Rider's Manual (US Model)
S 1000 RR

BMW Motorrad
The Ultimate Riding Machine
## Motorcycle/Retailer Data

### Motorcycle data

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<tbody>
<tr>
<td>Vehicle Identification Number</td>
</tr>
<tr>
<td>Color number</td>
</tr>
<tr>
<td>First registration</td>
</tr>
<tr>
<td>Registration number</td>
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### Retailer Data

<table>
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<tr>
<th>Contact in Service</th>
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<tr>
<td>Ms./Mr.</td>
</tr>
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<td>Phone number</td>
</tr>
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</table>
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 12. 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 accessory
BMW optional accessories can be purchased and installed at your authorized BMW Motorrad retailer.

EWS Electronic immobilizer.

DWA Anti-theft alarm.

ABS Anti-Lock Brake System.

DTC Dynamic Traction Control.
Equipment
When you ordered your BMW motorcycle, 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 separate operating instructions.

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

Currentness of this manual
The high safety and quality standards of BMW motorcycles are maintained by constant development work on designs, equipment and accessories. Because of this, your motorcycle may differ from the information supplied in the Rider’s Manual. In addition, BMW Motorrad cannot guarantee the total absence of errors. We hope you will appreciate that no claims can be entertained on the basis of the data, illustrations or descriptions in this manual.
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2 Adjusting rear compression damping (» 50)
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2. Vehicle Identification Number and type plate (on steering-head bearing at right)
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4. Coolant level indicator (behind side panel) (⇒ 113)
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4 Onboard toolkit (⇒ 106)
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6 Rider’s Manual (US Model)
Instrument cluster

1  Indicator and warning lights (⇒ 20) (⇒ 21)
2  Tachometer
3  Shifting flash (⇒ 63)
4  Ambient brightness sensor (for brightness adjustment of instrument lighting)
   – with anti-theft alarm
   Anti-theft alarm indicator light (see anti-theft alarm operating instructions)
5  Multifunction display (⇒ 20)

The instrument-cluster lighting has automatic day and night switchover.
Headlight
1 Parking lights
2 Low-beam headlight
3 High-beam headlight
**Status indicators**

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Standard displays
Multifunction display

1 Speedometer
2 Coolant temperature
3 Clock (37)
4 Odometer and trip meters (38)
5 Driving mode (43)
6 Gear indicator (20)

Indicator lights

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

Service display

If the time remaining until the next service lies within a month, the service date is briefly displayed following the pre-ride check. The month 1 and year 2 are shown. In this example the display means "August 2010".

Gear indicator
The gear engaged or N for neutral appears on the display.

If no gear is engaged, the "neutral" indicator light also lights up.
If the motorcycle is driven long distances annually, it is possible that earlier service is required. If the odometer reading for the earlier service lies within 621 miles (1000 km), the remaining miles (kilometers) are counted down in 62-mile (100-km) steps and briefly displayed following the pre-ride check.

If the service interval has been exceeded, the general warning light also lights up yellow in addition to the date or mileage display. The Service lettering is displayed continuously.

If the service display appears more than a month before the service date, the stored date must be adjusted in the instrument cluster. This situation can occur if the battery has been disconnected for a longer time. Consult a certified workshop, preferably an authorized BMW Motorrad retailer, for setting of the date.

Standard warning indicators

Display

Warnings are shown with one of the warning lights 1 or with a warning in the display.
If a warning 2 is shown in the display, the General warning light 3 also lights up red or yellow.

If several warnings are active, all corresponding warning lights are displayed and warnings are shown alternately.

The possible warnings are listed on the next page.
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<tr>
<th>Warning light</th>
<th>Displays</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lights up yellow</td>
<td>EWS ! is indicated</td>
<td>Electronic immobilizer is active (⇒ 25)</td>
</tr>
<tr>
<td>Lights up</td>
<td></td>
<td>Fuel down to reserve (⇒ 25)</td>
</tr>
<tr>
<td>Lights up red</td>
<td>Temperature display flashes</td>
<td>Coolant temperature too high (⇒ 25)</td>
</tr>
<tr>
<td>Lights up</td>
<td></td>
<td>Engine in emergency-operation mode (⇒ 25)</td>
</tr>
<tr>
<td>Lights up yellow</td>
<td>LAMPR ! is indicated</td>
<td>Rear bulb defective (⇒ 26)</td>
</tr>
<tr>
<td></td>
<td>LAMPF ! is indicated</td>
<td>Parking light bulb defective (⇒ 26)</td>
</tr>
<tr>
<td></td>
<td>LAMP ! is indicated</td>
<td>Turn indicator bulb defective (⇒ 26)</td>
</tr>
<tr>
<td></td>
<td>VDS ! is shown in the empty display</td>
<td>Motorcycle has fallen over (⇒ 27)</td>
</tr>
<tr>
<td>Warning light</td>
<td>Displays</td>
<td>Meaning</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>VDS ! is indicated</td>
<td>Fall sensor missing or defective  (➔ 27)</td>
<td></td>
</tr>
</tbody>
</table>
Electronic immobilizer is active

⚠️ General warning light shows yellow.

EWS is indicated.

Possible cause:
The key being used is not authorized for starting, or communication between the key and engine electronics is disrupted.

- Remove other ignition keys located on the ignition key.
- Use the reserve key.
- Have the defective key replaced, preferably by an authorized BMW Motorrad retailer.

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 unexpectedly can lead to accidents.

Do not drive until the fuel tank is completely empty.

Possible cause:
At the most, the fuel tank still contains the reserve fuel quantity.

- Reserve fuel quantity
  - Approx. 1.1 gal (Approx. 4 l)

Possible cause:
If possible, continue driving in the part-load range to cool down the engine.

Engine in emergency-operation mode

⚠️ Engine error warning light lights up.

The engine is in the emergency operating mode. It is possible that the full engine output and speed range may not be available, which can cause dangerous driving situations, particularly for passing maneuvers.

Adapt your driving style to

Coolant temperature too high

⚠️ General warning light shows red.

The coolant temperature display flashes.

- Continued driving with an overheated engine can result in engine damage.

Be sure to observe the measures listed below.

Possible cause:
The coolant temperature is too high.

- If possible, continue driving in the part-load range to cool down the engine.

- 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.
the possibly reduced engine performance.●
Possible cause:
The engine control unit has di-
agnosed a fault. In exceptional
cases, the engine stops and can
no longer be started. Otherwise,
the engine runs in the emer-
gency operating mode.
● Continued driving is possible,
however the accustomed en-
gine output and speed range
may not be available.
● Have the malfunction corrected
as soon as possible by a spe-
cialized workshop, preferably
an authorized BMW Motorrad
retailer.

Rear bulb defective
General warning light shows
yellow.
LAMPR ! is indicated.

Possible cause:
Taillight or brake light bulb defec-
tive.
● The diode tail light must be re-
placed. Please contact a spe-
cialized workshop, preferably
an authorized BMW Motorrad
retailer.

Parking light bulb
defective
LAMPF ! is indicated.
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.●
Possible cause:
Parking light bulb defective.
● Replacing left parking light bulb
(● 130).

● Replacing right parking light
bulb (● 132).

Turn indicator bulb
defective
LAMP ! is indicated.
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.●
Possible cause:
Turn indicator bulb defective
● Replacing front and rear turn
indicator bulbs (● 133).

Possible cause:
The license-plate carrier is re-
moved and the vehicle electron-
ics detects the missing turn in-
dicators. This fault message is
suppressed in the SLICK mode.
• Installing license-plate carrier (☞ 90).

**Motorcycle has fallen over**

VDS! (Vertical Down Sensor) is shown in the empty display. Possible cause:
- The fall sensor has detected a fall and switched off the engine.
- Position motorcycle upright
- Switch ignition off and then on again or switch emergency ON/OFF switch on and then off again.

**Fall sensor missing or defective**

VDS! (Vertical Down Sensor) is shown. Possible cause:
- The fall sensor is not installed.
- Install fall sensor.

**ABS warning indicators**

- with BMW Motorrad Race ABS OE

Possible cause:
- A defect was determined in the fall sensor.
- Contact a specialized workshop, preferably an authorized BMW Motorrad retailer.

**ABS warnings are indicated by one of the ABS warning lights.**

ABS warning lights described in this manual.

Possible alternative warning light due to special regulations.

Additional information on the BMW Motorrad Race ABS is provided from page (☞ 98); an overview of the possible warnings is provided on the following page.
<table>
<thead>
<tr>
<th>Warning light</th>
<th>Displays</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashes</td>
<td></td>
<td>ABS self-diagnosis not completed (29)</td>
</tr>
<tr>
<td>Lights up</td>
<td></td>
<td>ABS deactivated (29)</td>
</tr>
<tr>
<td>Lights up</td>
<td></td>
<td>ABS error (29)</td>
</tr>
</tbody>
</table>
ABS self-diagnosis not completed

ABS warning light flashes.

Possible cause:
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.

Possible cause:
The ABS system has been deactivated by the driver.
- Switching on ABS function (⇒ 42).

ABS error

ABS warning light lights up.

Possible cause:
The ABS control unit has detected an error. The ABS function is not available.
- Continued driving is possible while taking the failed ABS function into account. Observe additional information on situations which can lead to an ABS error (⇒ 99).
- Have the malfunction corrected as soon as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

DTC warning displays

- with BMW Motorrad Race ABS and DTC

Display

DTC warnings are indicated by the DTC warning light. Additional information on the BMW Motorrad DTC is provided from page (⇒ 100); an overview of the possible warnings is provided on the following page.
### Overview of warning indicators

<table>
<thead>
<tr>
<th>Warning light</th>
<th>Displays</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashes rapidly</td>
<td></td>
<td>DTC intervention  (31)</td>
</tr>
<tr>
<td>Flashes slowly</td>
<td></td>
<td>Self-diagnosis not completed  (31)</td>
</tr>
<tr>
<td>Lights up</td>
<td></td>
<td>DTC deactivated  (31)</td>
</tr>
<tr>
<td>Lights up</td>
<td></td>
<td>DTC error  (31)</td>
</tr>
</tbody>
</table>
DTC intervention

DTC warning light flashes rapidly.
The DTC has detected instability at the rear wheel and has reduced the torque. The warning light flashes longer than the DTC intervention lasts. As a result, the driver is provided with optical feedback on the regulation carried out even after the critical driving situation.

Self-diagnosis not completed

DTC warning light flashes slowly.

Possible cause:
The self-diagnosis was not completed; the DTC function is not available. So that the DTC self-diagnosis can be completed, the engine must be running and the motorcycle must be moved at a speed of at least 3 mph (5 km/h).

DTC deactivated

DTC warning light lights up.

Possible cause:
The DTC system has been deactivated by the driver.

Switching on DTC function (☞ 43).

DTC error

DTC warning light lights up.

Possible cause:
The DTC control unit has detected an error.

Continued driving is possible. It must be noted that the DTC function is not available or that its availability is restricted. Observe additional information on situations which can lead to a DTC error (☞ 101).

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

Anti-theft alarm warning indicators

- with anti-theft alarm OE
Anti-theft alarm warning are shown as warnings 2 in conjunction with the general warning light 3 following the pre-ride check and refer to the capacity of the internal anti-theft alarm battery.

The possible warnings are listed on the next page.
### Overview of warning indicators

<table>
<thead>
<tr>
<th>Warning light</th>
<th>Displays</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>DWALO ! is indicated</td>
<td>DWA ! is indicated</td>
<td>Anti-theft alarm battery weak (34)</td>
</tr>
<tr>
<td>Lights up yellow</td>
<td>DWA ! is indicated</td>
<td>Anti-theft alarm battery drained (34)</td>
</tr>
</tbody>
</table>
Anti-theft alarm battery weak

DWALO ! is indicated.

This error message is only displayed for a short time following the pre-ride check.

Possible cause:
The anti-theft alarm battery no longer has its full capacity. The operation of the anti-theft alarm is only ensured for a limited time with the motorcycle battery disconnected.
- Contact a specialized workshop, preferably an authorized BMW Motorrad retailer.

Anti-theft alarm battery drained

General warning light shows yellow.

DWA ! is indicated.

This error message is only displayed for a short time following the pre-ride check.

Possible cause:
The anti-theft alarm battery has no capacity. The operation of the anti-theft alarm is no longer ensured with the motorcycle battery disconnected.
- Contact a specialized workshop, preferably an authorized BMW Motorrad retailer.
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<tr>
<td>Luggage loops</td>
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</tr>
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</table>
Ignition switch and steering lock

Keys
You receive two master keys and one spare key. If a key is lost, please note the information on the electronic immobilizer (EWS) (● 37).

Ignition key and steering lock, tank cap and seat lock are all operated with the same key.

Switching on ignition

1. Turn key to position 1.

- Parking lights and all function circuits switched on.
- Engine can be started.
- Pre-ride check is performed. (● 60)
  - with BMW Motorrad Race ABS
  
  - ABS self-diagnosis is performed. (● 61)
  - with BMW Motorrad Race ABS and DTC
  
  - DTC self-diagnosis is performed. (● 61)

Switching off ignition

2. 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.
Electronic immobilizer EWS

The motorcycle’s electronics exchange certain continuously changing signals with the electronics in the key; these signals are specific to your motorcycle and they are transmitted via the ring antenna in the ignition lock. The engine management system does not enable engine starting until the key has been detected as “authorized” for your motorcycle. The motor can no longer be started using a disabled key; however, a disabled key can be enabled again.

Replacement and spare keys are only available through an authorized BMW Motorrad retailer. The keys are part of an integrated security system, so the retailer is under an obligation to check the legitimacy of all applications for replacement/extra keys.

Clock

Setting clock

Attempting to set the clock while riding the motorcycle can lead to accidents.

If you lose a key, you can have it disabled by your BMW Motorrad partner. For this purpose, you have to bring along all other keys that belong to the motorcycle.

Adjust the clock only when the motorcycle is stationary.

Switch on ignition.

Press and hold button 2 until hours 3 flash.

Press button 1 to increase hours.

Press button 2 to decrease hours.

When hours have been set as desired, press and hold button 2 until minutes 4 flash.

Press button 1 to increase minutes.
Odometer and trip meters

Selecting readings
- Switch on ignition.

Resetting trip meter
- Switch on ignition.
- Select desired trip meter.

The following values can be displayed:
- Total distance covered
- Trip meter 1 (Trip I)
- Trip meter 2 (Trip II)
- Operating range (after reaching reserve level)

Residual range

The operating range 1 indicates what distance can still be driven with the remaining fuel. It is only displayed after the fuel reserve is reached. This distance is calculated on the basis of fuel level and average consumption.

When refueling after running on reserve, make sure that you top up the tank to a level above reserve, as otherwise the sensor will not be able to register the new level. If the sensor cannot register the new level the
residual-range readout cannot be updated.

The determined residual range is an approximate reading. BMW Motorrad therefore recommends that you do not try to use the full remaining range before refueling.

**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 headlight switches on automatically when you start the engine.

**High-beam headlight and headlight flasher**
- Start engine.
  
  - Press switch 1 toward front to switch on high-beam headlight.
  - Pull switch 1 downward to operated headlight flasher.

**Parking light**
- Switch off ignition.
  
  - Press button 1 to left and hold immediately after switching off ignition until parking light is switched on.
  - Switch ignition on and then off again to switch off parking light.

**Turn indicators**

**Operating turn indicator**
- Switch on ignition.
  
  After driving for approx. ten seconds or after covering a distance of approx. 650 ft (200 m), the turn indicators are automatically switched off.
**Hazard warning flashers**

**Switching on hazard warning flashers**
- Switch on ignition.

! The hazard warning flashers place a strain on the battery. Do not use the hazard warning flashers for longer than absolutely necessary.

If a turn indicator button is pressed with the ignition switched on, the flashing function replaces the emergency flashing function as long as the button is pressed. If the turn indicator button is released, the emergency flasher function becomes active again.

» Ignition can be switched off.
- Press button 1 again to switch off hazard warning flashers.

**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.

**BMW Motorrad Race ABS**

- with BMW Motorrad Race ABS

**Switching off ABS function**
- Switch on ignition.

- Press and hold button 1 until the ABS warning light 2 changes its display behavior. ABS warning light lights up.

- with BMW Motorrad Race ABS and DTC

- Press and hold the button 1 until the warning lights change their display behavior: first the DTC warning light 3, then the ABS warning light 2.
  » The setting of the DTC remains unchanged.
  
  - Release button 1 within two seconds.
ABS warning light continues to light up.

> ABS function is switched off.

**Switching on ABS function**

1. Press and hold button 1 until the ABS warning light 2 changes its display behavior.
   - ABS warning light goes out; if self-diagnosis has not been completed, it begins to flash.
   - Release button 1 within two seconds.

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

3. ABS warning light remains off or continues to flash.

   > ABS function is switched on.
   - If the coding plug is not used for the SLICK function, as an alternative, the ignition can be switched off, then on again.

_Dynamic Traction Control (DTC) with BMW Motorrad Race ABS and DTC OE_

**Switching off DTC function**

- Press and hold button 1 until the DTC warning light 3 changes its display behavior.
- Release button 1 within two seconds.
- DTC function is switched off.

   > DTC warning light begins to light up.
   - The DTC function can also be deactivated while driving.
Switching on DTC function

1. Press and hold button 1 until the DTC warning light 3 changes its display behavior.
   - DTC warning light goes out; if self-diagnosis has not been completed, it begins to flash.
2. Release button 1 within two seconds.
   - DTC warning light remains off or continues to flash.
3. DTC function is switched on.
   - If the coding plug is not used for the SLICK function, as an alternative, the ignition can be switched off, then on again.
   - If the DTC warning light lights up after switching the ignition off and on and then continued driving over 3 mph (5 km/h), a DTC error has occurred.

Driving mode
Setting driving mode

1. Press button 1.
2. Switch on ignition.

Details on the selectable driving modes are provided in the chapter "Technology in Detail".

The selection arrow 1 and the selection menu 2 are displayed. The current setting is shown at position 3.
With the coding plug installed, the driving mode SLICK 4 is also offered in the selection menu.

- Install coding plug. (⇒ 45).

Press button 1 repeatedly until selection arrow is located before desired setting.

⚠️ SLICK mode is designed for racing tires (slick tires) and assumes very good adhesion values, as are usually found on racetracks only. Corresponding driving ability is also assumed. Enable SLICK mode on racetracks only, and only with racing tires.

- When selecting the SLICK mode: observe the restricted ABS control for the rear wheel (see the chapter “Technology in detail”).

» When the motorcycle comes to a stop, the selected driving mode is activated after approx. ten seconds.

» The new driving mode is activated while driving under the following conditions:
- Brake not actuated
- Throttle turned all the way back
- Clutch actuated

» After the new driving mode is activated, the selection menu disappears.

» The configured driving mode with the corresponding adaptations of the engine characteristics, ABS and DTC is maintained, even after the ignition is switched off.
Installing coding plug

⚠️ Using the coding plug voids the operating permit for public roads. Do not use the coding plug on public roads.

- Switch off ignition.
- Removing driver's seat (153).

Dirt and moisture can get into the open plug and cause malfunctions. Remount the cover cap after removing the coding plug.

- Remove cover cap of the connector 1.
- To do so, press the locking device 2 down and pull off the cap by pulling it upwards.
- Mount coding plug.
- Switch on ignition.

For safety reasons, after the coding plug is connected, the RAIN mode 1 is automatically activated.

- Setting driving mode (143).
- Installing driver's seat (153).

Brakes

Adjusting handbrake lever

⚠️ Changing the position of the brake-fluid reservoir can allow air to penetrate the brake system.

Do not reposition the handlebar controls on the handlebars or the handlebars in their mounts.
Adjusting the handbrake lever while driving can lead to accidents. Only adjust the handbrake lever when the motorcycle is stationary. Always check the adjustment after removing the mirror from the motorcycle.

Adjust the handbrake lever and check that it is freely movable. If the lever is difficult to move, it may be necessary to adjust the handbrake lever. If the handbrake lever is too loose, it may be necessary to replace it. If the handbrake lever is too tight, it may be necessary to replace it.

Mirrors
Adjusting mirrors

- Rotate the adjusting screw into the desired position by applying gentle pressure from the rear.
- Move mirror into desired position by twisting.

Spring preload
Setting
The spring preload on the front wheel must be adapted to the nature of the terrain. Uneven terrain requires a high spring preload, flat terrain requires a lower spring preload.

Spring preload on front wheel
- Make sure ground is level and firm and park motorcycle.
- Make sure there is no load on the motorcycle; remove all items of luggage, if carried.
Hold motorcycle in vertical position and measure distance \( d \) between lower edge 1 of immersion tube and front axle 2.

Load motorcycle with driver.

With the assistance of a helper, measure distance \( d \) between points 1 and 2 again and calculate difference (spring deflection) between measured values.

Adjustment of spring preload dependent on loading

- Compressing front wheel

\[ 0.4...0.6 \text{ in (10...15 mm)} \] (With rider 187 lbs (85 kg))

Your motorcycle’s handling will suffer if you do not match the spring-preload and damping-characteristic settings. Adjust the damping characteristic to suit the spring preload.

- To decrease spring deflection (increase spring preload), turn adjusting screws 3 with tool of onboard toolkit in direction a.
- To decrease spring deflection (decrease spring preload), turn adjusting screws 3 with tool of onboard toolkit in direction b.

Adjusting spring preload for rear wheel

- Make sure ground is level and firm and park motorcycle.
- Make sure there is no load on the motorcycle; remove all items of luggage, if carried.

Loosen screw 1 with tool of onboard toolkit.
Hold motorcycle in vertical position and measure distance \(d\) between lower edge 1 of license-plate carrier and screw 2 of chain guard.

Load motorcycle with driver.

With the assistance of a helper, measure distance \(d\) between points 1 and 2 again and calculate difference (spring deflection) between measured values.

Adjustment of spring preload dependent on loading:
- Compression of rear-wheel springs
- 0.8...1 in (20...25 mm) (With rider 187 lbs (85 kg))

To increase spring deflection (increase spring preload), turn adjustment ring 2 with tool of onboard toolkit in direction b.

To increase spring deflection (decrease spring preload), turn adjustment ring 2 with tool of onboard toolkit in direction a.

Tighten screw 1 to appropriate torque.

Your motorcycle’s handling will suffer if you do not match the spring-preload and damping-characteristic settings. Adjust the damping characteristic to suit the spring preload.

Damping Setting
The damping must be adjusted to the road conditions and the spring preload.
- A rough road surface requires softer damping than a smooth road surface.
- An increase in spring preload requires firmer damping, a re-
Adjusting compression damping on front wheel

- Use adjusting screws 1 on left and right to adjust compression damping.

To increase damping: turn adjusting screw with tool on onboard toolkit so that marking 2 points to a higher scale value.

To decrease damping: turn adjusting screw with tool of onboard toolkit so that marking 2 points to a lower scale value.

Compression stage, basic setting, front

- Position 3 (comfortable setting with driver 187 lbs (85 kg))
- Position 5 (normal setting with driver 187 lbs (85 kg))

Rebound-stage damping on front wheel

- Position 8 (sporty setting with driver 187 lbs (85 kg))

Adjust rebound-stage damping with adjusting screws 1 on left and right-hand fork leg.

- Make sure that the same values are set on the left and right.
To increase damping: turn adjusting screw with tool of onboard toolkit so that marking 2 points to a higher scale value.

To decrease damping: turn adjusting screw with tool of onboard toolkit so that marking 2 points to a lower scale value.

Rebound stage, basic setting, front

- Position 2 (comfortable setting with driver 187 lbs (85 kg))
- Position 5 (normal setting with driver 187 lbs (85 kg))

Adjusting compression damping for rear wheel

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

To increase damping: turn adjusting screw or adjustment ring with tool of onboard toolkit so that marking 3 or 4 points to a higher scale value.

To decrease damping: turn adjusting screw or adjustment ring with tool of onboard toolkit so that marking 3 or 4 points to a lower scale value.
Pressure stage basic setting at rear High-Speed
- Position 2 (comfortable setting with driver 187 lbs (85 kg))
- Position 6 (normal setting with driver 187 lbs (85 kg))
- Position 10 (sporty setting with driver 187 lbs (85 kg))

Pressure stage basic setting at rear Low-Speed
- Position 1 (comfortable setting with driver 187 lbs (85 kg))
- Position 4 (normal setting with driver 187 lbs (85 kg))
- Position 9 (sporty setting with driver 187 lbs (85 kg))

Adjusting rebound-stage damping for rear wheel
- Make sure ground is level and firm and park motorcycle.

Adjust rebound-stage damping with adjusting screw 1.
- To increase damping: turn adjusting screw with tool on onboard toolkit so that marking 2 points to a higher scale value.
- To decrease damping: turn adjusting screw with tool of onboard toolkit so that marking 2 points to a lower scale value.
### Tires

#### Checking tire pressure

Incorrect tire inflation pressure results in poorer handling 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. Use valve caps with rubber seals and screw them on firmly to prevent sudden tire deflation.

- Make sure ground is level and firm and park motorcycle.
- Check tire pressures against data below.

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tire pressure,</td>
<td>36.3 psi (2.5 bar)</td>
<td>42.1 psi (2.9 bar)</td>
</tr>
<tr>
<td>(With tire cold)</td>
<td></td>
<td>(With tire cold)</td>
</tr>
</tbody>
</table>

If tire pressure is too low:
- Correct tire pressure.

#### Front and rear seats

**Removing passenger seat**

- Make sure ground is level and firm and park motorcycle.
- Unlock seat lock 1 with ignition key.
- Lift passenger seat at rear, then remove upward toward rear.
- Remove ignition key and lay passenger seat on a clean surface with cover side facing downward.

- Position 8 (sporty setting with driver 187 lbs (85 kg))

```
Installing passenger seat

- Mount passenger seat in mounts 2 on left and right.
- Fold down passenger seat toward front with slight pressure.
- Lock seat lock with ignition key.

Removing driver’s seat

- Press cover of driver’s seat above screws 1 forward somewhat and hold in place.
- Remove screws.
- Push the driver’s seat forwards, lift it at the rear and remove it. When doing so, make sure that the paneling is not damaged by the screws.
- Lay the driver’s seat on the cover side on a clean surface.

Installing driver’s seat

- Mount driver’s seat in mount 2, then position over screw holes 3. When doing so, make sure that the paneling is not damaged by the screws.
**Helmet holder**

**Locking helmet on motorcycle**
- Press cover of driver’s seat over screw holes toward front somewhat and hold in place.
- Install screws 1.

**Operation**

- Removing passenger seat (52).
- Turn over passenger seat.

**Luggage loops**

**Locking luggage on motorcycle**
- Take loops 1 out of holders and lay toward outside.
- Installing passenger seat (53).
- Installing passenger seat (53).
Use loops 1 e.g. in conjunction with passenger footrests, to lash luggage onto passenger seat. When doing so, make sure that the rear trim is not damaged.
<table>
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<th>Page</th>
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<tr>
<td>Securing motorcycle for</td>
<td>67</td>
</tr>
<tr>
<td>transport</td>
<td></td>
</tr>
</tbody>
</table>
Safety instructions
Rider’s equipment
Do not ride without the correct clothing. Always wear:
  – Helmet
  – Rider’s suit
  – Gloves
  – Boots

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

Speed
If you ride at high speed, always bear in mind that various boundary conditions can adversely affect the handling of your motorcycle:
  – Settings of spring-strut and shock absorber system
  – Imbalanced load
  – Loose clothing
  – Insufficient tire inflation pressure
  – Poor tire tread
  – Etc.

Modifications
  – Modifications of the motorcycle (e.g. engine management system, throttle valves, clutch) can cause damage to the affected components and failure of safety-related functions. Damage caused in this way is not covered by the warranty. Do not make any modifications.

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.

  • Adjust setting of spring preload, damping characteristic and tire inflation pressures to suit total weight.

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

  – Inhaling exhaust fumes therefore represents a health hazard and can even cause loss of consciousness with fatal consequences.
  – Do not inhale exhaust fumes.
  – Do not run the engine in closed rooms.

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

  For this reason, observe the following points:
- Do not run the fuel tank dry
- 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.

Danger of overheating
⚠️ Cooling would be inadequate if the engine were allowed to idle for a lengthy period with the motorcycle at a standstill: overheating would result. In extreme cases, the motorcycle could catch fire.
Do not allow the engine to idle unnecessarily. After starting, ride off immediately.

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
- Shock absorber setting and spring preload
- Tread depth and tire inflation pressure
- Secure luggage attachment
- Tension and lubrication of drive chain

At regular intervals:
- Engine oil level (every time you refuel)
- Brake pad wear (during every third stop for refueling)

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. Do not engage the clutch until after switching on the ignition, as otherwise the engine cannot be started.

Starting engine
- Switch on ignition.
» Pre-ride check is performed.
(☞ 60)
• Press starter button 1.

At extremely low temperatures it may be necessary to operate the throttle grip during starting. At ambient temperatures below 32 °F (0 °C), actuate the clutch after switching on the ignition. The start attempt is automatically interrupted if battery voltage is too low. 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. (146)

Pre-ride check
The instrument cluster runs a test of the warning lights and the tachometer when the ignition is switched on: this is the "Pre-Ride-Check". The test is aborted if the engine is started before it is completed.

Phase 1
The indicator and warning lights 1 light up and the General warning light 2 lights up yellow. The tachometer needle is run up to the maximum engine speed. All segments are shown in the display.

Phase 2
The General warning light changes from yellow to red.

Phase 3
The tachometer needle is run down to zero.
The indicator and warning lights go out. The display changes to the standard display.

Should one of the warning lights not be shown:

⚠️ 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**

- with BMW Motorrad Race ABS

The readiness for operation of the BMW Motorrad Race 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 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:

- Continued driving is possible. It must be noted that neither the ABS nor the integral function is available.
- Have the malfunction corrected as soon as possible by a specialized workshop, preferably an authorized BMW Motorrad retailer.

**DTC self-diagnosis**

- with BMW Motorrad Race ABS and DTC

The readiness for operation of the BMW Motorrad DTC is checked by the self-diagnosis. Self-diagnosis is performed automatically when you switch on the ignition.
Phase 1
- Checking the diagnosable system components while stopped.
  - DTC warning light flashes slowly.

Phase 2
- DTC warning light flashes slowly.

Phase 2
- Checking the diagnosable system components while driving.
  - So that the DTC self-diagnosis can be completed, the motorcycle must be driven at a speed of at least 3 mph (5 km/h).
  - DTC warning light flashes slowly.

DTC self-diagnosis completed
- The DTC symbol is no longer displayed.

If a DTC error is indicated after the DTC self-diagnosis is completed:
- Continued driving is possible. It must be noted that the DTC 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 620 mls (1,000 km)
- While running in the motorcycle, vary the throttle opening and engine-speed range frequently; avoid driving for long periods at a constant speed.
- Choose curvy, slightly hilly sections of road if possible.
- Observe the engine run-in speeds.

<table>
<thead>
<tr>
<th>Engine run-in speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>– &lt;7000 min⁻¹ (Odometer reading 0...186 miles (0...300 km))</td>
</tr>
<tr>
<td>– &lt;9000 min⁻¹ (Odometer reading 186...621 miles (300...1000 km))</td>
</tr>
<tr>
<td>– no full throttle (Odometer reading 0...621 miles (0...1000 km))</td>
</tr>
</tbody>
</table>

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

Have the first inspection carried out after 300 - 750 mls (500 - 1200 km).
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.

---

**Shifting gear**

**Shifting flash**

The shifting flasher 1 indicates two engine speed thresholds to the driver:

**Drive-off speed**
At a stop, the shifting flasher indicates the ideal speed for driving off for racing starts.
- Shifting flasher off: speed too low
- Shifting flasher lit up: ideal drive-off speed
- Shifting flasher flashing: speed too high

**Shifting speed**
During driving the shifting flasher indicates the speed at which the rider should shift into the next-highest gear.
- Shifting flasher lit up: shifting speed will be reached soon
- Shifting flasher goes out: shifting speed reached

The speed thresholds and the light-up behavior of the shifting flasher can be adjusted in the SETUP menu.

**Gearshift assistant**
- with gearshift assistant

Your motorcycle is equipped with a gearshift assistant developed based on racing requirements. It enables upshifting without actuating the clutch or throttle valve in virtually all load and engine...
speed ranges. During acceleration the throttle valve can remain open, and the shifting time is reduced to a minimum. The gears are shifted into as usual with foot force on the shift lever.

The sensor in the shift linkage detects the shift request and initiates shifting support.

When driving at constant speed in low gears at high engine speeds, upshifting without clutch operation can result in major load change reactions. BMW Motorrad recommends only upshifting with clutch operation in these driving situations. The shifting assistant should not be used in the area of the rev-limiter.

No shifting support is provided in the following situations:
- during shifting with engaged clutch
- during shifting with the throttle valve closed (overrun)
- during downshifts

**Brakes**

**How is the shortest braking distance achieved?**

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

- with BMW Motorrad Race ABS

Locking up of the front wheel is prevented by the BMW Motorrad Race ABS.
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. The BMW integrated braking function ensures that the rear wheel brake is also applied when the handbrake lever is actuated, thus providing protection against overheating. Simply apply the front wheel brake and use the engine brake.

Wet, soiled brakes
Moisture and dirt on the brake disks and the brake pads result in a decrease in the braking action. Delayed or poorer braking action must be expected in the following situations:

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

Poor braking action due to moisture and dirt. Brake until brakes are dry or clean; clean if necessary. Brake early until the full braking action is available again.

Parking your motorcycle

Side stand
- Switch off engine.
- 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.
- Fold out side stand and park motorcycle.

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.
- If the slope of the road permits, turn the handlebars to the left.
- On a grade, the motorcycle should always face uphill; select 1st gear.

Refueling

Fuel is highly flammable. Fire at the fuel tank can result in fire and explosion.
Do not smoke. Never bring a naked flame near the fuel tank.
Fuel expands when exposed to heat. When the tank is overfilled, fuel can escape and get onto the road. This results in a danger of falling. Do not overfill the fuel tank.

Fuel attacks plastic surfaces, making them cloudy or unattractive. Wipe off any fuel that gets onto plastic parts immediately.

Fuel can attack the material of the windshield; it then becomes dull or unsightly. Wipe off any fuel that gets onto the windshield immediately.

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

- Make sure ground is level and firm and park motorcycle.
- Open protective cap.
- Unlock fuel tank cap 1 with ignition key and fold up.
- Refuel with quality listed below at most until lower edge of filler neck is reached.

When refueling after running on reserve, make sure that you top up the tank to a level above reserve, as otherwise the sensor will not be able to register the new level. Otherwise neither the fill level nor the range display can be updated.

Recommended fuel quality
- Super unleaded
- 89 AKI (95 ROZ/RON)
- 89 AKI

Usable fuel quantity
- Approx. 4.6 gal (Approx. 17.5 l)

Reserve fuel quantity
- Approx. 1.1 gal (Approx. 4 l)
• Press fuel tank cap down firmly to close.
• Remove key and close protective cap.

Securing motorcycle for transport

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

[Image of motorcycle and straps]

• Remove screws 1 and take off trim panel of lower fork bridge.

[Image of screws being removed]

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

Components can be damaged. Do not pinch components, e.g. brake lines or wiring harnesses. Lay straps at front over lower fork bridge on both sides. Tension straps downward.

[Image of motorcycle secured]
Fasten straps at rear on both sides on passenger footrests and tension.
- Tension all straps evenly; motorcycle should be compressed as greatly as possible.
On the racetrack

- Multifunction display .................. 70
- LAPTIMER mode ....................... 72
- INFO mode ............................ 76
- SETUP mode ........................... 81
- In a gravel bed ......................... 88
- Removing and installing mirror ...... 88
- Removing and installing license-plate carrier ......................... 89
- Removing and installing front turn indicator ......................... 92
Multifunction display

Selecting display mode

- Press button 2 repeatedly until desired mode is shown.

ROAD mode: The ROAD mode provides all information required for operation on public roads. All descriptions outside of this chapter refer to this mode.

LAPTIMER mode: In the LAPTIMER mode, lap times and other data can be saved and displayed again in the INFO mode.

INFO mode: In the INFO mode, the stored information from the LAPTIMER mode can be displayed. This mode can only be activated with the motorcycle stopped.

SETUP mode: In the SETUP mode, the behavior of the instrument cluster can be adjusted to driver's preferences. This mode can only be activated with the motorcycle stopped.

If INFO-MENU or SETUP-MENU is shown, press and hold button 2 to activate mode.
Overview of mode selection

solid line: button pressed briefly
dotted line: press and hold button

1. Operating odometer (page 30)
2. Setting clock (page 37)
3. Starting time recording (page 74)
4. Starting INFO menu (page 76)
5. Starting SETUP menu (page 81)

On the racetrack

6. 71
LAPTIMER mode

Display

1 Speedometer
2 current racing lap
3 Engine temperature
4 the display in these lines can be adjusted (72) in illustration: time of preceding lap (LASTLAP) and current lap time
5 set driving mode
6 Gear indicator

Marking displayed value

The following times can be shown in the second line:
- The time of the previous lap is marked with "LASTLAP".
- The running time of the current lap.

The following times can be shown in the third line:
- The fastest of the stored laps, marked with "BESTLAP"
- The all-time best lap time, without a marking
- The running time of the current lap.

The possible combinations are described on Page 84.

The stopped time of the preceding racing lap is shown briefly at the start of each new racing lap before the display switches over to the running time of the current racing lap. The duration of this delay can be set as described on Page 87.
Overview of lap timer mode

- Solid line: button pressed briefly
- Dotted line: press and hold button

1. Ending time entry (● 75).
2. Interrupting time entry (● 75).
3. Starting time recording (● 74).
4. Adjusting display setting (● 74).

On the racetrack
**Adjusting display setting**

To change display setting in LAPTIMER mode, press button 2 repeatedly until display has desired appearance.

**Starting time recording**

- Press button 1 to start recording.

For the headlight flasher signal to be detected, the engine must be running.

- When driving over Start/Finish line, press button 1 again to start recording for next race lap.
- The data of the preceding race lap will be saved.
- If the display mode is exited during a recording, then the recording continues to run.

However, the recording of a new lap can only be started in the other modes with an external signal.

**Infrared receiver**

- with infrared receiver OA

Operation of the instrument cluster in the LAPTIMER mode can be carried out conveniently with an infrared signal. For this purpose, the infrared receiver available as an optional accessory must be connected to the instrument cluster. Operation with the headlight flasher button is also possible with the integrated sensor.

To avoid the premature detection of a completed lap due to interference signals, a minimum lap time can be specified (● 87). Signals received before this time expires are then ignored.
Interrupting time entry

- To interrupt time entry, press button 1.
- To continue time entry, press button 1 again.

Ending time entry

- First, press the button 1 to interrupt the time entry.
- To save the displayed time as the last racing lap, press and hold down the button 1 until -- : -- : -- is displayed. Then, change the display mode using the button 2.
- If you do not want to save the displayed time any longer, press the button 2 to change the display mode.

If additional laps are recorded at a later time, the numbering of the laps is continued. Only after the current recording has been deleted in INFO mode does counting begin at lap 1 again.
INFO mode
Selecting stored lap

Press button 1 or button 2 to display stored laps consecutively.

If the rider drives off in this mode, the display automatically switches over to the ROAD mode.

When the button 1 is pressed, the stored laps are displayed in the following order. Each time the button 2 is pressed, they are displayed in the opposite order:

- all-time best lap time (ATBEST)
- best stored lap time (BEST)
- last stored lap time (LAST)
- all other stored laps
- Exit INFO mode (INFO RETURN)
- Possibility to delete the stored data (INFO CLEAR ALL) (except all-time best lap time)

On the racetrack
Overview of Info mode

- solid line: button pressed briefly
- dotted line: press and hold button

1. Selecting stored lap (76).
2. Clearing lap times (79).
3. Jump directly to CLEAR ALL menu.
4. Exiting INFO mode (78).
5. Clearing recording (78).
6. Activating ROAD mode (79).
Information per racing lap

1. Alternately: top speed (max) and minimum speed (min) of the indicated race lap
2. Race lap to which displayed data refer
3. Alternately: average throttle position (TH) in percent, driving percentage with brake actuation (BR) in percent and number of shifts (G) of indicated racing lap
4. Lap time of displayed racing lap

Exiting INFO mode

» The recorded values are stored.

Clearing recording

1. Press button 1 or button 2 repeatedly until INFO RETURN is displayed.
2. Press and hold down button 2 to delete the recorded data and return to LAPTIMER mode.
3. Press and hold down button 1 until INFO CLEAR ALL is displayed.
4. Press and hold down button 2 to exit INFO mode.
Activating ROAD mode

Press and hold down the button 1 until INFO CLEAR ALL is displayed.

Press and hold button 1 to return to ROAD mode.

The recorded values are stored.

All-time best lap

The all-time best lap (ATBEST) is the fastest of all recorded racing laps and is updated as soon as a faster lap has been recorded.

The all-time best lap remains stored even if the recorded laps are deleted. As a result, a new race can be recorded at other times and compared with the best lap from previous races. The all-time best lap can also be deleted.

If the all-time best lap is from a stored recording, the corresponding lap number is also displayed.

If the all-time best lap does not have a lap number, it is from a recording that has already been deleted.

Clearing lap times

Press button 1 or button 2 repeatedly until the lap to be deleted is displayed.

Press and hold button 2 to delete the lap.

If the selected lap is
- the all-time best lap ATBEST, the best of the stored laps is taken over as the new all-time best lap.
- the best stored lap BEST, the corresponding lap is deleted. The lap that previously had been the second best lap is taken over as the new best lap.
the last stored lap LAST, the corresponding lap is deleted. The lap that previously had been the second to last lap is taken over as the new last lap.
- a random stored lap, it is deleted. The numbering of the remaining laps is maintained.
SETUP mode
Selecting parameter

Press button 1 or button 2 repeatedly until desired parameter is displayed.

If the rider drives off in this mode, the display automatically switches over to the ROAD mode.

When the button 1 is pressed, the possible parameters are displayed in the following order. Each time the button 2 is pressed, they are displayed in the opposite order:

- Switch-on speed of shifting flasher (SFT-ON)
- Switch-off speed of shifting flasher (SFT-OFF)
- Brightness of shifting flasher (SFT-BR)
- Flashing frequency of shifting flasher (SFT-FL)
- Display structure in Laptimer mode (SETUP LAPTIMER)
- Display duration for last stopped time (HOLD)
- Minimum lap time (LAP-TM)
- End of SETUP (SETUP RETURN)
Overview of Setup mode

1. Selecting parameter (81).
2. Jump directly to ROAD mode (83).
3. Setting parameter briefly.
4. DOT (82).
5. Setting parameter (83).

On the racetrack
Setting parameter

- Press and hold button 2 until displayed parameter begins to flash.
- Press button 1 or button 2 repeatedly until desired value is displayed.

If desired value is displayed:
- Press and hold button 2 until displayed value no longer flashes.
- The value has been saved.

Exiting settings

- Press and hold button 1 until multifunction display switches over to ROAD mode.
  » A value which is still flashing will not be saved.
- As an alternative, press button 1 or button 2 repeatedly until SETUP RETURN is displayed.

If “SETUP RETURN” is displayed:
- Press and hold button 2 to exit SETUP mode.
  » SETUP MENU is indicated.

Switch-on speed of shifting flasher

Display of switch-on speed in rpm.
Switch-off speed of shifting flasher

Display of switch-off speed in rpm. Only speeds which lie above the switch-on speed can be selected.

Brightness of shifting flasher

Display of shifting flasher brightness in percent of the maximum brightness. The shifting flasher remains switched on during setting and is immediately adjusted to the selected brightness.

Flashing frequency of shifting flasher

Display of flashing frequency of shifting flasher in Hz (1/s). If ON is selected, the shifting flasher lights up constantly.

Display structure in Laptimer mode

The display structure in the Laptimer mode can be selected from six versions.
**Version 1**
The running time of the current lap is shown in the second line and the best lap time of the stored values is shown in the third line.

**Version 2**
The time required for the preceding lap is shown in the second line and the running time of the current lap is shown in the third line.

**Version 3**
The running time of the current lap is shown in the second line and the all-time best lap time is shown in the third line (see p. 79).
Version 4
The time required for the preceding lap is shown in the second line and the best lap time of the stored values is shown in the third line.

Version 5
The running time of the current lap is shown in the second line and the third line remains empty.

Version 6
The second line remains empty and the running time of the current lap is shown in the third line.
Display duration for last stopped time

When using an infrared receiver to determine the lap times, the time can be set which must elapse after the first received signal before a new signal is accepted. This prevents the signals of several transmitters positioned next to each other from being evaluated. It is also not possible to start a new lap with the headlight flasher button within this time.

Minimum lap time

Display of the display duration in seconds. After the start of a new lap, the stopped time of the preceding lap is shown for the selected time. Then the running time of the current lap is shown again.
In a gravel bed

- with BMW Motorrad Race ABS and DTC OE

DTC shut-off
On very loose substrates (e.g. a gravel bed on a racetrack), the control interventions of the DTC can attenuate the drive force on the rear wheel until the rear wheel no longer turns. In this case, BMW Motorrad recommends switching off the DTC temporarily.

Note that the rear wheel will spin in the loose substrate, and close the throttle in a timely manner before reaching a solid substrate. Then, switch the DTC back on.

Removing and installing mirror

Removing mirror
- Make sure ground is level and firm and park motorcycle.
- Remove nuts 1 on left and right and take off mirror.

Installing mirrors
- Make sure ground is level and firm and park motorcycle.
- Remove fairing fastener.

On the racetrack

Removing mirror
- Secure the paneling 2 on the left and right to the fairing bracket 3. If cable ties are used, protect possible locations of abrasion marks using an adhesive strip.
Mount mirrors on left and right in mounts 4.
Install nuts on back of fairing with torque.

- Mount mirrors on left and right in mounts 4.
- Install nuts on back of fairing with torque.

Removing and installing license-plate carrier

Removing license-plate carrier
- Switch off ignition.
- Make sure ground is level and firm and park motorcycle.
- With anti-theft alarm OE
- Deactivate anti-theft alarm system if necessary.<1>
- Removing passenger seat (p. 52).
- Actuate locking mechanism 2 and disconnect connector.
- With anti-theft alarm OE
- Actuate locking mechanisms 3 and disconnect connector.
- Remove screw 4.
- Remove anti-theft alarm system from bracket toward front.

- Cut through cable ties 1.
Carefully disconnect anti-theft alarm system bracket 5 from rear frame and turn upward.

Actuate locking mechanism 6 and disconnect connector.

Press locking mechanism 7 to left with small screwdriver while simultaneously sliding connector toward rear off anti-theft alarm system bracket.

Remove anti-theft alarm system bracket.

Protect connector on motorcycle against soiling.

Remove screws 8 with washers and take off license-plate carrier. Guide cable through opening 9 when doing so.

Installing passenger seat (53).

Installing license-plate carrier
- Make sure ground is level and firm and park motorcycle.
- Removing passenger seat (52).
• Position license-plate carrier and guide cable through opening 9.
• Install screws 8 with washers.
• Close connector so that locking mechanism 2 engages and secure on rear frame with cable tie 1.

• Slide connector of license-plate carrier onto anti-theft alarm system bracket so that locking mechanism 7 engages.
• Close connector so that locking mechanism 6 engages.

• Mount anti-theft alarm system bracket 5 in rear frame.
Mount anti-theft alarm system in bracket from front.
- Install screw 4.
- Close connector so that locking devices 3 engage.<
- Installing passenger seat (⇒ 53).

Removing and installing front turn indicator

Removing front turn indicator

The working steps described here for the right fairing side panel also apply logically for the left side.

- Removing fairing side panel (⇒ 113).
- Remove screw 2 and take off turn indicator. Guide cable through fairing side panel.
- Protect connector on motorcycle against soiling.
- Mount fairing side panel in mount 7 on engine spoiler.

Unclip the turn signal cable at position 1.
Mount side panel in rubber buffer at position 5.
Install screws 4 with washers.
Install screws 2 and 3.

Installing front turn indicator

1. Remove the screw 1 on the inside of the right side panel.

2. Position turn indicator and install screw 2.

On the racetrack

Remove screws 4 with washers.
Pull fairing side panel out of rubber buffer at position 5 and remove.
Guide cable through fairing side panel.

6 93

• Install screw 1.
• Remove screws 2 and 3.
On the racetrack

- Clip the turn signal cable in at position 1.
- Installing fairing side panel (→ 114).
Technology in detail

Driving mode .................. 96
Brake system with BMW Motorrad
Race ABS ..................... 98
Engine management with BMW
Motorrad DTC ............... 100
Driving mode Selection

There are four driving modes to choose from for adjusting the motorcycle to the weather, road conditions and driving style:
- RAIN
- SPORT (default mode)
- Race
- SLICK (only with coding plug installed)

⚠️ Using the coding plug voids the operating permit for public roads. Do not use the coding plug on public roads.

Each driving mode affects the behavior of the motorcycle in a different way. ABS and/or DTC can be switched off in each mode; the following explanations always refer to the activated systems. The last selected driving mode is reactivated automatically after the ignition is switched off and on again. However, the shut-off of ABS and/or DTC is maintained only if the coding plug is inserted.

The following always applies: The sportier the selected mode, the more directly the engine output can be utilized. At the same time, the support of the driver by the ABS and DTC systems is increasingly reduced.

The RAIN, SPORT and RACE modes are designed for riding with series tires recommended by BMW Motorrad. SLICK mode assumes racing tires and roads with very good adhesion. Therefore, consider the following when selecting the driving mode: The sportier the setting, the more demanding the requirements for the driving skill of the rider are!

RAIN
The engine output is only partially available. The increase in power when actuating the throttle grip is reserved, and the engine response is correspondingly soft.

The ABS system always intervenes early enough to prevent the wheels from locking up and the rear wheel from lifting off the ground if possible.

The DTC system intervenes early enough to always prevent the rear wheel from spinning if possible.

SPORT
In this mode the full engine output is available. The increase in power when the throttle grip is actuated is greater than in the RAIN mode, however the engine response is still reserved.
The behavior of the ABS system is the same as in the RAIN mode.
The DTC system intervenes later than in the RAIN mode so that minor drifts are possible at the end of curves.

**RACE**
The RACE mode is the sportiest mode as long as the coding plug is not installed.
The engine output and increase in power are the same as in the SPORT mode. However, the driver’s request is implemented much more directly.
The ABS system intervenes later in this mode. The wheels are still prevented from locking up, however the lift-off detection for the rear wheel is deactivated. The rear wheel can lift off the ground! The DTC system intervenes even later so that longer drifts and brief wheelies are also possible at the end of curves.

**SLICK**
To activate the SLICK mode, the coding plug must be used.
SLICK mode was developed for roads with good visibility and very high friction coefficients, as they are usually found on racetracks only. This mode also assumes that the motorcycle is riding with racing tires that have very good adhesion.
The engine output, increase in power and response are designed for maximum sportiness.
The behavior of the ABS system matches that of the RACE mode, however with one difference: If the footbrake lever is actuated, ABS control is no longer carried out on the rear wheel. The rear wheel can lock up. The lift-off detection for the rear wheel is also deactivated.

In this mode the control of the DTC system assumes that racing tires with maximum adhesion (slick tires) are mounted. Longer wheelies and wheelies at small angles are also permitted, which means it is possible to flip over backward in extreme cases!

**Switchover**
The switchover process for the functions in the engine management system, the ABS and the DTC is only possible in certain operating modes:
- no drive torque at rear wheel
- no brake pressure in the brake system

To obtain this state,
- the motorcycle must be stopped with the ignition switched on,
– the throttle must be turned back,
– the brake levers may not be actuated,
– the clutch must be actuated.

First the desired driving mode is preselected. The switchover does not take place until the affected systems are in the required state.

The selection menu does not disappear in the display until the driving mode has been switched over.

**Brake system with BMW Motorrad Race ABS**

– with BMW Motorrad Race ABS OE

**Partially integral brake**

Your motorcycle is equipped with a partially integral brake configuration. Both front and rear brakes are applied simultaneously when you pull the handbrake lever. The footbrake lever acts only on the rear brake.

Spinning of the rear wheel with the front brake pulled (burn out) is made considerably more difficult by the integral function. The result may be damage to the rear wheel brake and the clutch.

Burn-outs may be carried out with the ABS function switched off only.

**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 Integral 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.

How is the BMW Motorrad Race ABS noticeable to the rider?

If the ABS system must reduce the braking forces due to the conditions described above, then vibrations can be felt at the handbrake lever. If the handbrake lever is pulled, then braking pressure is built up at the rear wheel with the integral function. If the footbrake pedal is first actuated after this, the brake pressure already built up can be felt earlier than the counter-pressure, than when the footbrake pedal is actuated before or together with the handbrake lever.

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.

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 Race ABS, unusual driving conditions can also lead to a fault message.

**Unusual driving conditions:**
- Heating up on an auxiliary stand at idle or with gear engaged.
- Rear wheel locked-up for a longer period of time by engine brake, e.g. when riding down steep hills.

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 Race 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 Race 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 Race ABS is unable to counteract their effects.

**Engine management with BMW Motorrad DTC**

- with BMW Motorrad Race ABS and DTC★

**How does DTC work?**

The BMW Motorrad DTC compares the wheel speeds of the front and rear wheel. From the speed difference the slip, and with it the stability reserves on the rear wheel are determined. When a slip limit is exceeded, the engine torque is adapted by the engine management system.

Even with DTC, the laws of physics cannot be overridden. The driver is always responsible for adapting his/her driving style.

Do not reduce the additional safety provided with risky driving.★
Special situations
At an increasing angle, the acceleration performance is increasingly limited in accordance with physical laws. This can result in reduced acceleration when coming out of very tight curves.

To detect spinning or slipping away of the rear wheel, the speeds of the front and rear wheel are compared and the angle is considered, for example. If these values are detected to be implausible for a long period, a replacement value is used for the angle and the DTC function is deactivated. In these cases, a DTC error is displayed. The condition for a fault message is the completed self-diagnosis.

Unusual driving states:
- Driving on the rear wheel (wheelie) for a longer period with DTC deactivated.
- Rear wheel spinning in place with front brake pulled (burn out).
- Heating up on an auxiliary stand at idle or with gear engaged.

If the coding plug for the SLICK mode is not installed, the DTC is reactivated by switching the ignition off and then on again and then driving over 3 mph (5 km/h).

If the front wheel loses contact to the ground during extreme acceleration, the DTC reduces the engine torque until the front wheel touches the ground again. In this case, BMW Motorrad recommends turning back the throttle twist grip somewhat to achieve a stable driving state again as quickly as possible.

On a slippery surface, the throttle grip should never be suddenly turned back completely without pull the clutch at the same time. The engine braking torque can cause the rear wheel to slip, resulting in an unstable driving state. This case cannot be controlled by the BMW Motorrad DTC.
Accessories
General instructions ............... 104
Luggage ............................ 104
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.

Observe the information on the importance of tire sizes for chassis control systems (119).

Luggage

Correct loading

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 the road-vehicle construction and use regulations of your country.

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.

- Adjust setting of spring preload, damping characteristic and tire inflation pressures to suit total weight.
## Maintenance

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General instructions
The 'Maintenance' chapter describes work involving the checking and replacement of wear parts that can be performed with a minimum of effort.
If special tightening torques are to be taken into account for assembly, these are listed. An overview of all required tightening torques is contained in the chapter "Technical Data". Information on additional maintenance and repair work is provided in the Repair Manual for your motorcycle on DVD, which you can obtain from your authorized BMW Motorrad retailer.

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

Onboard toolkit

1. Spare fuses with gripper
   Miniature fuses, 4 A and 7.5 A

2. Box wrench
   Wrench size: 34 mm
   - Adjusting chain tension (118).

3. Socket wrench
   Wrench size: 17 mm
   - Adjusting spring preload on front wheel (46).
   - Adjusting compression damping for rear wheel (50).
   - Use plastic attachment for adjusting damping and spring preload
   - Extension for hook wrench

4. TORX wrench, T25
   - Removing and installing body panels

5. Hook wrench
   - Adjusting spring preload for rear wheel (47).

6. Extension for screwdriver insert
   - Adjusting rear damping (in conjunction with slotted blade)
7 Open-ended wrench
   Wrench size: 10/13 mm
   – Adjusting chain tension (118).
8 Plastic attachment for socket wrench
   – Adjusting spring preload on front wheel (46).
   – Adjusting compression damping for rear wheel (50).
9 Reversible screwdriver with Phillips and straight blade
   – Removing battery (140).
   – Adjusting front and rear damping
10 Reversible screwdriver insert with Phillips and Torx T25 blade
   – Removing driver’s seat (53).
   – Removing and installing body panels
   – Replacing front and rear turn indicator bulbs (133).

**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.

- Make sure ground is level and firm and hold motorcycle at operating temperature vertically.
- Let the engine run in neutral for one minute.
- Switch off ignition.
Read off the oil level from the display 1.

Specified level of engine oil
- between MIN and MAX marking

If oil level is below MIN mark:
- Topping up engine oil (☞ 108).

If oil level is above MAX mark:
- Have oil level corrected by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Topping up engine oil
- Make sure ground is level and firm and park motorcycle.
- Wipe area around fill location clean.

- Remove cap 1 of engine oil fill location.

⚠️ Both too little and too much engine oil can lead to engine damage. Always make sure that the oil level is correct.
- Add engine oil up to specified level.
• Checking engine oil level
   (⇒ 107).
• Install cap of engine oil fill location 1.

Brake system
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:
  ☢ Incorrect working practices endanger the reliability of the brakes.
Have all work on the brake system carried out by specialists.
• Have the brakes checked by a certified workshop, preferably an authorized BMW Motorrad retailer.

Checking front brake pad thickness
• Make sure ground is level and firm and park motorcycle.
• Turn handlebars.
• Visually inspect left and right brake pads to ascertain their thickness. Direction of view: From rear looking at brake pads 1.

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<th>Front brake-pad wear limit</th>
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<td>– min 0.03 in (min 0.8 mm)</td>
</tr>
<tr>
<td>(Only friction material without carrier plate)</td>
</tr>
</tbody>
</table>

If brake pads are worn:
☢ 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.
• Have the brake pads replaced by a specialized workshop, preferably an authorized BMW Motorrad retailer.
  • If genuine BMW Motorrad brake pads are not installed,
be sure to check thickness of brake-pad carrier plate.

- BMW Motorrad recommends installing only genuine BMW Motorrad brake pads.

Checking rear brake pad thickness
- Make sure ground is level and firm and park motorcycle.

<table>
<thead>
<tr>
<th>Rear brake-pad wear limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>– min 0.04 in (min 1.0 mm)</td>
</tr>
<tr>
<td>(Only friction material without carrier plate. Wear indicators must be clearly visible.)</td>
</tr>
</tbody>
</table>

If the wear indicating mark is no longer visible:

- 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.

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

**Checking front brake fluid level**

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

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

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

- Brake fluid DOT 4

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

If brake fluid level drops below permissible 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.

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

**Checking rear brake fluid level**

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

> **1** Rear brake fluid level

- Brake fluid DOT 4

- The brake fluid level must not fall below the MIN mark.

(Brake-fluid reservoir horizontal)

If brake fluid level drops below permissible 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.

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

Coolant
Checking coolant level
- Make sure ground is level and firm and park motorcycle.

- Read off coolant level on expansion tank 1. Direction of view: from front looking at inside of right-hand side panel.

If coolant level drops below permissible level:
- Add coolant.

Topping up coolant
- Removing fairing side panel (113).

- Open cap 1 of expansion tank.
- Add coolant up to specified level.
- Checking coolant level (113).
- Close cap of expansion tank.
- Installing fairing side panel (114).

Side panels
Removing fairing side panel
- Make sure ground is level and firm and park motorcycle.
The working steps described here for the right fairing side panel also apply logically for the left side.

- Remove the screw 1 on the inside of the side panel.
- Remove screws 2 and 3.
- Remove screws 4 with washers.
- Pull fairing side panel out of rubber buffer at position 5 and remove.
- Disconnect connector 6.
- Take off fairing side panel.

**Installing fairing side panel**

- Mount fairing side panel in mount 7 on engine spoiler.
The working steps described here for the right fairing side panel also apply logically for the left side.

- Close connector 6.

Mount side panel in rubber buffer at position 5.
- Install screws 4 with washers.
- Install screws 2 and 3.

Clutch

Checking clutch operation
- Pull the clutch lever.
- Pressure point must be clearly perceptible.
If no clear pressure point can be felt:
- Have the clutch checked by a specialized workshop, preferably an authorized BMW Motorrad retailer.

Checking clutch lever play
- Operate clutch lever 1 until resistance is felt.
- Install screw 1.
Measure clutch play between handlebar fitting and clutch lever in this position.

**Clutch lever play**

- 0.02...0.04 in (0.5...1.0 mm) (on the handlebar fitting, when the engine is cold)

If clutch play is outside tolerance:

- Adjusting clutch lever play (►116).

### Adjusting clutch lever play

- To increase clutch play: screw screw 2 into handlebar fitting.
- To decrease clutch play: screw screw 2 out of handlebar fitting.
- Checking clutch lever play (►115).
- Repeat work steps until clutch play is correctly adjusted.

### Tires

**Checking tire tread depth**

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

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

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

Tires have wear indicators integrated into the main tread grooves. If the tire tread has worn down to the level of the marks, the tire is completely worn. The locations of the marks are indicated on the edge of the tire, e.g. by the letters TI, TWI or by an arrow.
When the minimum tread depth is reached:
- Replace tires concerned.

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

Chain
Lubricating chain
- Dirt, dust and insufficient lubrication will considerably shorten the service life of the drive chain.
- Clean and lubricate the drive chain regularly.
- Lubricate drive chain at least every 500 miles (800 km). After driving through water or dust and dirt, carry out lubrication earlier accordingly.
- Switch off ignition and engage Neutral.
- Clean drive chain with suitable cleaning agent, dry and apply chain lubricant.
- To attain a high chain running performance, BMW Motorrad recommends using BMW Motorrad chain lubricant or:
  - Castrol Chain Spray O-R
  - Wipe off excess lubricant.

Checking chain tension
- Make sure ground is level and firm and park motorcycle.
- Turn the rear wheel until the position with the lowest chain sag is reached.
- Using a screwdriver, push the chain in the middle between the pinion and sprocket and measure the difference.
- Chain sag
  - 1.2...1.6 in (30...40 mm)
  - (Motorcycle unloaded on side stand)

If the measured value is outside the permissible tolerance:
- Adjusting chain tension (p. 118)
Adjusting chain tension
- Make sure ground is level and firm and park motorcycle.
- Loosen quick-release axle nut 1.
- Loosen lock nuts 3 on left and right.
- Adjust chain tension with adjusting screws 2 on left and right.
- Checking chain tension (117).
- Make sure that the same scale value 4 is set on the left and right.

Checking chain wear
- Engage 1st gear.
- Turn rear wheel in driving direction.
- Chain is pre-tensioned.
- Determine chain elongation A over 16 rivets 1.

- Tighten locknuts 3 on left and right with appropriate torque.
- Locknut of drive-chain tensioning screw
  - 14 lb/ft (19 Nm)
- Tighten quick-release axle nut 1 to appropriate torque.
- Rear-wheel quick-release axle in swinging arm
  - Thread-locking compound:
    - Mechanical screw lock
    - 74 lb/ft (100 Nm)
Permissible chain length

~ max. 10.2 in (max. 259.0 mm)
(Measured over 16 rivets, chain tensioned)

If the chain has reached the maximum permissible length:
- Contact a specialized workshop, preferably an authorized BMW Motorrad retailer.

Wheels

Tire recommendation

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.

Affect of wheel sizes on chassis control systems

The wheel sizes play a major role in the chassis control systems ABS and DTC. Especially the diameter and width of the wheels are stored in the control unit as the basis for all necessary calculations. A change in these sizes due to conversion to others than the wheels installed as standard equipment can seriously affect the control comfort of these systems.

The sensor wheels required for wheel speed detection must also match the control systems installed and may not be replaced.

If you want to equip your motorcycle with different wheels, please speak to a specialized workshop, and preferably a BMW Motorrad retailer. In some cases the data stored in the control units can be adapted to the new wheel sizes.

Removing front wheel

- Make sure ground is level and firm and park motorcycle.
- Remove screw 1 and take ABS sensor out of hole.
- Mask off area of wheel rim that could be scratched in process of removing brake calipers.

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.

- Remove screws 2 of brake calipers on left and right.

• Push brake pads 3 apart slightly by rocking the brake caliper 4 back and forth against the brake disk 5.
• Carefully pull brake calipers back and out until clear of brake disks.
• Place motorcycle on an auxiliary stand; BMW Motorrad recommends BMW Motorrad rear wheel stand.
• Installing the auxiliary stand on the rear wheel (=> 127).
• Raise front of motorcycle until the front wheel can turn freely.

BMW Motorrad recommends...
the BMW Motorrad front-wheel stand for lifting the motorcycle.
- Installing the auxiliary stand on the front wheel (⇒ 126).

Installing the auxiliary stand on the front wheel (⇒ 126).

- Installing the auxiliary stand on the front wheel (⇒ 126).

- Installing the auxiliary stand on the front wheel (⇒ 126).

Installing front wheel

⚠ Malfunctions may occur during control interventions by ABS and DTC if a wheel other than the standard wheel is installed. Please see the information on the effect of wheel sizes on the chassis control systems ABS and DTC at the beginning of this chapter.

- Unscrew right-hand axle clamping screws 1.

⚠ 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.

- 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.

- Lift front wheel and install quick-release axle 2 with torque.

- 37 lb/ft (50 Nm)
- Tighten right axle clamping screws 1 to specified tightening torque.
  - 14 lb/ft (19 Nm)
- Remove front wheel stand and auxiliary stand.
- Ease brake calipers onto brake disks.
- With BMW Motorrad Race ABS OE

- Install screws 2 on left and right with appropriate torque.
  - 28 lb/ft (38 Nm)

- Insert ABS sensor into hole and install screw 1.
- Remove adhesive tape from wheel rim.
- Press handbrake lever firmly a number of times until resistance point is felt.

Removing rear wheel
- Place motorcycle on an auxiliary stand; BMW Motorrad recommends BMW Motorrad rear wheel stand.
Installing the auxiliary stand on the rear wheel (127).
Support the rear wheel, e.g. with a wooden block, so that it cannot fall down after the quick-release axle is removed.

- Remove axle nut 1 with washer.
- Loosen lock nuts 3 on left and right.
- Loosen adjusting screws 2 on left and right.
- Remove adjusting plate 4 and slide axle as far as possible toward inside.

- Remove quick-release axle 5 and take out adjusting plate 6.
- Roll rear wheel as far forward as possible and remove chain 7 from chain sprocket.

- Remove brake line from bracket 8.
- Remove brake and ABS line from bracket 8.

– with BMW Motorrad Race ABS OE
Make sure that the ABS sensor 9 is not damaged when rolling out the rear wheel.

Roll rear wheel toward rear out of swinging arm while pulling brake caliper carrier 10 toward rear until rear-wheel rim can be guided past it.

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

- Malfunctions may occur during control interventions by ABS and DTC if a wheel other than the standard wheel is installed. Please see the information on the effect of wheel sizes on the chassis control systems ABS and DTC at the beginning of this chapter.

- 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.

- Roll rear wheel on support into swinging arm until brake-caliper support can be installed.

- Mount brake caliper carrier in guide 11.
- with BMW Motorrad Race ABS

Make sure that the ABS sensor 9 is not damaged when rolling in the rear wheel.

Roll rear wheel further into swinging arm while simultaneously pushing brake caliper carrier 10 toward the front.

Roll rear wheel as far forward as possible and lay chain 7 on sprocket.

Mount adjusting plate on right 6 in swinging arm so that twist lock 12 is positioned vertically.

Lift rear wheel and install rear axle 5 through adjusting plate into brake caliper carrier and rear wheel.

Make sure that rear axle contacts twist lock.
Mount adjusting plate on left 4.
Install axle nut 1 with washer, however do not tighten yet.
Mount brake line in bracket 8.
- with BMW Motorrad Race ABS OE
Mount brake and ABS line in bracket 8.
- Adjusting chain tension (⇒ 118).

Front wheel stand
Installing the auxiliary stand on the front wheel

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.
- Installing the auxiliary stand on the rear wheel (⇒ 127).

Use basic stand (0 402 241) with mounting pieces (2 152 839).

Place motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad auxiliary stand.
- Installing the auxiliary stand on the rear wheel (⇒ 127).

Use basic stand (0 402 241) with mounting pieces (2 152 839).
Insert the mounting pins (2 152 840) at the left and right into the front suspension.

Turn in the bracket 2 with the long sides facing the inside.

Adjust the mounting pieces 3 to the width of the pins inserted into the front suspension.

Adjust the height of the auxiliary stand so that the front wheel is lifted slightly off the ground.

Attach the auxiliary stand to the front suspension and press it on the ground evenly.

Rear-wheel stand
Installing the auxiliary stand on the rear wheel

Use basic stand with tool number (0 402 241) and the mounting pieces (2 152 839).
- Install the mounting pins (2152 841) 1 on the left and right into the rear wheel swinging arm with torque.

Adapter on rear wheel swinging arm
- 15 lb/ft (20 Nm)

- Turn in the bracket 2 with the long sides facing the outside.
- Adjust the mounting pieces 3 to the width of the pins inserted into the rear wheel swing arm.
- Adjust the height of the auxiliary stand so that the rear wheel is lifted slightly off the ground.

- Attach the auxiliary stand to the rear wheel swinging arm and press it on the ground evenly.

Lamps
General instructions
A warning appears in the multifunction display if a bulb is defective. If the brake or rear light fails, the symbol is accompanied by the “General” warning light, which lights up yellow.

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

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

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

### Replacing low-beam and high-beam bulbs

The alignment of the connector may differ from the illustration depending on the bulb to be replaced.

- Make sure ground is level and firm and park motorcycle.
- Switch off ignition.

- Remove the cover 1 to replace the low-beam bulb.
- Remove the cover 2 to replace the high-beam bulb.
- Disconnect plug 3.
- Remove spring wire brackets 4 from their detents on left and right and fold them up.
- Remove bulb 5 from the socket.
• Replace defective bulb.

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.

<table>
<thead>
<tr>
<th>Bulbs for low-beam headlight</th>
<th>Bulbs for high-beam headlight</th>
</tr>
</thead>
<tbody>
<tr>
<td>– H7 / 12 V / 55 W</td>
<td>– H7 / 12 V / 55 W</td>
</tr>
</tbody>
</table>

• Install bulb 5. To do this, first insert lug 6, then press bulb into socket. Insert both sides of wire spring 4 into locking device.

• Attach plug 3.

• Install the cover.

Replacing left parking light bulb

• Make sure ground is level and firm and park motorcycle.
• Switch off ignition.

• Remove parking light cover 1.
Push the locking device 2 downwards (using a screwdriver if necessary) and pull the socket 3 out of the headlight housing.

Remove bulb 4 from the socket.

Replace defective bulb.

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.

Insert bulb 4 into the socket.

Bulb for parking light

W5W / 12 V / 5 W
Insert socket 3 into the socket until the locking device 2 engages.
- Install the cover.

Replacing right parking light bulb
- Make sure ground is level and firm and park motorcycle.
- Switch off ignition.

Remove cover 1.

Push the locking device 2 downwards (using a screwdriver if necessary) and pull the socket 3 out of the headlight housing.

Remove bulb 4 from the socket.
- Replace defective bulb.

- 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.
Bulb for parking light
- W5W / 12 V / 5 W

Insert bulb 4 into the socket.

Insert socket 3 into headlight housing until locking device 2 engages.
- Install the cover.

Replacing front and rear turn indicator bulbs
- Make sure ground is level and firm and park motorcycle.
- Switch off ignition.

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. 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.

Bulbs for flashing turn indicators:
- RY10W / 12 V / 10 W

Bulbs for flashing turn indicators:
- RY10W / 12 V / 10 W

• Install bulb 2 by screwing clockwise into light housing.

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

• Install screw 1.
Diode rear light
If more LEDs have burned out in the tail light than are indicated in the Technical Data below, the tail light bulb must be replaced. In this case:
- Contact a specialized workshop, preferably an authorized BMW Motorrad retailer.

Maximum number of defective LEDs in taillight
- 1

Replacing license plate light
- Pull license-plate light 1 out of lamp housing.
- Pull bulb out of socket.
- Replace defective bulb.
- 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.

Bulb for license-plate light
- W5W / 12 V / 5 W
- Press bulb into socket.
Maintenance

Fuses

Removing fuse

- There is a danger of fire if defective fuses are bypassed. Always replace defective fuses with new fuses.
- Switch off ignition.
- Make sure ground is level and firm and park motorcycle.

- Press license-plate light 1 into lamp housing.
- 1

- Removing passenger seat (➔ 52).

- Press together locking lever and remove cover of fuse box 1.
- To replace main fuse, remove cover 2 of relay box.
- Pull defective fuse upward out of fuse box.
- If the fuses blow frequently, have the electrical system checked by an authorized specialized workshop, preferably a BMW Motorrad retailer.

- Installing fuse

- Replace defective fuse with fuse with required amperage.
- An overview of the fuse assignment and the required amperages is provided in the chapter "Technical Data". The numbers in the graphic match the fuse numbers.
- Close fuse cover.
- Latch audibly engages.
- Installing passenger seat (➔ 53).
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.
• When jump-starting the engine, do not disconnect the battery from the onboard electrical system.
• Removing driver’s seat (☞ 53).
• Run engine of donor vehicle during jump-starting.
• Begin by connecting one end of red jump lead to positive terminal of discharged battery and other end to positive terminal of donor battery.
• Then connect one end of black jumper lead to negative terminal of donor battery, and other end to negative terminal of discharged battery.
• Start engine of the vehicle with discharged battery in usual way; if engine does not start, wait a few minutes before repeating attempt in order to protect starter motor and donor battery.
• Allow both engines to idle for a few minutes before disconnecting jump leads.
• Disconnect jump lead from negative terminals first, then disconnect second lead from positive terminals.
• Installing driver’s seat (☞ 53).

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
- BMW Motorrad has developed a trickle-charger specially designed for compatibility with the electronics of your motorcycle. Using this charger, you can keep the battery charged during long periods when the motorcycle is not being used without having to disconnect the battery from the motorcycle's onboard systems. Additional information is available at your authorized BMW Motorrad retailer.

Disconnect battery from motorcycle.
- Make sure ground is level and firm and park motorcycle.
- Removing driver's seat (⇒ 53).

An incorrect disconnection sequence increases the risk of short-circuiting. Always observe the proper sequence:
- Remove negative cable 1 first.
- Then remove positive cable 2.
Connecting the battery to the motorcycle

- First install positive battery cable 2.
- Then install negative battery cable 1.

Charging battery
- Disconnect battery from motorcycle. (⇒ 138).
- Charge battery using a suitable charger.
- Comply with operating instructions of charger.

Note the deviating position of the battery and the poles 1 and 2.<
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.

Connect the battery to the motorcycle. (139).

Removing battery
- Disconnect battery from motorcycle. (138).
- Lift battery upwards; if it is difficult to move, moving it back and forth will help.

Installing battery
- Connect the battery to the motorcycle. (139).
- Place battery in battery compartment, positive terminal on right in direction of travel.
- If the motorcycle was disconnected from the battery for a longer time, the current date must be entered in the instrument cluster to ensure the proper operation of the service indicator. Consult a certified workshop, preferably an authorized BMW Motorrad retailer, for setting of the date.
- Place battery in battery compartment in driving direction.
- Connect the battery to the motorcycle. (139).
- Setting clock (37).

Maintenance
Care

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

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

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

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

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

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

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

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

⚠️ Warm water intensifies the effect of salt. Only use cold water to remove road salt.

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

Cleaning sensitive motorcycle parts
Fairings
Clean body panels with water and BMW plastic care emulsion.

⚠️ 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.

### Windscreen and headlight lenses made of plastic

Clean off dirt and insects with a soft sponge and plenty of water.

Fuel and chemical solvents attack the windshield material; the windshield becomes cloudy or dull. Do not use cleaning agents.

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

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.
Technical data

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**Troubleshooting chart**

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

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side stand</td>
<td>Retract side stand (→ 59).</td>
</tr>
<tr>
<td>Gear engaged and clutch not operated</td>
<td>Place transmission in neutral or disengage clutch (→ 59).</td>
</tr>
<tr>
<td>Clutch disengaged before ignition on</td>
<td>Switch on ignition first, then disengage clutch.</td>
</tr>
<tr>
<td>No fuel in tank</td>
<td>Refueling (→ 65).</td>
</tr>
<tr>
<td>Battery drained</td>
<td>Charge battery.</td>
</tr>
</tbody>
</table>
### Threaded fasteners

<table>
<thead>
<tr>
<th>Wheel Type</th>
<th>Part Description</th>
<th>Value</th>
<th>Valid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front wheel</td>
<td>Quick-release axle in threaded bush</td>
<td>M24 x 1.5</td>
<td>37 lbf ft (50 Nm)</td>
</tr>
<tr>
<td></td>
<td>Clamping screw in axle adapter</td>
<td>M8 x 35</td>
<td>14 lbf ft (19 Nm)</td>
</tr>
<tr>
<td></td>
<td>Radial brake calipers on the axle adapter</td>
<td>M10 x 65</td>
<td>28 lbf ft (38 Nm)</td>
</tr>
<tr>
<td>Rear wheel</td>
<td>Locknut of drive-chain tensioning screw</td>
<td>M8</td>
<td>14 lbf ft (19 Nm)</td>
</tr>
<tr>
<td></td>
<td>Rear-wheel quick-release axle in swinging arm</td>
<td>M24 x 1.5</td>
<td>74 lbf ft (100 Nm)</td>
</tr>
<tr>
<td></td>
<td>Mechanical screw lock</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Rear wheel

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Value</th>
<th>Valid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapter on rear wheel swinging arm</td>
<td>M8 x 30</td>
<td>15 lb/ft (20 Nm)</td>
</tr>
<tr>
<td>Clamping screw on upper spring plate</td>
<td>M5 x 25</td>
<td>2 lb/ft (3 Nm)</td>
</tr>
<tr>
<td>Spring strut on main frame</td>
<td>M10 x 65</td>
<td>41 lb/ft (56 Nm)</td>
</tr>
</tbody>
</table>

### Mirrors

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Value</th>
<th>Valid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mirror on front panel carrier</td>
<td>M6, Replacing the nuts Mechanical screw lock</td>
<td>6 lb/ft (8 Nm)</td>
</tr>
</tbody>
</table>
### Engine

**Engine design**
Transverse-mounted four-cylinder, four-stroke inline engine, angled 32° toward front. With four valves per cylinder, actuated by two overhead camshafts and trailing valve levers; liquid cooled, electronic fuel injection, integrated six-speed transmission, wet-sump lubrication.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement</td>
<td>999 cc (999 cm³)</td>
</tr>
<tr>
<td>Cylinder bore</td>
<td>3.1 in (80 mm)</td>
</tr>
<tr>
<td>Piston stroke</td>
<td>2 in (49.7 mm)</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>13:1</td>
</tr>
<tr>
<td>Rated output</td>
<td>193 hp (142 kW), at engine speed: 12500 min⁻¹</td>
</tr>
<tr>
<td>Torque</td>
<td>83 lb/ft (112 Nm), at engine speed: 9750 min⁻¹</td>
</tr>
<tr>
<td>Maximum engine speed</td>
<td>max 14200 min⁻¹</td>
</tr>
<tr>
<td>Idle speed</td>
<td>1250 min⁻¹, Engine at operating temperature</td>
</tr>
</tbody>
</table>
**Fuel**

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended fuel quality</td>
<td>Super unleaded 89 AKI (95 ROZ/RON)</td>
</tr>
<tr>
<td>Usable fuel quantity</td>
<td>Approx. 4.6 gal (Approx. 17.5 l)</td>
</tr>
<tr>
<td>Reserve fuel quantity</td>
<td>Approx. 1.1 gal (Approx. 4 l)</td>
</tr>
</tbody>
</table>

**Engine oil**

<table>
<thead>
<tr>
<th>Engine oil, capacity</th>
<th>Capacity with filter change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.7 quarts (3.5 l)</td>
</tr>
</tbody>
</table>

- Castrol Power 1 Racing SAE 5W-40, API SL / JASO MA2
  - Temperature: ≥-4 °F (≥-20 °C)

- SAE 5W-40, API SJ / JASO MA2
  - Temperature: ≥-4 °F (≥-20 °C)

- SAE 10W-40, API SJ / JASO MA2
  - Temperature: ≥-4 °F (≥-20 °C)

**Engine oil, quantity for topping up**

- Max 0.8 quarts (max 0.8 l)
  - Difference between MIN and MAX
### Clutch

| Clutch design                  | Multi-disk oil-bath clutch, slipper clutch |

### Transmission

<table>
<thead>
<tr>
<th>Transmission design</th>
<th>Claw-shifted 6-speed transmission integrated in engine housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission gear ratios</td>
<td>1.652 (76:46 teeth), Primary gear ratio</td>
</tr>
<tr>
<td></td>
<td>2.647 (45:17 teeth), 1st gear</td>
</tr>
<tr>
<td></td>
<td>2.091 (46:22 teeth), 2nd gear</td>
</tr>
<tr>
<td></td>
<td>1.727 (38:22 teeth), 3rd gear</td>
</tr>
<tr>
<td></td>
<td>1.500 (36:24 teeth), 4th gear</td>
</tr>
<tr>
<td></td>
<td>1.360 (34:25 teeth), 5th gear</td>
</tr>
<tr>
<td></td>
<td>1.261 (29:23 teeth), 6th gear</td>
</tr>
</tbody>
</table>
### Rear-wheel drive

<table>
<thead>
<tr>
<th>Type of final drive</th>
<th>Chain drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of rear suspension</td>
<td>Two-arm cast aluminum swinging arm</td>
</tr>
<tr>
<td>Number of teeth of rear-wheel drive (Pinion/sprocket)</td>
<td>17 / 44</td>
</tr>
<tr>
<td>Secondary gear ratio</td>
<td>2,588</td>
</tr>
</tbody>
</table>

### Running gear

#### Front wheel

<table>
<thead>
<tr>
<th>Type of front suspension</th>
<th>Upside-down telescopic forks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring travel, front</td>
<td>4.7 in (120 mm), On wheel</td>
</tr>
</tbody>
</table>

#### Rear wheel

<table>
<thead>
<tr>
<th>Type of rear suspension</th>
<th>Two-arm cast aluminum swinging arm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of final drive</td>
<td>Chain drive</td>
</tr>
<tr>
<td>Spring travel, rear</td>
<td>5.1 in (130 mm), On wheel</td>
</tr>
</tbody>
</table>
### Brakes

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of front brake</td>
<td>Hydraulic radially operated twin disk brake with 4-piston radial fixed calipers and floating brake disks</td>
</tr>
<tr>
<td>Brake-pad material, front</td>
<td>Sintered metal</td>
</tr>
<tr>
<td>Type of rear brake</td>
<td>Hydraulic disk brake with 1-piston floating caliper and fixed brake disk</td>
</tr>
<tr>
<td>Brake-pad material, rear</td>
<td>Organic</td>
</tr>
</tbody>
</table>

### Wheels and tires

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended tire combinations</td>
<td>You can obtain an overview of the current tire approvals from your authorized BMW Motorrad retailer or on the Internet at <a href="http://www.bmw-motorrad.com">www.bmw-motorrad.com</a>.</td>
</tr>
</tbody>
</table>

### Front wheel

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front wheel design</td>
<td>Cast aluminum, MT H2</td>
</tr>
<tr>
<td>Front-wheel rim size</td>
<td>3.50&quot; x 17&quot;</td>
</tr>
<tr>
<td>Front tire designation</td>
<td>120 / 70 ZR 17</td>
</tr>
</tbody>
</table>
### Technical data

<table>
<thead>
<tr>
<th><strong>Rear wheel</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear wheel design</td>
<td>Cast aluminum, MT H2</td>
</tr>
<tr>
<td>Rear-wheel rim size</td>
<td>6.0” x 17”</td>
</tr>
<tr>
<td>Rear tire designation</td>
<td>190 / 55 ZR 17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Tire inflation pressure</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tire pressure, front</td>
<td>36.3 psi (2.5 bar), With tire cold</td>
</tr>
<tr>
<td>Tire pressure, rear</td>
<td>42.1 psi (2.9 bar), With tire cold</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Electrical system</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fuses</strong></td>
<td></td>
</tr>
<tr>
<td>Nominal current of fuse 1 (Instrument cluster)</td>
<td>7.5 A</td>
</tr>
<tr>
<td>Nominal current of fuse 2 (Cutoff relay, diagnosis plug)</td>
<td>4 A</td>
</tr>
<tr>
<td>Nominal current of fuse 3 (Fan)</td>
<td>7.5 A</td>
</tr>
<tr>
<td>Nominal current of fuse 4 (Low-beam headlight, load relief relay)</td>
<td>7.5 A</td>
</tr>
<tr>
<td>Nominal current of fuse 5 (High-beam headlight)</td>
<td>7.5 A</td>
</tr>
<tr>
<td><strong>Nominal current of fuse 6 (Horn)</strong></td>
<td>7.5 A</td>
</tr>
<tr>
<td><strong>Nominal current of fuse 7 (Ignition switch)</strong></td>
<td>4 A</td>
</tr>
<tr>
<td><strong>Nominal current of fuse 8 (Sensor group)</strong></td>
<td>4 A</td>
</tr>
<tr>
<td><strong>Main fuse</strong></td>
<td>40 A</td>
</tr>
</tbody>
</table>

| **Battery** |  |
| **Battery design** | AGM (Absorptive Glass Mat) battery. |
| **Battery voltage** | 12 V |
| **Battery capacity** | 10 Ah |
| **— with anti-theft alarm** | 12 Ah |

| **Spark plugs** |  |
| **Spark plugs, manufacturer and designation** | NGK LMAR9D-J |
| **Electrode gap of spark plug** | 0.03 in (0.8 mm) |

| **Bulbs** |  |
| **Bulb for high-beam headlight** | H7 / 12 V / 55 W |
| **Bulbs for low-beam headlight** | H7 / 12 V / 55 W |
| **Bulb for parking light** | W5W / 12 V / 5 W |
| **Bulb for taillight/brake light** | LED / 12 V |
### Technical data

| Maximum number of defective LEDs in taillight | 1 |
| 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 | Cast light alloy - welded design with screwed-on light alloy rear frame |
| Location of type plate | Right steering head |
| Location of vehicle identification number | Right steering head |

### Dimensions

| Motorcycle length | 80.9 in (2056 mm) |
| Motorcycle height | 44.8 in (1138 mm), Across windshield at DIN unladen weight |
| Motorcycle width | 32.5 in (826 mm), Across mirrors |
| Driver's seat height | 32.3 in (820 mm), Without driver |
| Rider's inside-leg arc, heel to heel | 71.3 in (1810 mm), Without driver |
## Weights

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unladen weight</td>
<td>448 lbs (203 kg), DIN unladen weight, ready for road, 90 % full tank of gas, without OE</td>
</tr>
<tr>
<td>Permissible gross weight</td>
<td>893 lbs (405 kg)</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>445 lbs (202 kg)</td>
</tr>
</tbody>
</table>

## Riding specifications

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Top speed</td>
<td>&gt;124 mph (&gt;200 km/h)</td>
</tr>
</tbody>
</table>
Service

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- BMW Motorrad Service Quality .... 161
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Reporting safety defects

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying BMW of North America, LLC. If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or BMW of North America, LLC.

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

Advanced technology requires specially adapted methods of maintenance and repair.

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

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

Have all maintenance and repair work carried out confirmed in the “Service” chapter in this manual. Your authorized BMW Motorrad retailer is supplied with all the latest technical information and therefore possesses the 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 Mobility Services - onsite breakdown service

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

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

**BMW Motorrad Service Network**

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

All information concerning the international dealership network can be found in the brochure “Service Contact Europe” or “Service Contact Africa, America, Asia, Australia, Oceania”.

**Maintenance work**

**BMW Pre-Delivery Check**

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

**BMW Running-in Check**

The BMW running-in check has to be performed when the motorcycle has covered between 300 miles (500 km) and 750 miles (1200 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.

The service display in the multifunction display reminds you of the next service date approx. one month or 600 miles (1000 km) before the entered values.

The specified service intervals apply to street operation. For racing operation, adjust the intervals in accordance with loading.
## Confirmation of maintenance work

<table>
<thead>
<tr>
<th>BMW Pre-Delivery Check</th>
<th>BMW Running-in Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted</td>
<td>Conducted</td>
</tr>
</tbody>
</table>

on ______________________________

Odometer reading, __________

Next service at the latest

on ______________________________

or, if reached sooner,

Odometer reading, __________

Stamp, Signature

Stamp, Signature
| Service | BMW Service Conducted on Odometer reading  
|---------|---------------------------------------------------
|         | Next service at the latest on, if reached sooner, Odometer reading  
<p>| Stamp, Signature | Stamp, Signature | Stamp, Signature |</p>
<table>
<thead>
<tr>
<th>BMW Service</th>
<th>BMW Service</th>
<th>BMW Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted</td>
<td>Conducted</td>
<td>Conducted</td>
</tr>
<tr>
<td>on__________</td>
<td>on__________</td>
<td>on__________</td>
</tr>
<tr>
<td>Odometer reading</td>
<td>Odometer reading</td>
<td>Odometer reading</td>
</tr>
<tr>
<td>Next service</td>
<td>Next service</td>
<td>Next service</td>
</tr>
<tr>
<td>at the latest</td>
<td>at the latest</td>
<td>at the latest</td>
</tr>
<tr>
<td>on__________</td>
<td>on__________</td>
<td>on__________</td>
</tr>
<tr>
<td>or, if reached sooner,</td>
<td>or, if reached sooner,</td>
<td>or, if reached sooner,</td>
</tr>
<tr>
<td>Odometer reading</td>
<td>Odometer reading</td>
<td>Odometer reading</td>
</tr>
</tbody>
</table>

Stamp, Signature

Stamp, Signature

Stamp, Signature
<table>
<thead>
<tr>
<th>12 Service</th>
<th>BMW Service Conducted on Odometer reading</th>
<th>BMW Service Conducted on Odometer reading</th>
<th>BMW Service Conducted on Odometer reading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Next service at the latest on</td>
<td>Next service at the latest on</td>
<td>Next service at the latest on</td>
</tr>
<tr>
<td></td>
<td>or, if reached sooner, Odometer reading</td>
<td>or, if reached sooner, Odometer reading</td>
<td>or, if reached sooner, Odometer reading</td>
</tr>
<tr>
<td></td>
<td>Stamp, Signature</td>
<td>Stamp, Signature</td>
<td>Stamp, Signature</td>
</tr>
</tbody>
</table>
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
Confirmation of service

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

<table>
<thead>
<tr>
<th>Work carried out</th>
<th>Odometer reading</th>
<th>Date</th>
</tr>
</thead>
</table>
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Details described or illustrated in this booklet may differ from the motorcycle’s actual specification as purchased, the accessories fitted or the national-market specification. No claims will be entertained as a result of such discrepancies. Dimensions, weights, fuel consumption and performance data are quoted to the customary tolerances. The right to modify designs, equipment and accessories is reserved. Errors and omissions excepted.

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### Important data for refueling

**Fuel**

<table>
<thead>
<tr>
<th>Recommended fuel quality</th>
<th>Super unleaded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>89 AKI (95 ROZ/RON)</td>
</tr>
<tr>
<td></td>
<td>89 AKI</td>
</tr>
<tr>
<td>Usable fuel quantity</td>
<td>Approx. 4.6 gal (Approx. 17.5 l)</td>
</tr>
<tr>
<td>Reserve fuel quantity</td>
<td>Approx. 1.1 gal (Approx. 4 l)</td>
</tr>
</tbody>
</table>

**Tire inflation pressure**

| Tire pressure, front     | 36.3 psi (2.5 bar), With tire cold |
| Tire pressure, rear      | 42.1 psi (2.9 bar), With tire cold |

---

**BMW recommends**

Order No.: 01 41 8 522 217  
07.2010, 4th Edition