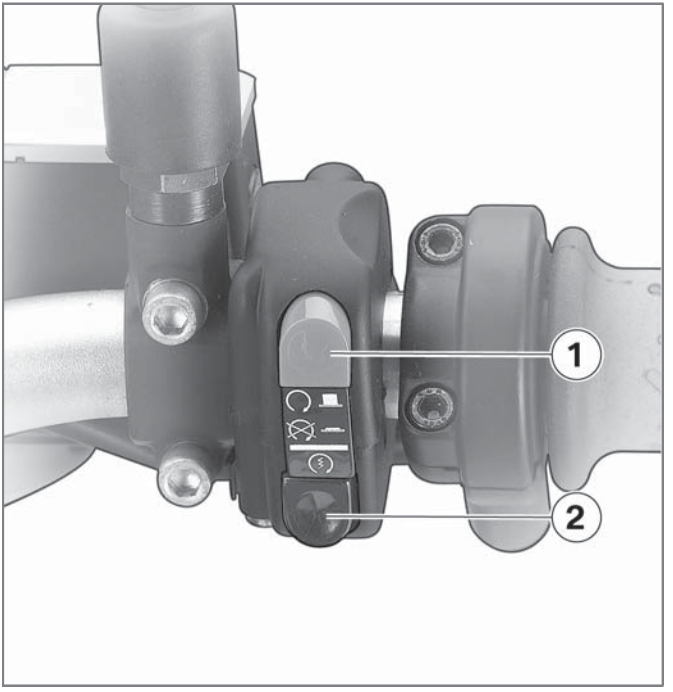


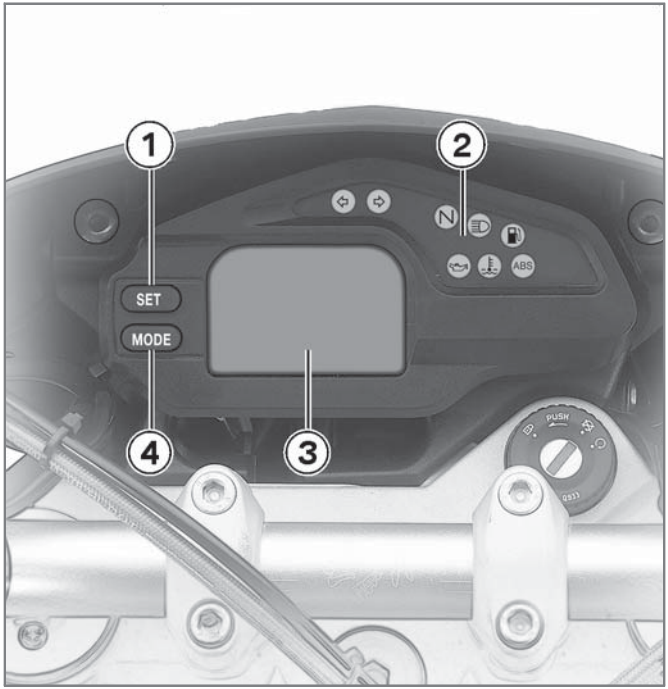
Left handlebar fitting

1 Headlight flasher
2 ABS operation OE (➡ 33)
3 Turn indicator switch (➡ 32)
4 Horn
5 High-beam headlight (➡ 31)

Handlebar fitting, right

1 Emergency ON/OFF switch (➡ 32)
2 Starter button (➡ 46)

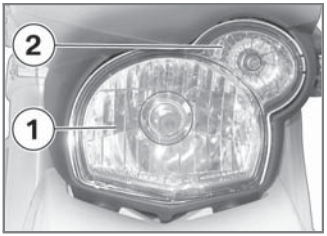




Instrument cluster

1 Setting clock (➡ 29)
Resetting tripmeter (➡ 29)
2 Warning lamps (➡ 20)
Indicator lights (➡ 20)
3 Multifunction display (➡ 20)
4 Selecting readings (➡ 28)

Headlight



1 Low and high-beam
2 Parking lights

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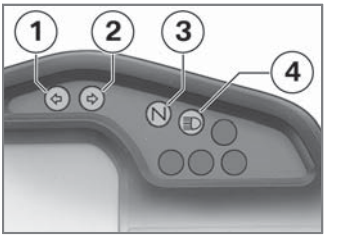
Status indicators

Multifunction display



1 Speedometer
2 Odometer, clock or battery voltage (➡ 28)

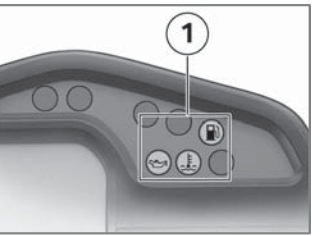
Indicator lights



1 Turn indicators, left
2 Turn indicators, right
3 Idling
4 High-beam headlight

Standard warning indicators

Display



Warnings are indicated by the warning lights **1**.
The possible warnings are listed on the next page.

Overview of warning indicators

		Meaning
	Lights up	Fuel down to reserve (➡ 22)
	Lights up	Engine oil pressure insufficient (➡ 22)
	Lights up	Coolant temperature too high (➡ 22)

Fuel down to reserve

Fuel-reserve warning light lights up.

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: The fuel tank contains the fuel reserve quantity at most.

Reserve fuel quantity
– ≥2.1 quarts (≥2 l)

- Refueling (➡ 52)

Engine oil pressure insufficient

Engine oil-pressure warning light lights up.
The oil pressure in the lubricating oil circuit is too low. If the warning light lights up, stop immediately and switch off the engine.

The warning on insufficient engine oil pressure is no substitute for the function of an oil-level indicator. The correct engine oil level can only be checked on the oil dipstick.◀

Possible cause: Engine oil level too low.
- Checking engine oil level (➡ 63)

If oil level is too low:
- Topping up engine oil (➡ 65)

If the engine oil level is correct:

Driving with insufficient engine oil pressure can result in engine damage.
Do not continue driving.◀
- Have the malfunction corrected as soon as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Coolant temperature too high

Coolant-temperature warning light lights up.

Continued driving with an overheated engine can result in engine damage.
Be sure to observe the measures listed below.◀

Possible cause: Coolant level too low.
- Checking coolant level (➡ 69)

If coolant level is too low:
- Topping up coolant (➡ 69)

Possible cause: Radiator fan defective.

If the radiator fan fails to run with the coolant-temperature warning light switched on:

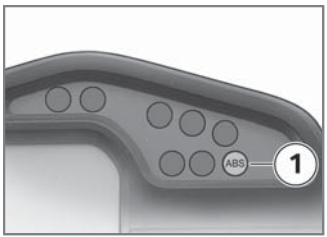
- Have the malfunction corrected as soon as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Possible cause: Insufficient cooling.

- If possible, continue driving in the part-load range to cool down the engine.
- In traffic jams, switch off the engine, but keep the ignition switched on so that the radiator fan continues to operate.
- Should the coolant temperature frequently be too high, have the fault rectified as quickly as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

ABS warning indicators OE

Display



ABS warnings are indicated by the ABS warning light **1**. Additional information is provided from page (➠ 54); and overview of the possible warnings is provided on the following page.

Overview of warning indicators

		Meaning
	Flashes	Self-diagnosis not completed (➡ 25)
	Lights up	ABS deactivated (➡ 25)
	Lights up	ABS error (➡ 25)

Self-diagnosis not completed



ABS warning light flashes.

The ABS function is not available, because the self-diagnosis has not been completed. To check the wheel sensors, the motorcycle must be driven a few yards.

- Ride off slowly. It must be noted that the ABS function is not available until the self-diagnosis has been completed.

ABS deactivated



ABS warning light lights up.

The ABS system has been deactivated by the driver.
With OE BMW Motorrad ABS:

- Switching on ABS function (➡ 33)

ABS error



ABS warning light lights up.

The ABS control unit has detected an error. The ABS function is not available.

- Continue driving is possible. It must be noted that the ABS function is not available. Observe additional information on situations which can lead to an ABS error (➡ 55).
- Have the malfunction corrected as soon as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

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Ignition switch and steering lock

Keys

You receive one master key and one spare key.
Ignition key and steering lock, tank filler cap lock and seat lock are all operated with the same key.

Switching on ignition



- Turn key to position **1**.
» Parking lights and all function circuits switched on.
» Engine can be started.
» Pre-ride check is performed. (➡ 47)

With OE BMW Motorrad ABS:

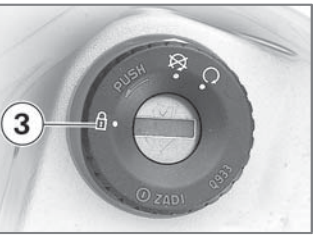
- Turn key to position **1**.
» In addition to the points named above, the ABS self-diagnosis is also carried out. (➡ 47)◁

Switching off ignition



- Turn key to position **2**.
» Light switched off.
» Handlebars not locked.
» Key can be removed.

Locking handlebars



- Turn handlebars to left.
- Turn key to position **3** while moving handlebars slightly.
» Ignition, lights and all function circuits switched off.
» Handlebars locked.
» Key can be removed.

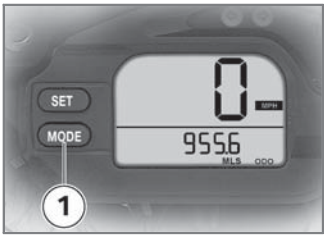
Multifunction display

Selecting readings

- Switch on ignition.

For longer stays in foreign countries, the display can be switched over from miles to

kilometers and vice versa. In this case, consult a specialized workshop, preferably an authorized BMW Motorrad retailer.◀



• Press button **1**.



Each time the button is pressed, the display shows values starting with the current value in the following order:

– Total mileage (ODO)
– Tripmeter 1 (`Trip I`)
– Tripmeter 2 (`Trip II`)
– Clock
– Battery voltage
– Driving range with fuel reserve (after reaching reserve quantity)

Resetting tripmeter

• Switch on ignition.
• Select desired tripmeter.



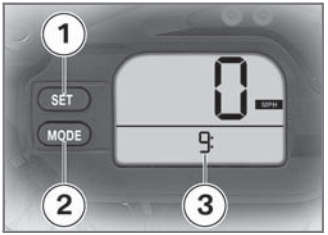
• Hold down button **1**.
» Tripmeter is reset.

Setting clock

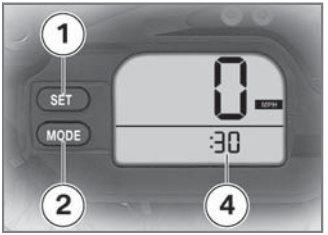
• Switch on ignition.

This adjustment can only be carried out with the motorcycle at a standstill.◀

• Select clock.

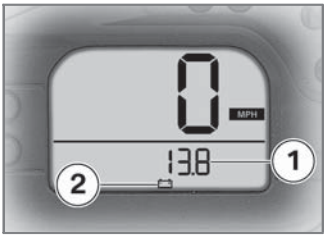


- Hold down button **1**.
» Hours **3** are indicated.
- Press button **1**.
» Hours increase by one each time button is pressed.
- Press button **2**.
» Hours decrease by one each time button is pressed.



- When desired hours have been set, wait briefly.
» Minutes **4** are indicated.
- Press button **1**.
» Minutes increase by one each time button is pressed.
- Press button **2**.
» Minutes decrease by one each time button is pressed.
- When desired minutes have been set, wait briefly.
» End setting; set time is displayed.
» Setting is also ended if speed is greater than zero.

Battery voltage



The battery voltage **1** is displayed together with the battery symbol **2**.

Driving range with fuel reserve



A distance **1** is displayed which has been covered since the reserve fuel quantity was reached.

Lights

Parking lights

The parking lights switch on automatically when the ignition is switched on.

The parking lights are a strain on the battery. Do not leave the ignition switched on longer than absolutely necessary.◀

Low-beam headlight

The low-beam headlights switch on automatically when the ignition is switched on.

The low-beam headlight is a strain on the battery. Do not leave the ignition switched on longer than absolutely necessary.◀

High-beam headlight



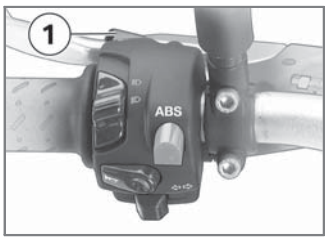
- Push high-beam switch **1** upward.

» High-beam headlight is switched on.

- Push high-beam switch **1** downward.

» High-beam headlight is switched off.

Headlight flasher

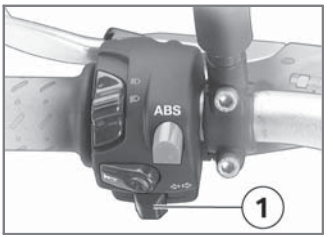


- Press headlight flasher button **1**.

» The high-beam headlight is switched on for as long as the button is pressed.

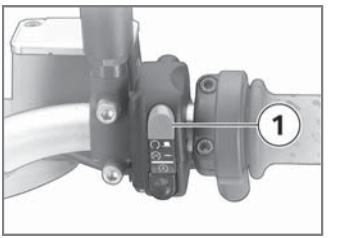
Turn indicators

Operating turn indicators



- Press turn indicator button **1** toward left.
» Left-hand turn indicator is switched on.
» Indicator light for left-hand turn indicator flashes.
- Press turn indicator button toward right.
» Right-hand turn indicator is switched on.
» Indicator light for right-hand turn indicator flashes.
- Press turn indicator button toward front.
» Turn indicator is switched off.
» Turn indicator lights in indicator light panel are off.

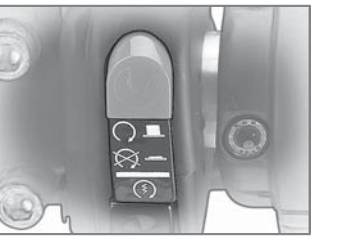
Emergency ON/OFF switch



1 Emergency ON/OFF switch

Operating the emergency ON/OFF switch when riding can cause the rear wheel to lock and thus cause a fall.
Do not operate the emergency ON/OFF switch when riding.◀

The engine can be switched off easily and quickly using the emergency ON/OFF switch.



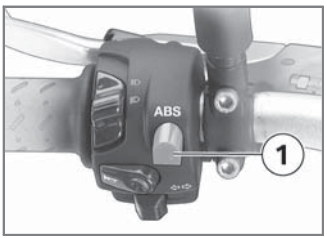
- Switch not actuated: operating position.
- Switch actuated: engine switched off.

The engine can only be started in the operating position.◀

BMW Motorrad ABS OE

Switching off ABS function

- Switch on ignition or bring motorcycle to a stop.



- Hold down ABS button **1**.

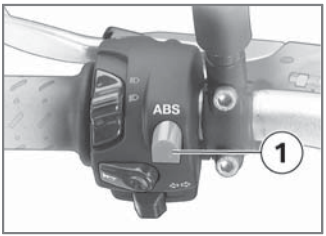
(ABS) ABS warning light begins to light up.

- Release ABS button within five seconds.

» ABS function is switched off.

(ABS) ABS warning light continues to light up.

Switching on ABS function



- Hold down ABS button **1**.

(ABS) ABS warning light goes out; if self-diagnosis has not been completed, it begins to flash.

- Release ABS button within five seconds.

» ABS warning light remains off or continues to flash.

» ABS function is switched on.

- As an alternative to pressing the ABS button, the ignition can also be switched off and then on again.

If the ABS light continues to light up after switching the ignition off and then on again, an ABS fault has occurred.◀

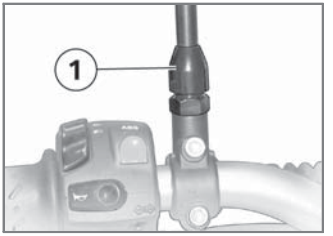
Mirrors

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.

	Mirror union nut
– 15 lb/ft (20 Nm)	

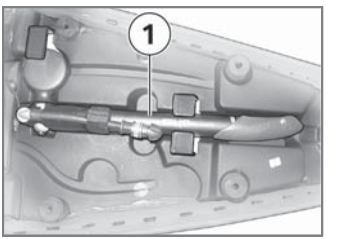
Air pump

Use

Using the air pump, the air pressures in the Air Damping System (➠ 34) and in the tires can be checked and corrected if necessary.

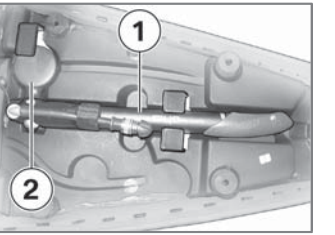
Removing air pump

- Removing seat (➠ 41)



- Remove air pump **1**.

Installing air pump



- Insert air pump **1** in holder with pressure indicator **2** facing downward.
- Installing seat (➠ 42)

Air pressure in Air Damping System

Air Damping System

Your motorcycle is equipped with an Air Damping System on the rear wheel.

With this system the motorcycle is not suspended with a steel spring, but instead with the com-

pression of a trapped volume of air.
The Air Damping System is adjusted to the driver and load in accordance with the suspension preload by changing its air pressure. The air pressure can be reduced with the valve on the Air Damping System or increased using the air pump.

Level indicator

A level indicator similar in function and appearance to the bubble on a level is mounted on the motorcycle. The suitable air pressure is achieved when the level indicator is horizontal with the rider and the desired load. The air pressure should always be checked before driving off.

Adjusting air pressure

The air pressure in the Air Damping System must be adjusted to the loading of the motorcycle. Increase the air pressure when the motorcycle is heavily loaded and reduce the air pressure accordingly when the motorcycle is lightly loaded.
To read the level indicator, the rider sits on the motorcycle so that he/she balances out the motorcycle with his/her feet, however his/her weight rests on the motorcycle as much as possible. BMW Motorrad recommends selecting the air pressure in the Air Damping System somewhat higher than required by the weight of the rider and load to be expected. Then the air pressure can be reduced while sitting on the motorcycle.

Air pressure and temperature

When the Air Damping System is heavily loaded, the air enclosed in it heats up. This leads to a volume increase, and with it to an increase in the motorcycle height - an effect which is very practical for offroad riding. To ensure correct air pressure, the air pressure may only be checked and adjusted with the Air Damping System cold, i.e. not directly following offroad use.
In case of very great heating up due to extreme loading of the system, the increase in the motorcycle height can result in to uncomfortable handling. In these special cases, the motorcycle height should be balanced out again by bleeding air and using the level gauge (➡ 35). The motorcycle must then be balanced out again after the system has cooled down.

Longer immobilization times

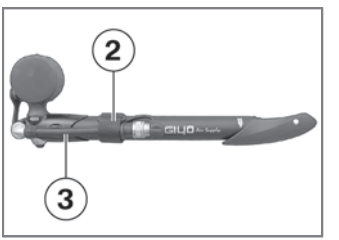
For immobilization times longer than two months, the motorcycle should be parked so that both wheels are clear of the ground, for example on the BMW Motorrad auxiliary stand. Before the motorcycle is removed from the auxiliary stand for returning it to operation, the air pressure should be checked. The air pressure gauge for the air pump can be used for this purpose.

Adjusting air pressure on Air Damping System

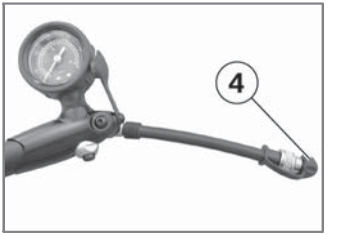
- Removing air pump (➡ 34)
- Installing seat (➡ 42)



- Screw valve cap **1** off Air Damping System valve.



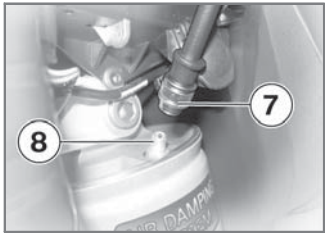
- Release Velcro strap **2** and turn air pump hose **3** toward front.



- Remove protective cap **4**.



- Fold out handle piece **5** and release lock **6** of second piston.



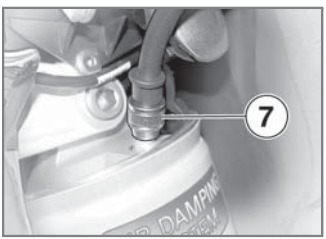
- Screw threaded piece **7** onto valve **8**, allowing hose and air pump to turn with it if necessary.

» Air pump is connected air-tight to valve, and valve is open.

- Pump up Air Damping System in accordance with guide values listed below.

Guide value for Air Damping System
– 87 psi (6 bar) (Single rider, driver with helmet and motorcycle clothing 143 lbs (65 kg))

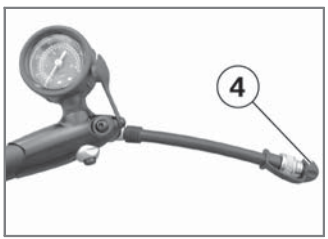
Guide value for Air Damping System
– 97.2 psi (6.7 bar) (Single rider, driver with helmet and motorcycle clothing 187 lbs (85 kg))
With OA Passenger kit:
– 152.3 psi (10.5 bar) (Operation with passenger 331 lbs (150 kg))◁



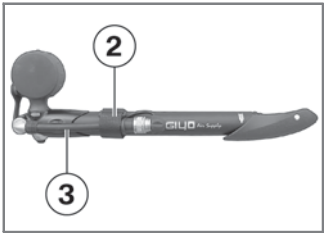
- Screw threaded piece **7** off valve.



- Close lock **6** of second piston, push together air pump and fold in handle piece **5**.



- Mount protective cap **4**.



- Turn air pump hose **3** toward air pump and close Velcro strip **2**.
- Sit on motorcycle, hold motorcycle vertically and load it with your entire body weight as much as possible.
- Release air from the Air Damping System by pressing in valve pin and check level.

You can use the tip of the valve cap as an aid to press in the valve pin.◀



- Release air and check level repeatedly until level indicator is horizontal.
- Screw valve cap onto Air Damping System valve.
- Removing seat (➠ 41)
- Installing air pump (➠ 34)

Damping

Adjustment on front wheel

Both the rebound and the compression damping of the telescopic forks can be adapted to the road condition. With the rebound, the damping during rebound is adjusted, and with compression the damping during compression.
The stiffer the damping, the greater the compensating movement of the forks is damped when riding on rough road surfaces. When soft damping is set, the forks react correspondingly faster to rough roads.

Adjusting rebound on front wheel

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



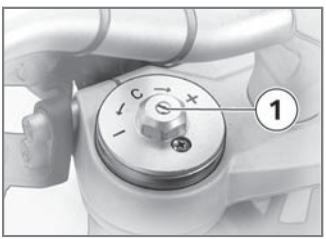
- Adjust rebound via adjusting screw **1**.



- To increase damping, turn adjusting screw in **+** direction with a screwdriver.
- To reduce damping, turn adjusting screw in - direction with a screwdriver.

Rebound stage, basic setting, front
– Turn adjusting screw as far as possible in "+" direction, then 11 clicks in "-" direction.

Adjusting compression on front wheel



- Adjust compression via adjusting screw **1**.



- To increase damping, turn adjusting screw in **+** direction with a screwdriver.
- To reduce damping, turn adjusting screw in - direction with a screwdriver.

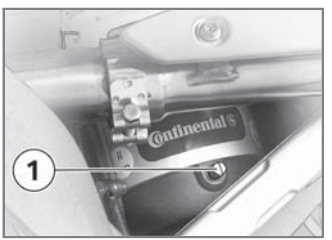
Compression stage, basic setting, front
– Turn adjusting screw as far as possible in "+" direction, then 11 clicks in "-" direction.

Adjustment on rear wheel

The damping of the Air Damping System can be adjusted to the road condition in two settings. The adjusting screw can be turned in both directions without limitation.

Adjusting damping on rear wheel

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



- Turn adjusting screw **1** into horizontal position.

» Hard damping, adjustment screw engages.

- Turn adjusting screw **1** into vertical position.

» Soft damping, adjustment screw engages.

Tires

Checking tire pressure

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

Incorrect tire inflation pressure results in poorer handing characteristics of the motorcycle and reduces the life of the tires.
Ensure proper tire inflation pressure.◀

At high road speeds, tire valves have a tendency to open as a result of centrifugal force.
Fit metal valve caps with rubber seals and screw them on firmly to prevent sudden deflation.◀

- Check tire pressures against the data below.

Tire pressure, front
– 26.1 psi (1.8 bar) (Single rider, with cold tire)
– 27.6 psi (1.9 bar) (Driver with passenger and/or load, with cold tire)

Tire pressure, rear
– 29 psi (2 bar) (Single rider, with cold tire)
– 31.9 psi (2.2 bar) (Driver with passenger and/or load, with cold tire)

If tire pressure is too low:

- Correct tire pressure.

Headlight

Adjusting headlight for RHD/LHD traffic

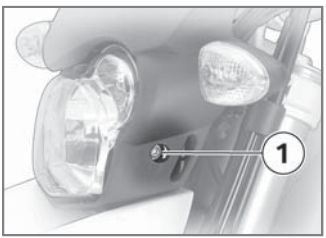
The motorcycle is equipped with a symmetrical low-beam headlight, and can therefore also be used without modification in countries which drive on the opposite side of the road as in the country of registration.

Headlight range and air pressure in Air Damping System

The headlight range remains constant due to the adjustment of the air pressure in the Air Damping System to the loading state.

Air pressure 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.◀

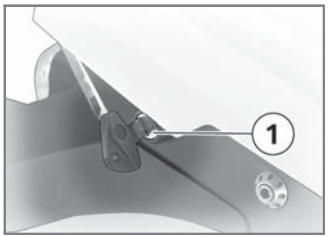


The headlight height can be adjusted with the screws **1** on the left and right. To ensure correct adjustment, it should be carried out by a specialized workshop, preferably an authorized BMW Motorrad retailer.

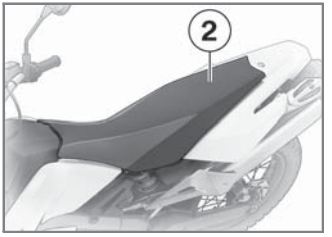
Seat

Removing seat

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

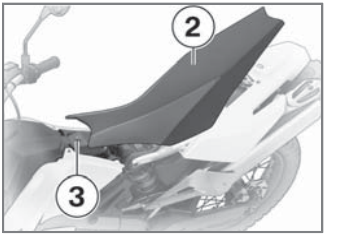


- Turn seat lock **1** counterclockwise with ignition key and hold.



- Raise seat **2** at rear and release key.
- Remove seat.
- Place seat on a clean surface with seat surface facing downward.

Installing seat



If too much pressure is applied in the forward direction, there is a danger that the motorcycle will be pushed off its stand.
Make sure that the motorcycle is steady on its stand.◀

- Push seat **2** forward into mount **3**.
- Firmly press down on the seat at the rear.

» The seat can be heard to lock into place.

- Check firm seating of seat.

Riding

Safety instructions 44
Checklist 45
Starting 46
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Driving offroad 49
Brakes 50
Parking your motorcycle 51
Refueling 52

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 pressure
– Poor tire tread
– Etc.

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.◀

Alcohol and drugs

Even small amounts of alcohol or drugs will adversely affect your perception and your ability to assess situations and make decisions, and slow down your reflexes. Medication can exacerbate these effects.
Do not ride your motorcycle after consuming alcohol, drugs and/or medication.◀

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.◀

High voltage

Touching live parts of the ignition system with the engine running can cause electric shock.
Do not touch parts of the ignition system when the engine is running.◀

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
– Do not run the engine with the spark-plug cap removed
– 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.◀

Risk of fire

Temperatures at the exhaust are high.

⚠ Flammable materials (e.g. hay, leaves, grass, clothing and luggage, etc.) could ignite if allowed to come into contact with the hot exhaust pipe.
Make sure that no highly flammable materials can come in contact with the hot exhaust system.◀

⚠ 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.◀

Tampering with control unit of electronic engine-management system

⚠ Tampering with the engine control unit can damage the motorcycle and cause accidents.
Do not tamper with the engine control unit.◀

⚠ Tampering with the engine control unit can result in mechanical loads that the motorcycle's components are not designed to withstand. Damage caused in this way is not covered by the warranty.
Do not tamper with the engine control unit.◀

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 fluid level
– Damper adjustment and air pressure in Air Damping System
– Tread depth and tire pressure
– Firm seating of cases and luggage

At regular intervals:
– Engine oil level (every time you refuel)
– Brake pad wear (during every third stop for refueling)
– Tension and lubrication of drive chain

Starting

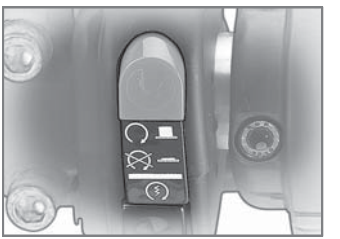
Side stand

You cannot start the motorcycle with the side stand extended and a gear engaged. The engine will switch itself off if you start it with the transmission in neutral and then engage a gear before retracting the side stand.

Transmission

You can start the engine when the transmission is in neutral or if you pull the clutch with a gear engaged.

Starting engine



• Emergency ON/OFF switch in operating position.

Transmission lubrication is only ensured when the engine is running.Insufficient lubrication can lead to transmission damage.
Do not allow the motorcycle to roll for longer periods or push it over longer distances with the engine switched off.◀

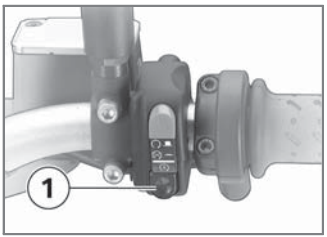
• Switch on ignition.
» Pre-ride check is performed. (➡ 47)

With OE BMW Motorrad ABS:
• Switch on ignition.
» Pre-ride check is performed. (➡ 47)
» ABS self-diagnosis is performed. (➡ 47)◁

• Wait until coolant-temperature warning light no longer flashes.

After the ignition is switched on, the idling positioner is positioned. If positioning takes longer than the pre-ride check, this is signaled by the coolant-temperature warning light flashing. You should

wait for this procedure to be completed to avoid problems during driving.◀



- Press starter button **1**.

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

If the engine fails to start although the starter turns, insufficient battery voltage may be the reason. Recharge the battery before you start the engine, or use jump leads and a donor battery to start.◀

» Engine starts.
» Consult the troubleshooting chart if the engine refuses to start. (➠ 104)

Pre-ride check

After the ignition is switched on, the instrument cluster conducts a test of the warning and indicator lights and the display, the so-called "Pre-Ride-Check".

Phase 1

All warning and indicator lights and all segments of the multifunction display are switched on for a short time.

Phase 2

The tire parameters stored in the instrument cluster are displayed for a short time.
Then the instrument cluster assumes normal operation.

If one of the specified warning and indicator lights was not switched on, or if not all segments of the multifunction display are switched on:

If it was not possible to switch on the warning lights, possible malfunctions cannot be indicated.
Watch all warning and indicator lights on the display.◀

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

ABS self-diagnosis OE

The readiness for operation of the BMW Motorrad ABS is checked by the self-diagnosis. Self-diagnosis is performed automatically when you switch on the ignition. To check the wheel

sensors, the motorcycle must be driven a few yards.

Phase 1

» Checking the diagnosable system components while stopped.

ABS warning light flashes.

Phase 2

» Checking the wheel sensors while starting off.

ABS warning light flashes.

ABS self-diagnosis completed

» The ABS warning light goes out.

If an ABS fault is indicated after the ABS self-diagnosis is completed:

- Continue driving is possible. It must be noted that the ABS function is not available.
- Have the malfunction corrected as soon as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Running in

The first 600 miles (1,000 km)

- While running in the motorcycle, vary the throttle opening and engine-speed range frequently.
- Try to do most of your riding during this initial period on twisting, fairly hilly roads, avoiding high-speed main roads and highways if possible.

Exceeding the specified engine speeds while running in will lead to increased engine wear.

Adhere to the specified engine run-in speeds.◀

- Do not exceed gear-dependent top speeds during break-in period.

Top speeds during break-in period
– Max 22 mph (Max 35 km/h) (1st gear)
– Max 34 mph (Max 55 km/h) (2nd gear)
– Max 47 mph (Max 75 km/h) (3rd gear)
– Max 59 mph (Max 95 km/h) (4th gear)
– Max 68 mph (Max 110 km/h) (5th gear)

- Do not accelerate at full throttle.
- Avoid low engine speeds at full load.
- After 300 - 750 miles (500 - 1,200 km), have the first inspection performed.

Brake pads

New brake pads must "bed down" and therefore do not achieve their optimum friction levels during the first 300 miles (500 km). 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 pressures

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.◀

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.◀

Air pressure and damping

The values for the air pressure in the Air Damping System and for the front and rear damping changed for offroad driving can result in poorer handling characteristics of the motorcycle on paved roads.
Before returning to paved roads, set the proper air pressure in the Air Damping System and proper damping.◀

Deactivatable ABS OE

You can switch off the BMW Motorrad (➡ 33) Integral ABS for offroad riding.

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. To prevent the front wheel from locking, the ABS system must intervene and reduce the brake pressure; the braking distance increases.

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 brakes

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 brakes are dry or braked until dry.◀

Salt on brakes

The full braking effect can be delayed if the motorcycle is ridden on salt-covered roads and the brakes are not applied for some time.
Brake early until the salt layer of the brake disks and brake pads has been braked off.◀

Oil or grease on brakes

Oil and grease on the brake disks and pads considerably diminish braking efficiency.
Especially after repair and maintenance tasks, make sure that the brake disks and brake pads are free of oil and grease.◀

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.◄

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.
- Hold motorcycle upright and balanced.
- Use your left foot to extend side stand fully.

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 lean the motorcycle to the side until its weight is taken by the stand and dismount to the left.

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.
- From left, grip handlebars with both hands.
- Pull handbrake lever.
- Swing your right leg over the seat and lift motorcycle to upright position.
- Hold motorcycle upright and balanced.

An extended side stand can catch on the ground when the motorcycle is moving and lead to a fall.
Retract the side stand before moving the vehicle.◀

- Sit on motorcycle and use your left foot to retract side stand.

Refueling

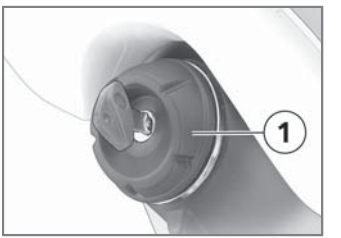
Fuel is highly flammable. Fire at the fuel tank can result in fire and explosion.
Do not smoke. Never bring a naked flame near the fuel tank.◀

Fuel expands when exposed to heat. When the tank is overfilled, fuel can escape and get onto the rear wheel.
This results in a danger of falling.
Do not fill the tank past the bottom edge of the filler neck.◀

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.



- Open fuel tank cap **1** with ignition key by turning counterclockwise.
- Remove fuel tank cap.
- Refuel with quality listed below at most until lower edge of filler neck is reached.

Recommended fuel quality
– 95 ROZ/RON (Super unleaded)

Usable fuel quantity
– ≤2.5 gal (≤9.5 l)

Reserve fuel quantity
– ≥2.1 quarts (≥2 l)

- Mount fuel tank cap.
- Close fuel tank cap with ignition key by turning clockwise.

Technology in detail

Brake system with BMW Motorrad ABS[OE] 54

Brake system with BMW Motorrad ABS OE

How does ABS work?

The maximum braking force that can be transferred to the road surface is partially dependent on the friction coefficient of the road surface. Gravel, ice, snow and wet roads offer a considerably poorer friction coefficient than a dry, clean asphalt surface. The poorer the friction coefficient of the road surface is, the longer the braking distance will be.
If the maximum transferrable braking force is exceeded when the driver increases the brake pressure, the wheels begin to block and driving stability is lost, and a fall can result. Before this situation occurs, ABS intervenes and adjusts the brake pressure to the maximum transferrable braking force. This enables the wheels to continue to turn and maintains driving stability regardless of the road surface condition.

What happens when rough roads are encountered?

Bumpy or rough roads can briefly lead to a loss of contact between the tires and the road surface, until the transferrable braking force is reduced to zero. If braking is carried out in this situation, ABS must reduce the brake pressure to ensure driving stability when restoring contact to the road. At this point in time, the BMW Motorrad ABS must assume extremely low friction coefficients (gravel, ice, snow) so that the running wheels turn in every imaginable case and the driving stability is ensured. After detecting the actual conditions, the system adjusts the optimum brake pressure.

Lifting off rear wheel

Even during severe braking, a high level of tire grip can mean that the front wheel does not lock up until very late, if at all. Consequently, ABS does not intervene until very late, if at all. Under these circumstances the rear wheel can lift off the ground, and the outcome can be a high-siding situation in which the motorcycle can flip over.

Heavy braking can lead to the rear wheel lifting off the ground.
When braking, bear in mind that the ABS control cannot be relied on in all circumstances to prevent the rear wheel from lifting off the ground.◀

What are the design characteristics of the BMW Motorrad ABS?

The BMW Motorrad ABS ensures driving stability on any surface within the limits of driving physics. The system is not optimized for special requirements resulting under extreme weather conditions offroad or on the racetrack.

Special situations

To detect the tendency of the wheels to lock up, the speeds of the front and rear wheel are compared. If implausible values are detected over a longer period of time, the ABS function is deactivated for safety reasons and an ABS fault is indicated. The condition for a fault message is the completed self-diagnosis.
In addition to problems on the BMW Motorrad ABS, unusual driving conditions can also lead to a fault message.

Unusual driving conditions:

- Driving on the rear wheel (wheely) for a longer period.
- Rear wheel spinning in place with front brake pulled (burn out).
- Heating up on the main or auxiliary stand at idle or with gear engaged.
- Locked-up rear wheel for a longer period of time, e.g. when riding downhill offroad.

Should a fault message result due to one of the driving conditions described above, the ABS function can be reactivated by switching the ignition off and then on again.

How important is regular maintenance?

Any technical system is always only as good as its maintenance condition.
To ensure that the BMW Motorrad ABS is in an optimally maintained condition, it is vital that the specified inspection intervals be complied with.◀

Reserves for safety

But remember: the potentially shorter braking distances which BMW Motorrad ABS permits must not be used as an excuse for careless riding. ABS is primarily a means of ensuring a safety margin in genuine emergencies.
Take care when cornering. When you apply the brakes on a corner, the motorcycle's weight and momentum take over and even

BMW Motorrad ABS is unable to counteract their effects.

Accessories

General instructions 58
Onboard socket[OE] 58
Luggage 59

General instructions

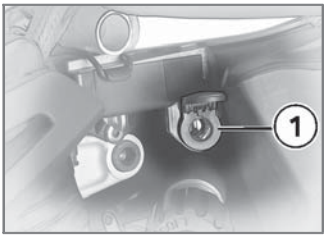
BMW Motorrad recommends the use of parts and accessories for your motorcycle that are approved by BMW for this purpose. Your authorized BMW Motorrad retailer is the right place to go for genuine BMW parts and accessories,other BMW-approved products, and expert advice on their installation and use.
These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

Onboard socket OE

Ratings



The load of the onboard socket **1** may not exceed the value specified in the technical data.

Operating electrical accessories

The operation of additional devices is a strain on the battery. The starting capacity of the battery must be maintained.

Cable routing

The cables from the onboard socket to the auxiliary device must be routed in such a way that they:

– Do not impede the rider
– Do not restrict or obstruct the steering angle and handling characteristics
– Cannot be trapped

Improperly routed cables can impede the rider. Route the cables as described above.◀

Luggage

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.◀

- Adjustment of air pressure in Air Damping System, of damping and of tire pressure to match total weight.
- Comply with maximum payload of luggage rack.

Loading luggage rack
– Max 11 lbs (Max 5 kg)

Maintenance

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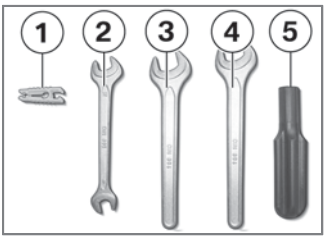
Information

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".
Information on additional maintenance and repair work is provided in the Repair Manual for your motorcycle on DVD/CD-ROM (RepROM), which you can obtain from your authorized BMW Motorrad retailer.

Special tools and a thorough knowledge of motorcycles 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.

Onboard toolkit

Standard onboard toolkit



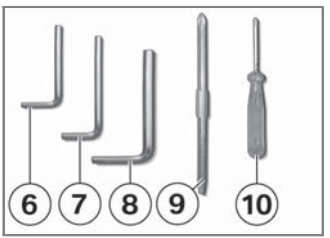
1 Fuse clip
– Replacing fuses

2 Open-ended wrench, 8/10 mm
– Adjusting chain tension

3 Open-ended wrench, 19 mm
– Adjusting mirror arm

4 Open-ended wrench, 19 mm
– Adjusting mirror arm

5 Screwdriver handle
– Screwdriver handle **9**



6 3 mm socket-head
– Replacing headlight bulb

7 4 mm socket-head
– Removing and installing body panels

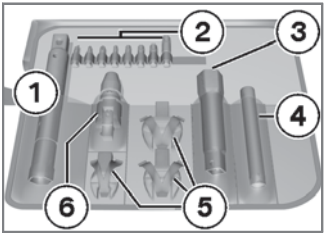
8 6 mm socket-head
– Adjusting headlight height

9 Screwdriver blade
– Phillips and straight blade
– Adjusting rear damping

10 Screwdriver, small
– Replacing turn indicator bulbs

Onboard-toolkit service set

Your BMW Motorrad retailer offers the onboard-toolkit service set for additional work.
Information on conducting this work is provided in the Repair Manual on CD or DVD, which is also available from your BMW Motorrad retailer.



1 Pull-out tool holder
– Holding of all tools with adapter
– Removing and installing spark plugs

2 1/4" bits
– Phillips
– Straight blade
– Adapter 1/4" hexagon to 1/4" square
– 2x hexagon socket wrench insert
– 3 mm, 4 mm and 6 mm socket-head

3 -Box wrench, 26 mm
– Removing and installing wheels

4 Flashlight
– LED technology

5 3x Socket wrench
– Adjusting chain tension

6 Adapter
– Mounting for 1/4" bits
– 9x12 mm and 3/8" jointed adapter

Engine oil

Checking engine oil level

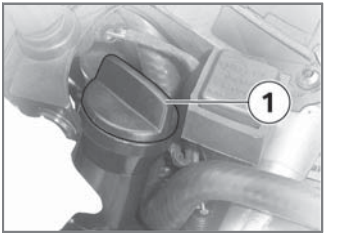
The engine can seize if the oil level is low, and this can lead to accidents.
Always make sure that the oil level is correct.◀

The oil level varies with the temperature of the oil. The higher the temperature, the higher the level of oil in the sump.

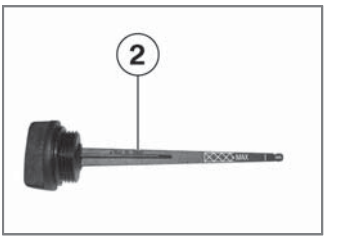
Checking the oil level with the engine cold or after a short trip leads to misinterpretations and therefore to incorrect oil fill quantities.

To ensure that the display of the engine oil level is correct, only check the oil level after a longer trip.◀

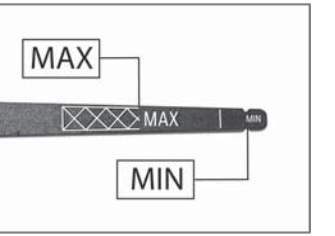
- Allow engine to idle until fan starts up, then allow to continue running for an additional minute.
- Make sure the ground is level and firm and hold the motorcycle vertically.
- Switch off the engine.
- Wipe area around oil fill location clean.



- Remove oil dipstick **1** by turning counterclockwise.



- Clean measuring range **2** of oil dipstick with a dray cloth.
- Install oil dipstick by turning clockwise.
- Remove oil dipstick and read off oil level.



Specified level of engine oil
– Engine oil 15W-40
– between MIN and MAX marking

If oil level is below MIN mark:

- Topping up engine oil (➡ 65)

If the oil level is above the MAX mark:

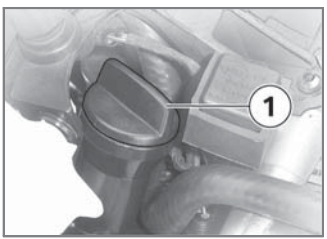
- Have oil level corrected by a specialized workshop, prefer-

ably an authorized BMW Motorrad retailer.

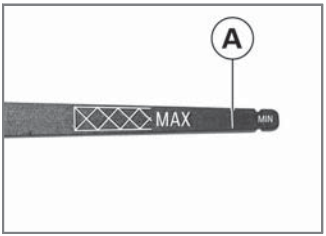
Topping up engine oil

Both too little and too much engine oil can lead to engine damage.
Always make sure that the oil level is correct.◀

- Wipe area around fill location clean.



- Remove oil dipstick **1**.



- Add engine oil up to marking **A**.
- Checking engine oil level (➡ 63)
- Install oil dipstick.

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 performed by a specialized workshop, preferably by an authorized BMW Motorrad retailer.◀

Checking brake operation

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

If no clear pressure points are perceptible:

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

Brake pads

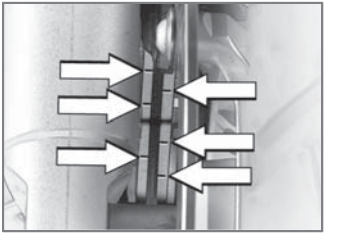
Checking front brake pad thickness



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.◀

- Check the brake pad thickness with visual inspection. Direction of view: between wheel and fork tube at brake caliper.



Front brake-pad wear limit

– Min 0.04 in (Min 1 mm) (Only friction material without carrier plate)

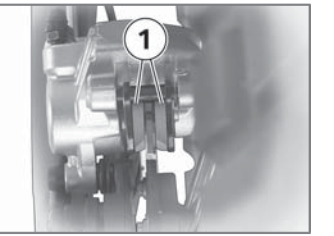
– Wear markings (grooves) must be clearly visible.

If the wear indicating marks are no longer clearly visible:

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

Checking rear brake pad thickness

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

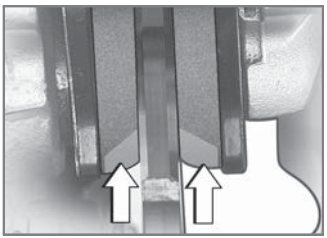


Dropping below the minimum pad thickness leads to reduced braking performance and may result in damage to the brakes.

In order to ensure the operating reliability of the brake system, make sure that the brake pads

are not worn beyond their minimum thickness.◀

- Check thickness of rear brake pads **1** with visual inspection from behind.



Rear brake-pad wear limit
– Min 0.04 in (Min 1 mm) (Only friction material without carrier plate)
– Wear indicators must be clearly visible.

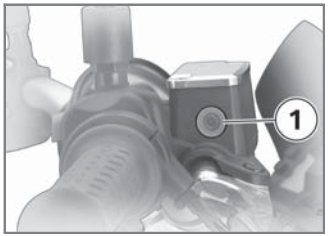
If the wear indicating marks are no longer visible:

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

Brake fluid

Checking front brake fluid level

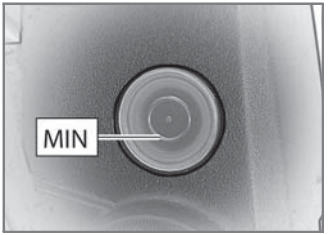
- Make sure the ground is level and firm and hold the motorcycle vertically.
- Move handlebars into straight-ahead position.



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.◀

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

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



Front brake fluid level

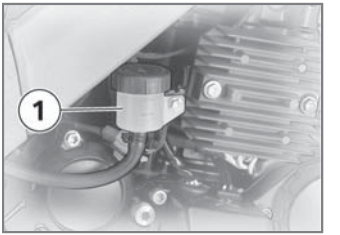
– Brake fluid DOT4

– 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.

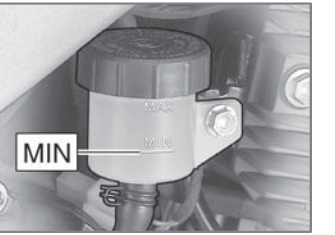
Checking rear brake fluid level



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.◀

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

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



Rear brake fluid level

– Brake fluid DOT4

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

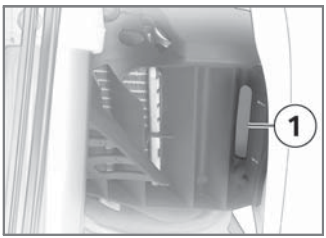
If brake fluid level drops below permissible level:

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

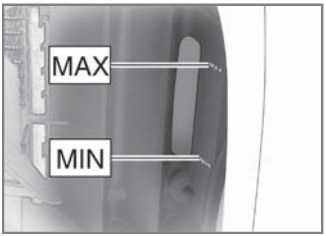
Coolant

Checking coolant level

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



- Check coolant level on scale **1** of coolant expansion tank.



Coolant, specified level

– between MIN and MAX marks on the expansion tank

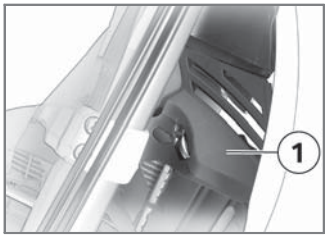
If coolant level is too low:

- Add coolant.

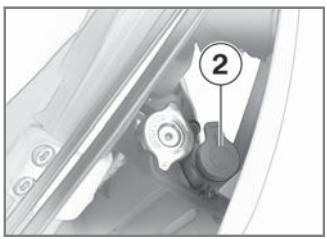
If coolant level is too high:

- Contact a specialized workshop, preferably an authorized BMW Motorrad retailer.

Topping up coolant

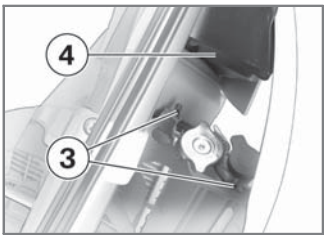


- Pull out radiator cap cover **1** toward front.



- Open cap of coolant expansion tank **2**.

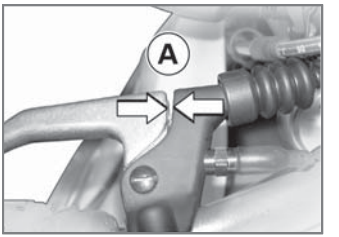
- Pour in coolant up to specified level.
- Close cap of coolant expansion tank.



- Insert radiator cap cover in holders **3**. When doing so, guide the upper edge of the cover behind the lower edge of the center fairing panel **4**.

Clutch

Checking clutch lever play



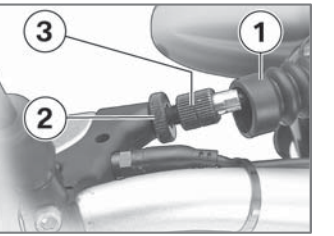
- Pull clutch lever until resistance is felt.
- Measure clutch lever play **A**.

Clutch lever play
– 0.08...0.12 in (2...3 mm) (With cold engine)

If clutch lever play is outside tolerance:

- Adjusting clutch lever play (➡ 70)

Adjusting clutch lever play



- Push back bellows **1**.
- Loosen lock nut **2**.
- Adjust clutch lever play to set-point setting with adjusting screw **3**.

» Turn clockwise: clearance is increased.

» Turn counterclockwise: clearance is reduced.

- Checking clutch lever play (➡ 70)
- Tighten lock nut **2**.
- Pull bellows **1** over adjusting screw.

Tires

Checking tire tread depth

- 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.◀

If the tire tread depth no longer complies with the legally required minimum tread depth:

- Replace tire.

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.

Chain

Lubricating chain

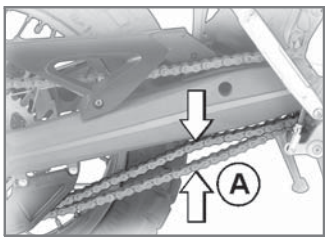
- Switch off ignition and engage Neutral.

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

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

Checking chain tension

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



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

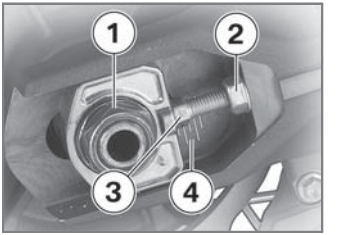
Chain sag
– 1...1.2 in (25...30 mm) (Motorcycle standing on side stand)
– 1.2...1.4 in (30...35 mm) (Rear wheel rebounded)

If the measured value is outside the permissible tolerance:

- Adjusting chain tension (➡ 72)

Adjusting chain tension

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



- Loosen quick-release axle nut **1**.
- Loosen lock nuts **2** on left and right by turning counterclockwise.
- Adjust chain tension with adjusting screws **3** on left and right.
  - » Turning clockwise: chain tension is reduced.
  - » Turning counterclockwise: chain tension is increased.
- Checking chain tension (➡ 71)
- Make sure that the same scale value **4** is set on the left and right.
- Tighten lock nuts **2** on left and right by turning clockwise.

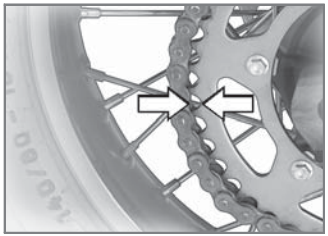
Locknut of drive-chain tensioning screw
– 18 lb/ft (25 Nm)

- Tighten quick-release axle nut **1** with specified torque.

Nut on rear quick-release axle
– 59 lb/ft (80 Nm)

Checking chain wear

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



- Pull chain toward rear at rearmost point of chain sprocket.

» The tooth tips must still be within the chain links.

If the chain can be pulled off beyond the tooth tips:

- Please contact a specialized workshop, preferably an authorized BMW Motorrad retailer.

Wheels

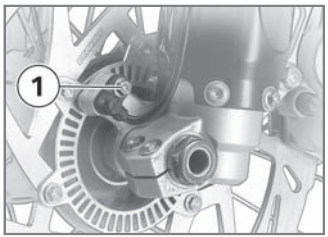
Recommended tires

For every size of tire, BMW Motorrad has tested and approved certain makes as roadworthy. BMW Motorrad cannot evaluate the suitability of other tires, and can therefore take no responsibility for their driving safety. BMW Motorrad recommends only using the tires tested and approved by BMW Motorrad. Extensive information is available at your authorized BMW Motorrad retailer or on the Internet at www.bmw-motorrad.com.

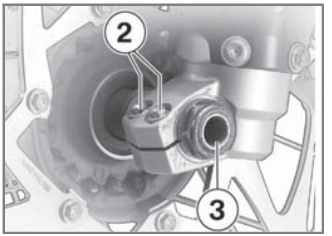
Removing front wheel

- Place motorcycle on a suitable auxiliary stand. BMW Motorrad recommends the BMW Motorrad auxiliary stand.
- Mounting auxiliary stand (➠ 79)

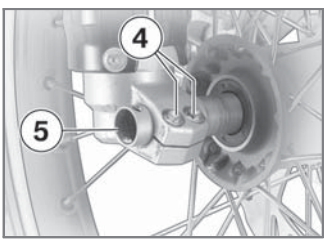
With OE BMW Motorrad ABS:



- Remove screw **1** of ABS sensor and take ABS sensor out of holder.◁
- Lift front wheel with suitable auxiliary stand. BMW Motorrad recommends the BMW Motorrad front wheel stand.
- Mounting front wheel stand (➠ 80)



- Unscrew left-hand axle clamping screws **2**.
- Remove axle screw **3**.



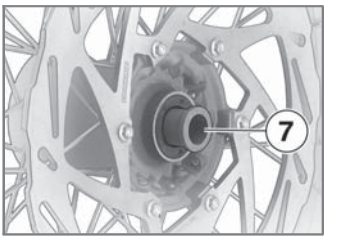
- Unscrew right-hand axle clamping screws **4**.
- Pull out axle **5** using a screwdriver.
- Do not remove grease on axle.



- Hold left-hand slider tube **6** in place and turn front wheel to left to press apart brake pads.

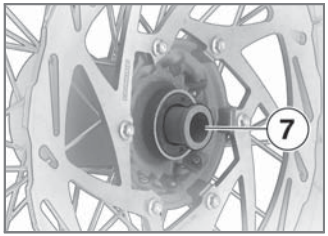
⚠ Once the calipers have been removed, there is a risk of the brake pads being pressed together to the extent that they cannot be slipped back over the brake disk on reassembly.
Do not operate the handbrake lever when the brake calipers have been removed.◀

- Roll front wheel out of the forks.



- Remove spacer sleeve **7**.

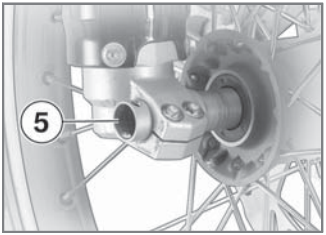
Installing front wheel



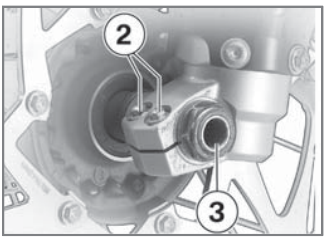
- Insert spacer sleeve **7**.

⚠ The front wheel must be installed right way round to rotate in the correct direction. Observe the direction of rotation arrows on the tires or on the rim.◀

- Roll front wheel into forks while guiding brake disk between brake pads.



- Install axle **5**.



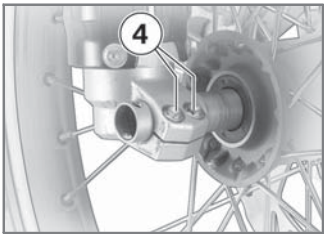
⚠ Threaded fasteners not tightened to the specified torque can work loose or their threads can suffer damage. Always have the tightening torques checked by a specialized workshop, preferably an authorized BMW Motorrad retailer.◀

- Install axle screw **3** with specified torque, bracing with screwdriver on right-hand side if necessary.

	Nut on front quick-release axle
– 59 lb/ft (80 Nm)	

- Remove front wheel stand.
- Without actuating brake: firmly compress spring forks several times.
- Tighten the left-hand axle clamping screws **2** with specified torque.

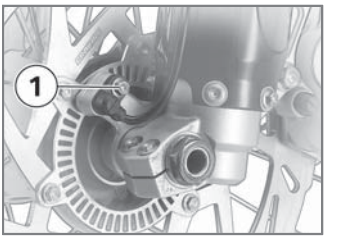
	Front axle clamping
– 7 lb/ft (10 Nm)	



- Tighten axle clamping screw **4** with specified torque.

Front axle clamping	
– 7 lb/ft (10 Nm)	

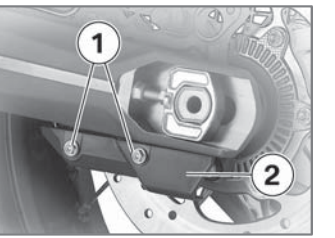
With OE BMW Motrad ABS:



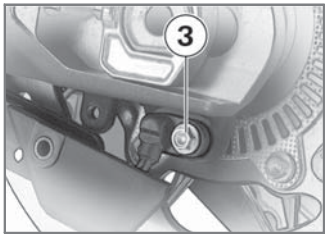
- Mount ABS sensor in holder and install screw **1** of ABS sensor.◁
- Remove auxiliary stand.
- Firmly actuate brake lever several times to lay brake pads on brake disk.

Removing rear wheel

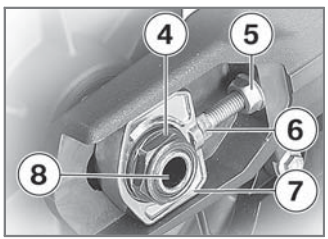
- Place motorcycle on a suitable auxiliary stand. BMW Motorrad recommends the BMW Motorrad auxiliary stand.
- Mounting auxiliary stand (➠ 79)



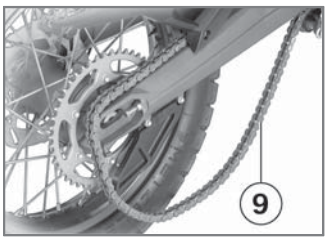
- Remove screws **1** and pull cover **2** downward somewhat.



- Remove screw **3** of speed sensor and take speed sensor out of holder.



- Remove quick-release axle nut **4**.
- Loosen lock nuts **5** on left and right by turning counterclockwise.
- Loosen adjusting screws **6** on left and right by turning clockwise so that adjusting plate **7** can be removed.
- Remove quick-release axle **8**.

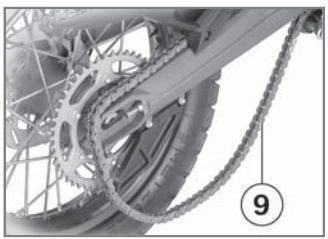


- Roll rear wheel as far forward as possible and remove chain **9** from chain sprocket.
- Roll rear wheel toward rear out of swinging arm.

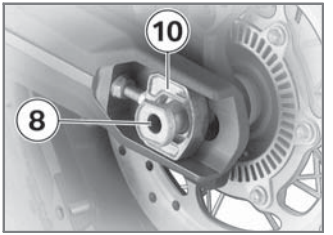
▷ The chain sprocket and the spacer sleeves on the left and right are loosely inserted in the wheel. When removing, make sure that these parts are not damaged or lost.◀

Installing rear wheel

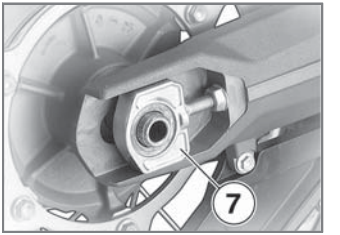
- Roll rear wheel into swinging arm while guiding brake disk between brake pads.



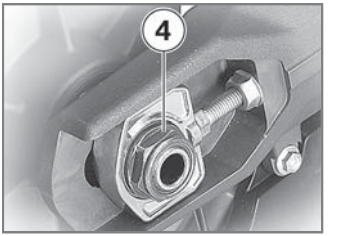
- Roll rear wheel as far forward as possible and lay chain **9** on chain sprocket.



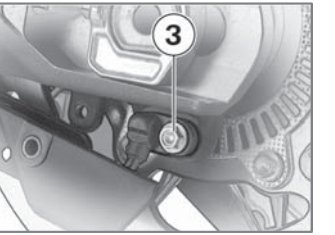
- Mount left-hand adjusting plate **10** in swinging arm and install quick-release axle **8** in brake caliper and rear wheel.
- Make sure that axle fits in cutout of adjusting plate.



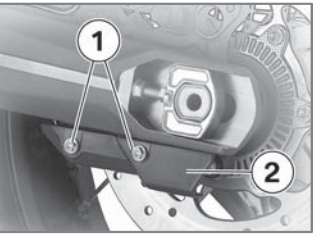
- Insert right-hand adjusting plate **7**.



- Install quick-release axle nut **4**, however do not tighten yet.



- Mount speed sensor in holder and install screw **3** of speed sensor.



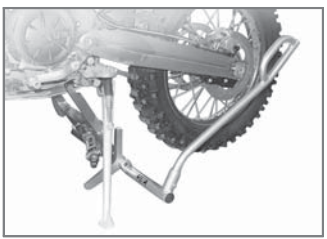
- Lay on cover **2**.
- Install 2 screws **1**.
- Adjusting chain tension (➠ 72)

- Remove auxiliary stand.

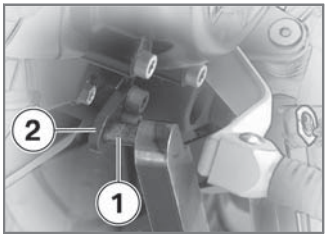
BMW Motorrad auxiliary stand

Mounting auxiliary stand

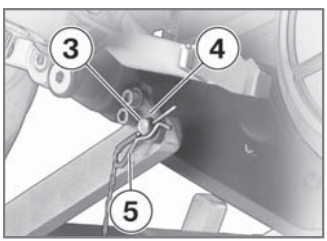
- Make sure ground is level and firm and park motorcycle.
- Use auxiliary stand with number (001631) and H-adapter with number (001639).



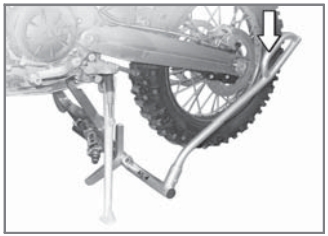
- Guide auxiliary stand under motorcycle between side stand and rear wheel with lifting lever on left.



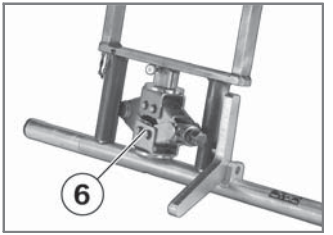
- Insert bolt **1** half way into mount **2** on left side.



- Pull bolt **3** as far as possible into mount **4** on right side.
- Insert splint **5** in hole.



- Position motorcycle horizontally so that auxiliary stand rests completely on floor.
- Press lifting lever to floor.



- Height of auxiliary stand can be adjusted with scissors jack **6** for a safe stance.

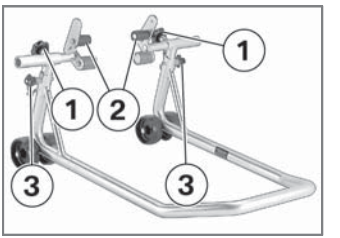
BMW Motorrad front wheel stand

Mounting front wheel stand

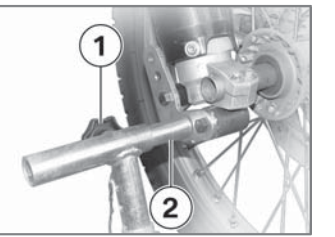
The BMW Motorrad front wheel stand is not designed for holding motorcycles without a center or other auxiliary stands. A motorcycle standing on the front wheel stand and the rear wheel alone can fall over.

Place the motorcycle on the center stand or an auxiliary stand before lifting it with the BMW Motorrad front wheel stand.◀

- Place motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad auxiliary stand.
- Mounting auxiliary stand (➡ 79)
- Use front wheel stand with number (363970).



- Loosen adjustment screws **1** of front wheel stand.
- Push two mounts **2** far enough apart that front forks fit between them.
- Use locating pins **3** to set front wheel stand to desired height.
- Center front wheel stand relative to front wheel and push it against front axle.



- Align two mounts **2** so that front forks rest securely on them.
- Tighten adjusting screws **1**.



If the motorcycle is raised too far at the front the auxiliary stand will lift clear of the ground and the motorcycle could topple to one side.
When raising the motorcycle, make sure that the auxiliary stand remains on the ground. Adjust the height of the front-wheel or auxiliary stand if necessary.◀

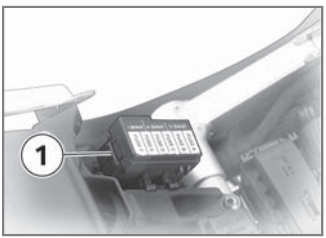
- Apply uniform pressure to push front wheel stand down and raise motorcycle.

Fuses

Removing fuse

There is a danger of fire if defective fuses are bypassed.
Always replace defective fuses with new fuses.◀

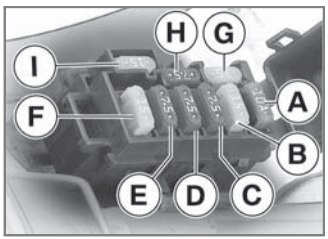
- Switch off ignition.
- Removing seat (➡ 41)



- Press locking lever **1** and fold open fuse cover.
- Pull defective fuse out of fuse box as shown in assignment diagram.

If the fuses are frequently defective, have the electrical system checked by a specialized workshop, preferably an authorized BMW Motorrad retailer.◀

Fuse assignment



A ABS (OE) (10 A)
B Engine management system (15 A)
C Low-beam headlight (7.5 A)
D Brake light, horn, instrument cluster, diagnosis plug (7.5 A)

E Parking lights, license plate light, headlight flasher, high-beam headlight (7.5 A)
F Starter relay, turn indicators, diagnosis plug (15 A)
G Spare fuse (15 A or 10 A with OE)
H Spare fuse (7.5 A)
I Spare fuse (15 A)

Installing fuse

- Replace defective fuse with fuse with required amperage.
- Close fuse cover.

» Latch audibly engages.

- Installing seat (➡ 42)

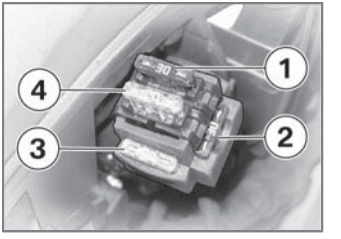
Removing ABS fuse

There is a danger of fire if defective fuses are bypassed.
Always replace defective fuses with new fuses.◀

- Switch off ignition.
- Removing right fairing side panel (➡ 95)
- Pull defective fuse out of fuse box as shown in assignment diagram.

If the fuses are frequently defective, have the electrical system checked by a specialized workshop, preferably an authorized BMW Motorrad retailer.◀

ABS fuse assignment OE



1 ABS (30 A)
2 Spare fuse (30 A)
3 Spare fuse (20 A)
4 ABS (20 A)

Installing ABS fuse

- Replace defective fuse with fuse with required amperage.
- Installing right fairing side panel (➡ 95)

Lamps

Information

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 mo-

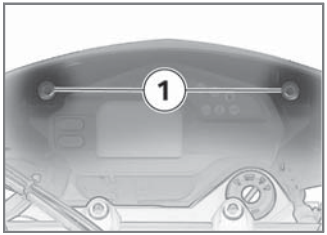
torcycle is provided in the chapter "Technical Data".◀

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.◀

Removing headlight housing

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.◀

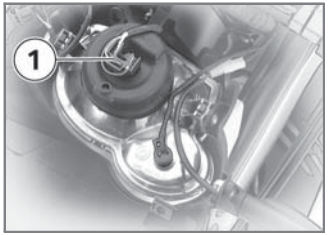
- Make sure ground is level and firm and park motorcycle.



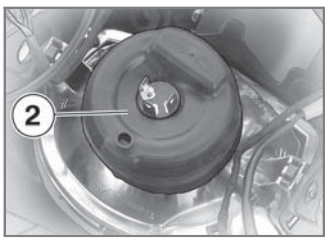
- Remove two screws **1**.
- Take off headlight housing toward front and upward.

Replacing low-beam and high-beam bulb

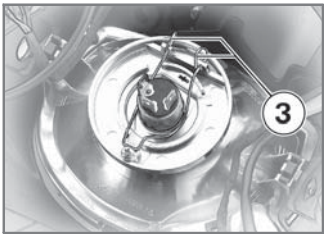
- Switch off ignition.
- Removing headlight housing (➡ 83)



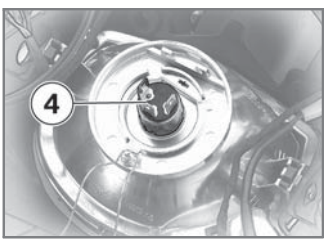
- Disconnect plug **1**.



- Remove rubber cap **2**.



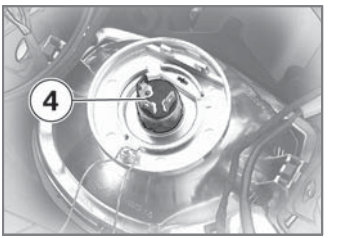
- Remove spring strap **3** from detents and fold up.



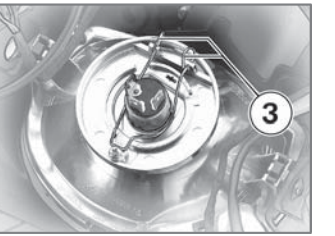
- Remove bulb **4**.
- Replace defective bulb.

Bulb for low-beam and high-beam headlight

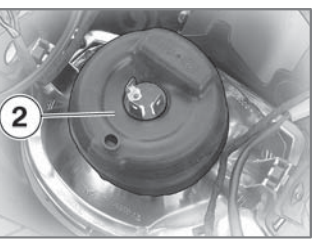
– H4 / 12 V / 55...60 W



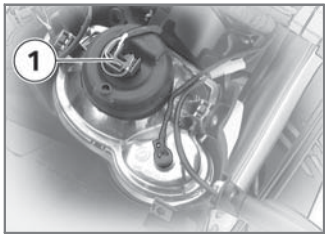
- Install bulb **4**.



- Fold closed spring strap **3** and insert in detents.

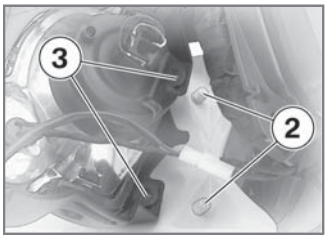


- Install rubber cap **2**.

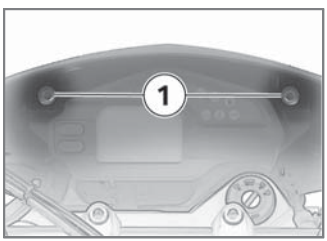


- Connect plug **1**.
- Installing headlight housing (➡ 85)

Installing headlight housing



- Insert headlight housing with mounts **3** in holders **2**.

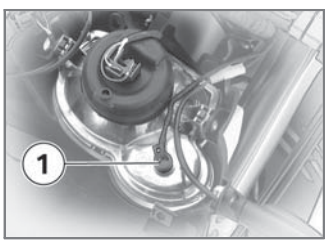


- Install two screws **1**.

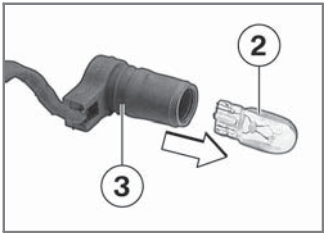
Replacing parking light bulb

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.
- Switch off ignition.
- Removing headlight housing (➡ 83)

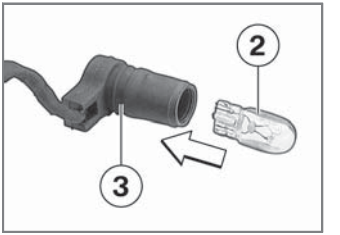


- Pull bulb socket **1** out of headlight housing.

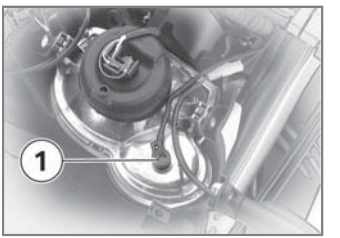


- Pull the bulb **2** out of the socket **3**.
- Replace defective bulb.

	Bulb for parking light
– W5W / 12 V / 5 W	



- Insert bulb **2** into socket **3**.

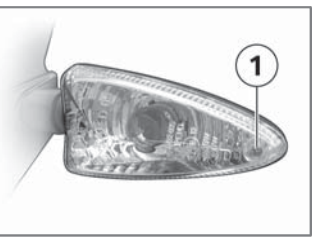


- Insert bulb socket **1** into headlight housing.
- Installing headlight housing (➠ 85)

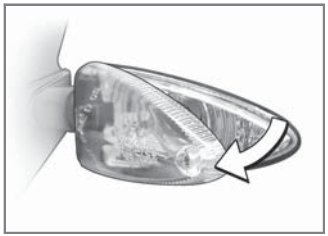
Replacing front and rear turn indicator bulbs

⚠ 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.◀

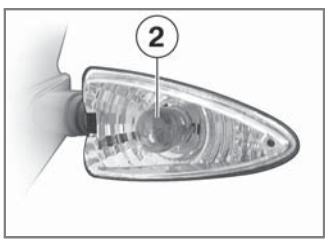
- Make sure ground is level and firm and park motorcycle.



- Remove screw **1**.



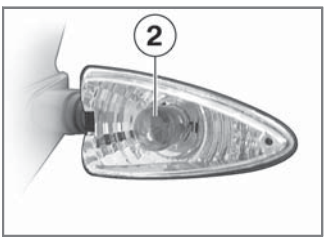
- Pull glass on screw connection side out of mirror housing.



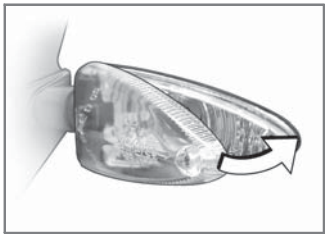
- Remove bulb **2** from light housing by turning it counterclockwise.
- Replace defective bulb.

Bulbs for flashing turn indicators, front
– RY10W / 12 V / 10 W

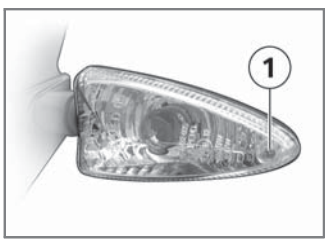
Bulbs for flashing turn indicators, rear
– RY10W / 12 V / 10 W



- Install bulb **2** by turning clockwise in light housing.



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



- Install screw **1**.

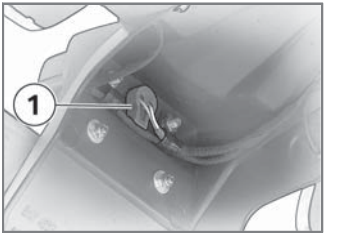
Diode rear light

If more than three diodes of the rear light have failed, it must be replaced. In this case, consult a specialized workshop, preferably an authorized BMW Motorrad retailer.

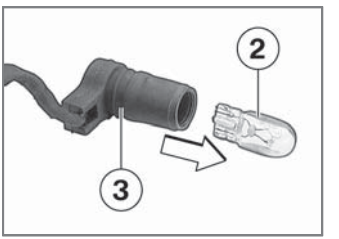
Replacing license-plate bulb

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.

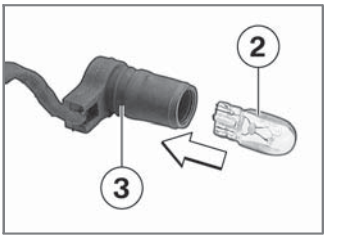


- Pull bulb socket **1** out of bulb holder.

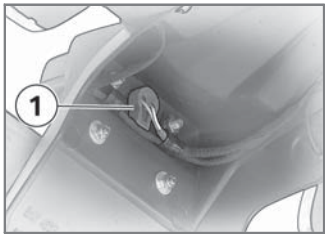


- Pull bulb **2** out of socket **3**.
- Replace defective bulb.

Bulb for license-plate light
– W5W / 12 V / 5 W



- Insert bulb **2** into socket **3**.



- Insert bulb socket **1** into bulb holder.

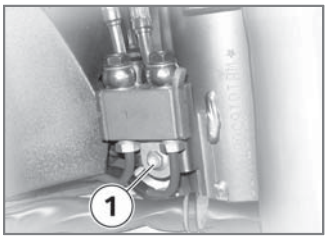
Air filter

Replacing air filter insert

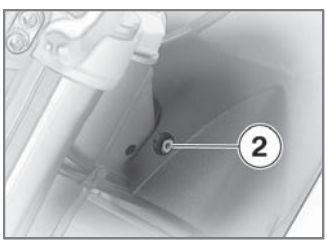
If it is not standing firmly, the motorcycle could topple in the course of the operations described below.
Make sure that the motorcycle is steady on its stand.◀

- Make sure ground is level and firm and park the motorcycle.
- Removing seat (➠ 41)

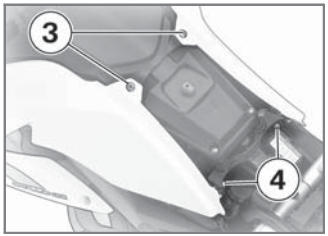
With OE BMW Motorrad ABS:



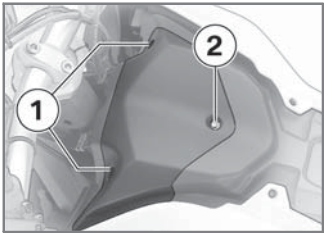
- To achieve better accessibility, loosen screw **1** of brake line distributor on right side.◁



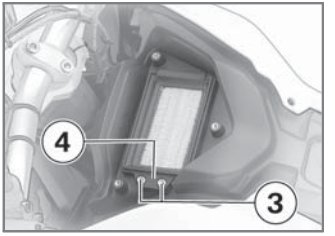
- Remove screws **2** on left and right.



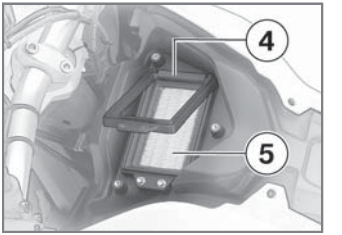
- Remove screws **3**.
- Pull side panels out of holders **4**.
- Press side panels apart and remove center fairing panel.



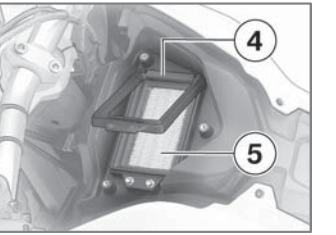
- Remove screws **1** and screw **2** and take off air filter cover.



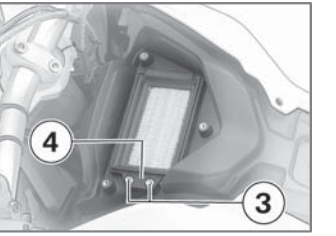
- Remove screws **3** and fold up frame **4** on left-hand side.



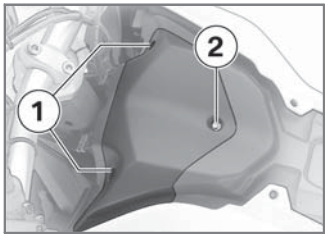
- Remove frame **4** on right-hand side and take out air filter insert **5**.
- Knock out or replace air filter insert depending on degree of soiling.



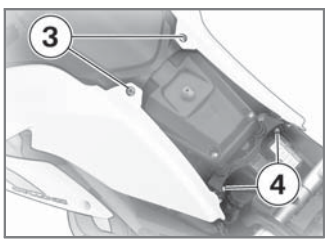
- Insert air filter insert **5** and insert frame **4**.



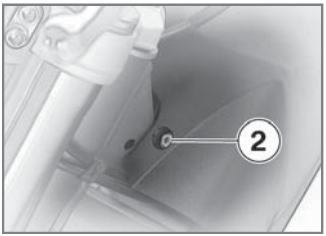
- Close frame **4** and install screws **3**.



- Lay on air filter cover and install screws **1** and screw **2**.

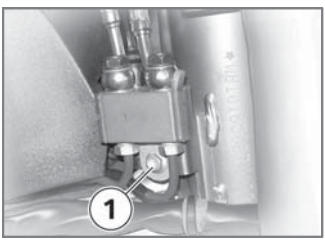


- Press side panels apart and install center fairing panel.
- Insert side panels in holders **4**.
- Install screws **3**.



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

With OE BMW Motorrad ABS:



- Tighten screw **1** of brake line distributor.◁
- Installing seat (➡ 42)

Jump-starting

The wires leading to the power socket do not have a load-capacity rating adequate for jump-starting the engine. Excessively high current can lead to a cable fire or damage to the motorcycle electronics.
Do not use the onboard socket to jump-start the engine of the motorcycle.◀

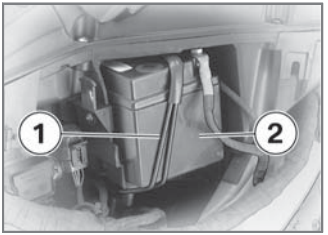
Touching live parts of the ignition system with the engine running can cause electric shock.
Do not touch parts of the ignition system when the engine is running.◀

A short-circuit can result if the crocodile clips of the jump leads are accidentally brought into contact with the motorcycle.
Use only jump leads fitted with

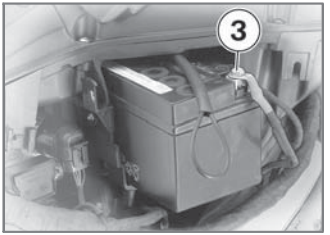
fully insulated crocodile clips at both ends.◀

Jump-starting with a donor-battery voltage higher than 12 V can damage the motorcycle electronics.
The battery of the donor vehicle must have a voltage of 12 V.◀

- Removing right fairing side panel (➡ 95)
- When jump-starting the engine, do not disconnect the battery from the onboard electrical system.



- Remove rubber tensioning strap **1** from holder at bottom and pull out battery **2** somewhat.
- Run engine of donor vehicle during jump-starting.



- Begin by connecting one end of red jump lead to positive terminal **3** of discharged battery and other end to positive terminal of donor battery.
- Connect black jumper cable to negative terminal of supporting battery and then to a suitable grounding point of this motorcycle.
- Start engine of motorcycle with discharged battery in usual way; if engine refuses to start, wait a few minutes before repeating attempt to protect starter and supporting battery.

- Allow both engines to idle for a few minutes before disconnecting jump leads.
- First disconnect jumper cables from negative terminal and from grounding point respectively, then from positive terminal **3**.

To start the engine, do not use start sprays or similar items.◀

- Installing right fairing side panel (➡ 95)

Battery

Maintenance instructions

Correct upkeep, recharging and storage will prolong the life of the battery and are essential if warranty claims are to be considered.

Compliance with the points below is important in order to maximize battery life:

- Keep the surface of the battery clean and dry
- Do not open the battery
- Do not top up with water
- Be sure to read and comply with the instructions for charging the battery on the following pages
- Do not turn the battery upside down

If the battery is not disconnected, the onboard electronics (clock etc.) will drain the battery. This can cause the battery to run flat. If this happens, warranty claims will not be accepted.

During periods when the motorcycle is not being used, of more than four weeks, disconnect the battery from the motorcycle or connect a trickle charger to the battery.◀

Charging connected battery

Charging the connected battery directly at the battery terminals can damage the motorcycle electronics.

To charge the battery via the battery terminals, disconnect the battery first.◀

If you switch on the ignition and the multifunction display and indicator lights fail to light up, the battery is completely flat. Attempting to charge a completely flat battery via the onboard socket can cause damage to the motorcycle's electronics.

Always charge a completely drained battery directly at the terminals of the disconnected battery.◀

- Charge connected battery via onboard socket (OE).
- Comply with the operating instructions of the charger.

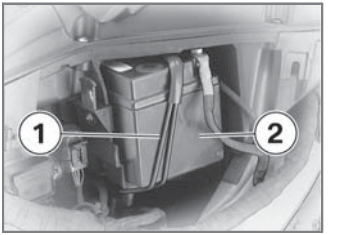
Charging disconnected battery

- 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.

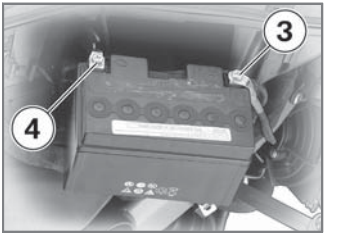
In the case of longer periods when the motorcycle is not being used, the battery must be recharged regularly. See the instructions for caring for your battery. Always fully recharge the battery before returning it to use.◀

Removing battery

- Removing right fairing side panel (➡ 95)



- Unhook clamping strap **1**.
- Pull out battery **2**.

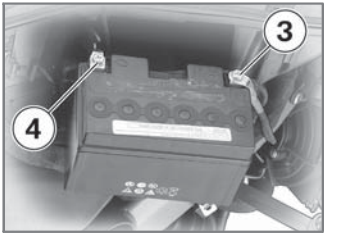


An incorrect disconnection sequence increase the risk of short-circuiting.

Always observe the proper sequence.◀

- Remove battery ground wire **4** first.
- Then remove positive battery cable **3**.

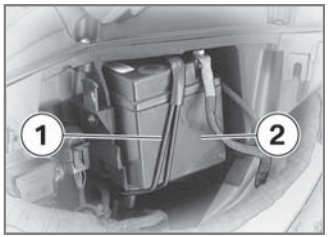
Installing battery



An incorrect installation sequence increases the risk of short-circuiting.
Always observe the proper sequence.◀

- First install the positive battery cable **3**.

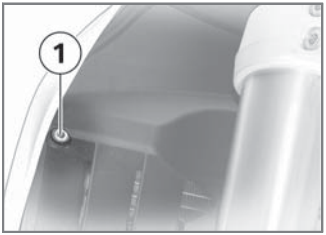
- Then install negative battery cable **4**.



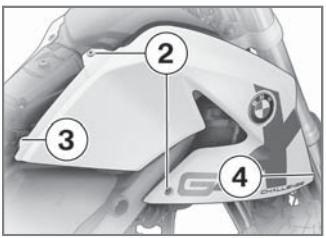
- Insert battery **2** with negative terminal first.
- Hook in clamping strap **1**.
- Installing right fairing side panel (➡ 95)
- Setting clock (➡ 29)

Removing right fairing side panel

- Make sure ground is level and firm and park the motorcycle.
- Removing seat (➡ 41)

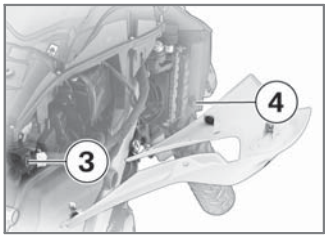


- Remove screw **1** at front right.

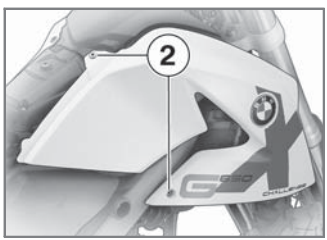


- Remove screws **2**.
- First pull fairing side panel out of holder **3**, then toward rear out of holder **4**.
- Take off fairing side panel.

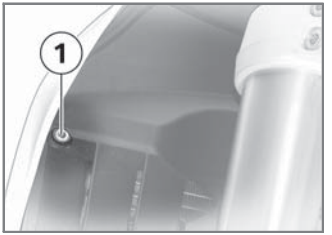
Installing right fairing side panel



- First insert fairing side panel into holder **4**, then into holder **3**.



- Install screws **2**.

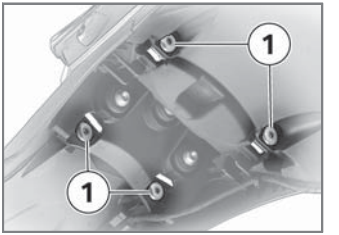


- Install screw **1** at front right.
- Installing seat (➡ 42)

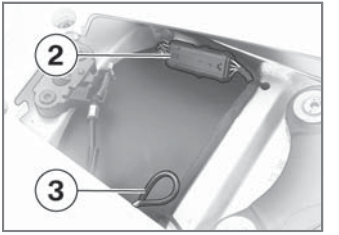
License-plate carrier

Removing license-plate carrier

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

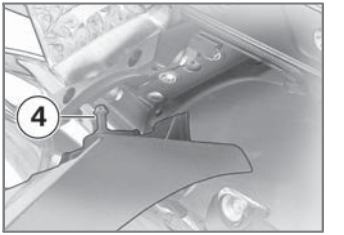


- Remove four screws **1**.



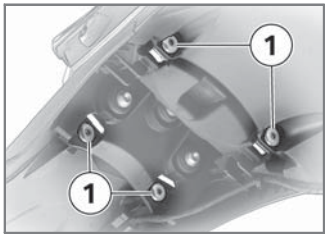
- Disconnect connector **2**.
- Unlock license-plate carrier with wire loop **3** and remove while threading out connector **2** with cable.

Installing license-plate carrier

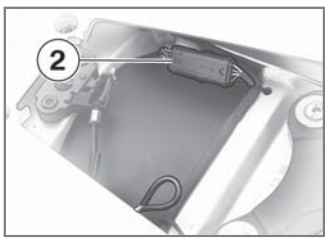


- Thread in cable, position license-plate carrier and press upward.

» Pin **4** audibly engages.



• Install four screws **1**.



• Close connector **2**.

Care

Care products 100
Washing your motorcycle 100
Cleaning sensitive motorcycle parts 100
Paint care 101
Protective wax coating 102
Storing motorcycle 102
Returning motorcycle to use 102

Care products

BMW Motorrad recommends that you use cleaning and care products available at your authorized BMW Motorrad retailer. BMW Care Products 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 brakes 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
– Covering glass of the 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.◀

Chrome

Especially in the case of road salt, carefully clean chrome parts with plenty of water and BMW auto shampoo. Use chrome polish for additional treatment.

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.◀

Paint care

Washing the motorcycle regularly will help counteract the long-term effects of substances that damage the paint, especially if your motorcycle is ridden in areas with high air pollution or natural sources of dirt, e.g. tree resin or pollen.
However, remove particularly aggressive materials immediately; otherwise changes in the paint or discoloration can occur. These include spilled fuel, oil, grease, brake fluid as well as bird droppings. BMW Car Polish or BMW Paint Cleaner are recommended for this.
Contamination of the paint finish is particularly easy to see after the motorcycle has been washed. Remove this type of soiling with cleaning naphtha or spirit on a clean cloth or cotton ball. BMW Motorrad recommends removing tar spots with BMW Tar Re-

mover. Then add a protective wax coating to the paint at these locations.

Protective wax coating

To preserve the finish of your motorcycle, BMW Motorrad recommends using BMW Car Wax or agents that contain carnauba or synthetic waxes.
A sure sign that the paint must be protected, is the fact that water no longer pearls up on it.

Storing motorcycle

- Clean motorcycle.
- Remove battery.
- Spray brake and clutch lever, side stand pivot and, if necessary, main stand pivot 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.

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.
- Before removing the auxiliary stand, check the air pressure in the Air Damping System and adjust if necessary.

Technical data

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Wheels and tires 111
Electrical system 113
Frame 114
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Weights 115
Riding specifications 116

Troubleshooting chart

Engine does not start at all or is very difficult to start

Possible cause	Remedy
Emergency ON/OFF switch activated.	Emergency ON/OFF switch in operating position.
Side stand extended and gear engaged.	Retract side stand (➡ 46).
Gear engaged and clutch not operated.	Place transmission in neutral or disengage clutch (➡ 46).
No fuel in tank.	Refueling (➡ 52)
Battery not adequately charged.	Charging connected battery (➡ 93)

Threaded fasteners

Front wheel	Value	Valid
Nut on front quick-release axle		
M20 x 1.25	59 lb/ft (80 Nm)	
Front axle clamping		
M6	7 lb/ft (10 Nm)	

Rear wheel	Value	Valid
Nut on rear quick-release axle		
M20 x 1.25	59 lb/ft (80 Nm)	
Locknut of drive-chain tensioning screw		
M8	18 lb/ft (25 Nm)	

Mirror arm	Value	Valid
Mirror union nut		
	15 lb/ft (20 Nm)	
Mirror clamping screw on handlebar		
	15 lb/ft (21 Nm)	

Engine

Engine design	Single-cylinder, four-stroke engine, DOHC control with bush roller-chain drive, 4 valves actuated by bucket tappets, compensating shaft, liquid cooling for cylinders and cylinder head. Integrated water pump, 5-speed transmission and dry-sump lubrication
Displacement	652 cc (652 cm^3)
Cylinder bore	3.9 in (100 mm)
Piston stroke	3.3 in (83 mm)
Compression ratio	11.5:1
Rated output	53 hp (39 kW), at engine speed: 7000 min^{-1}
Torque	44 lb/ft (60 Nm), at engine speed: 5250 min^{-1}
Maximum engine speed	Max 7500 min^{-1}
Idle speed	1480 min^{-1}

Fuel

Recommended fuel quality	95 ROZ/RON, Super unleaded
Usable fuel quantity	≤2.5 gal (≤9.5 l)
Reserve fuel quantity	≥2.1 quarts (≥2 l)

Engine oil

Engine oil, capacity	2.4 quarts (2.3 l), with filter change
Lubricant	Engine oil 15W-40
Engine oil, quantity for topping up	0.3 quarts (0.25 l), Difference between MIN and MAX
Lubricant	Engine oil 15W-40
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. BMW Motorrad recommends not using synthetic oils for the first 6,000 miles (10,000 km). Ask your BMW Motorrad retailer for engine oils suitable for your motorcycle.
Permissible viscosity classes	
SAE 10 W-40	≥-4 °F (≥-20 °C), Operation at low temperatures
SAE 15 W-40	≥14 °F (≥-10 °C)

Clutch

Clutch design	Multi-disk oil-bath clutch

Transmission

Transmission design	Claw-shifted 5-speed transmission
Transmission gear ratios	1.946 (37:72 teeth), Primary gear ratio 2.750 (12:33 teeth), 1st gear 1.750 (16:28 teeth), 2nd gear 1.313 (16:21 teeth), 3rd gear 1.045 (22:23 teeth), 4th gear 0.875 (24:21 teeth), 5th gear

Rear-wheel drive

Type of final drive	Chain drive
Type of rear suspension	Two-arm cast aluminum swinging arm
Secondary gear ratio	3.1 (15:47 teeth)

Running gear

Type of front suspension	Upside-down telescopic forks
Spring travel, front	10.6 in (270 mm), On wheel
Type of rear suspension	Air Damping System, rebound-stage damping selectable in 2 stages between Comfort and Sport
Spring travel at rear wheel	10.6 in (270 mm), On wheel

Brakes

Type of front brake	Hydraulic single-rotor disk brake with 2-piston floating caliper and fixed brake disk
Brake-pad material, front	Organic
Type of rear brake	Hydraulic single-rotor disk brake with 1-piston floating caliper and fixed brake disk
Brake-pad material, rear	Organic

Wheels and tires

Tire combinations recommended at time of going to press (As at: 01.06.2007)	front: Metzeler Enduro 3, 90/90-21 (54S) rear: Metzeler Enduro 3, 140/80-18 (70S)
	front: Metzeler MCE Karoo, 90/90 - 21 M/ C (54R) M+S rear: Metzeler MCE Karoo, 140/80 - 18 M/ C (70R) M+S The permissible top speed must be specified as a reminder within the driver's field of vision (e.g. sticker).
Without OE BMW Motorrad ABS:	front: Pirelli Scorpion PRO F.I.M., 90/90 - 21 (54M) M+S rear: Pirelli Scorpion PRO F.I.M., 140/80 - 18 (70M) M+S Max 81 mph (Max 130 km/h) The permissible top speed must be specified as a reminder within the driver's field of vision (e.g. sticker).
	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 x 21
Rear wheel	
Rear wheel design	Spoke wheel
Rear-wheel rim size	2.50" x 18"
Rear tire designation	140/80 x 18
Tire pressures	
Tire pressure, front	26.1 psi (1.8 bar), Single rider, with cold tire 27.6 psi (1.9 bar), Driver with passenger and/or load, with cold tire
Tire pressure, rear	29 psi (2 bar), Single rider, with cold tire 31.9 psi (2.2 bar), Driver with passenger and/or load, with cold tire

Electrical system

Electrical rating of onboard socket	
With OE BMW Motorrad ABS Or With OA Onboard socket:	5 A
Fuses	"Minifuse" blade-type fuses with 7.5 A and 15 A
With OE BMW Motorrad ABS:	"Minifuse" blade-type fuses with 10 A, 20 A and 30 A
Battery	
Battery manufacturer and designation	ETZ 10 S
Battery design	AGM (Absorptive Glass Matt) battery
Battery voltage	12 V
Battery capacity	10 Ah
Spark plugs	
Spark plugs, manufacturer and designation	NGK DR8 EB
Electrode gap of spark plug	0.02...0.03 in (0.6...0.7 mm), New Max 0.04 in (Max 0.9 mm), Wear limit

Bulbs	
Bulb for low-beam and high-beam headlight	H4 / 12 V / 55...60 W
Bulb for parking light	W5W / 12 V / 5 W
Bulbs for flashing turn indicators, front	RY10W / 12 V / 10 W
Bulbs for flashing turn indicators, rear	RY10W / 12 V / 10 W
Bulb for license-plate light	W5W / 12 V / 5 W

Frame

Frame design	Steel bridge frame, carrying drive unit and bolted-on rear frame
Location of type plate	On front frame at right
Location of vehicle identification number	On front frame at right

Dimensions

Motorcycle length	86.8 in (2205 mm)
Motorcycle height	49.4 in (1255 mm), Without mirrors 58.7 in (1490 mm), With mirrors
Motorcycle width	35.7 in (907 mm), Across mirrors
Driver's seat height	36.6 in (930 mm), Without driver at unladen weight
Ground clearance	11.2 in (285 mm)

Weights

Unladen weight	344 lbs (156 kg), DIN unladen weight, ready for road, 90 % full tank of gas, without OE
Permissible gross weight	739 lbs (335 kg)
Maximum payload	395 lbs (179 kg)

Riding specifications

Top speed	103 mph (165 km/h)

Service

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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 necessary 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 Service Card - On-the-spot breakdown assistance

With all new BMW motorcycles, the BMW Motorrad Service Card protects 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, 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 has to be performed when the motorcycle has covered between 300 miles (500 km) and 750 miles (1,200 km).

BMW Service

BMW Service is carried out once a year. The scope of the services performed may be dependent on the vehicle owner and the mileage driven. Your BMW Motorrad retailer confirms that the service has been performed and enters the date for the next service.
For drivers who drive long distances annually, it may be necessary to come in for service before the entered date. In this case a corresponding maximum odometer reading will also be entered in the confirmation of service. If this odometer reading is reached before the next service date, service must be performed sooner.

Confirmation of maintenance work

BMW Pre-Delivery Check

Conducted

on_____

Stamp, Signature

BMW Running-in Check

Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

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Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

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Next service
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Stamp, Signature

BMW Service
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Odometer reading_____

Next service
at the latest

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or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

BMW Service
Conducted

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if reached sooner,

Odometer reading_____

Stamp, Signature

Confirmation of service

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

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Work carried out	Odometer reading	Date

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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, LCC.

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.

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.
The right to modify designs, equipment and accessories is reserved.
Errors and omissions excepted.

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Fuel	
Recommended fuel quality	95 ROZ/RON, Super unleaded
Usable fuel quantity	≤2.5 gal (≤9.5 l)
Reserve fuel quantity	≥2.1 quarts (≥2 l)
Tire pressures	
Tire pressure, front	26.1 psi (1.8 bar), Single rider, with cold tire 27.6 psi (1.9 bar), Driver with passenger and/or load, with cold tire
Tire pressure, rear	29 psi (2 bar), Single rider, with cold tire 31.9 psi (2.2 bar), Driver with passenger and/or load, with cold tire

BMW recommends Castrol

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