BMW
MOTORRAD

RIDER'S MANUAL

F 450 GS



MAKE LIFE A RIDE

Vehicle data

Model

Vehicle identification number

Color number

First registration

License plate

Retailer data

Contact in Service

Ms./Mr

Phone number

Retailer's address/Phone (company stamp)

YOUR BMW.

We are pleased that you have chosen a BMW Motorrad vehicle and welcome you to the family of BMW riders. Familiarize yourself with your new vehicle so that you can ride safely and confidently in all traffic situations.

About these operating instructions

Read this rider's manual before starting your new BMW. It contains important notes about operating the vehicle that will enable you to make full use of the technical assets of your BMW.

You will also obtain preventive maintenance and care instructions, which are beneficial to operating and road safety and help retain the value of your vehicle as much as possible.

If you should decide to sell your BMW one day, please remember to hand over this rider's manual as well. It is an important part of your vehicle.

We wish you many miles of safe and enjoyable riding with your BMW

BMW Motorrad.

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GENERAL INSTRUCTIONS

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4 GENERAL INSTRUCTIONS

QUICK & EASY REFERENCE

This rider's manual has been designed to provide quick and efficient orientation. The quickest way for you to find information on specific topics is to consult the comprehensive index at the end of the rider's manual. If you would like to start with a quick overview of your vehicle, this information has been provided in chapter 2. All preventive maintenance and repair procedures carried out on your motorcycle will be documented in the chapter "Service". Documentation of the maintenance work performed is a prerequisite for generous treatment of claims.

ABBREVIATIONS AND SYMBOLS

CAUTION Hazard with low risk. Failure to avoid this hazard can result in minor or moderate injury.

WARNING Hazard with moderate risk. Failure to avoid this hazard can result in death or serious injury.

DANGER Hazard with high risk. Failure to avoid this hazard results in death or serious injury.

ATTENTION Special instructions and precautionary measures. Non-compliance can cause damage to the vehicle or accessories and warranty claims may be denied as a result.

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

- • Instruction.
- » Result of a repair procedure.
- Reference to a page with more detailed information.
- ◁ Indicates the end of accessory or equipment-dependent information.
- Tightening torque.
- Technical data.
- NV National-market version.

OE	Optional equipment. BMW Motorrad optional equipment is already completely installed during motorcycle production.
OA	Optional accessories. BMW Motorrad optional accessories can be purchased and retrofitted at your authorized BMW Motorrad dealer.
ABS	Anti-Lock Brake System.
DTC	Dynamic Traction Control.
ERC	Easy Ride Clutch.
MSR	Engine drag torque control.

EQUIPMENT

When you ordered your BMW Motorrad, you chose various custom equipment items. This rider's manual describes optional equipment (OE) and selected optional accessories (OA) offered by BMW. Please bear in mind that it may also contain descriptions of equipment that you might not have selected. Please note, too, that your motorcycle might not be exactly as illustrated in this manual on account of country-specific differences. If your motorcycle features equipment that is not described here, you can find these features described in a separate manual.

TECHNICAL DATA

All dimensions, weights and performance data contained in this rider's manual refer to the German Institute for Standardization i.e. DIN (Deutsches Institut für Normung e. V.) and comply with their tolerance specifications.
The technical data and specifications in this rider's manual serve as points of reference. The vehicle-specific data may deviate from these, for example, as a result of the selected optional equipment, the national-market version or country-specific measuring procedures. Detailed values can be obtained from the registration documents or requested from your authorized BMW Motorrad dealer or other qualified service partner or repair shop. The information on the vehicle documents always takes prece-

dence over the information in this rider's manual.

CURRENTNESS OF THIS MANUAL

The high safety and quality levels of BMW motorcycles are maintained by constant development work on design, equipment and accessories. For this reason, some aspects of your vehicle may vary from the descriptions in this rider's manual. At the time of manufacturing of the motorcycle, the rider's manual is the most current source. Due to updates after the press date, there can be differences between the printed rider's manual and the online version.
Updated information is available at **bmw-motorrad.com/service**.

ADDITIONAL SOURCES OF INFORMATION

Authorized BMW Motorrad dealer

Your authorized BMW Motorrad dealer is always happy to answer any of your questions.

Internet

The rider's manual for your vehicle, the Owner's Manual and installation instructions for optional accessories and general BMW Motorrad information related to the technology or other features are available at **bmw-motorrad.com/manuals**.

CERTIFICATES AND OPERATING PERMITS

The certificates for the vehicle and the General Operating Permits for optional accessories are available at **bmw-motorrad.com/certification**.

Open source software

Open source software is used in some vehicle components. Information about open source software is available at **bmw-motorrad.com/certification**.

DATA MEMORY

General information

Control units are installed in the vehicle. Control units process data received from vehicle sensors, self-generated data or data exchanged between control units, for example. Some control units are required for

safe vehicle operation or provide riding assistance, such as rider assistance systems. Control units also make comfort and infotainment functions possible.
Information about the stored or exchanged data can be obtained from the vehicle manufacturer, such as in the form of a separate booklet.

Personal references
Every vehicle is marked with a unique vehicle identification number. Depending on the country, the vehicle owner can be identified using the vehicle identification number and license plate and with the help of the relevant authorities. There are also other ways to trace data obtained from the vehicle back to the rider or vehicle owner, such as via the ConnectedDrive Account that was used.

Data privacy laws
In accordance with applicable data privacy laws, vehicle users have certain rights over the vehicle manufacturer or company that collects or processes personal data.
Vehicle users have the right to obtain comprehensive information without charge from the locations that store the vehicle user's personal data.
These locations may be:
–The vehicle manufacturer
–Qualified, authorized BMW Motorrad dealer
–Repair shops
–Service providers

Vehicle users may request information about the type of personal data that is stored, the purpose for which the data will be used and the source of the data. This information can only be obtained by a registered owner or a person with written proof authorizing use of the vehicle.
The right to information also includes information related to data transmitted to other companies or locations.
The vehicle manufacturer's website contains the appropriate privacy policy notices. The privacy policy notices contain information on the right to delete or correct data. The vehicle manufacturer also provides the manufacturer contact information and the contact information of the data security officer on the Internet.
The vehicle owner can also pay an authorized BMW Motorrad

dealer or a repair shop to read out the data stored in the vehicle.
The vehicle data is exported using the vehicle's legally mandated 12 V diagnostic socket for on-board diagnostics (OBD).

Operating data in the vehicle
Control units process data so that the vehicle can run.
Examples of this include:
– Status messages from the vehicle and its individual components, such as wheel speed, wheel centrifugal velocity and deceleration
– Ambient conditions, such as temperature

The data is processed only in the vehicle itself and is usually temporary. The data is not stored beyond the period in which the vehicle is operating.
Electronic components such as control units contain components for storing technical information. This may be information about the vehicle's condition, component load, events or faults stored temporarily or permanently.
This information generally documents the condition of a component, module, system or the surrounding area; for example:
– Operating states of system components, such as fill levels and tire pressure
– Malfunctions in key system components, such as lights and brakes
– Vehicle responses in specific riding situations, such as the activation of riding dynamics systems
– Information about events causing damage to the vehicle

The data is necessary for providing control unit functions. In addition, it is used by the vehicle manufacturer to detect and eliminate malfunctions as well as to optimize vehicle functions.
The majority of this data is temporary and is processed only within the vehicle itself. Only a small amount of event-driven data is stored in the event data recorder and fault memory.
When a vehicle is serviced, such as for repairs, servicing processes, warranty cases and quality assurance measures, this technical information can be read out from the vehicle together with the vehicle identification number.

The information can be read out by an authorized BMW Motorrad dealer or a repair shop. The data is read out using the legally prescribed 12 V socket for on-board diagnostics (OBD) provided on the vehicle.
The data is collected, processed and used by the respective service network locations. The data documents the vehicle's technical states and helps with fault finding, compliance with warranty obligations and quality improvements.
The manufacturer also has product monitoring obligations arising from product liability law. The vehicle manufacturer requires technical data from the vehicle in order to fulfill these obligations. The data from the vehicle can also be used to verify customer warranty and guarantee claims.
The fault memory and event data recorder in the vehicle can be reset by an authorized BMW Motorrad dealer or repair shop during repair or servicing work.

Data input and data transfer in the vehicle

General information

Depending on the equipment, comfort settings and individualized settings in the vehicle can be saved and changed or reset at any time.
It is possible to introduce data into the vehicle entertainment and communication system via a smartphone, for instance. Depending on the individual equipment, this includes:

- Multimedia data, such as music for playback
- Address book data for use in combination with a communication system or integrated navigation system
- Entered destinations
- Data about the use of Internet services. This data can be stored locally in the vehicle or is on a device connected to the vehicle, such as a smartphone, USB stick or MP3 player. If this data is saved in the vehicle, it can be deleted at any time.

This data is transmitted to third parties only upon personal request as part of the use of online services. The data transmitted depends on the selected

settings when using the services.

Incorporating mobile end devices

Depending on the equipment, mobile end devices connected to the vehicle, such as smartphones, are controlled using the vehicle's operating elements.

This enables audio and visual output from mobile end devices through the multimedia system. At the same time, certain information is transmitted to the mobile end device. This includes, for instance, position data and other general vehicle information, depending on the type of incorporation,. and makes it possible to optimize the use of selected apps, such as those for navigation or audio playback.

The way the data is processed further is determined by the provider of the particular app used. The range of possible settings depends on the particular app and the operating system of the mobile end device.

Services

General information

If the vehicle has a mobile phone connection, this connection makes it possible to exchange data between the vehicle and other systems. The mobile phone connection is made possible through the vehicle's transmitter and receiver or via personally integrated mobile end devices such as smartphones. Online functions, as they are called, are used over this mobile phone connection. These include online services and apps provided by the vehicle manufacturer or other providers.

Vehicle manufacturer services

If the vehicle manufacturer provides online services, the particular functions are described in the appropriate location, such as in the rider's manual or on the manufacturer's website. The relevant legal information on data privacy is also provided there. Personal data may be used in order to provide online services. The data is exchanged over a secure connection, i.e. with the vehicle manufacturer's IT systems

which are intended for this purpose.
Any collection, processing and use of personal data that goes beyond the provision of services take place only as permitted by law, on the basis of a contractual agreement or as a result of consent. It is also possible to have the entire data connection activated or deactivated. This is not the case for legally prescribed functions.

Services of other providers
When using the online services of other providers, these services are subject to the responsibility and the term of data protection and use of the respective provider. The vehicle manufacturer has no control over the content exchanged via these services. Information about the type, scope and purpose of collecting and using personal data as part of third-party services can be obtained from the particular service provider.

BLUETOOTH®

Bluetooth is a close-range wireless technology. Bluetooth devices are short-range devices (transmitting with a limited range) on the license-free ISM frequency band (Industrial, Scientific, Medical) between 2.402...2.480 GHz. They can be operated anywhere in the world without a license being required.
Although Bluetooth is designed for establishing robust connections over short distances, faults are possible as with any other wireless technology. Connections can be subject to interference, can be briefly interrupted or lost entirely. Especially when several devices are operated in one Bluetooth network, there is no guarantee for smooth operation in every situation.

Possible sources of interference:
- Interference fields due to transmission towers and similar.
- Devices with incorrectly implemented Bluetooth radio standard.
- By nearby Bluetooth-capable devices.

–Shielding by metals or bodies.

CONNECTIVITY FUNCTIONS

Connectivity functions include media, telephony and navigation. Connectivity functions can be used if the instrument cluster is connected to a mobile terminal and a helmet (➠ 59). You can find more information on the Connectivity functions at:
bmw-motorrad.com/connectivity

Depending on the mobile terminal, the scope of the Connectivity functions may be limited.

BMW Motorrad Connected App
With the BMW Motorrad Connected App, you can call up information about the vehicle and usage. To use some functions such as navigation, the app must be installed on the mobile terminal and be connected to the instrument cluster. The app starts the route guidance and adapts the navigation.

On some mobile terminals, e.g. with operating system iOS, you must go to the BMW Motorrad Connected App before use.

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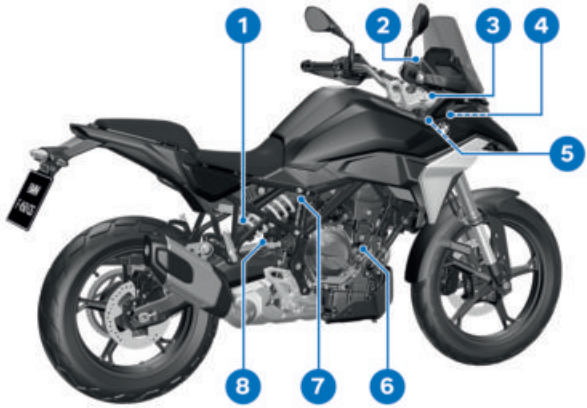
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OVERALL VIEW, LEFT SIDE



1 USB charging interface (➠ 164)
2 Seat lock (➠ 77)
3 Passenger grab handle
4 Passenger footrest
5 Rider footrest

OVERALL VIEW, RIGHT SIDE



1 Spring preload setting (➠ 85)

2 Brake fluid reservoir for front wheel brake (➠ 133)

3 Adjustment of front fork damping (➠ 85)

4 Vehicle identification number (on the steering head)
Type plate (on frame at front right)

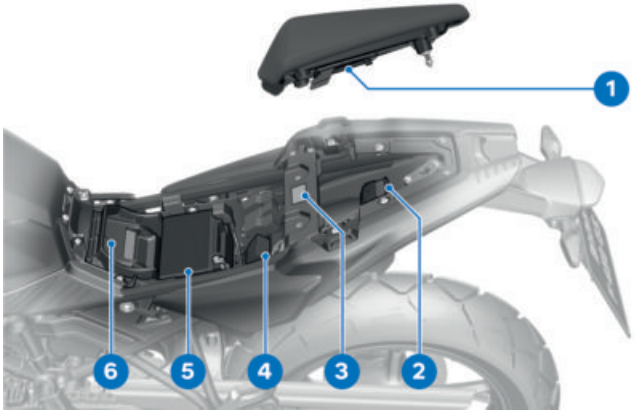
5 Coolant level indicator (➠ 136)
Coolant tank (➠ 137)

6 Oil filler opening and oil level dipstick (➠ 128)

7 Setting the damping (➠ 85)

8 Brake fluid reservoir for rear wheel brake (➠ 134)

UNDERNEATH THE SEAT



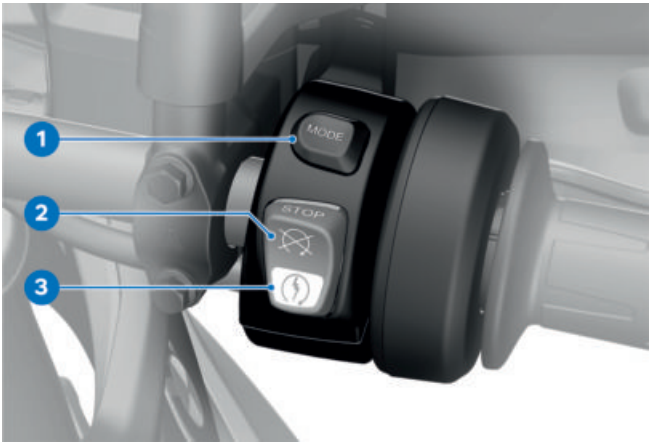
1 Onboard vehicle tool kit (➠ 127)
2 Diagnostic connector (➠ 160)
3 Tire pressure table
Payload table
4 Fuses (➠ 159)
5 Battery (➠ 155)
6 Air filter (➠ 152)

MULTIFUNCTION SWITCH, LEFT



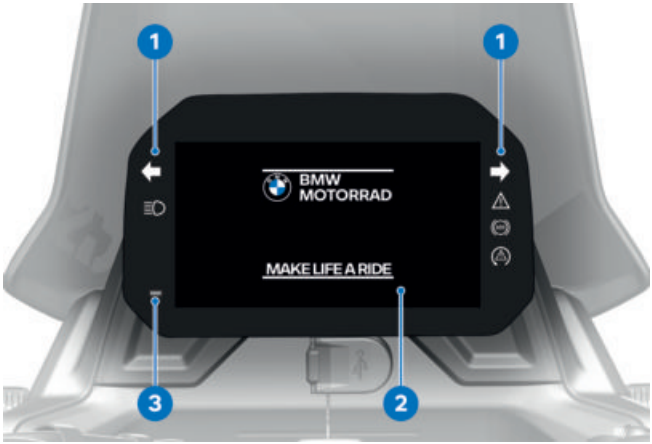
1 Hazard warning system (➠ 70)
2 Traction control (DTC) (➠ 71)
3 Turn signals (➠ 70)
4 Horn
5 Rocker button (➠ 55)
6 Multi-Controller (➠ 54)
7 Heated grip (➠ 75)
8 High beams and headlight flasher (➠ 69)

MULTIFUNCTION SWITCH, RIGHT



1 Selecting the riding mode (➠ 74)
2 Emergency-off switch (➠ 69)
3 Starter button (➠ 96)

INSTRUMENT CLUSTER



1 Indicator and warning lights (➠ 24)

2 Instrument cluster (➠ 26)

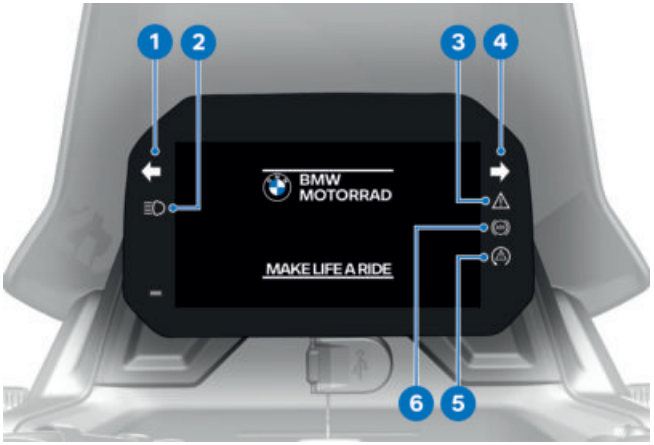
3 Photodiode (for adjusting brightness of instrument lighting)

DISPLAYS

03

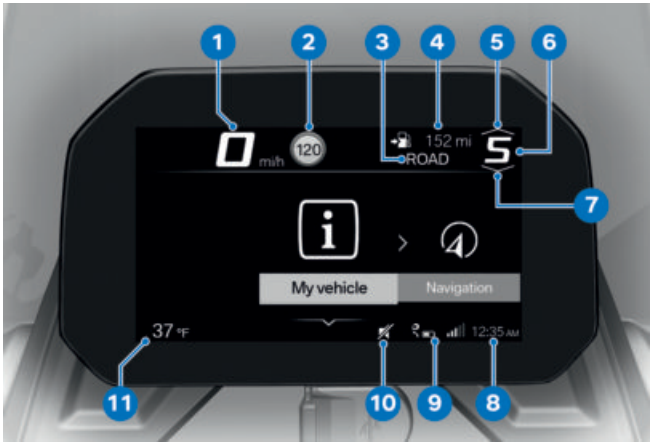
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INDICATOR AND WARNING LIGHTS



1 Turn signal, left (➠ 70)
2 High beams (➠ 69)
3 General warning light (➠ 32)
4 Turn signal, right (➠ 70)
5 DTC (➠ 46)
6 ABS (➠ 44)

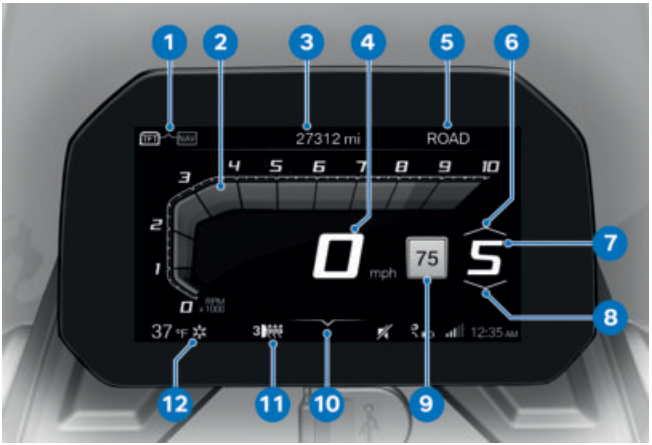
MENU VIEW



1 Speedometer
2 Speed Limit Info (➠ 63)
3 Riding mode (➠ 72)
4 Status line (➠ 57)
5 Upshift recommendation (➠ 28)
6 Gear display
7 Downshift recommendation (➠ 28)
8 Clock (➠ 58)
9 Connection status (➠ 59)
10 Muting (➠ 58)
11 Outside temperature

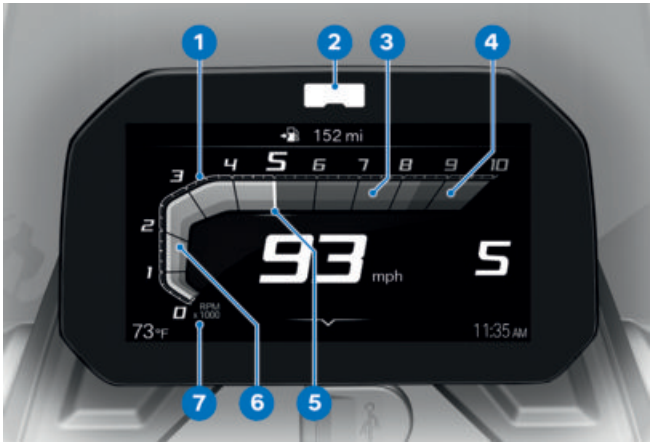
PURE RIDE VIEW

START SCREEN



1 Changing operating focus (➠ 60)
2 Tachometer (➠ 27)
3 Status line (➠ 57)
4 Speedometer
5 Riding mode (➠ 72)
6 Upshift recommendation (➠ 28)
7 Gear display
8 Downshift recommendation (➠ 28)
9 Speed Limit Info (➠ 63)
10 Operating assistance
11 Heated grip (➠ 75)
12 External temperature warning (➠ 38)

TACHOMETER



1 Scale
2 Shiftpoint light (➠ 76)
3 Rotational speed range
4 High / red engine speed range
5 Needle
6 Drag pointer
7 Unit for tachometer: 1000 RPM

The RPM range shaded in red changes depending on the coolant temperature:
The colder the engine, the lower the rotational speed at which the red-shaded rotational speed range begins.
The warmer the engine, the higher the rotational speed at which the red-shaded rotational speed range begins.

The solid red rotational speed range indicates the current maximum speed, depending on, for example, break-in service or faults in the engine control.

When the shift light flashes, the revolution counter also flashes.

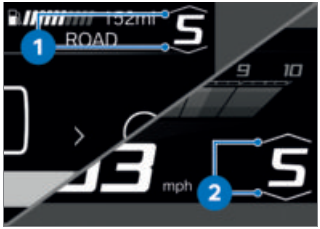
Range



The range **1** indicates how far you can ride with the remaining fuel. This distance is calculated based on average consumption and the remaining fuel quantity.

– When the vehicle is propped on its side stand, the resulting angle of inclination means that the sensor cannot register the fuel quantity correctly. For this reason, the range is only recalculated when the side stand is folded in.
– The range is output together with a warning after the fuel reserve level is reached.
– After refueling, the range is recalculated if the fuel quantity is greater than the fuel reserve.
– The calculated range is only an approximate figure.

Recommended gear



The recommended gear appears in the status line **1** or in the Pure Ride **2** view.
The upshift recommendation signals the most economical time for shifting up a gear. The downshift recommendation signals the right time to downshift when the engine speed is low.

ATTENTION

Wrong gear selection
Component damage, increased wear
- Only drive off in first or second gear.
- Avoid long journeys with the clutch not fully engaged.

SPORT VIEW

–with riding modes Pro[OE]



1 Maximum DTC torque reduction

2 Current DTC torque reduction

3 Rotational-speed sensor

4 Maximum angle of inclination to left

5 Current angle of inclination during cornering for left and right

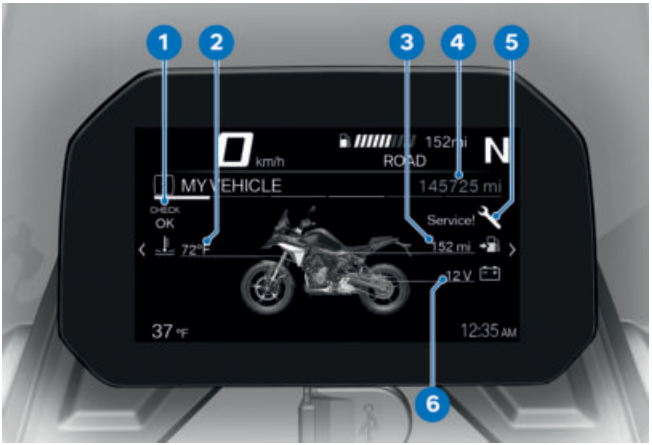
6 Maximum angle of inclination to right

7 Current deceleration during braking

8 Maximum deceleration

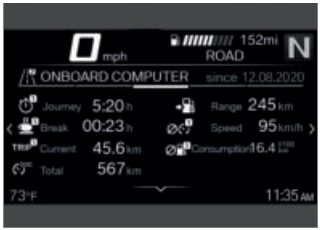
MY VEHICLE VIEW

START SCREEN



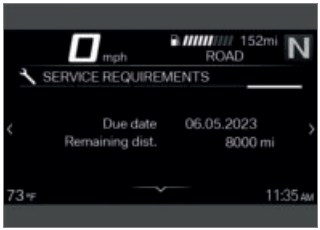
1 Check Control display (➠ 32)
2 Coolant temperature (➠ 41)
3 Range (➠ 28)
4 Odometer
5 Service display (➠ 49)
6 Voltage of the vehicle electrical system (➠ 156)

On-board computer and travel on-board computer



The ONBOARD COMPUTER and TRIP COMPUTER menu windows show the vehicle and trip data, e.g. average values.

Service display



If the time remaining until the next service is less than a month, or if the next service is due within 620 mi (1000 km), a white Check Control message is displayed.

INDICATOR LIGHTS

Layout

Warnings are indicated by the corresponding warning light. Warnings are indicated by the general warning light in combination with a dialog in the instrument cluster. The general warning light lights up in either yellow or red, depending on the urgency of the warning.

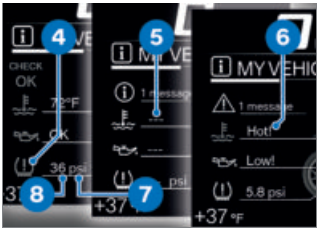
The general warning light lights up for whichever warning is most urgent at the current time.
You will find an overview of the potential warnings on the following pages.



Check Control display

The messages in the display are shown differently in the display. Different colors and characters are used depending on the priority:

–Green CHECK OK **1**: No message, optimal values.
–White circle with lowercase "i" **2**: Information.
–Yellow warning triangle **3**: Warning, value not optimal.
–Red warning triangle **3**: Warning, value critical



Value display

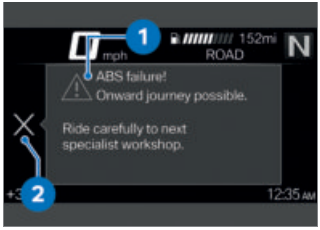
The icons **4** are displayed differently. Different colors are used depending on the assessment of value. Instead of numerical values **8** with units **7**, texts **6** are also displayed:

Color of the icon

–Green: (`OK`) Current value is optimal.
–Blue: (`Cold!`) Current temperature is low.
–Yellow: (`Low!`/`High!`) Current value is too low or too high.
–Red: (`Hot!`/`High!`) Current temperature or value is too high.

– White: (---) There is no valid value. Instead of the value, dashes **5** are displayed.

The evaluation of the individual values is possible in part only after a certain riding duration or speed. If a measured value cannot yet be displayed due to unfulfilled measurement conditions, dashes are displayed instead as placeholders. As long as no valid measured value is available, no evaluation is carried out in the form of a colored symbol.



Check Control dialog

Messages are output as Check Control dialog **1**.

– If the icon **2** is active, you can acknowledge this by tilting the Multi-Controller to the left.
– Check Control messages are dynamically added to the screens in the `My vehicle` menu as additional tabs. You can go back to the message as long as the fault is present.

Overview of warning indicators

Indicator and warning lights	Display text	Meaning
	 is displayed.	External temperature warning (➠ 38)
	 `Vehicle voltage low.`	Voltage of the vehicle electrical system too low (➠ 38)
 lights up yellow.	 `Vehicle voltage critical!`	Voltage of the vehicle electrical system is critical (➠ 39)
 blinks yellow.	 `Battery critically low!`	Charging voltage critical (➠ 39)
 lights up yellow.  blinks yellow.	 The faulty light source is displayed.  The faulty light source is displayed.	Faulty light source (➠ 39)
 lights up yellow.	 `Light control failure!`	Light control unit failed (➠ 40)
 lights up yellow.	 `Engine too hot!`	Engine temperature high (➠ 41)
 lights up red.	 `Engine overheating!`	Engine overheated (➠ 42)
 lights up yellow.  lights up.	 `No communication with engine control.`	Engine control malfunction (➠ 42)

Indicator and warning lights	Display text	Meaning
 lights up yellow.	 Fault in the engine control.	Engine in emergency operation mode (➠ 42)
 blinks red.	 Serious fault in the engine control.	Serious fault in the engine control (➠ 43)
 lights up yellow.	 Side stand monitoring faulty	Malfunction of side stand monitor (➠ 44)
 flashes regularly.		ABS self-diagnosis not completed (➠ 44)
 lights up yellow.  lights up.	 Limited ABS availability!	ABS fault (➠ 44)
 lights up yellow.  lights up.	 ABS failure!	ABS failure (➠ 45)
 lights up yellow.  lights up.	 ABS Pro failure!	ABS Pro failure (➠ 45)
 flashes irregularly.		ABS-control on front wheel only (➠ 45)
 blinks rapidly.		DTC intervention (➠ 46)

Indicator and warning lights	Display text	Meaning
 blinks slowly.		DTC self-diagnosis not completed (➠ 46)
 lights up.	 Off!  Traction control deactivated.	DTC turned off (➠ 46)
 lights up yellow.  lights up.	 Traction control limited.	Limited DTC availability (➠ 46)
 lights up yellow.  lights up.	 Traction control failure!	DTC error (➠ 47)
 lights up yellow.	 Low fuel.	Fuel has reached reserve volume (➠ 48)
	 Gear indicator flashes.	Gear not taught in (➠ 48)
 lights up yellow.	 Clutch temperature high!	Clutch temperature high (➠ 48)
 flashes in green.  flashes in green.		Hazard warning flasher switched on (➠ 49)
	 is displayed in white. Service due!	Service due (➠ 49)

Indicator and warning lights	Display text	Meaning
 lights up yellow.	 is displayed in yellow. Service overdue!	Service appointment overdue (➠ 50)

Outside temperature

The outside temperature is displayed in the status line of the instrument cluster.

Engine heat can lead to spurious measurement readings of the outside temperature when the vehicle is stationary. If the effect of the motor heat becomes excessive, dashes are temporarily displayed instead of the value.



If the outside temperature falls below the limit value of approx. 37 °F (approx. 3 °C), there is a risk of black ice formation.

The first time the temperature drops below this value, the ice crystal symbol flashes in the status line of the instrument cluster.

External temperature warning



is displayed.

Possible cause:

 The outside temperature measured on the vehicle is less than:
approx. 37 °F (approx. 3 °C)

WARNING

Risk of black ice, also above approx. 37 °F (approx. 3 °C)

Risk of accident

- At low outside temperatures, icy conditions must expected on bridges and in shady road areas.

- Use caution when riding.

Voltage of the vehicle electrical system too low



`Vehicle voltage low. Switch off unneeded consumers.`

The vehicle voltage is too low. If you continue riding, the vehicle electronics will discharge the battery.

Possible cause:

Electrical loads with high electrical consumption, e.g. heating vests, are in operation; too many electrical loads are in operation at the same time, or the battery is defective.

- Switch off electrical loads that are not needed or disconnect them from the electrical system.
- If the fault persists or occurs without any electrical loads connected, have the fault corrected as soon as possible at

a repair shop, preferably an authorized BMW Motorrad dealer.

Voltage of the vehicle electrical system is critical

 lights up yellow.

 `Vehicle voltage critical! Consumers were switched off Check battery condition.`

WARNING

Failure of vehicle systems
Accident hazard
- Do not continue riding.

The vehicle voltage is critical. The vehicle electronics will drain the battery.
Possible cause:
Electrical loads with high electrical consumption, e.g. heating vests, are in operation; too many electrical loads are in operation at the same time, or the battery is defective.
- Switch off electrical loads that are not needed or disconnect them from the electrical system.
- If the fault persists or occurs without any electrical loads connected, have the fault corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

Charging voltage critical

 blinks yellow.

 `Battery critically low! Risk of accident. Do not continue to operate vehicle.`

WARNING

Failure of vehicle systems
Accident hazard
- Do not continue riding.

The battery is not being charged. The vehicle electronics will drain the battery.
Possible cause:
Alternator is malfunctioning, battery is defective or fuse is burned through.
- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

Faulty light source

 lights up yellow.

 The faulty light source is displayed:


High beam faulty!


Turn indicator front left faulty! or Turn indicator front right faulty!


Low beam faulty!


Front parking lamp faulty!


Tail light faulty!


Brake light faulty!


Rear left turn signal faulty! or Rear right turn signal faulty!


License plate light faulty!

–Have checked by a specialist workshop.


blinks yellow.


The faulty light source is displayed:


Active headlamp faulty.

WARNING

Overlooking the vehicle in road traffic due to failure of the lighting on the vehicle

Safety risk

- Replace defective lighting as soon as possible. Please contact a repair shop for this purpose, preferably an authorized BMW Motorrad dealer.

Possible cause:

One or more light sources are faulty.

- Identify faulty lights by visually inspecting them.
- Have the LED light source replaced in full; for details please contact a repair shop, preferably an authorized BMW Motorrad retailer.

Light control unit failed


lights up yellow.


Light control failure! Have checked by a specialist workshop.

WARNING

Overlooking the vehicle in road traffic due to failure of the vehicle lighting

Safety risk

- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

The vehicle lighting has failed partially or completely.

Possible cause:

The light control unit has diagnosed a communication fault.

- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

Engine temperature high

 lights up yellow.

 `Engine too hot! Continue driving at low revs to cool engine.`

ATTENTION

Riding with overheated engine

Engine damage

- Be sure to observe the measures listed below.

Possible cause:

Coolant level is too low.

- Check the coolant level. (➠ 136)

If coolant level is too low:

- Allow the engine to cool down. Top up coolant. Have the cooling system checked at a repair shop, preferably by an authorized BMW Motorrad dealer.

Possible cause:

The temperature sensor has detected a high temperature in the engine.

- Ride in the partial load range if possible to cool the engine.
- If the engine temperature is more frequently too high, have the fault rectified as quickly as possible by a repair shop, preferably an authorized BMW Motorrad retailer.

Engine overheated

 lights up red.


Engine overheating! Come to a safe stop, then stop the engine.

ATTENTION

Riding with overheated engine

Engine damage

- Be sure to observe the measures listed below.

Possible cause:

Coolant level is too low.

- Check the coolant level. (➠ 136)

If coolant level is too low:

- Allow the engine to cool down. Top up coolant. Have the cooling system checked at a repair shop, preferably by an authorized BMW Motorrad dealer.

Possible cause:

Engine is overheated.

- Carefully come to a stop and turn off the engine until it has cooled down.
- If the engine overheats more frequently, have the fault corrected as soon as possible by a repair shop, preferably an authorized BMW Motorrad dealer.

Engine control malfunction

 lights up yellow.

 lights up.


No communication with engine control. Multiple sys. affected. Ride carefully to the next specialist workshop

Possible cause:

Communication with the engine control unit has malfunctioned.

- You may continue riding. Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

Engine in emergency operation mode

 lights up yellow.


Fault in the engine control. Onward journey possible. Ride carefully to next specialist workshop.

WARNING

Unusual handling when the engine is in emergency operation

Accident hazard

- Avoid rapid acceleration and passing maneuvers.

Possible cause:

The engine control unit has diagnosed a fault. In exceptional cases, the engine stops and can no longer be started. Otherwise, the engine runs in emergency operation.

- Continued riding is possible, however, the accustomed engine power may not be available.
- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

Serious fault in the engine control

 blinks red.

 Serious fault in the engine control. Onward journey possible. Damage possible. Have checked by a workshop.

WARNING

Emergency operation mode can damage the engine

Risk of accident

- Drive slowly and refrain from accelerating quickly and overtaking other vehicles.
- If possible, have the vehicle picked up and let the malfunction be corrected at a repair shop, preferably an authorized BMW Motorrad dealer.

Possible cause:

The fill level in the fuel tank is too low or the engine control unit has diagnosed a fault. Serious faults can occur as a result. The engine is in emergency operation mode.

- Continued riding is possible, however it is not recommended.
- Avoid high load and engine speed ranges if possible.
- Refueling procedure. (➠ 105)
- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

Malfunction of side stand monitor

 lights up yellow.



Side stand monitoring faulty Onward journey possible. Stop engine when stationary! Have checked by workshop.

Possible cause:

 The side support switch or its wiring is damaged
The engine is turned off if the speed falls below the minimum limit. The journey cannot be continued.
min. 3 mph (min. 5 km/h)

- Contact a repair shop, preferably an authorized BMW Motorrad dealer.

ABS self-diagnosis not completed

 blinks.

Possible cause:

 ABS self-diagnosis not completed
The ABS function is not available, as the self-diagnosis function has not been completed. (To check wheel speed sensors, the vehicle must reach a minimum speed with the engine running: min. 3 mph (min. 5 km/h))

- Ride off slowly. Note that the anti-lock braking system function is only available after the self-diagnosis has been completed.

ABS fault

 lights up yellow.

 lights up.



Limited ABS availability! Onward journey possible. Ride carefully to next specialist workshop.

Possible cause:

The ABS control unit has detected an error. The ABS function is limited.

- You may continue riding. Take note of additional information on special

situations that can lead to an ABS fault message (➠ 113).
- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

ABS failure

 lights up yellow.

 lights up.

 `ABS failure! Onward journey possible. Ride carefully to next specialist workshop.`

Possible cause:

The ABS control unit has detected an error. The ABS function is not available.
- You may continue riding. Take note of additional information on special situations that can lead to an ABS fault message (➠ 113).
- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

ABS Pro failure

 lights up yellow.

 lights up.

 `ABS Pro failure! Onward journey possible. Ride carefully to next specialist workshop.`

Possible cause:

The monitoring of the ABS Pro function has detected a fault. The ABS Pro function is not available. The ABS function remains available. ABS only supports braking in straight-ahead riding.
- You may continue riding. Observe additional information on special situations that can lead to a ABS Pro fault message (➠ 113).
- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

ABS-control on front wheel only

–with riding modes Pro[OE]

 flashes irregularly.

Possible cause:
The ABS control for the rear wheel is turned off in the currently selected riding mode.
The rear wheel brake can block the rear wheel.
- Check the settings of the riding mode.
- More detailed information on configuring the riding modes can be found in the "Technology in detail" chapter (➠ 117).

DTC intervention

 blinks rapidly.

Possible cause:
DTC has detected instability at the rear wheel and responded by reducing the torque.
The indicator and warning light flashes longer than the DTC intervention lasts. This provides the rider with visual feedback for the control action that was taken even after the critical riding situation has passed.
- You may continue riding. Use caution when riding.

DTC self-diagnosis not completed

 blinks slowly.

Possible cause:

 DTC self-diagnosis not completed
The DTC function is not available, as the self-diagnosis function has not been completed. (To check wheel speed sensors, the motorcycle must reach a minimum speed with engine running: min. 3 mph (min. 5 km/h))

- Ride off slowly. Note that the DTC function is only available after the self-diagnosis has been completed.

DTC turned off

 lights up.

 `Off!`

 `Traction control deactivated.`

Possible cause:
The DTC system was turned off by the rider.
- Turn on the DTC. (➠ 72)

Limited DTC availability

 lights up yellow.

 lights up.



Traction control limited. Onward journey possible. Ride carefully to next specialist workshop.

Possible cause:

The engine control unit has detected a DTC fault.

ATTENTION

Damage to components

Damage to sensors, for example, with the resultant malfunctions

- Do not carry along any objects under the rider's or passenger's seat.
- Secure vehicle tools.

- Do not damage the angular rate sensor.
- Note that the DTC function and other electronic stability control systems are available with limitations only.
- You may continue riding. Observe additional information on situations that can lead to a DTC fault (➠ 116).
- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

DTC error



lights up yellow.



lights up.



Traction control failure! Onward journey possible. Ride carefully to the next specialist workshop.

Possible cause:

The engine control unit has detected a DTC fault.

ATTENTION

Damage to components

Damage to sensors, for example, with the resultant malfunctions

- Do not carry along any objects under the rider's or passenger's seat.
- Secure vehicle tools.

- Do not damage the angular rate sensor.
- Note that the DTC function and other electronic stability control systems are not available.
- You may continue riding. Observe additional information on situations that can lead to a DTC fault (➠ 116).
- Have the malfunction corrected as soon as possible

at a repair shop, preferably an authorized BMW Motorrad dealer.

Fuel has reached reserve volume

 lights up yellow.

 Low fuel. Ride to the next filling station.

WARNING

Rough engine running or switching off of the engine due to a fuel shortage

Accident hazard, damage to catalytic converter

- Do not drive to the extent that the fuel tank is completely empty.

Possible cause:

At most, the fuel tank contains only the reserve volume.

 Reserve fuel quantity
approx. 2.6 quarts (approx. 2.5 l)

- Refueling procedure. (➠ 105)

Gear not taught in

–with Gearshift Assistant Pro OE

 Gear indicator flashes.

Possible cause:

The transmission sensor has not been completely taught in.

- Start engine. (➠ 96)
- Shift to neutral N.
- Fold the side stand out and back in; do not operate the gearshift lever while doing this.
- Shift all gears with clutch control. In the respective gear, put the throttle grip in the idle position multiple times and then accelerate again.

» The gear display stops blinking when the transmission sensor has been successfully taught in.

–Once the transmission sensor has been fully taught in, the Gear Shift Assistant Pro functions as described (➠ 120).

- If the teach-in procedure is unsuccessful, have the fault corrected at a repair shop, preferably an authorized BMW Motorrad dealer.

Clutch temperature high

–with Easy Ride Clutch OE

 lights up yellow.

 Clutch temperature high! Shift recommendation: Shift to a lower gear!

ATTENTION

Wrong gear selection
Component damage, increased wear
- Only drive off in first or second gear.
- Avoid long journeys with the clutch not fully engaged.

Possible cause:

The clutch temperature is too high due to driving off in too high a gear or due to constant-speed driving when the clutch is not fully engaged.
- Observe the recommended gear and perform a downshift.
- Continue driving at a moderate speed and avoid clutch slip.

Hazard warning flasher switched on

 flashes in green.

 flashes in green.

Possible cause:

The hazard warning flasher was switched on by the rider.
- Operate hazard warning flashers. (➠ 70)

Service display

 If service is overdue, the due date or the odometer reading at which service was due is accompanied by the general warning light in yellow.

If service is overdue, a yellow Check Control message is displayed. The displays for service, service appointment, and remaining distance are also highlighted with exclamation marks in the menu windows MY VEHICLE and SERVICE REQUIREMENTS.

 If the service display appears more than a month before the service date, the current day's date must be reset. This situation can occur if the battery was disconnected.

Service due

 is displayed in white.

Service due! Have a service performed at a specialist workshop.
Possible cause:

Service is due either because of the mileage or the date.
- Have service performed regularly by a repair shop, preferably an authorized BMW Motorrad dealer.

» The operating safety and road safety of the vehicle remains unchanged.
» The best-possible value retention of the vehicle is ensured.

Service appointment overdue

 lights up yellow.

 is displayed in yellow.

`Service overdue! Have a service performed at a specialist workshop.`
Possible cause:
Service is overdue because of the mileage or the date.
- Have service performed regularly by a repair shop, preferably an authorized BMW Motorrad dealer.

» The operating safety and road safety of the vehicle remains unchanged.
» The best-possible value retention of the vehicle is ensured.

INSTRUMENT CLUSTER

04

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WARNINGS

WARNING

Operation of a smartphone while riding

Risk of accident

- Observe the valid road traffic regulations.
- Do not use any smartphone while riding. Applications that do not involve operation are exempt, such as phone calls using a hands-free system.

WARNING

Distraction from traffic conditions and loss of control

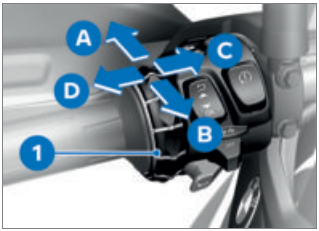
Risk of accident through the use of integrated information systems and communication devices during the journey

- Operate these systems or devices only if the traffic situation allows.
- If necessary, stop and operate the system or devices at a standstill.

Some functions can be used only when the vehicle is at a standstill.

OPERATING ELEMENTS

Multi-Controller



1 Multi-Controller

A Move the cursor up in lists
Increases the volume

B Move the cursor down in lists
Decrease volume

C Activate the function according to the feedback
Confirm selection/setting
Browsing through menu screens

D Activate or deactivate the function according to the feedback
After settings, return to menu view
Change one hierarchy level up
Browsing through menu screens

Rocker button



Briefly press the top of the rocker button 1:

–In Menu view: Change a hierarchy level up.
–In Pure Ride view: Changing the display for rider info. status line.

Press and hold the top of the 1 rocker button.

–In Menu view: Open Pure Ride view.
–In Pure Ride view: Reset onboard computer value.
–Change the operating focus to the navigator.

Briefly press the rocker button 1 at the bottom.

–Change a hierarchy level down.
–Confirm the selection/setting.

Press and hold the bottom of the 1 rocker button.

–Return to the last menu, after a menu change has been previously carried out by pressing and holding the top of the rocker button.

Navigation instructions are displayed as a dialog if you have not gone to the `Navigation` menu. Operation of the rocker button is temporarily restricted.

MENUS

Requirement

The Pure Ride view is displayed.



- Press and hold the top of the rocker button **2** to display the Pure Ride view.
- Briefly press the bottom of the rocker button **2**.
- Briefly press the Multi-Controller **1** to the right repeatedly until the desired menu item is highlighted.
- Briefly press down the rocker button **2** to open the respective menu.

MY VEHICLE

Calling up the on-board computer

- Go to the My vehicle menu.
- Scroll to the right until the ONBOARD COMPUTER menu screen is displayed.

Resetting the on-board computer



- Go to the My vehicle menu.
- Call up ONBOARD COMPUTER menu screen.
- Press down the bottom of the rocker button **1**.
- Select Reset all values or Reset individual values and confirm.
- Alternative: Switch to Pure Ride view.
- Briefly press the top of the rocker button **1** to select the value in the upper status line.
- Press and hold the top of the rocker button **1** to reset the selected value.

The following values can be reset individually:


Journey


Break



Current


Consump.


Speed

Calling up the travel on-board computer

- Go to the on-board computer. (➠ 56)
- Scroll to the right until the TRIP COMPUTER menu screen is displayed.

Resetting the travel on-board computer



- Go to the My vehicle menu.
- Call up TRIP COMPUTER menu screen.
- Press down the bottom of the rocker button **1**.

- Select Automatic reset or Reset all values and confirm.

» If Automatic reset is selected, the travel on-board computer is automatically reset if at least 6 hours have passed since the ignition was switched off and the date has changed.

SETTINGS

Selecting content of upper status line

- Switch to Pure Ride view.

» In the instrument cluster, all of the information necessary for operating the vehicle on public roads is made available from the instrument cluster (e.g. TRIP 1) and the travel on-board computer (e.g. TRIP 2). The information can be displayed in the upper status line.

- Go to menu Settings, Display, Status line content.
- Turn on desired displays.

» It is possible to change between the selected displays in the upper status line. If no displays are selected, only the range is shown.

Changing display of upper status line

- Select content of upper status line. (➠ 57)



- Switch to Pure Ride view.
- Press button **1** briefly to select the value in the upper status line **2**.

The following values can be displayed:

- Total distance
- Current distance 1
- Current distance 2
- Consumption 1 (average)
- Consumption 2 (average)
- Riding time 1
- Riding time 2


Break 1


Break 2


Speed 1 (average)


Speed 2 (average)


Fuel tank level


Range

Adjusting the volume

- Connect the rider's helmet and the passenger helmet. (➠ 60)
- Increase volume: Turn the Multi-Controller up.
- Decrease volume: Turn the Multi-Controller down.
- Mute: Turn the Multi-Controller all the way down.

Configuring system settings

- Call up menu Settings, System settings.

» The following system settings can be configured here:

–Date and time
–Units
–Language

Switch GPS synchronization on or off

–with preparation for navigation system OA

- Go to menu Settings, System settings, Date and time.
- Turn GPS synchronization on or off.

» When the corresponding option is activated in the Navigator, the time is taken from the Navigator.

» Operating the navigation system (➠ 169)

Adjusting brightness

- Go to menu Settings, Display, Brightness.
- Adjust brightness.

» The brightness of the display is dimmed to the set value if ambient brightness falls below a defined value.

Resetting all settings

- Go to the Settings menu.
- Select Reset all and confirm.

The settings of the following menus are reset to the factory setting:

–Vehicle settings
–System settings
–Connections
–Display
–Information

» The pairing of the vehicle with the current BMW Motorrad Connected-Ride account is reset.

BLUETOOTH PAIRING

Pairing

Two Bluetooth devices have to recognize each other before they can communicate. This process of mutual recognition is known as pairing. When two devices have paired they remember each other, so the pairing process is conducted only once, on initial contact.

On some mobile terminals, e.g. with operating system iOS, you must go to the BMW Motorrad Connected App before use.

During the pairing process, the instrument cluster searches for other Bluetooth-compatible devices within its reception range. The conditions that have to be satisfied before a device can be detected are as follows:

– The Bluetooth function of the device must be activated.
– The device must be "visible" to others.
– Other Bluetooth-capable devices must be OFF (e.g. mobile phones and navigation systems).

Please consult the operating instructions for your communication system.

Carrying out pairing

- Call up menu `Settings`, `Connections`.

» Bluetooth connections can be established, managed, and deleted in the `CONNECTIONS` menu. The following Bluetooth connections are displayed:

– `Mobile device`
– `Rider's helmet`
– `Passenger helm.`

The connection status for mobile end devices is displayed.

Connecting a mobile end device

- Carry out pairing. (➠ 59)
- Activate the Bluetooth function of the mobile end device (see operating instructions for the mobile end device).
- Select `Mobile device` and confirm.
- Select `Pair new mobile device` and confirm.

Mobile end devices are searched for.


blinks in the lower status line during pairing.

Visible mobile end devices are displayed.
- Select the mobile end device and confirm.
- Observe the instructions for the mobile end device.
- Confirm that the codes match.

» The connection is established and the connection status is updated.
» If the connection cannot be established, the troubleshooting chart in the Technical data chapter may provide assistance. (➠ 183)

Connect the rider's helmet and the passenger helmet
- Carry out pairing. (➠ 59)
- Select `Rider's helmet` or `Passenger helm.` and confirm.
- Show the communication system of the helmet.
- Select `Pair new rider's helmet` or `Pair new passeng. helmet` and confirm.

Helmets are searched for.


blinks in the lower status line during pairing.

Visible helmets are displayed.
- Select helmet and confirm.

» The connection is established and the connection status is updated.
» If the connection cannot be established, the troubleshooting chart in the Technical data chapter may provide assistance. (➠ 183)

Deleting connections
- Call up menu `Settings`, `Connections`.
- Select `Delete connections`.
- To delete an individual connection, select the connection and confirm.
- To delete all connections, select `Delete all connections` and confirm.

OPERATING FOCUS

–with preparation for navigation system OA

Changing operating focus

When the Navigator is connected, you can change between operation of the Navigator and of the instrument cluster.

Changing the operating focus

If a ConnectedRide Navigator is switched on and connected to the vehicle, the interface focus automatically switches to the Navigator.



- Securely fasten the navigation device. (➠ 167)
- Press and hold the top of the **1** rocker button.

» Dialog menu with progress bar is displayed.

The following selection is possible:

–`Navigator`
–`Pure ride view`

In Pure Ride view:

–`Navigator`
–`Reset BC value`

- Press and hold the top of the rocker button **1** until the progress bar reaches its maximum, or confirm `Navigator`.

» The operating focus changes to the Navigator.

» Operating the navigation system (➠ 169)

- To change the operating focus to the instrument cluster, briefly press the bottom of the rocker button **1**.

NAVIGATION

Prerequisite

The vehicle is connected to a compatible mobile end device via Bluetooth.

The BMW Motorrad Connected app is installed on the connected mobile terminal.

On some mobile terminals, e.g. with operating system iOS, you must go to the BMW Motorrad Connected App before use.

Entering destination address

- Connect mobile terminal. (➠ 59)
- Go to the BMW Motorrad Connected app and start the guidance.
- Call up `Navigation` menu in the instrument cluster.

» Active destination guidance is displayed.

» If the active destination guidance is not displayed, the troubleshooting chart in the Technical data chapter may provide assistance. (➠ 183)

Select destination from most recent destinations

- Call up menu `Navigation`, `Recent destinations`.
- Select destination and confirm.

- Select Start route guidance.

Select destination from favorites

- The FAVORITES menu shows all destinations that have been saved as a favorite in the BMW Motorrad Connected app. It is not possible to create new favorites in the instrument cluster.
- Call up menu Navigation, Favorites.
- Select destination and confirm.
- Select Start guidance.

Entering special destinations

- Special destinations, e.g. landmarks, can be displayed on the map.
- Call up menu Navigation, POIs.

The following locations can be selected:

–At current location
–At destination
–Along the route

- Select in which location you want to search for special destinations.

The following point of interest can be selected:

–Filling station

- Select special destination and confirm.
- Select Start route guidance and confirm.

Specifying route criteria

- Call up menu Navigation, Route criteria.

The following criteria can be selected:

–Route type
–Avoid

- Select desired Route type.
- Turn desired Avoid on or off.

The number of enabled avoidances is displayed in brackets.

Display route info

- Go to the Navigation, Settings menu, then select the Route info menu item.

You can select between the following options:

–Destination
–Waypoint

- Select desired option.

» The remaining distance and time are displayed.

Editing guidance

- Call up menu Navigation, New destination.

You can select between the following destinations:

–Recent destinations
–Favorites
–POIs

- Select destination from one of the three destination categories.

- Select Edit route guidance in the destination entry.
- Select Add stop to add the selected destination as a waypoint.
- Select Start guidance to overwrite the current destination.

Ending route guidance

- Tilt the Navigation Multi-Controller to the left while in the menu.
- Alternatively, select Active route guidance Option End route guidance from the menu and confirm.

Switching spoken instructions on or off

- Connect the rider's helmet and the passenger helmet. (➠ 60)
- The navigation can be read aloud. To do this, the Spoken instructions must be turned on.
- Call up menu Navigation, Active route guidance.
- Turn Spoken instructions on or off.

Repeating the last spoken instruction

- Call up menu Navigation, Active route guidance.
- Select Current instruction and confirm.

Turning Speed Limit Info on or off

Requirement

The vehicle is connected to a compatible mobile end device. The BMW Motorrad Connected app is installed on the mobile end device.

- Speed Limit Info displays the currently permitted maximum speed insofar as this information is provided by the editor of the maps in the navigation system.
- Call up menu Settings, Display.
- Turn Speed Limit Info on or off.

MEDIA

Prerequisite

The vehicle is connected to a compatible mobile end device and a compatible helmet.

Controlling audio playback



- Go to the Media menu.

- Adjust the volume. (➠ 58)
- Next title: Briefly tilt Multi-Controller **1** to the right.
- Last title or beginning of the current title: Briefly tilt Multi-Controller **1** to the left.
- Fast forward: Tilt Multi-Controller **1** to the right for an extended period.
- Fast rewind: Tilt Multi-Controller **1** to the left for an extended period.
- Go to context menu: Press button **2** downward.

Depending on the mobile terminal, the scope of the Connectivity functions may be limited.

» The following functions can be used in the context menu:
–`Playback` or `Pause`.
–For search and playback, select the category `Now playing`, `All artists`, `All albums` or `All tracks`.
–Select `Playlists`.

In the `Audio settings` submenu, the following settings are possible:
–Turn `Shuffle` on or off.
–Select `Repeat`: `Off`, `One` (current track) or `All`.

TELEPHONE

Prerequisite

The vehicle is connected to a compatible mobile end device and a compatible helmet.

Making a phone call



- Go to the `Telephone` menu.
- Accepting a call: Tilt Multi-Controller **1** to the right.
- Rejecting a call: Tilt Multi-Controller **1** to the left.
- Ending a call: Tilt Multi-Controller **1** to the left.

Muting

The microphone in the helmet can be muted during active conversations.

Conversations with multiple users

A second telephone call can be accepted during a conversation. The first conversation will be put on hold. The number of active calls is displayed in the `Telephone` menu. It is pos-

sible to switch between two conversations.

Telephone data

Depending on the mobile end device, telephone data is transferred to the vehicle automatically after pairing (➠ 59).
`Phone book`: List of contacts saved in the mobile terminal
`Call list`: List of calls with the mobile terminal
`Favorites`: List of favorites saved in the mobile terminal

SOFTWARE VERSION

- Go to menu `Settings`, `Information`, `Software version`.

LICENSE INFORMATION

- Go to menu `Settings`, `Information`, `Licenses`.

OPERATION

05

IGNITION SWITCH/STEERING LOCK 68
EMERGENCY-OFF SWITCH 69
LIGHTING 69
DYNAMIC TRACTION CONTROL (DTC) 71
RIDING MODE 72
PRO RIDING MODE 74
HEATED GRIP 75
SHIFTPOINT LIGHT 76
RIDER'S SEAT AND PASSENGER SEAT 77

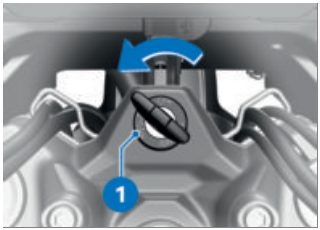
IGNITION SWITCH/STEERING LOCK

Ignition keys

You receive two ignition keys. The ignition lock, fuel filler cap and seat lock are operated with the same key.

Locking the steering lock

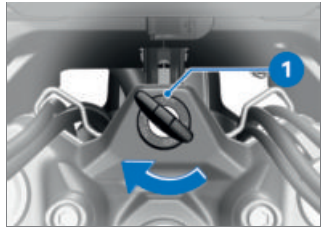
- Turn handlebars to left.



- Turn key to position **1** while moving handlebars slightly.

» Ignition, lights and all electrical circuits turned off.
» Steering lock locked.
» Ignition key can now be removed.

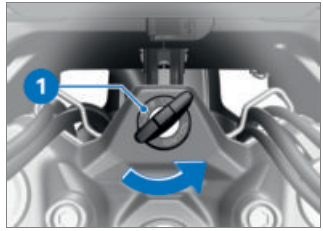
Turning on the ignition



- Turn ignition key to position **1**.

» Parking lights and all function circuits turned on.
» Engine can be started.
» Pre-Ride-Check and self-diagnoses are performed. (➠ 97)
» If the ignition cannot be turned on, the troubleshooting chart can help. (➠ 182)

Turning off the ignition



- Turn ignition key to position **1**.

» Light is turned off.
» Steering lock is not locked.
» Ignition key can now be removed.

» Electrically powered accessories remain operational for a limited period of time.
» Battery charging possible via the accessory power socket.

EMERGENCY-OFF SWITCH



1 Emergency-off switch

WARNING

Operation of the emergency ON/OFF switch when riding
Danger of falling due to blocking of rear wheel
- Do not operate the emergency ON/OFF switch when riding.

The engine can be turned off easily and quickly using the emergency-off switch.



A Engine turned off
B Operating position

The engine can only be started in the operating position.

LIGHTING

Low beams and parking lights
The parking lights turn on automatically when the ignition is turned on.

The parking lights are a strain on the battery. Only turn on the ignition briefly.

The low-beam headlight switches on automatically when the engine is started.

High beams and headlight flasher
- Turn on the ignition. (➠ 68)



- Press switch **1** forward to turn on high beams.
- Pull switch **1** toward rear to actuate headlight flasher.

Headlight courtesy delay feature

- Turn off the ignition. (➠ 68)



- Immediately after turning off the ignition, pull switch **1** back and hold until the headlight courtesy delay feature turns on.

» The vehicle lighting lights up for one minute and then turns off automatically.

–This can be used, for example, to light the path to your front door after the vehicle is parked.

Operating the hazard warning system

- Turn on the ignition. (➠ 68)

The hazard warning system places a load on the battery. Only switch the hazard warning lights system on briefly.



- Press button **1** to turn on the hazard warning system.

» Ignition can be turned off.

- To turn off the hazard warning system, turn on the ignition and press the button **1** again.

Operating turn signals

- Turn on the ignition. (➠ 68)
- Go to the `Settings`, `Vehicle settings` menu, then select the `Lights` menu item.
- Turn `Comfort turn indicator` on or off.



- Press button **1** to the left or right to turn on the turn signals.

» If the comfort turn signal is turned on, the turn signal automatically switches off. How long it flashes depends on the initial speed when the turn signal is turned on.

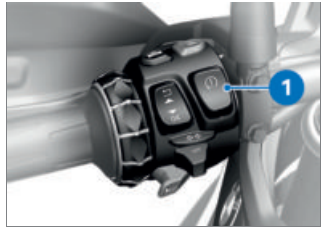
- Alternative: Press button **1** to turn off the turn signals.

DYNAMIC TRACTION CONTROL (DTC)

Turning off the DTC

- Turn on the ignition. (➠ 68)

The Dynamic Traction Control (DTC) can also be turned off while riding.



- Press and hold button **1** until the DTC indicator light changes its behavior.

Immediately after pressing the button **1**, the DTC system status ON and current ABS system status are displayed.

lights up.

Possible DTC system status OFF! is displayed.

- Release button **1** after changeover of the status.

continues to light up.

The new DTC system status OFF! is displayed for a short time. The ABS system status remains unchanged.

» The DTC function is switched off.

Turn on the DTC



- Press and hold button **1** until the DTC indicator light changes its behavior.

Immediately after pressing the button **1**, the DTC system status OFF! and current ABS system status are displayed.

extinguishes, and if self-diagnosis has not been completed, it begins to blink.

Possible DTC system status ON is displayed.

- Release button **1** after changeover of the status.

remains off or continues to blink.

The new DTC system status ON is displayed for a short time. The ABS system status remains unchanged.

» The DTC function is switched on.

- As an alternative, the ignition can also be turned off and then on again.

If the DTC indicator light lights up after turning the ignition off and on and then continuing to ride at the following minimum speed, a DTC fault has occurred.

min. 3 mph (min. 5 km/h)

- More detailed information on the Dynamic Traction Control can be found in the chapter Technology in detail. (➠ 115)

RIDING MODE

Use of the riding modes

BMW Motorrad has developed riding scenarios for your vehicle from which you can select the one matching your situation:

Series

–RAIN: Riding on wet roads.
–ROAD: Riding on dry roads.
–ENDURO: Driving off-road with road tires.

–with riding modes Pro OE

With Pro riding modes

–ENDURO PRO: riding off-road with coarse-tread off-road tires.

For each of these riding modes, there is a coordinated setting for the ABS and DTC systems, engine drag torque control and the throttle response.
More detailed information about the riding modes can be found in the "Technology in detail" chapter (➠ 117).

Riding mode preselection
–with riding modes Pro[OE]

With the aid of the riding mode preselection, individually preferred riding modes can be compiled in a preselection.
Two to a maximum of four riding modes can be added to the riding mode preselection.
Factory setting:
RAIN, ROAD, and ENDURO

Configuring the riding mode preselection
–with riding modes Pro[OE]

- Turn on the ignition. (➠ 68)
- Go to menu `Settings`, `Vehicle settings`, `Riding mode preselection`.
- Activate or deactivate riding modes for the riding mode preselection.

» The activated riding modes are available for selection.
» If fewer than two riding modes are activated, the following message appears:

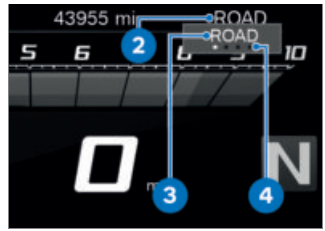
`Action not possible. Min. number reached.`

» The compilation of the riding modes in the riding mode preselection is retained, even after the ignition is switched off.

Selecting the riding mode
- Turn on the ignition. (➠ 68)



- Press button **1**.



The active riding mode **2** fades into the background and is displayed in pop-up **3**. The guide **4** shows how many riding modes are available.

ATTENTION

Turning on off-road mode (ENDURO and ENDURO PRO) when in road mode

Risk of falling due to unstable riding conditions when braking or accelerating in the ABS or DTC control range

- Switch on off-road mode (ENDURO and ENDURO PRO) during off-road riding only.

- Press button **1** repeatedly until the desired riding mode is shown in the pop-up.

–with riding modes Pro OE

Depending on the riding mode or its configuration, the intervention of electronic stability control systems can be restricted.

Possible restrictions are displayed as a pop-up message, e.g. `Caution! ABS setting.`.

The ABS indicator light flashes irregularly.

You can find more detailed information regarding road handling control systems such as ABS in the chapter "Technology in detail".◁

–with riding modes Pro OE

» The availability of riding modes is affected by how the rider configures the riding modes preselection function.◁

» When the vehicle is at a standstill, the selected riding mode is activated after approx. 2 seconds.

» The new riding mode is activated while the vehicle is in motion under the following conditions:

–The throttle grip is in idle position.

–Brake is not engaged.

» The riding mode selected and its associated engine characteristic ABS and DTC settings are retained even after the ignition has been turned off.

PRO RIDING MODE

–with riding modes Pro OE

Adjustment options

The Pro riding modes can be adjusted individually.

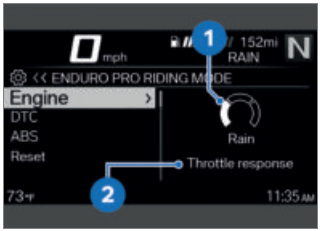
Select Pro riding mode

- Turn on the ignition. (➠ 68)
- Go to menu `Settings`, `Vehicle settings`, `Riding mode preselection`.
- Select `ENDURO PRO riding mode`.

Adjusting Enduro Pro

–with riding modes Pro OE

- Select Pro riding mode. (➠ 74)
- Call up Configuration.



The Engine system is selected. The current setting is displayed as a diagram **1** with explanations on the system **2**.

- Select and confirm the system.



You can scroll through the possible settings **3** and the related descriptions **4**.

- Adjust the system.

» The Engine, DTC, and ABS systems can all be adjusted in the same way.

Riding mode settings reset

- Select Pro riding mode. (➠ 74)
- Select Reset and confirm.

» The following factory settings apply to ENDURO PRO RIDING MODE:

–ENGINE: Road

–DTC: Enduro Pro

–ABS: Enduro Pro

HEATED GRIP

Operating the grip heating

- Start engine. (➠ 96)

Grip heating is active from a driving speed of min. 4 mph (min. 6 km/h).

The increase in electrical consumption caused by grip heating can cause the battery to discharge when driving in the lower rotational speed range. If the battery charge level is too low, grip heating will be switched off to retain the vehicle's starting capability.



- Press button **1** repeatedly until the desired heating level **2** is shown next to the grip heating icon **3**.

The handlebar grips can be heated at three different levels. High heater output is used for fast heating of the grips; the switch should then be switched back to a lower heater output.



High heater output



Medium heater output



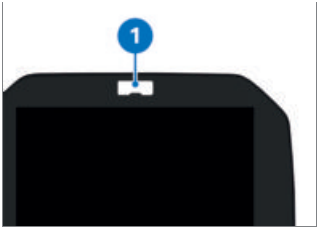
Low heater output

» If no further changes are made, the selected heating level is set.

- To turn off grip heating, press button **1** repeatedly until the grip heating icon **3** disappears from the display.

SHIFTPOINT LIGHT

Function



The shiftpoint light **1** signals to the rider the rotational speed at which the rider needs to shift to the next highest gear.

– Shiftpoint light blinks at the set frequency: Shifting speed has been reached

Turning the shiftpoint light on and off

- Call up menu `Settings`, `Vehicle settings`.
- Turn `Shift light` on or off.

Setting shifting flash

- Turn on the `Shift light` function.
- Go to menu `Settings`, `Vehicle settings`, `Configuration` (under `Shift light`).

» The following settings are available:

– `Start RPM`
– `End RPM`
– `Brightness`

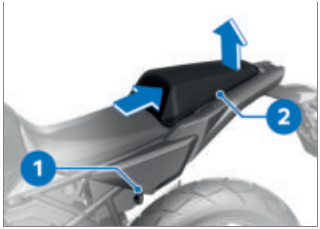
– `Frequency`. A flashing frequency of 0 Hz corresponds to continuous lighting.

» Changes to the brightness and the flashing frequency are signaled by the shiftpoint light lighting up or flashing.

RIDER'S SEAT AND PASSENGER SEAT

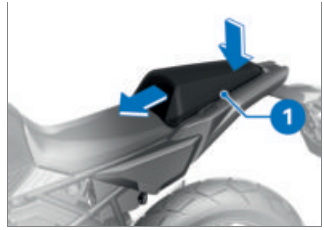
Removing the passenger seat

- Park the motorcycle, making sure the ground is level and firm.



- Turn the ignition key **1** counterclockwise and hold.
- Lift the passenger seat **2** in the rear and release the ignition key.
- Lay the passenger seat on a clean, dry surface with the upholstered side down.

Installing the passenger seat



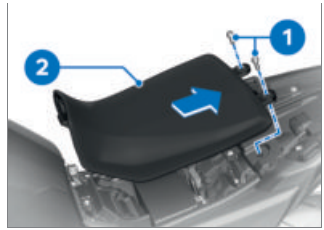
- Insert the front of the passenger seat **1** into the rear frame and press it down at the rear.

» Passenger seat audibly engages.

Removing the rider's seat

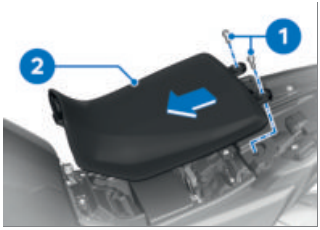
Requirement

Passenger seat has been removed.



- Take out the screws **1** and remove the seat **2** by pulling it backwards out of the lock **Arrow**.
- Lay the rider's seat on a clean, dry surface with the upholstered side down.

Installing the rider's seat



- Insert the rider's seat **2** into the lock **Arrow** and position it.
- Install screws **1**.

	Rider's seat on support bridge
M5×20	
3 lb/ft (4 Nm)	

SETTING

06

MIRRORS 82
HEADLIGHTS 82
CLUTCH 83
BRAKES 83
SPRING PRELOAD 85
DAMPING 85

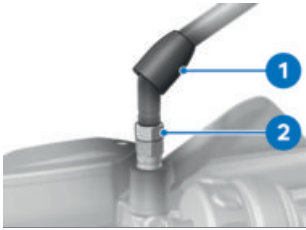
MIRRORS

Adjusting the mirrors



- Move mirrors into desired position by rotating them.

Adjusting the mirror arm



- Slide the protective cap **1** upwards over the threaded connection on the mirror arm.
- Loosen nut **2**.
- Turn the mirror arm into the desired position.
- Tighten the nut **2** to the specified torque while holding the mirror arm in place.

Left mirror (lock nut) to adapter
M10×1.25

Left mirror (lock nut) to adapter
16 lb/ft (22 Nm)

Right mirror (lock nut) to adapter
M10×1.25
16 lb/ft (22 Nm) (Left-hand thread)

- Slide protective cap **1** over threaded connection.

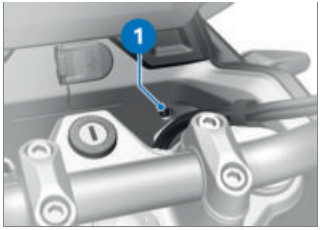
HEADLIGHTS

Headlight range and spring preload

The headlight range generally remains constant due to the adjustment of the spring preload to the load status. Only with a very heavy payload can adjustment of the spring preload be insufficient. If that is the case, the headlight beam throw must be adapted to the weight.

If there are doubts as to the correct headlight range, have the setting checked by a repair shop, preferably by an authorized BMW Motorrad dealer.

Adjusting the headlight range



If the spring preload adjustment is no longer able to maintain the correct beam height to avoid dazzling oncoming traffic owing to high vehicle payloads:

- Adjust the headlight range at the adjustment screw **1** using the onboard toolkit.

If the motorcycle is ridden again with lower payload:

- Restore basic setting of headlight.

CLUTCH

Adjusting the clutch lever

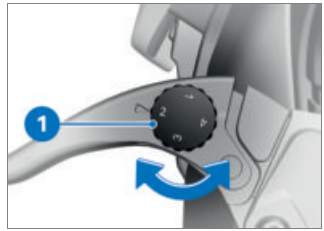
WARNING

Adjusting the clutch lever while driving

Accident hazard

- Adjust the clutch lever when the motorcycle is stationary.

The adjusting screw is easier to turn when the clutch lever is pressed forward.



- Turn the adjustment screw **1** clockwise to increase the distance between the clutch lever and handlebar grip.
- Turn the adjustment screw **1** counterclockwise to decrease the distance between the clutch lever and handlebar grip.
- Check the hand guard. (➠ 100)

BRAKES

Setting the brake lever

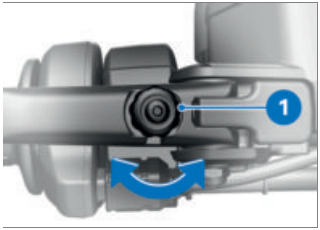
WARNING

Adjusting the brake lever while driving

Risk of accident

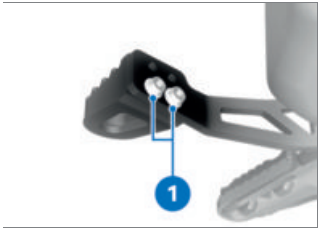
- Only adjust the brake lever when the vehicle is stationary.

The adjustment lever is easier to shift when the brake lever is pressed forward.

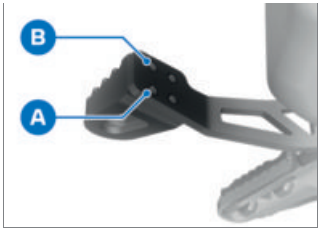


- Turn the adjustment screw **1** clockwise to increase the distance between the clutch lever and handlebar grip.
- Turn the adjustment screw **1** counterclockwise to decrease the distance between the clutch lever and handlebar grip.
- Check the hand guard. (➠ 100)

Adjusting the footbrake lever foot plate



- Remove screws **1**.



- Position the foot plate in position **A** or **B**.

» Position **A**: Low foot plate position

» Position **B**: High foot plate position



- Install the screw **1** and tighten to the specified torque.

Foot plate on footbrake lever
M6 × 16
6 lb/ft (8 Nm)

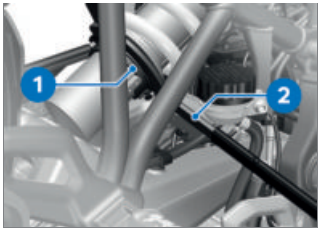
SPRING PRELOAD

Adjustment on rear wheel

It is essential to set the spring preload at the rear wheel to suit the load carried by the motorcycle. Increase spring preload if the payload increases and reduce spring preload accordingly if the payload decreases.

Adjusting the spring preload at the rear wheel

- Remove the rear seat. (➠ 77)
- Remove the onboard vehicle tool kit.



WARNING

Settings for spring preload and spring strut damping that have not been coordinated.

Worse handling.

- Adapt the spring strut damping to the spring preload.

- To increase the spring preload, rotate the adjuster **1** clockwise using the onboard toolkit **2**.
- To reduce the spring preload, rotate the adjuster **1** counterclockwise using the onboard toolkit **2**.

Basic setting of spring preload, rear
Level 2 of 10 (One-up without load)
Level 5 of 10 (One-up with load)
Level 10 of 10 (Two-up mode with load)

- Refit the onboard vehicle tool kit.
- Install the passenger seat. (➠ 77)

DAMPING

Effects of damping on vehicle handling

The aim of adjusting this setting is to adapt the damping to suit the spring preload, road conditions, desired vehicle handling and load state.

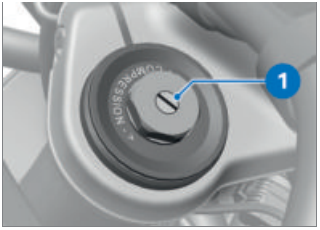
Increased compression damping
–Direct vehicle handling.
–Increased response to road conditions.
–Loss of comfort on bumps or uneven road surfaces.

Reduced compression damping
–Comfortable vehicle handling.
–Reduced response to road conditions.
–Increased vibration tendency.

Increased rebound-stage damping
–Direct vehicle handling.
–Increased response to road conditions.
–Reduced vibration tendency.
–Loss of comfort when driving over series of bumps.

Reduced rebound-stage damping
–Comfortable vehicle handling.
–Reduced response to road conditions.
–Increased vibration tendency.

Adjusting the compression damping on the front wheel
–with sports suspension OE



- Adjust compression damping with adjustment screw **1** on the left-side fork leg.
- For increasing the damping: Turn the adjustment screw **1** clockwise.
- For reducing the damping: Turn the adjustment screw **1** counterclockwise.

Compression stage, basic setting, front
Turn the adjustment screw clockwise up to the stop, then turn it back 10 clicks (Standard)
Turn the adjustment screw clockwise up to the stop, then turn it back 15 clicks (Comfort)

Adjusting the rebound-stage damping on the front wheel
–with sports suspension OE

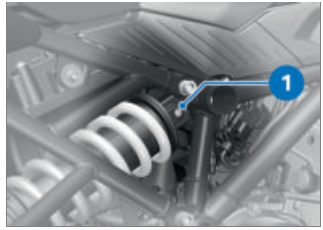


- Adjust rebound-stage damping by means of the adjustment screw **1** on the right-side fork leg.
- For increasing the damping: Turn the adjustment screw **1** clockwise.
- For reducing the damping: Turn the adjustment screw **1** counterclockwise.

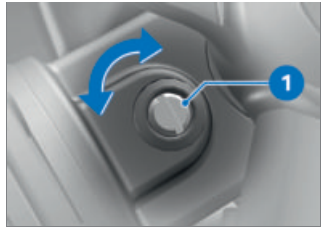
Rebound stage, basic setting, front
Turn the adjustment screw clockwise up to the stop, then turn it back 10 clicks (Standard)
Turn the adjustment screw clockwise up to the stop, then turn it back 15 clicks (Comfort)

Adjusting damping at the rear wheel

- Park the motorcycle, making sure the ground is level and firm.



- Adjust damping via the adjustment screw **1**.



- To increase damping, turn the adjustment screw **1** clockwise.
- To reduce damping, turn the adjustment screw **1** counterclockwise.

Basic setting of rear wheel damping
Turn the adjustment screw clockwise up to the stop, then turn it back 10 clicks (Standard)

 Basic setting of rear wheel damping
Turn the adjustment screw clockwise up to the stop, then turn it back 5 clicks. (Two-up mode with load)

RIDING

07

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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 dealer will be happy to advise you and has the correct clothing for every purpose.

WARNING

Seizure of loose textile fabrics, luggage items or straps in open running rotating vehicle parts (wheels, prop shaft)
Risk of accident
- Make sure that no loosely worn textile fabrics can get caught in open, running and rotating vehicle parts.
- Keep luggage items as well as tension belts and lashing straps away from open, running and rotating vehicle parts.

Vehicle equipment

DANGER

Unauthorized two-up mode
Risk of accident
- Only drive in two-up mode if the vehicle meets all legal requirements.

Correct loading

WARNING

Reduced riding stability caused by overloading and uneven loading
Accident hazard
- Do not exceed the gross weight limit and observe the loading information.

- Adjust the setting of the spring preload and damping for the current gross vehicle weight.
–with topcase OA
- Observe the maximum payload and maximum speed; also see the Accessories chapter (➠ 167).

Payload of Topcase
max. 7 lbs (max. 3 kg) (Accessories)

 Maximum speed when riding with a loaded topcase
max. 81 mph (max. 130 km/h)◁

–with tank bag OA

- Observe the maximum payload of the tank bag.

 Payload of tank bag
max. 11 lbs (max. 5 kg)

 Maximum speed when riding with loaded tank bag
max. 81 mph (max. 130 km/h)◁

–with rear bag OA

- Observe maximum payload of the rear bag.

 Payload of rear bag
max. 11 lbs (max. 5 kg)

 Maximum speed when riding with loaded rear bag
max. 81 mph (max. 130 km/h)◁

–with side bag OA

- Observe maximum payload of the side bag.

 Payload for side bag
max. 11 lbs (max. 5 kg) (per bag)

 Speed limit for side bag
max. 81 mph (max. 130 km/h)◁

Speed

Drive cold tires warm with care to extend the service life of your tires and ensure optimum road adhesion. Avoid powerful acceleration on cold tires. Slowly increase lean angles while driving the tires warm.

To prevent the tires from overheating and to extend the service life of your tires, avoid driving at maximum speed for long periods.

When riding at high speed, always bear in mind that various boundary conditions can negatively affect the vehicle handling of your vehicle. These include, but are not limited to, the following:

–Adjustment of the chassis
–Unevenly distributed load
–Loose clothing
–Insufficient tire pressure
–Tire tread in poor condition

Maximum speed with studded or winter tires

DANGER

Maximum speed of the motorcycle is higher than the permissible maximum speed of the tires
Risk of accident due to tire damage at high speed
- Observe the maximum speed applicable to the tires.

With studded or winter tires, the maximum permissible speed for the tires must be observed.
Attach a sticker specifying the maximum speed permitted within the field of view of the instrument cluster.

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

WARNING

Harmful exhaust gas
Danger of suffocation
- Do not inhale exhaust fumes.
- Do not run the engine in closed rooms.

WARNING

Inhalation of vapors that are harmful to health
Damage to health
- Do not inhale vapors from operating fluids and plastics.
- Only use the vehicle outdoors.

Risk of burning

CAUTION

Intense heating up of engine and exhaust system while riding
Burn hazard
- After parking the motorcycle, make sure that no persons or objects come into contact with the engine and exhaust system.

WARNING

Opening the radiator cap
Risk of burning
- Do not open the radiator cap when it is hot.
- Check the coolant level exclusively at the expansion tank and top up if necessary.

Catalytic converter

ATTENTION

Unburned fuel in the catalytic converter
Damage to catalytic converter
- Note the points listed for protection of the catalytic converter.

There is a danger of overheating and damage if misfiring causes unburned fuel to enter the catalytic converter.
The following must be observed:
– Do not run the fuel tank dry.
– Do not run the engine with the spark plug connector removed.
– Stop the engine immediately if it misfires.
– Use unleaded fuel only.
– Comply with all specified maintenance intervals.

Danger of overheating

ATTENTION

Engine idling for a lengthy period while at a standstill
Overheating due to insufficient cooling; in extreme cases vehicle fire
- Do not allow the engine to idle unnecessarily.
- After starting, ride off immediately.

Modifications

ATTENTION

Modifications to the motorcycle (e.g. engine control unit, throttle valves, clutch)
Damage to the affected parts, failure of safety-relevant functions, expiration of warranty
- Do not make any modifications.

REGULAR CHECK

Checklist

- Use the following checklist to check your motorcycle at regular intervals.

In the event of a change to the load status:

- Adjust the spring preload at the rear wheel. (➠ 85)
- Adjust damping at the rear wheel. (➠ 87)

–with sports suspension OE

- Adjusting the compression damping on the front wheel. (➠ 86)
- Adjusting the rebound-stage damping on the front wheel. (➠ 86)◁

Before every ride:

- Check brake function. (➠ 130)
- Check operation of the lighting and signal system.
- Check the clutch cable for damage.
- Check the clutch function. (➠ 135)
- Check tire tread depth. (➠ 138)
- Check tire pressure. (➠ 137)
- Check that luggage is securely held in place.

At every third refueling stop:

- Check engine oil level. (➠ 128)
- Check front brake pad thickness. (➠ 131)
- Check rear brake pad thickness. (➠ 132)
- Check the front brake fluid level. (➠ 133)
- Check rear brake fluid level. (➠ 134)
- Check the coolant level. (➠ 136)
- Lubricate the chain. (➠ 149)
- Check chain tension. (➠ 149)

STARTING

Starting the engine

ATTENTION

Sufficient transmission gearbox lubrication only when the engine is running.

Transmission damage

- Do not allow the motorcycle to roll for longer periods or push it over longer distances with the engine switched off.

- Turn on the ignition. (➠ 68)

» Pre-Ride-Check and self-diagnoses are performed. (➠ 97)

- Engage Neutral, or pull back the clutch lever if a gear is engaged.

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



- Press starter button **1**.

The starting attempt is automatically interrupted if battery voltage is too low. Recharge the battery before you attempt to start the engine again, or use jumper cables and a donor battery to start.
For more details, see the "Maintenance" chapter under "Jump starting".

Engine starts.

» If the engine fails to start, the troubleshooting chart in the Technical Data chapter may provide assistance. (➠ 182)

–with Easy Ride Clutch OE

» If 1st gear cannot be engaged, the troubleshooting chart in the Technical Data chapter may provide assistance. (➠ 182)◁

Pre-Ride-Check and self-diagnosis

After the ignition is turned on, the instrument cluster performs a test of the display elements and of the indicator and warning lights. During the Pre-Ride-Check, all indicator and warning lights light up temporarily.

» If the instrument cluster remains dark after the ignition is turned on, the troubleshooting chart in the Technical Data chapter may provide assistance. (➠ 184)

» The self-diagnosis checks the operational readiness of the BMW Motorrad ABS, and of the BMW Motorrad DTC.

blinks.

blinks slowly.

» The indicator and warning lights go dark once a riding speed of 3 mph (5 km/h) is reached.

» The self-diagnosis is completed.

If a fault message is displayed after self-diagnosis has been completed:
- Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

BREAKING IN

Engine

- In the period preceding the break-in service, ride in frequently changing engine load and engine speed ranges, avoiding extended periods at constant rpm.
- Try to do most of your riding during this initial period on twisting, fairly hilly roads, avoiding highways if possible.
- Observe the engine run-in speeds.

 Engine run-in speed
<6500 min^{-1} (Odometer reading 0...746 miles (0...1200 km))
No full throttle (Odometer reading 0...746 miles (0...1200 km))

- Observe mileage, after which the break-in inspection should be performed.

 Mileage until first running-in check
311...746 miles (500...1200 km)

Brake pads

New brake pads have to be broken in before they can achieve their optimum frictional force. This reduction in braking effect can be compensated for by exerting greater pressure on the brake levers.

WARNING

New brake pads
Extension of the braking distance, accident hazard
- Brake early.

Tires

New tires have a smooth surface. They must be roughened by riding in a restrained manner at varying lean angles until the tires are run in. This breaking-in procedure is essential if the tire tread is to achieve maximum grip.
Read the tire manufacturer's information on how to break-in new tires correctly.

WARNING

Loss of adhesion of new tires on wet roads and at extreme angles
Accident hazard
- Always think well ahead and avoid extreme angles.

OFF-ROAD USE

After riding off-road
BMW Motorrad recommends that the following be observed after driving off-road:

Tire pressure

WARNING

When driving off-road, lower tire pressure than riding on paved roads
Risk of accident due to poorer handling characteristics.
- Ensure proper tire inflation pressure.

Brakes

WARNING

Riding on unpaved or dirty roads
Delayed braking effect due to dirty brake discs and brake pads
- Brake early until the brakes are clean again.

ATTENTION

Riding on unpaved or dirty roads
Increased brake pad wear
- Check the brake pad thickness more often and replace the brake pads sooner.

Spring preload and damping

WARNING

Modified values for spring preload and spring strut damping when riding off-road
Poorer handling characteristics on paved roads
- Set correct spring preload and correct spring strut damping before leaving off-road terrain.

Rims

BMW Motorrad recommends checking the rims for possible damage after riding off-road.

Air cleaner element

ATTENTION

Dirty air filter element

Engine damage

- When driving in dusty terrain, check air filter insert for soiling at short intervals and clean or replace if necessary.

Use under very dusty conditions (deserts, savannas, etc.) requires the use of air filter elements specially developed for these kinds of applications.

Liquid may accumulate in the intake silencer following intensive off-road use, fording or washing the vehicle thoroughly.

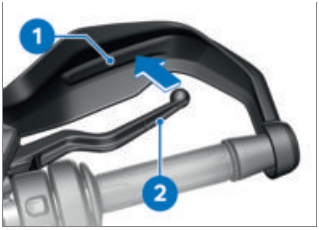
For more information on draining the fluid, see (➠ 176).

Checking the hand guard

If the hand guard is twisted, not enough distance between the hand guard and handlebar lever can lead to continuous actuation of the handlebar lever. Interference with the clutch and/or brake function is possible.

- Check the position of the hand guard and free movement of the handlebar levers, particularly after the following events:

–Change in ergonomic settings
–Accident or fall
–Incorrect transport
–Loose screw connections



- Check the free movement between the hand guard **1** and handlebar levers **2** on the left and right.

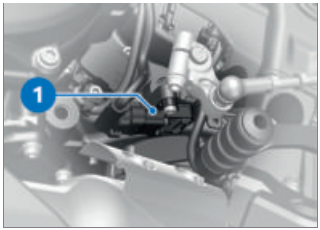
If the handlebar lever touches the hand guard or the handlebar lever does not easily move forward out of the rest position:

- Have the hand guard aligned by a repair shop, preferably an authorized BMW Motorrad dealer.

GEAR SHIFT ASSISTANT PRO

–with Gearshift Assistant Pro[OE]

Gear Shift Assistant Pro



- Engage the gears as usual with the foot-operated gearshift lever.

» The Gear Shift Assistant provides assistance for upshifts and downshifts, without the rider having to actuate the clutch or throttle grip.

–This is not an automatic gearshift system.

–The rider is an essential part of the system and decides when to shift gears.

–The sensor **1** on the gearshift shaft detects the intent to shift gears and triggers the shift assistance.

» If you are riding at a constant speed in a low gear at high RPMs and attempt to shift gears without clutch control, it can cause a strong load-change response.

–BMW Motorrad recommends only shifting gears with clutch control in these riding situations.

–Use of the Pro Gear Shift Assistant should be avoided at RPMs within the speed limiter range.

» Shift assistance is not available in the following situations:

–With clutch actuated.

–Gearshift lever not in its initial position.

–When upshifting with the throttle valve closed (coasting overrun) or when decelerating.

–When downshifting with the throttle valve open or when accelerating.

- After a gearshift, you must fully release the gearshift lever before another gear shift with the Gear Shift Assistant Pro can take place. More detailed information on the Gearshift Assistant Pro (➠ 120).

BRAKES

How do you achieve the shortest braking distance?

The dynamic load distribution between the front and rear wheel changes during braking. The greater the deceleration, the more load is transferred to the front wheel. Increases in the load on an individual wheel are accompanied by a rise in the effective brake force that the wheel can provide.

To achieve the shortest possible braking distance, the front wheel brake must be applied quickly and with progressively greater levels of force. This procedure provides ideal utilization of the dynamic load increase to the front wheel.

With the frequently instructed "emergency braking," in which the brake pressure is generated as quickly as possible and with great force, dynamic load distribution lags behind the progressive increases in deceleration rate and the braking force cannot be completely transferred to the road.

Locking up of the front wheel is prevented by BMW Motorrad ABS Pro.

Descending mountain passes

WARNING

Braking should be done predominantly using the rear wheel brake when riding on downhill routes

Loss of braking effect, destruction of the brakes due to overheating

- Apply the front and rear wheel brake and use the engine brake.

Wet, soiled brakes

WARNING

Decreased braking effect due to moisture and dirt

Risk of accident

- Dry brakes or clean them through braking; if necessary, clean them manually.
- Brake early until the tires have reached their full braking effect again.

Moisture and dirt on the brake discs and the brake pads result in a decrease in the braking effect.

Delayed or decreased braking effect must be expected in the following situations:

– When riding in the rain and through puddles.
– After washing the vehicle.
– When riding on salted roads.
– After working on the brakes due to oil or grease residues.
– When riding on soiled roads or offroad.

ABS Pro
Physical riding limits

WARNING

Braking in curves
Danger of falling despite ABS Pro
- The rider is always responsible for adapting his/her driving style.
- Do not reduce the system's extra safety margin with careless riding or unnecessary risks.

ABS Pro and the supporting function of the Dynamic Brake Control are available in all riding modes except Enduro PRO.

Falling cannot be excluded

Although ABS Pro and Dynamic Brake Control represent valuable support and an enormous safety advantage for the rider when braking in an inclined position, they by no means redefine the physical riding limits. It is still possible to exceed those limits through misjudgments or riding errors. In extreme cases this my result in a fall.

Use on public roads

On public roads, ABS Pro and Dynamic Brake Control help make riding your motorcycle even safer. When braking due to unexpected hazards in curves, ABS Pro prevents blocking and slipping of the wheels within the scope of the physical riding limits. In the event of emergency braking, Dynamic Brake Control enhances the braking effect and intervenes if the throttle grip is accidentally actuated during braking.

ABS Pro was not developed to increase the individual braking performance in the inclined position.

PARKING THE MOTORCYCLE

Side stand

- Turn off the ignition. (➠ 68)

ATTENTION

Poor ground conditions in area of stand

Component damage cause by tipping over

- Always check that the ground under the stand is level and firm.

ATTENTION

Loading of the side stand with additional weight

Component damage cause by tipping over

- Do not sit on the motorcycle when it is parked on the side stands.

- Fold out side stand and park motorcycle.
- Turn handlebars to left.
- On slopes point the motorcycle uphill and engage 1st gear.

–with Easy Ride Clutch OE

CAUTION

Rolling away of the parked vehicle

Risk of injury

- Secure the motorcycle against rolling away on roads with a downhill gradient. If it is not possible to secure the motorcycle to prevent it from rolling away, do not park it on a downhill gradient.

The operating principle of the ERC allows the motorcycle to roll along with the gear engaged.

- For more information on the ERC, see the "Technology in detail" chapter (➠ 121).◁

REFUELING

Fuel quality

Requirement

For optimal fuel consumption, the fuel should be sulfur-free or very low in sulfur content.

ATTENTION

Refueling with leaded fuel
Damage to catalytic converter
- Do not refuel with leaded gasoline or gasoline with metallic additives, e.g. manganese or iron.

ATTENTION

Use of Ethanol E85 as fuel
Damage to the engine and fuel supply
- Do not refuel with E85, i.e. fuel with an ethanol content of 85 %, or with Flex Fuel.

- Observe the maximum ethanol content of the fuel.

Fuel additives clean the fuel injection system and the combustion area. Fuel additives should be used when refueling with low-quality fuels or during longer stationary periods. Your authorized BMW Motorrad dealer can provide you with more detailed information.

Recommended fuel quality
Premium unleaded (Max. 10 % ethanol, E10) 89 AKI (95 ROZ/RON) 90 AKI
Alternative fuel quality
Regular unleaded (restrictions with regard to power and fuel consumption.) (Max. 10 % ethanol, E10) 87 AKI (91 ROZ/RON) 87 AKI

Refueling procedure

WARNING

Fuel is highly flammable
Fire and explosion hazard
- Do not smoke. Never bring a naked flame near the fuel tank.

WARNING

Escaping of fuel due to expansion under exposure to heat with overfilled fuel tank
Accident hazard
- Do not overfill the fuel tank.

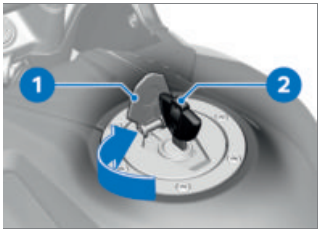
ATTENTION

Contact of fuel and plastic surfaces

Damage to surfaces (become unattractive or cloudy)

- Immediately clean plastic surfaces after contact with fuel.

- Put the motorcycle up on the side stand, ensuring that it is resting on a firm and level support surface.



- Open the protective flap **1**.
- Unlock the fuel tank cap in a clockwise direction using the ignition key **2** and open it.



- Refuel up to the lower edge of the fuel filler neck, but no higher. This is the maximum level.

If refueling is carried out after running on fuel reserve, the resulting filling capacity must be greater than the fuel reserve so that the new fill level is detected and the fuel reserve indicator light is switched off.

The "usable fuel quantity" specified in the technical data is the fuel quantity, which can be refueled if the fuel tank was completely emptied, i.e., if the engine dies off due to lack of fuel.

Usable fuel quantity
approx. 3.7 gal (approx. 14 l)

Reserve fuel quantity
approx. 2.6 quarts (approx. 2.5 l)

- Press the fuel tank cap down firmly to lock it.
- Remove ignition key **2** and close the protective cap **1**.

FASTENING MOTORCYCLE IN PLACE FOR TRANSPORTATION

- Make sure that all components that might come into contact with luggage straps are adequately protected against scratching. Use adhesive tape or soft cloths, for example, for this purpose.



ATTENTION

Motorcycle tips to the side when raising

Component damage cause by tipping over

- Secure the motorcycle against tipping to the side, preferably with the assistance of a second person.

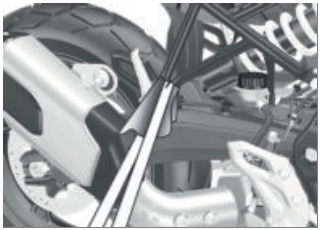
- Push the motorcycle onto the transport surface, and do not prop it on its side stand.



ATTENTION

Pinching of components
Component damage
- Do not pinch components, e.g. brake lines or wiring harnesses.

- Fasten the front luggage straps on both sides on the lower fork bridge and tighten them.



- Fasten the rear tensioning belts on both sides on the rear frame and tighten them.
- Tighten all tensioning belts evenly.

TECHNOLOGY IN DETAIL

08

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GENERAL NOTES

More information on the topic of technology is available at **bmw-motorrad.com/technik**.

ANTILOCK BRAKING SYSTEM (ABS)

How does ABS work?

The maximum braking force that can be transferred to the road is partially dependent on the coefficient of friction of the road surface. Gravel, ice, snow and wet roads offer a considerably lower coefficient of friction than a dry, clean asphalt surface. The lower the coefficient of friction of the road is, the longer the braking distance will be.

If the maximum transferable braking force is exceeded when the rider increases the brake pressure, the wheels begin to lock and riding stability is lost, and a fall can result. Before this situation occurs, ABS is activated and the brake pressure is adjusted to the maximum transferable braking force. This enables the wheels to continue to turn and maintains riding stability regardless of the road condition.

In the factory setting, the ABS control for the rear wheel is deactivated when the ENDURO PRO riding mode is active.

What happens when rough roads are encountered?

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

Lifting off rear wheel

During extremely heavy and rapid decelerations, it is possible that the BMW Motorrad anti-lock braking system cannot prevent the rear wheel from lifting off the ground. In these cases, the motorcycle can also flip end over end.

WARNING

Lifting off of the rear wheel due to heavy braking
Accident hazard
- When braking heavily, bear in mind that the ABS control cannot always be relied on to prevent the rear wheel from lifting off the ground.

What are the design features of the BMW Motorrad ABS?
The BMW Motorrad ABS ensures riding stability on any surface within the limits of riding physics.

At speeds greater than 2.5 mph (4 km/h), the BMW Motorrad ABS can ensure riding stability on any surface within the limits of riding physics. At lower speeds, the BMW Motorrad ABS cannot provide optimal support on all surfaces due to system limitations.

The system is not optimized for the special requirements encountered under the extreme conditions of competitive off-road and racetrack use.

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 switched off for safety reasons, and an ABS fault is displayed. A self-diagnosis must be completed before the fault message can be displayed.
In addition to problems at the BMW Motorrad ABS, unusual riding conditions can also result in a fault message:
- Riding on the rear wheel (wheelie) for an extended period.
- Rear wheel spinning in place with front wheel brake engaged (burn out).
- Warm-up on the center or auxiliary stand in neutral or with gear engaged.
- Rear wheel locked-up for a longer period of time by engine brake, e.g. when riding downhill on slippery surfaces.

Should a fault memory entry occur due to an unusual riding condition, the ABS function can be reactivated by turning the ignition off and then on again.

How important is regular preventive maintenance?

WARNING

Brake system not regularly serviced
Accident hazard
- To ensure that the BMW Motorrad ABS is in a properly maintained condition, it is vital that the specified service intervals are kept to.

Reserves for safety

The potentially shorter braking distances that the BMW Motorrad anti-lock braking system permits must not be used as an excuse for a careless driving style. ABS is primarily a means of ensuring a safety margin in genuine emergencies.
Be careful on curves! When you apply the brakes on a curve, the vehicle's weight and momentum take over and even the BMW Motorrad anti-lock braking system is unable to counteract their effects.

Further development of ABS to ABS Pro

In the past, the BMW Motorrad ABS system provided for a very high level of safety while braking during straight-ahead riding. Now ABS Pro also offers increased safety even when performing the braking process around curves. ABS Pro prevents the wheels from locking up, even in the event that the brakes are applied quickly. ABS Pro reduces abrupt changes in steering forces, especially during shock braking, and therefore decreases the risk of the occurrence of inadvertent lift-off of the vehicle.

ABS control

From a technical standpoint, ABS Pro adjusts the ABS control to the angle of inclination of the motorcycle based on the respective riding situation. Signals for the roll and yaw rate and the lateral acceleration are used to determine the inclination of the vehicle.
With an increasing inclination, the brake pressure gradient is increasingly limited at the start of braking. This results in a slower pressure buildup. In

addition, the pressure modulation in the range of the ABS control is more uniform.

Advantages for the rider

The advantages of ABS Pro for the rider are sensitive response and high braking and riding stability with the best possible deceleration, even around curves.

DYNAMIC TRACTION CONTROL (DTC)

How does traction control work?

The traction control compares the wheel centrifugal velocities of the front and rear wheels. The slip, and with it the stability reserves at the rear wheel, are determined from the speed difference. The engine control adapts the engine torque when the slip limit is exceeded. DTC factors in the lean angle and uses lean angle and acceleration information to regulate traction more precisely and smoothly.

BMW Motorrad DTC is designed as a rider assistance system for riding on public streets. The extent to which the rider affects DTC control can be considerable (weight shifts when cornering, loose luggage on the motorcycle), especially when approaching the limits imposed by the laws of physics.

The ENDURO riding mode should be activated for off-road riding. In this mode, the adjusting intervention by the DTC is performed later, enabling controlled drifting.

The system is not optimized for the special requirements encountered under the extreme conditions of competitive off-road and racetrack use. The BMW Motorrad DTC can be switched off in such instances.

WARNING

Risky riding style

Risk of accident despite DTC

- The rider is always responsible for adapting his/her driving style.
- Do not reduce the system's extra safety margin with careless riding or unnecessary risks.

Special situations
As the angle of inclination increases, the capacity to accelerate is more and more limited in accordance with the laws of physics. This can result in reduced acceleration when coming out of very tight curves.

To detect spinning or slipping away of the rear wheel, the rotational speeds of the front and rear wheel are compared and the angle is considered, for example.

If the values for the lean angle are detected to be implausible for a long period, a substitute value is used for the angle, or the DTC function is turned off. In these cases, a DTC fault is displayed. A self-diagnosis must be completed before the fault message can be displayed.
Under the following unusual riding conditions, BMW Motorrad Traction Control may be deactivated automatically.
Unusual riding conditions:
–Riding on the rear wheel (wheelie) for an extended period.
–Rear wheel spinning in place with front wheel brake engaged (burn out).
–Warming up the engine on an auxiliary stand in neutral or with gear engaged.

Turning the ignition off and on again and then riding the motorcycle at a minimum speed reactivates the DTC .

 Minimum speed for DTC activation
min. 3 mph (min. 5 km/h)

If the front wheel loses contact with the ground under extreme acceleration, the DTC reduces the engine torque in the RAIN and ROAD riding modes until the front wheel makes contact with the ground again.
The riding modes ENDURO and ENDURO PRO are designed for off-road riding and are not suitable for road operation.
In ENDURO riding mode, the front wheel lift-off detection permits brief wheelies.
The front wheel lift-off detection is switched off in ENDURO PRO riding mode.
BMW Motorrad recommends that you respond to the front wheel lifting off by letting off on the throttle grip somewhat to return to a stable riding state as quickly as possible.

In the RAIN, ROAD and ENDURO riding modes, the DTC setting corresponds to the riding mode.
In ENDURO PRO riding mode, DTC can be set differently.

ENGINE DRAG TORQUE CONTROL

How does engine drag torque control work?

The purpose of the engine drag torque control is to safely prevent unstable riding conditions that are related to excess drag torque at the rear wheel. Depending on the road condition and riding dynamics, excess drag torque can make the slip at the rear wheel increase severely and impede riding stability. The engine drag torque control reduces slip at the rear wheel to a safe, setpoint slip that is dependent on the mode.

Causes of excess slip at the rear wheel:

–Riding in coasting overrun on a road with low coefficient of friction (e.g. wet leaves).
–Hopping when shifting gears down.
–Hard brake onset in sporty riding style.

Like the BMW Motorrad DTC traction control, the engine drag torque control compares the wheel centrifugal velocities of the front and rear wheel, which are calculated from the wheel speeds and the tire radius. The engine drag torque control can determine the slip, and therefore the stability reserve, on the rear wheel using the speed difference.
If the slip exceeds the respective limit value, engine torque is increased by slightly opening the throttle valves. The slip is reduced, and the vehicle is stabilized.

RIDING MODE

Selection

To adjust the motorcycle to the road condition and the desired riding experience, you can select from the following riding modes:

Series
–RAIN
–ROAD (standard mode)
–ENDURO

–with riding modes Pro OE
With Pro riding modes
–ENDURO PRO

For each of these riding modes, there is a coordinated setting for the ABS and DTC systems, engine drag torque control and the throttle response.

In driving mode ENDURO PRO, throttle response ABS, and DTC can be set individually. (➠ 75)

DTC can be switched off in any riding mode. The following explanations always refer to the riding safety systems that are turned on.

Throttle response
–RAIN: Gentle throttle response.
–ROAD: Optimum throttle response.
–ENDURO: Gentle throttle response.

–with riding modes Pro OE
–ENDURO PRO: The throttle response can be set individually (➠ 74).

ABS

In the factory setting, the ABS control for the rear wheel is deactivated when the ENDURO PRO riding mode is active.

Setting
–RAIN and ROAD: The ABS setting corresponds to the riding mode ROAD.
–ENDURO and ENDURO PRO: The ABS setting corresponds to the respective riding mode.

Coordination
–RAIN and ROAD: The ABS is set for road use.
–ENDURO: The ABS is adjusted to off-road use with road tires.
–ENDURO PRO: There is no ABS-control at the rear wheel if the footbrake lever is actuated. The ABS is adjusted to off-road use with cleated tires.

Rear wheel lift-off detection
–RAIN and ROAD: The driver is supported as much as possible by the rear wheel lift-off detection.
–ENDURO: The rear wheel lift-off detection offers reduced support and permits gentle lift-off of the rear wheel.
–ENDURO PRO: The rear wheel lift-off detection is inactive.

ABS Pro
–RAIN and ROAD: ABS Pro is fully available.

– ENDURO: ABS Pro assistance is reduced compared to RAIN and ROAD riding modes.
– ENDURO PRO: In the standard setting, ABS Pro is not available.

DTC

Tires

– RAIN and ROAD: DTC is adjusted to road use with road tires.
– ENDURO: DTC is adjusted to off-road use with road tires.
– ENDURO PRO: DTC is adjusted to off-road use with lugged tires.

Riding stability

– RAIN: Intervention of the DTC occurs at such an early stage that maximum ride stability is achieved.
– ROAD: The intervention of the DTC occurs later than in the RAIN riding mode. Rear wheel spinning without traction is avoided wherever possible.
– RAIN and ROAD: The front wheel is prevented from lifting off.
– ENDURO: The intervention of DTC is adapted to off-road driving. Brief wheelies are possible at the end of curves.
– ENDURO PRO: The control of the DTC assumes that lugged tires are used in off-road operation. The intervention of the DTC occurs later than in the ENDURO riding mode.
– Front wheel lift-off detection is deactivated in the ENDURO PRO riding mode, so wheelies of any duration and height are possible. In extreme cases, the vehicle can roll over backward!

Effect of the engine drag torque control

– RAIN and ROAD: Maximum stability.
– ENDURO: Reduced stability.

– with riding modes Pro OE
– In ENDURO PRO, the engine drag torque control is inactive.

DYNAMIC BRAKE CONTROL

Dynamic Brake Control function

The Dynamic Brake Control function is inactive in riding mode ENDURO PRO.

When the ABS is turned off, the Dynamic Brake Control function is turned off at the same time.

The Dynamic Brake Control function helps the rider in the event of emergency braking.

Detection of emergency braking

–Emergency braking is detected when the front wheel brake is applied quickly and with force.

Behavior during emergency braking

–If emergency braking is applied at a speed of more than 10 km/h, in addition to the ABS function, the Dynamic Brake Control function will also be activated.

Behavior in the event of accidental activation of the throttle grip

–If the throttle grip is accidentally actuated during emergency braking (throttle position >5%), the intended braking effect is ensured by the Dynamic Brake Control ignoring the opening process of the throttle grip. This ensures the effectiveness of emergency braking.

–If the gas is shut off (throttle position <5%) during the intervention of Dynamic Brake Control, the engine torque required by the ABS brake system will be restored.

–If hazard braking has ended but the throttle grip is still being actuated, Dynamic Brake Control returns the engine torque to that required by the rider in a controlled manner.

GEAR SHIFT ASSISTANT

–with Gearshift Assistant Pro[OE]

Gear Shift Assistant Pro

Your motorcycle is equipped with the Gear Shift Assistant Pro originally developed for racing but now specially adapted for touring use.
It allows you upshift and downshift under almost any load conditions and in virtually all engine-speed ranges without operating the clutch or accelerator.
The engine control supports the gear change depending on:

–Desired target gear
–Engine speed
–The position of the throttle grip

The decision about using the Gearshift Assistant lies with the rider, who must take into account the driving situation as well as aspects of safety and comfort.

Benefits

–Most of the gear shifts can be done without the clutch.
–Less movement between rider and passenger due to shorter gear-change intervals.
–The throttle grip does not have to be closed during acceleration.
–During downshifting (throttle grip closed), double-clutching is used to change the RPM.
–Shifting times are faster than when the clutch is used to shift gears.

For a gearshift request to be detected, the rider has to move the previously unused gearshift lever at a medium to fast speed in the desired direction and up to the mechanical stop of the shift control. After the gear change is completed, the gearshift lever must be fully released before the Gear Shift Assistant Pro can execute a new gear change. To achieve optimum shift quality with the Gearshift Assistant Pro, the respective load condition (throttle position) must be kept constant before and during the gear shift. In the case of gear shifting with clutch control, there is no support from the Gearshift Assistant Pro.

Downshifts

–Downshifts are assisted up to the speed at which the engine reaches maximum rpm in the gear to be engaged. Overrevving is thus prevented.

 Maximum engine speed
max. 10000 min^{-1}

Upshifts

–Upshifting is possible until engine speed undershoots idle speed in the required gear. This prevents the idle speed from being undershot.
–In the case of upshifting during overrun, particularly in low gears, loss of comfort and stronger power-off reactions can result due to the functional principle.

EASY RIDE CLUTCH

–with Easy Ride Clutch OE

Easy Ride Clutch (ERC)

The ERC is a centrifugal clutch that allows the rider to drive off without actuating the clutch lever.
The ERC is always open while the motorcycle is stationary. The motorcycle can also be pushed with a gear engaged. To make it easier to push, e.g.

when maneuvering, shift into neutral.
The motorcycle can be driven off by opening the throttle grip with the gear engaged. When the engaging clutch speed is reached, the centrifugal unit closes the ERC. If the starting engine speed is to be increased, the ERC can be overridden by actuating the clutch lever.

ATTENTION

Wrong gear selection
Component damage, increased wear
- Only drive off in first or second gear.
- Avoid long journeys with the clutch not fully engaged.

In overrun mode, the ERC remains closed regardless of its engaging clutch speed. The engine braking torque is comparable to that of a conventional clutch. When approaching idle speed, the ERC opens to prevent the vehicle from stalling. If the vehicle rolls downhill with a gear engaged, for example, the ERC closes and the engine braking torque is available.

The clutch lever can be used to engage and disengage the clutch manually while riding.

MAINTENANCE

09

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GENERAL NOTES

The "Maintenance" chapter describes work involving the checking and replacement of wearing parts that can be performed with a minimum of effort.
If specific tightening torques are to be taken into account for installation, these are listed. An overview of all required tightening torques is contained in the "Technical data" chapter.

Special tools and thorough specialized knowledge are required to carry out some of the work described here. If in doubt, contact a repair shop, preferably an authorized BMW Motorrad dealer.

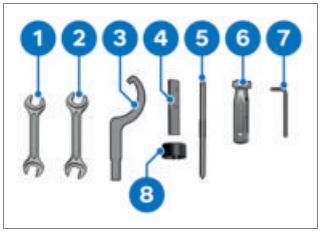
Microencapsulated screws

The microencapsulation is a chemical threadlocker. An adhesive is used to create a solid connection between screw and nut or component. Microencapsulated screws, therefore, are suitable for single use only. Regardless of the removal or installation, the hole must always be cleaned. After removal, the internal thread must be cleaned to remove adhesive. During installation, a new microencapsulated screw must be used. Before removal, make sure that you have suitable tools for cleaning the thread and a new replacement screw. If you carry out the work improperly, the locking function of the screw might no longer be guaranteed, which puts you in danger!

Disposable cable ties

Occasionally cables and wires are secured with disposable cable ties. To prevent cables and wires from getting damaged during removal, a suitable tool must be used, e.g. diagonal cutting pliers.
For reinstallation, cables and wires that were cut free must be secured with new disposable cable ties.
Protrusions should be cut off with cable tie pliers.

ONBOARD VEHICLE TOOL KIT



1 Open-ended wrench
Key range: 12/14 mm
–Adjust chain tension. (➠ 150)

2 Open-ended wrench
Key range: 10/16 mm
–Adjust the mirror arm. (➠ 82)
–Remove battery. (➠ 158)

3 Hook wrench
–Adjust the spring preload at the rear wheel. (➠ 85)

4 Extension piece for hook wrench and oil dipstick attachment part

5 Reversible screwdriver insert
with slotted blade and 5 mm hexagon socket

6 Screwdriver handle

7 Allen screw
5 mm
–Adjust the headlight range. (➠ 83)

8 Tool for oil cap

FRONT WHEEL STAND

Attaching the front wheel stand

ATTENTION

Use of the BMW Motorrad front wheel stand without an auxiliary stand
Component damage cause by tipping over
- Place the motorcycle on an auxiliary stand before lifting the front wheel with the BMW Motorrad front-wheel stand.

- Ensure that the motorcycle is standing securely.
- Place motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad auxiliary stand.
- Attach the rear-wheel stand. (➠ 128)



- For a description of the correct installation, please refer to the instructions for the front wheel stand.
- BMW Motorrad offers a suitable auxiliary stand for each vehicle. Your authorized BMW Motorrad dealer will be very happy to assist you in choosing the suitable auxiliary stand.

REAR-WHEEL STAND

Attaching the rear-wheel stand



- For a description of the correct installation, please refer to the instructions for the rear-wheel stand.
- BMW Motorrad offers a suitable auxiliary stand for each vehicle. Your authorized BMW Motorrad dealer will be very happy to assist you in choosing the suitable auxiliary stand.

ENGINE OIL

Checking the engine oil level

To prevent unnecessary pollution of the environment, BMW Motorrad recommends checking the engine oil after riding min. 31 miles (min. 50 km).

ATTENTION

Misinterpretation of the oil capacity because the oil level is temperature-dependent (the higher the temperature, the higher the oil level)

Engine damage from incorrect filling

- Only check the oil level after an extended ride or when the engine is warm.
- Clean the area around the oil filler opening.
- Allow the engine to idle in Neutral until the fan starts

up, then allow it to idle one minute longer.
- Turn off engine.

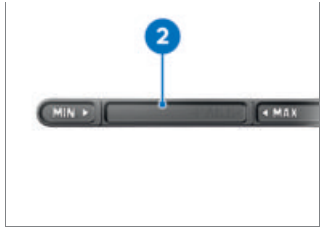
ATTENTION

Lateral tipping of the vehicle
Component damage cause by tipping over
- Secure the vehicle from tipping over laterally, preferably with the support of a second person.

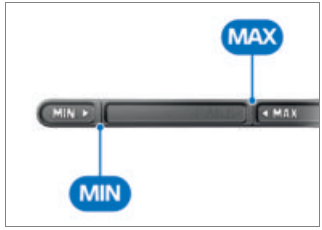
- When the engine is at operating temperature, position the motorcycle vertically on ground that is level and firm. BMW Motorrad recommends the use of a suitable auxiliary stand.



- Wait one minute to allow oil to drain into the oil pan.
- Remove oil dipstick **1**.



- Clean the measuring range **2** with a dry cloth.
- Place oil dipstick on oil filler opening, but do not install. For better readability, turn back by one turn.
- Remove the oil level dipstick and check oil level.



	Specified level of engine oil
Between the **MIN** and **MAX** marks	

Engine oil, top-up quantity
max. 0.5 quarts (max. 0.5 l) (Difference between **MIN** and **MAX**)

If the oil level is below the **MIN** mark:
- Top up engine oil. (➠ 130)

If the oil level is above the **MAX** mark:
- Have the oil level corrected at a repair shop, preferably an authorized BMW Motorrad dealer.
- Install oil level dipstick.

Topping up the engine oil
- Park the motorcycle, making sure the ground is level and firm.
- Wipe the area around the oil filler opening clean.



- Remove oil dipstick **1**.

ATTENTION

Use of too little or too much engine oil
Engine damage from incorrect filling
- Always make sure that the oil level is correct.

- Top up the engine oil to the specified level.
- Check engine oil level. (➠ 128)
- Install oil level dipstick.

BRAKE SYSTEM

Checking brake function
- Actuate the brake lever.
» The resistance point must be clearly perceptible.
- Press the footbrake lever.
» The resistance point must be clearly perceptible.

If resistance points are not clearly perceptible:

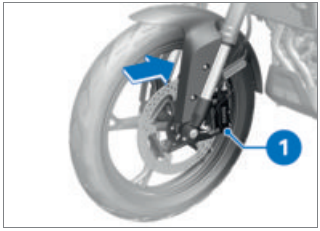
ATTENTION

Improper working on the brake system
Endangering of the operating safety of the brake system
- Have all work on the brake system carried out by experts.

- Have the brakes checked by a repair shop, preferably an authorized BMW Motorrad dealer.

Checking the front brake pad thickness

- Park the motorcycle, making sure the ground is level and firm.



- Visually inspect the left and right brake pads to ascertain their thickness. Direction of view: between the wheel and front suspension through to the brake caliper **1**



Front brake-pad wear limit
min. 0.16 in (min. 4 mm) (Friction lining with carrier plate. The wear marks (grooves) must be clearly visible.)

If the wear marks are no longer clearly visible:

WARNING

Dropping below the minimum pad thickness
Reduced braking action, damage to the brake

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

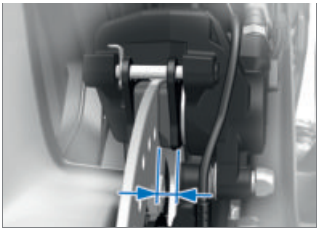
- Have brake pads renewed at a repair shop, preferably an authorized BMW Motorrad dealer.

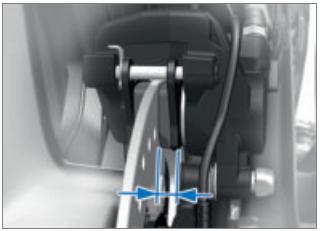
Checking the rear brake pad thickness

- Park the motorcycle, making sure the ground is level and firm.



- Conduct a visual inspection of the brake pad thickness. Direction of view: from rear toward brake caliper **1**.





Rear brake-pad wear limit
min. 0.17 in (min. 4.3 mm) (Friction lining with carrier plate. The wear markings, i.e. the chamfers, must be clearly visible.)

If brake pads are worn:

WARNING

Dropping below the minimum pad thickness
Reduced braking action, damage to the brake
- In order to ensure the operating reliability of the brake system, make sure that the brake pads are not worn beyond their minimum thickness.

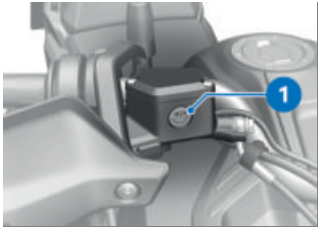
- Have brake pads renewed at a repair shop, preferably an authorized BMW Motorrad dealer.

Checking the front brake fluid level

WARNING

Insufficient or contaminated brake fluid in the brake fluid reservoir
Considerably reduced braking power caused by air, dirt or water in the brake system
- Stop riding immediately until fault is rectified.
- Check brake fluid level regularly.
- Make sure that the lid of the brake fluid reservoir is cleaned before opening.
- Make sure that brake fluid is used from a sealed container only.

- Position the motorcycle vertically, making sure that the ground is firm and level.
- Move the handlebars to the straight-ahead position.



- Check brake fluid level at brake fluid reservoir for front wheel brake **1**.

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



Front brake fluid level
Brake fluid, DOT4
The brake fluid level must not fall below the **MIN** mark. (Brake fluid reservoir horizontal, vehicle standing upright)

If the brake fluid level falls below the approved level:

- Have the fault rectified as soon as possible by a repair shop, preferably an authorized BMW Motorrad dealer.

Checking the rear brake fluid level

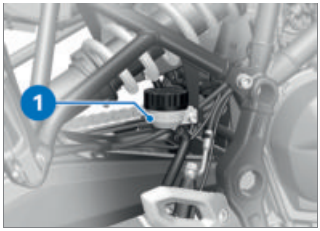
WARNING

Insufficient or contaminated brake fluid in the brake fluid reservoir

Considerably reduced braking power caused by air, dirt or water in the brake system

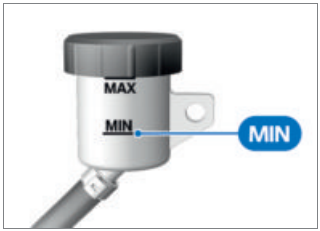
- Stop riding immediately until fault is rectified.
- Check brake fluid level regularly.
- Make sure that the lid of the brake fluid reservoir is cleaned before opening.
- Make sure that brake fluid is used from a sealed container only.

- Position the motorcycle vertically, making sure that the ground is firm and level.



- Check the brake fluid level at the brake fluid reservoir for rear wheel brake **1**.

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



Rear brake fluid level (visual inspection)
Brake fluid, DOT4
The brake fluid level must not fall below the **MIN** mark.

If the brake fluid level falls below the approved level:

- Have the fault rectified as soon as possible by a repair shop, preferably an authorized BMW Motorrad dealer.

CLUTCH

Checking the clutch function

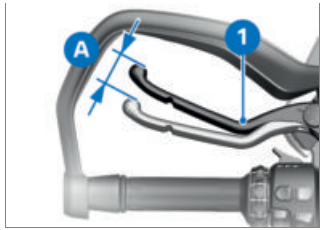
- Pull the clutch lever.

» The resistance point must be clearly perceptible.

If no clear resistance point can be felt:

- Have the clutch checked by a repair shop, preferably an authorized BMW Motorrad dealer.

Checking clutch cable play



- Actuate clutch lever **1** several times until it touches the handle.
- Actuate clutch lever **1** slightly until you can feel resistance while observing the play in the clutch cable **A**.

–with Easy Ride Clutch OE

The clutch cable play may vary with the rotational speed. Check the clutch cable play while the motorcycle is stationary and the engine is not

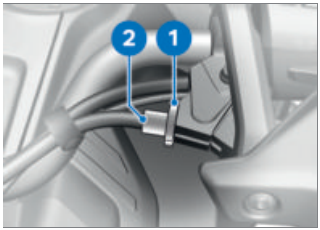
running, and adjust it if necessary.◁

Clutch cable play
0.12...0.2 in (3...5 mm) (along the outside of the hand lever, handlebars in the straight-ahead position, when the engine is cold)

If the clutch cable play is outside of tolerance:

- Adjust clutch cable play. (➠ 136)

Adjusting clutch cable play



- Loosen lock nut **1**.
- To increase clutch cable play: Turn the adjustment screw **2** into the handlebar fitting.
- To reduce clutch cable play: Turn the adjustment screw **2** out of the handlebar fitting.

The distance between lock nuts and nuts (measured inside) must not exceed $0.31^{\pm 0.06}$ in ($8^{\pm 1.5}$ mm).

If the correct clutch cable play can only be set through further unscrewing, contact a repair shop, preferably an authorized BMW Motorrad dealer.

- Check clutch cable play. (➠ 135)
- Tighten lock nut **1**, hold down adjustment screw **2** while doing so.

COOLANT

Checking the coolant level

- Park the motorcycle upright, making sure that the ground is firm and level.
- Turn the handlebars to the right.



- Check coolant level at expansion tank **1**.



Required coolant level
Between **MIN** and **MAX** marks on the expansion tank (Engine cold)

If the coolant level drops below the permitted level:

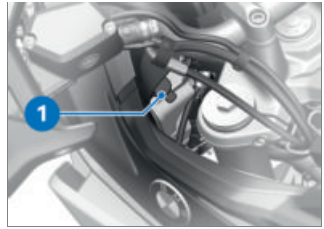
- Top up coolant.

Topping up coolant

WARNING

Opening the radiator cap
Risk of burning

- Do not open the radiator cap when it is hot.
- Check the coolant level exclusively at the expansion tank and top up if necessary.



- Open cap **1** of expansion tank.
- Top up the coolant until it reaches the target level using a suitable funnel.
- Check the coolant level. (➠ 136)
- Close cap **1** of expansion tank.

TIRES

Checking tire pressure

WARNING

Incorrect tire pressure
Worse handling characteristics of the motorcycle, reduction in the service life of the tires

- Ensure correct tire pressure.

WARNING

Automatic opening of vertically installed valve inserts at high speeds
Sudden loss of tire inflation pressure
- Use valve caps with rubber sealing ring and screw on firmly.

- Park the motorcycle, making sure the ground is level and firm.
- Check tire pressure against data below.

 Front tire pressure
24.7 psi (1.7 bar) (One-up mode, with cold tires)
24.7 psi (1.7 bar) (Two-up and/or load, with cold tire)

 Rear tire pressure
27.6 psi (1.9 bar) (One-up mode, with cold tires)
31.9 psi (2.2 bar) (Two-up and/or load, with cold tire)

If tire pressure incorrect:
- Correct the tire pressure.

Checking tire tread depth

WARNING

Riding with heavily worn tires
Risk of accident due to poorer rideability
- If necessary, replace the tires before the legally specified minimum tread depth is reached.

- Park the motorcycle, making sure the ground is level and firm.
- Measure tire tread depth in main tread grooves with wear marks.

Wear marks are integrated into the main grooves on every tire. 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 the worn tire.

RIMS

Checking rims

- Park the motorcycle, making sure the ground is level and firm.
- Visually inspect rims for defects.
- Have damaged rims checked and, if necessary, renewed by a repair shop, preferably an authorized BMW Motorrad dealer.

Checking spokes

–with cross spoke wheels[OE]

- Park the motorcycle, making sure the ground is level and firm.
- Run the handle of a screwdriver or similar object over the spokes and listen to the sound pattern.

If the sound pattern is uneven:

- Have spokes checked by a repair shop, preferably by an authorized BMW Motorrad dealer.

WHEELS

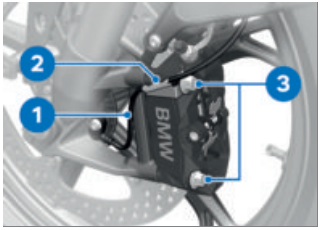
Effect of wheel sizes on suspension control systems

The wheel sizes play a major role in the ABS suspension control system. The diameter and width of the wheels stored in the control unit have particular significance as the basis for all necessary calculations. A change in these sizes resulting from conversion to wheels not installed as standard equipment can seriously affect the control convenience of these systems. The sensor rings required for wheel speed detection must also match the installed control systems and must not be replaced.

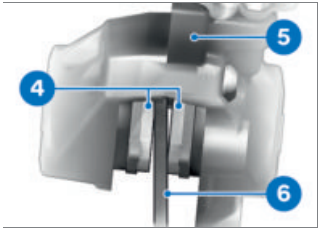
If you want to convert your motorcycle to different wheels, please contact a repair shop, preferably an authorized BMW Motorrad dealer. In some cases, the data stored in the control units can be adapted for the new wheel sizes.

Removing the front wheel

- Park the motorcycle, making sure the ground is level and firm.



- Loosen the wheel speed sensor cable **1** from the holding clip **2**.
- Remove the screws **3** with the holding clip **2**.



- Push the brake pads **4** apart slightly by turning the brake caliper **5** against the brake disc **6**.

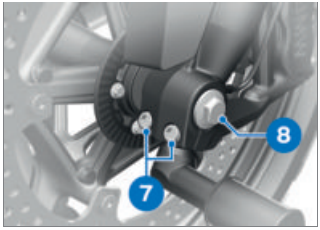
ATTENTION

Using hard or sharp-edged objects near the component
Component damage
- Do not scratch components, if necessary tape off or cover.
- Mask off the rim area that could be scratched when removing the brake caliper.

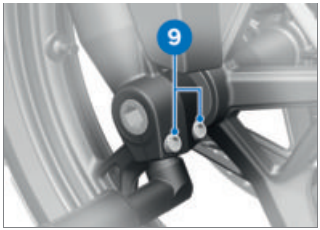
ATTENTION

Unintentional pressing together of brake pads
Component damage when mounting the brake caliper or when pressing the brake pads apart
- Do not actuate the brakes with the brake caliper removed.

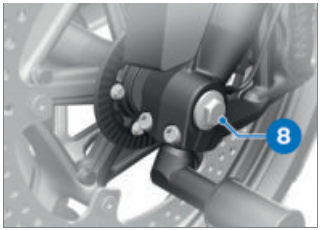
- Carefully pull brake calipers back to remove them from the brake rotor.
- Place motorcycle on a suitable auxiliary stand.
- Attach the rear-wheel stand. (➠ 128)
- Raise front of motorcycle until the front wheel can turn freely. BMW Motorrad recommends using the BMW Motorrad front wheel stand for lifting the motorcycle.
- Attach the front wheel stand. (➠ 127)



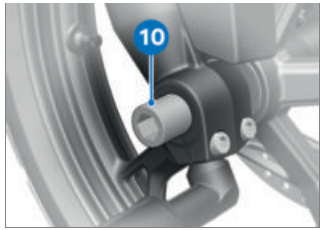
- Loosen the clamping bolts **7** on the left.
- Slacken the screw **8** but **do not remove it**.



- Loosen the clamping bolts **9** on the right.



- Press the quick-release axle with screw **8** inward a little to get a better grip on the right side.
- Remove screw **8**.



- Remove axle **10** while supporting the wheel.
- Do not remove grease on axle.
- Roll the front wheel forward to remove it.

When removing and installing the wheel, do not damage the wheel speed sensor.



- Remove spacer bushing **11** on left side from wheel hub.

Installing the front wheel

WARNING

Use of a wheel which does not comply with series specifications
Malfunctions during control interventions by ABS and DTC
- Please see the information on the effect of wheel sizes on the ABS and DTC chassis control systems at the beginning of this chapter.

ATTENTION

Tightening screw connections with incorrect tightening torque
Damage to or loosening of screw connections
- Have the tightening torques checked by a repair shop, preferably by an authorized BMW Motorrad dealer.



- Lubricate the contact surface on the spacer bush **11**.

Lubricant
Unirex N3 wheel bearing grease

- Insert the spacer bushing **11** into the wheel hub on the left side with the collar facing outwards.

ATTENTION

Front wheel installation opposite the running direction
Accident hazard
- Observe running direction arrows on tire or rim.

- Roll the front wheel into the front suspension.

When removing and installing the wheel, do not damage the wheel speed sensor.



- Lubricate quick-release axle **10**.

Lubricant
Unirex N3 wheel bearing grease

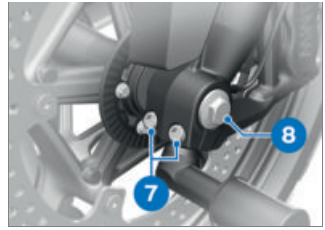
WARNING

Improper installation of quick-release axle

Loosening of the front wheel

- After the brake caliper is fastened and the spring fork is relaxed, tighten the quick-release axle and axle clamping with the specified torque.

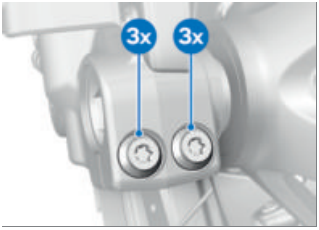
- Raise the front wheel and insert the quick-release axle **10** as far as possible.



- Install axle screw **8** to appropriate torque. Brace quick-release axle on the right side at the same time.

Axle screw in front quick-release axle
M12×20
37 lb/ft (50 Nm)

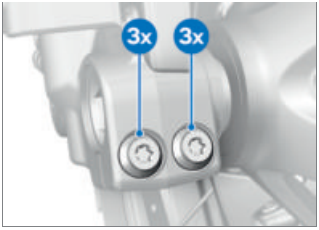
- Remove front wheel stand and firmly compress front forks. Do not actuate brake lever at the same time.
- Attach the front wheel stand. (➠ 127)
- Tighten left axle clamping screws **7** to appropriate torque.



Clamp on quick-release axle
Tightening sequence: Tighten the screws 6 times, alternating between one and the other each time
M8 × 30
14 lb/ft (19 Nm)

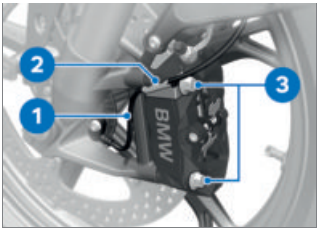


- Tighten the right-side axle clamping screws **9** to the specified torque.



Clamp on quick-release axle
Tightening sequence: Tighten the screws 6 times, alternating between one and the other each time
M8 × 30
14 lb/ft (19 Nm)

- Place the brake caliper on the brake disk.



- Install the mounting bolts **3** with the brake caliper holder **2** and tighten to the specified torque.

Brake caliper on telescopic forks
M10×60
28 lb/ft (38 Nm)

- Remove adhesive tape from wheel rim.

WARNING

Brake pads do not contact the brake disc
Risk of accident due to delayed braking effect.
- Before driving off, check that the braking effect kicks in without any delay.

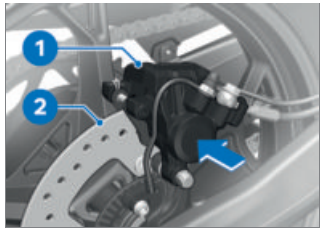
- Engage the brake repeatedly, continuing until the brake pads are against the rotors.
- Insert cable for wheel speed sensor **1** in holding clip **2**.
- Remove the front wheel stand.

Removing the rear wheel

ATTENTION

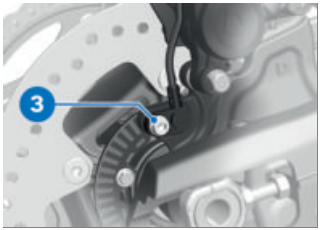
Unintentional pressing together of brake pads
Component damage when mounting the brake caliper or when pressing the brake pads apart
- Do not actuate the brakes with the brake caliper removed.

- Make sure the ground is level and firm and prop the motorcycle up on a suitable auxiliary stand.
- Attach the rear-wheel stand. (➠ 128)
- Support the rear wheel, e.g. with a wooden block, so that it cannot fall down after the quick-release axle is removed.

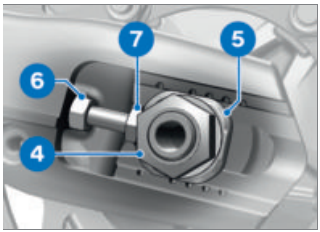


- Press the brake caliper **1** against the brake disk **2**.

» Brake pistons are pressed back.



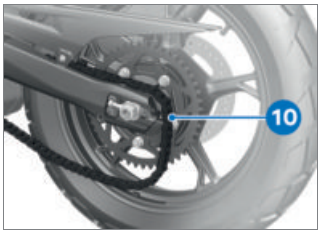
- Remove the screw **3** and remove the wheel speed sensor from the drilled hole.



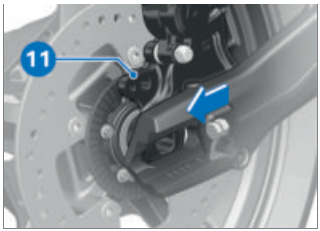
- Remove the axle nut **4** and washer **5**.
- Loosen the lock nut **6** on both sides.
- Screw in the screw **7** as far as possible.



- Remove the wheel spindle **8** and detach the sliding piece **9** on the left and right.



- Roll rear wheel as far forward as possible and remove chain **10** from chain sprocket.



- Roll rear wheel toward rear out of swing arm while pulling brake caliper carrier **11** to-

ward rear until rear-wheel rim can be guided past it.

The camshaft sprocket and the spacer bushings on the left and right are loosely inserted in the wheel. During removal, make sure that the parts are not damaged or lost.

Installing the rear wheel

WARNING

Use of a wheel which does not comply with series specifications

Malfunctions during control interventions by ABS and DTC

- Please see the information on the effect of wheel sizes on the ABS and DTC chassis control systems at the beginning of this chapter.

ATTENTION

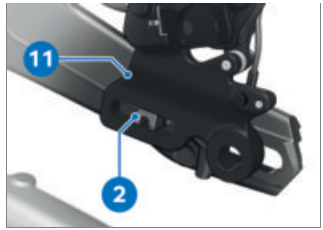
Tightening screw connections with incorrect tightening torque

Damage to or loosening of screw connections

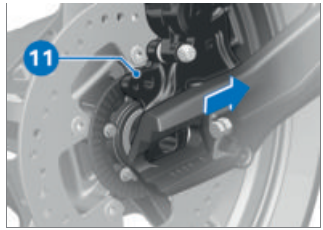
- Have the tightening torques checked by a repair shop, preferably by an authorized BMW Motorrad dealer.

The camshaft sprocket and the spacer bushings on the left and right are loosely inserted in the wheel. During installation, make sure that the parts are not damaged or lost.

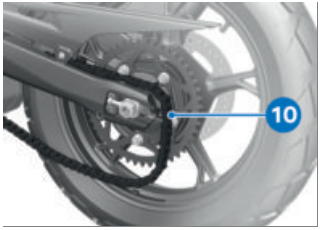
- Roll the rear wheel on the support into the swinging arm until the brake-caliper support can be installed.



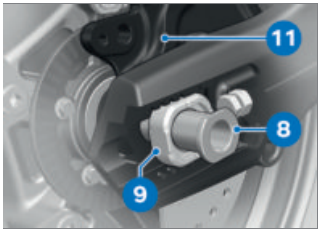
- Insert brake caliper mounting bracket **11** in guide **2**.



- Roll the rear wheel further into swing arm while simultaneously pushing the brake caliper carrier **11** forwards.



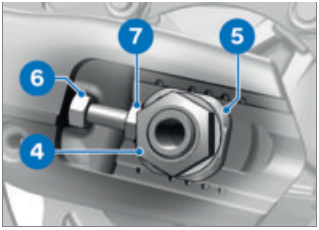
- Roll the rear wheel as far forward as possible and place the chain **10** on the sprocket.



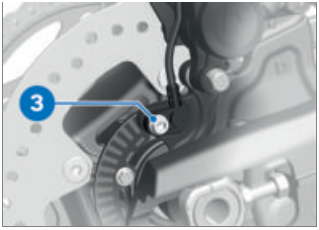
- Insert the sliding piece **9** into the swingarm on the left and right.
- Lubricate the wheel spindle **8** and install it in the brake caliper mounting bracket **11** and rear wheel.

Lubricant
Unirex N3 wheel bearing grease

- Make sure that the axle fits into the recess of the chain tensioner.



- Install washer **5** and axle nut **4**, but do not tighten yet.
- Turn the screw **7** counterclockwise to tighten the drive chain and slightly tighten the lock nut **6**.



- Clean the thread for screw **3**.
- Insert the wheel speed sensor into the bore and tighten the **new** screw **3** to the specified torque.

Rear wheel speed sensor on the brake caliper carrier
M6 × 20
7 lb/ft (10 Nm)

WARNING

Brake pads do not contact the brake disc
Risk of accident due to delayed braking effect.
- Before driving off, check that the braking effect kicks in without any delay.

- After this work is complete, engage the brake repeatedly, continuing until the brake pads seat against the discs.
- Adjust chain tension. (➠ 150)
- Check chain tension. (➠ 149)

DRIVE CHAIN

Lubricating the drive chain

ATTENTION

Insufficient cleaning and lubrication of the drive chain
Increased wear
- Clean and lubricate the drive chain regularly.

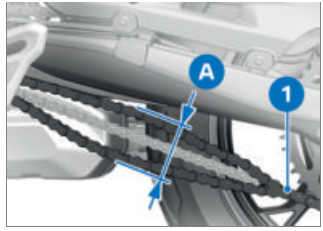
- Lubricate the drive chain every third fuel stop.
- Perform lubrication at shorter intervals after riding in wet conditions, or after riding in dusty or dirty conditions.
- Switch off ignition and engage Neutral.
- Clean drive chain with suitable cleaning agent, dry and apply chain lubricant.
- To extend and maximize the chain's service life, BMW Motorrad recommends using BMW Motorrad chain lubricant or:

Lubricant
Chain spray, compatible with O-rings and X-rings

- Wipe off excess lubricant.

Checking chain tension

- Park the motorcycle, making sure the ground is level and firm.



- Turn the rear wheel until the position with the lowest chain sag is reached.
- Use a screwdriver to push the chain **1** up and down in the middle between the pinion and sprocket and measure the difference **A**.

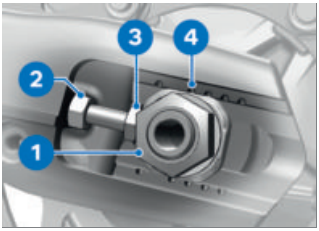
Chain sag
1.6...2 in (40...50 mm) (Motorcycle unloaded on side stand)

If the measured value is outside the approved tolerance:

- Adjust chain tension. (➠ 150)

Adjusting chain tension

- Park the motorcycle, making sure the ground is level and firm.

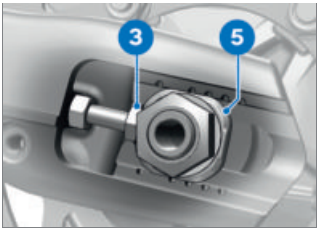


- Loosen axle nut **1**.
- Loosen the lock nuts **2** on the left and right of the chain tensioner.
- Adjust chain tension with adjustment screws **3** on the left and right.
- Check chain tension. (➠ 149)
- Ensure that the identical scale value **4** is set on both the left and right.
- Tighten the lock nuts **2** on the left and right of the chain tensioner.

Lock nut of the drive chain tensioning screw
M8
14 lb/ft (19 Nm)

- Tighten axle nut **1** to specified torque.

Rear-wheel quick-release axle in swinging arm
M18 × 1.5
Thread-locking compound: mechanical
74 lb/ft (100 Nm)



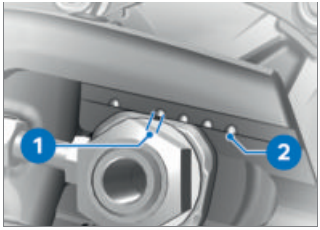
- Check whether the screw head **3** is fully in contact with the sliding piece **5**, and correct it on the left and right if necessary.

Checking drive chain for wear

Requirement

The chain tension is correctly adjusted.

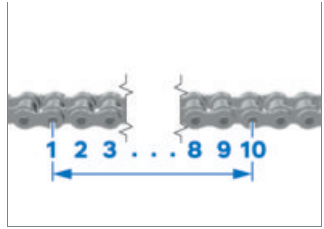
- Park the motorcycle, making sure the ground is level and firm.



- Check whether the marking on the sliding piece **1** is in the area of the last groove on the swingarm **2**.

If marking **1** is near marking **2**, check the chain length:

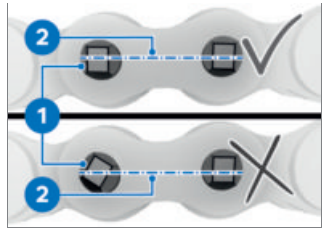
- Engage 1st gear.
- Rotate the rear wheel in the riding direction until the drive chain is tensioned.
- Determine the chain length below the rear wheel swinging arm across the center of 10 rivets.
- Turn the rear wheel in the direction of travel and calculate the chain length at 3 different spots.



Permissible chain length
max. 5.7 in (max. 144 mm) (Measured over the **center** of 10 rivets, drive chain under tension)

If the drive chain has reached the maximum approved length:

- Contact a repair shop, preferably an authorized BMW Motorrad dealer.



- Check to see whether a rivet head **1** has rotated.

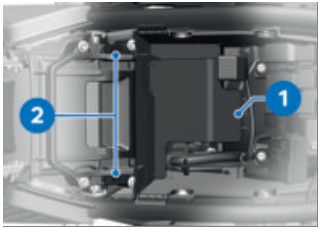
Rivet heads should be parallel to the centerline of the drive chain **2**.
- Riveting is OK.

If one or more rivet heads has rotated:
- Contact a repair shop, preferably an authorized BMW Motorrad dealer.

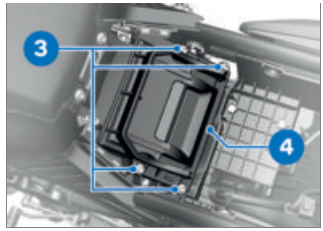
AIR FILTER

Removing the air filter

- Park the motorcycle, making sure the ground is level and firm.
- Remove the rear seat. (➠ 77)
- Remove the rider's seat. (➠ 77)
- Remove battery. (➠ 158)



- Loosen the cover **1** from the retaining lugs **2** and remove it.



- Remove the screws **3** and the air filter cover **4**.



- Remove air filter insert **5**.
- Clean the air filter housing.

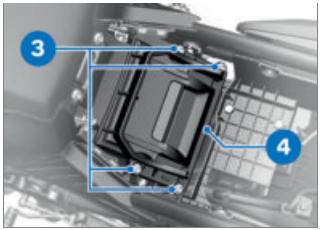
Installing the air filter

ATTENTION

Insufficient filter function, intake of dirt particles. The air filter insert slips when being pushed in.
Component damage
- Insert the air filter insert correctly into the filter frame and hook into the pins.

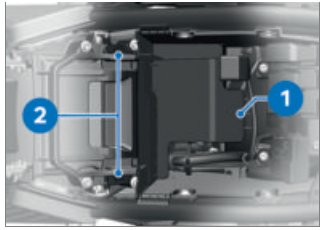


- Install the air filter **5** in the air filter housing.



- Install the air filter cover **4** and tighten the screws **3** to the specified torque.

Air filter cover on intake silencer
M5×20
3 lb/ft (4.5 Nm)



- Install the cover **1** with the retaining lugs **2**.
- Install the battery. (➠ 158)
- Install the rider's seat. (➠ 78)
- Install the passenger seat. (➠ 77)

LIGHT SOURCES

Replacing the LED light source

WARNING

Overlooking the vehicle in road traffic due to failure of the lighting on the vehicle
Safety risk
- Replace defective lighting as soon as possible. Please contact a repair shop for this purpose, preferably an authorized BMW Motorrad dealer.

All light sources on the vehicle are LED light sources. The service life of the LED light sources is longer than the assumed service life of the vehicle. If an LED light source is faulty, please contact a repair shop, preferably an authorized BMW Motorrad dealer.

JUMP-STARTING

- Park the motorcycle, making sure the ground is level and firm.

CAUTION

Touching live parts of the ignition system when the engine is running

Electrocution

- Do not touch parts of the ignition system when the engine is running.

ATTENTION

Current too high when jump-starting the motorcycle

Cable fire or damage to the motorcycle electronics

- Do not jump-start the motorcycle using the power socket, only via the battery terminal.

ATTENTION

Contact between crocodile clips of jump leads and motorcycle

Danger of short circuit

- Use jump leads fitted with fully insulated crocodile clips at both ends.

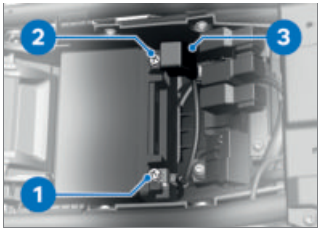
ATTENTION

Jump-starting with a voltage higher than 12 V

Damage to the motorcycle's electronics

- The battery of the donor motorcycle must have a voltage of 12 V.

- Remove the rear seat. (➠ 77)
- Remove the rider's seat. (➠ 77)
- Do not disconnect the battery from the electrical system for an external start.



- Open positive terminal cover **3**.
- Begin by connecting one end of the red jumper cable to the positive terminal **2** of the discharged battery and the other end to the positive terminal of the donor battery.
- Then clamp one end of the black jumper cable to the donor battery's negative terminal **1** while connecting the other end to the empty battery's negative terminal.
- Run the engine of the donor vehicle at a slightly increased rotational speed during the jump start process.

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

- Start the engine of the vehicle with the empty battery in the usual way; if the engine does not start, wait a few minutes before repeating the attempt to start the engine to protect the starter motor and the donor battery.
- Allow both engines to idle for a few minutes before disconnecting the jumper cable.
- Disconnect the jumper cable from the negative terminal **1** first, then from the positive terminal **2**.
- Install the rider's seat. (➠ 78)
- Install the passenger seat. (➠ 77)

BATTERY

Maintenance instructions

Proper care, charging and storage extend the battery's service life and are required for any warranty claims.

Compliance with the points below is important in order to maximize battery service 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.


Battery design

AGM (Absorbent Glass Mat) battery, maintenance-free

ATTENTION

Discharging of the connected battery by the vehicle electronics (e.g. clock)
Total discharge of battery leading to a rejection of warranty claims
- During riding breaks of more than 4 weeks, connect a trickle-charger to the battery.

BMW Motorrad has developed a trickle-charger specially designed for compatibility with the electronics of the motorcycle. The float charger allows quick and convenient charging via the 12V power socket. In order to maintain the battery charge over a prolonged stationary period, BMW Motorrad recommends connecting the float charger to the disconnected battery or the jump start support points.
For more information, consult an authorized BMW Motorrad dealer.

Charging a connected battery

ATTENTION

Charging the battery connected to the vehicle using the battery terminals
Damage to the motorcycle's electronics
- Disconnect the battery before charging on the battery terminals.

Charging a disconnected battery
- Charge battery using a suitable charger.
- Comply with operating instructions of charger.
- Once battery is fully charged, disconnect charger's terminal clips from battery terminals.

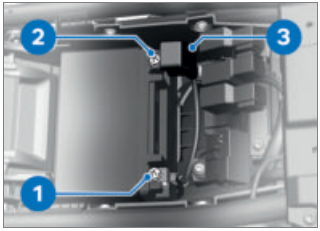
In the case of longer periods when the motorcycle is not being used, the battery must be recharged regularly. See the instructions for caring for your battery. Always fully recharge the battery before returning it to use.

Disconnecting battery from vehicle

ATTENTION

Incorrect battery disconnection
Danger of short circuit
- Follow the disconnection sequence.

- Park the motorcycle, making sure the ground is level and firm.
- Remove the rear seat. (➠ 77)
- Remove the rider's seat. (➠ 77)
- Turn off the ignition.

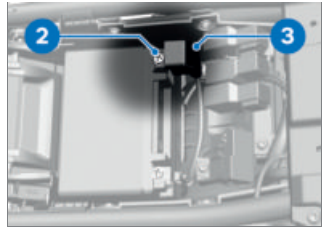


- Remove the negative battery cable **1**.
- Open the positive terminal cover **3**.
- Remove the positive battery cable **2**.

Connecting the battery to the motorcycle

ATTENTION

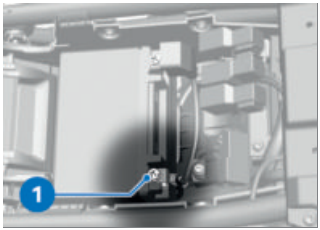
Incorrect battery connection
Danger of short circuit
- Follow the installation sequence.



- Install positive battery cable **2**.

	Wiring harness on battery
M6 × 13.5	
4 lb/ft (5 Nm)	

- Position the positive terminal cover **3**.



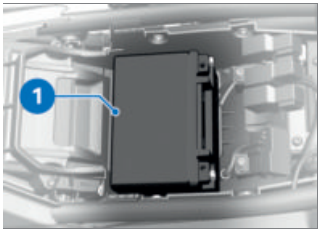
- Install negative battery cable **1**.

Wiring harness on battery
M6 × 13.5
4 lb/ft (5 Nm)

- Install the rider's seat. (➠ 78)
- Install the passenger seat. (➠ 77)

Removing the battery

- Disconnecting battery from motorcycle. (➠ 157)

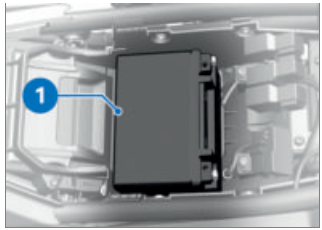


- Lift the battery **1** up and out, tilting it if the movement is stiff.

Installing the battery

If the vehicle has been disconnected from the battery for a long time, the current date must be reset to make sure the service display is working properly.

After the battery type is changed, the `Fault in the on-board battery. Limited onward journey possible. Drive carefully to nearest specialist workshop.` message is displayed once.
If you want to convert your motorcycle to a different battery type, please contact a repair shop beforehand, preferably an authorized BMW Motorrad dealer.



- Insert the battery **1** into the battery compartment, with the positive terminal on the right in the driving direction.
- Connect the battery to the motorcycle. (➠ 157)

- Configure system settings. (➠ 58)

FUSES

Replacing fuse

ATTENTION

Bypassing defective fuses
Risk of short circuit and fire
- Do not bypass defective fuses.
- Replace defective fuses with new fuses.

- Turn off the ignition. (➠ 68)
- Park the motorcycle, making sure the ground is level and firm.
- Remove the rear seat. (➠ 77)
- Remove the rider's seat. (➠ 77)



- Open the cover **1** and remove the defective fuse.

If the fuses are faulty frequently, have the electrical system checked by a repair shop, preferably a BMW Motorrad dealer.

Fuse 1
30 A (Main fuse)
Fuse 2
3 A (Main relay)
Fuse 3
5 A (Cut-off relay coil, instrument cluster)
Fuse 4
10 A (CCP, FLC)
Fuse 5
7.5 A (Radiator fan)
Fuse 6
15 A (Central injection)
Spare fuses
15 A (Spare fuse 1)
30 A (Spare fuse 2)

Fuses

All electrical circuits are electronically protected. If an electric circuit was switched off by the electronic fuse and if the fault that caused this has been rectified, the electric circuit will be active again after switching on the ignition.

- Install the rider's seat. (➠ 78)
- Install the passenger seat. (➠ 77)

DIAGNOSTIC CONNECTOR

Detaching the diagnostic connector

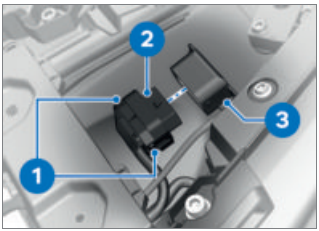
CAUTION

Incorrect procedure when disconnecting the diagnostic socket for onboard diagnosis

Vehicle experiences malfunctions

- Do not have the diagnostic socket disconnected except during BMW Motorrad service by a repair shop or other authorized persons.
- Have work carried out by appropriately trained personnel.
- Observe the specifications of the vehicle manufacturer.

- Remove the rear seat. (➠ 77)

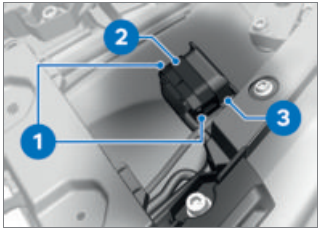


- Press locks **1** on both sides.
- Detach the diagnostic socket **2** from the holder **3**.

» The interface for the diagnostics and information system can be connected to the diagnostic connector **2**.

Fastening the diagnostic connector

- Disconnect the interface for the diagnostics and information system.



- Insert the diagnostic socket **2** into the holder **3**.

» The locks **1** snap in.

- Install the passenger seat. (➠ 77)

ACCESSORIES

10

GENERAL NOTES 164
USB CHARGING SOCKET 164
TOPCASE 165
NAVIGATION SYSTEM 167

GENERAL NOTES

CAUTION

Use of products from other manufacturers
Safety risk
- 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.

The safety, function and suitability of the parts and accessory products have been thoroughly tested by BMW. Therefore, BMW assumes responsibility for these products. BMW shall not be held liable for unapproved parts and accessory products of any kind.
Comply with the legal requirements for any modifications. Consult the road traffic licensing regulations of your country.
Your authorized BMW Motorrad dealer offers you qualified advice for choosing original BMW parts, accessories and other products.
More information on the topic of accessories is available at: **bmw-motorrad.com/equipment**

USB CHARGING SOCKET

Notes about use

WARNING

Obstruction of the steering angle and risk of fire due to improperly laid cables
Driving safety is impaired
- Do not wrap cables around the handlebars, make sure that the handlebars can be moved freely.
- When laying the cable, make sure that the cable does not come into contact with any hot components.

ATTENTION

Vibrations during riding
Damage to stored mobile phones
- Make sure that the stored mobile phone is suitable for use on the vehicle. To do so, ask the manufacturer about limits of use and observe them.

Automatic shutoff
The USB charging sockets are automatically switched off under the following conditions:
–If the battery voltage is too low to retain the starting capability of the vehicle.
–If the maximum load capacity of 3 A is exceeded.
–During the starting procedure.

Connecting electrical devices
The ignition must be switched on before electrical devices connected to USB charging sockets can be operated. To relieve the electrical system, the USB high-voltage charging sockets are switched off 60 seconds ignition has been turned off.
To protect the connected device, the device should be unplugged when riding in rain.
When no device is connected, the cover should be closed to prevent soiling.

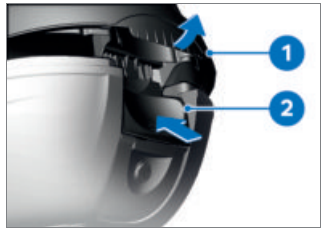
Cable layout
Observe the following when routing cables from USB charging sockets to additional devices:
–Cables must not impede the rider.
–Cables must not restrict the steering angle and handling characteristics.
–Cables must not become trapped.

TOPCASE

–with topcase[OA]

Opening the Light topcase
- Turn the key until it is vertical in the lock.

The release levers are locked in the key's horizontal position.

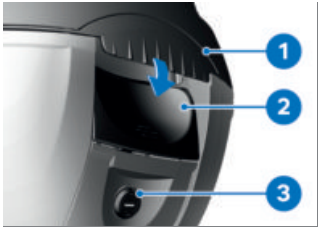


- Push the release lever **2** in the arrow direction.

- Open topcase lid **1**.

Closing the Light topcase

- Turn the key until it is vertical in the lock.

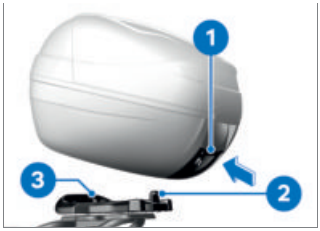


- Close topcase lid **1**. Make sure that nothing is trapped between the lid and case and that the release lever **2** snaps into place.
- Turn the key in the topcase lock **3** until it is horizontal, then remove it.

» The release levers are locked. You can neither open the topcase nor remove it from the adapter.

Removing the Light topcase

- Turn the key until it is vertical in the lock.



- Push the release lever **1** in the arrow direction.
- Lift the topcase at the rear and remove it from the hook **2** of the adapter **3**.

Installing the Light topcase

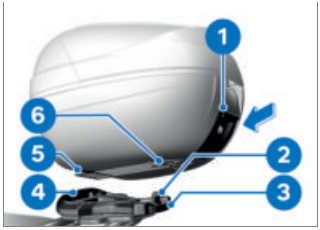
WARNING

Topcase not properly secured

Driving safety is impaired

- Topcase must not shake and must be fastened clearance-free.

- Turn the key until it is vertical in the lock.



- Insert the base **5** into the slot **4**.
- Set the mount **6** on the hook **2**.
- Ensure that the release lever **1** snaps in and the topcase is securely connected to the adapter **3**.
- To lock the release lever, turn the key until it is horizontal in the lock and pull it out.

Maximum payload and maximum speed

Observe maximum payload and maximum speed.

Maximum speed when riding with a loaded topcase
max. 81 mph (max. 130 km/h)

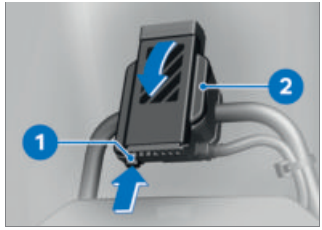
Payload of Topcase
max. 7 lbs (max. 3 kg) (Accessories)

NAVIGATION SYSTEM

–with preparation for navigation system OA

Securely fastening navigation device

- Turn on the ignition. (➠ 68)



- Press and hold button **1**.

» The ConnectedRide Mount is unlocked and the cover **2** can be removed with a rotational movement toward the front.



- Insert the navigation device **2** in the bottom mount **1** and swivel to the rear in a rotational movement.

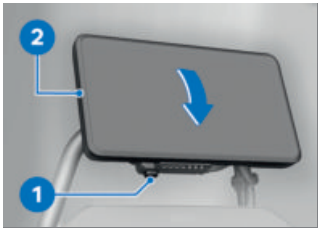
» The navigation system engages in the lock **3** with an audible click.
- Check that the navigation system **2** fits firmly in the ConnectedRide Mount.
- Turn off the ignition. (➠ 68)

Removing the navigation device

ATTENTION

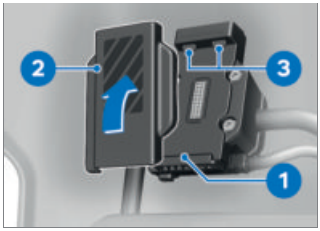
Dust and dirt on contacts of ConnectedRide Mount
Damage to the contacts
- Reinstall the cover after the end of every ride.

- Turn on the ignition. (➠ 68)



- Press and hold button **1**.

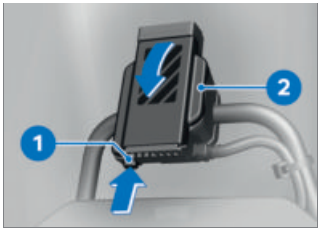
» ConnectedRide Mount is unlocked and navigation system **2** can be removed toward the front using a rotational movement.



- Insert the cover **2** in the bottom mount **1** and swivel to the rear in a rotational movement.

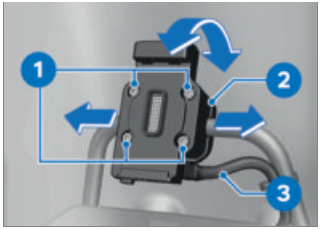
» The cover engages in the lock **3** with an audible click.
- Turn off the ignition. (➠ 68)

Adjusting ConnectedRide Mount settings
- Turn on the ignition. (➠ 68)

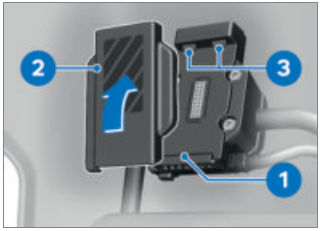


- Press and hold button **1**.

» The ConnectedRide Mount is unlocked and the cover **2** can be removed with a rotational movement toward the front.



- Slacken screws **1**.
- Align the position and angle of ConnectedRide Mount **2** taking care with cable **3**.
- Tighten screws **1**.



- Insert the cover **2** in the bottom mount **1** and swivel to the rear in a rotational movement.

» The cover engages in the lock **3** with an audible click.

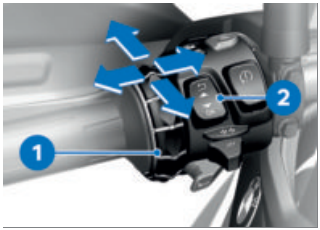
- Turn off the ignition. (➠ 68)

Operating the navigation system

The following description refers to the BMW Motorrad ConnectedRide Navigator.

Only the latest version of the BMW Motorrad communication system is supported. A software update may be required for the BMW Motorrad communication system. In this case, please contact your authorized BMW Motorrad dealer.

If the BMW Motorrad ConnectedRide Navigator is installed and the operating focus is changed to the Navigator (➠ 60), some of its functions can be operated directly from the handlebars. If the BMW Motorrad ConnectedRide Navigator is connected, all connections to the vehicle are automatically disconnected and reestablished by the Navigator. Now the `Navigation`, `Media` and `Telephone` functions are controlled through the Navigator.



The navigation system is operated using the Multi-Controller **1** and the rocker button **2**

Turn the Multi-Controller 1 up/down
–Select menu
–Change volume
–Zoom in when using maps

Briefly tilt the Multi-Controller 1 to the left/right
–Confirm or cancel

Press the rocker button 2 down
Change the operating focus to the instrument cluster.

Special functions
For more information, see the operating instructions of the ConnectedRide Navigator.

Security settings
The safety instructions in the operating instructions of the BMW Motorrad Connected-Ride Navigator must be observed.

CARE

11

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CARE PRODUCTS

ATTENTION

Use of unsuitable cleaning and care agents

Damage to motorcycle parts

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

ATTENTION

Use of highly acidic or alkaline cleaning agents

Damage to motorcycle parts

- Observe the dilution ratio on the packaging of the cleaning agents.
- Do not use highly acidic or alkaline cleaning agents.

BMW Motorrad recommends that you use cleaning and care products available at your authorized BMW Motorrad dealer. BMW Care Products have been materials tested, lab-tested, and field tested and provide optimum vehicle care and protection for the materials used in your vehicle.

WASHING THE VEHICLE

WARNING

Wet brake disks and brake pads after washing the vehicle, after water passages or in rain

Decreased braking effect, risk of accident

- Brake early until the brake disks and brake pads have dried off on their own or through braking.

ATTENTION

High water pressure generated by high-pressure cleaners or steam-jet cleaners can cause damage

Corrosion or short circuit, damage to stickers, seals, hydraulic brake system, electrical system and seat

- Do not clean the dashboard or switches with high-pressure or steam-jet equipment.
- Use high-pressure or steam-jet equipment with care.

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 vehicle immediately after it has been exposed to bright sunlight and do not wash it in the sun.
Regularly clean the fork tubes of contamination.
Make sure that the vehicle is washed more frequently, especially during the winter months and when riding on salted roads.

ATTENTION

Increased effect of salt caused by warm water
Corrosion
- Only use cold water to remove salt deposits.

To remove salt deposits, clean the vehicle and any add-on parts with cold water immediately after completion of every trip.

After rides in the rain, in high humidity and after the vehicle is washed, condensation can form inside the headlight. During this process, the headlight can become foggy for a while. If moisture accumulates in the headlight on an ongoing basis, contact a repair shop, preferably an authorized BMW Motorrad dealer.

CLEANING SENSITIVE VEHICLE PARTS

Plastics

ATTENTION

Use of unsuitable cleaning agents
Damage to plastic surfaces
- Do not use abrasive cleaners or cleaners containing alcohol or solvents.
- Do not use insect sponges or sponges with a hard surface.

Clean plastic components with water and BMW plastic care emulsion. This includes in particular:
–Windshields and wind deflectors
–Headlight diffusers made of plastic
–Glass cover of the instrument cluster
–Black, unpainted parts

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

Instrument cluster

Clean the instrument cluster with warm water and dish soap. Then dry with a clean cloth, e.g. a paper towel.

Chrome

Carefully clean chrome parts with plenty of water and motorcycle cleaner of the BMW Care Products series. This is particularly important in case of exposure to salt.

For additional treatment, use BMW Motorrad high-gloss polish.

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.

ATTENTION

Bending of radiator fins

Damage to radiator fins

- When cleaning, ensure that the cooler fins are not bent.

Rubber

ATTENTION

Use of silicone sprays for care of rubber seals

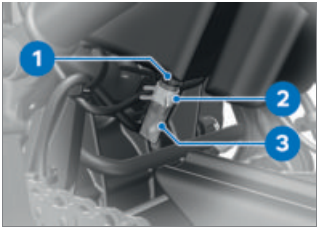
Damage to rubber seals

- Do not use silicone sprays or care products that contain silicone.

Treat rubber parts with water or BMW rubber care product.

Draining fluid from the intake silencer

Liquid may accumulate in the intake silencer following intensive off-road use, fording or washing the vehicle thoroughly.



- Place a rag under the drain outlet **1** of the intake silencer.
- Loosen the clamp **2** by squeezing it, and together with the drainage hose **3** remove it from the drain outlet.

» Fluid drains out through the drain outlet.
- Drain the fluid from the drainage hose into a cloth and remove the cloth.
- Squeeze the clamp **2** and install it with the drainage hose **3** on the drain outlet **1** .

CARE OF PAINTWORK

ATTENTION

Paint damage from metal polish
Risk of damage
- Do not treat paints and chrome lacquers with metal polish.

Washing the vehicle regularly will help counteract the long-term effects of substances that damage the paint, especially if your vehicle is ridden in areas with high air pollution or natural sources of dirt, such as tree resin or pollen.
However, remove particularly aggressive substances immediately; otherwise changes in the paint or discoloration may occur. These include spilled fuel, oil, grease and brake fluid as well as bird droppings.
It is recommended to use BMW Motorrad solvent cleaner and then apply BMW Motorrad high-gloss polish to preserve the paint.
Contaminants on the paint surface are particularly easy to see after washing the vehicle. Remove this type of dirt immediately with cleaning benzene or ethyl alcohol on a clean cloth or cotton ball. BMW Motorrad recommends removing tar stains with BMW tar remover. Then add a protective wax coating to the paint at these locations.

PAINT PRESERVATION

Apply a preservative when water fails to bead up on the painted surface.
BMW Motorrad recommends BMW Motorrad high gloss polish or agents that contain carnauba or synthetic wax for paint preservation.

Chrome lacquer must not be preserved with chrome polish.
Only use the agents recommended by BMW Motorrad.

STORING THE MOTORCYCLE

- Completely fill the motorcycle's fuel tank.

Fuel additives clean the fuel injection system and the combustion area. Fuel additives should be used when refueling with low-quality fuels or during longer stationary periods. Your authorized BMW Motorrad dealer can provide you with more detailed information.

- Clean the motorcycle.
- Remove battery. (➠ 158)
- Spray the brake lever and clutch lever with a suitable lubricant.
- Coat bare metal and chrome-plated parts with an acid-free grease (petroleum jelly).
- Park motorcycle in a dry room, raising it to relieve weight from both wheels (preferably using the front-wheel and rear-wheel stands offered by BMW Motorrad).

PUTTING THE MOTORCYCLE INTO OPERATION

- Remove the protective wax coating.
- Clean the motorcycle.
- Install the battery. (➠ 158)
- Checklist. (➠ 95)

TECHNICAL DATA

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TROUBLESHOOTING CHART

Ignition cannot be turned on.

Possible cause	Remedy
Battery drained	Charge the disconnected battery. (➠ 156)

Engine does not start:

Possible cause	Remedy
Side stand extended and gear engaged	Engage neutral or fold in side stand.
Gear engaged and clutch not disengaged	Shift transmission to neutral or disengage clutch.
No fuel in tank	Refueling procedure. (➠ 105)
Battery drained	Charge the disconnected battery. (➠ 156)
Overheating protection for starter motor has triggered. Starter motor can only be actuated for a limited period.	Leave the starter motor to cool down for around 1 minute until it becomes available again.

–with Easy Ride Clutch OE

Gear cannot be engaged:

Possible cause	Remedy
1st gear cannot be engaged	Move the vehicle or briefly actuate the throttle grip in order to gradually approach the clutch engaging engine speed 3000 min^{-1} so that the centrifugal clutch closes slightly. Then engage 1st gear with the throttle grip closed. The process may need to be repeated.

Bluetooth connection is not established.

Possible cause	Remedy
Necessary pairing steps were not performed.	Refer to the operating instructions of the communication system for the necessary steps for pairing.
The communication system is not connected automatically despite successful pairing.	Turn off the communication system of the helmet and connect again after one to two minutes.
Too many Bluetooth® devices are stored in the helmet.	Delete all pairing entries in the helmet (see the operating instructions of the communication system).
There are additional vehicles with Bluetooth-capable devices nearby.	Avoid simultaneous pairing with multiple vehicles.

Active destination guidance is not displayed in the instrument cluster.

Possible cause	Remedy
Navigation from the BMW Motorrad Connected App was not transferred.	Go to the BMW Motorrad Connected App on the connected mobile terminal before riding.
Route guidance cannot be started.	Ensure that there is a data connection to the mobile end device and check the map data on the mobile end device.

The instrument cluster remains dark after the ignition is turned on.

Possible cause	Remedy
There is a software error that causes a malfunction of the instrument cluster.	Turn the ignition off and on again.
The instrument cluster is damaged.	Have the malfunction corrected as soon as possible at a repair shop, preferably an authorized BMW Motorrad dealer.

THREADED CONNECTIONS

Front wheel	Value	Valid
Brake caliper on telescopic forks		
M10×60	28 lb/ft (38 Nm)	
Clamp on quick-release axle		
M8 × 30	**Tightening sequence: Tighten the screws 6 times, alternating between one and the other each time**	
	14 lb/ft (19 Nm)	
Axle screw in front quick-release axle		
M12×20	37 lb/ft (50 Nm)	

Rear wheel	Value	Valid
Rear-wheel quick-release axle in swinging arm		
M18 × 1.5 mechanical	74 lb/ft (100 Nm)	
Lock nut of the drive chain tensioning screw		
M8	14 lb/ft (19 Nm)	
Rear wheel speed sensor on the brake caliper carrier		
M6 × 20	7 lb/ft (10 Nm)	

Mirror arm	Value	Valid
Left mirror (lock nut) to adapter		
M10×1.25	16 lb/ft (22 Nm)	
Right mirror (lock nut) to adapter		
M10×1.25	Left-hand thread, 16 lb/ft (22 Nm)	

Gearshift lever	Value	Valid
Gearshift lever (clamp) on gearshift shaft		
M6 × 30	6 lb/ft (8 Nm)	

Air filter	Value	Valid
Air filter cover on intake silencer		
M5×20	3 lb/ft (4.5 Nm)	

Battery	Value	Valid
Wiring harness on battery		
M6 × 13.5	4 lb/ft (5 Nm)	

FUEL	
Recommended fuel quality	Premium unleaded (Max. 10 % ethanol, E10) 89 AKI (95 ROZ/RON) 90 AKI
Alternative fuel quality	Regular unleaded (restrictions with regard to power and fuel consumption.) (Max. 10 % ethanol, E10) 87 AKI (91 ROZ/RON) 87 AKI
Usable fuel quantity	approx. 3.7 gal (approx. 14 l)
Reserve fuel quantity	approx. 2.6 quarts (approx. 2.5 l)
Fuel consumption	62 mpg (3.80 l/100 km), in accordance with WMTC
CO2 emissions	88 g/km, In accordance with WMTC
Emission standard	TIER 2

ENGINE OIL	
Engine oil, filling capacity	approx. 2.7 quarts (approx. 2.6 l), with filter exchange
Specification	SAE 5W-40, API SL/ JASO MA2, Additives (for instance, molybdenum-based substances) are prohibited, because they would attack the coatings on engine components, BMW Motorrad recommends BMW Motorrad ADVANTEC Ultimate oil.
Engine oil, top-up quantity	max. 0.5 quarts (max. 0.5 l), Difference between **MIN** and **MAX**

BMW recommends ADVANTEC ORIGINAL BMW ENGINE OIL

ENGINE	
Engine number location	Crankcase lower section on the right, behind the water pump
Engine type	A20A04A
Engine design	Water-cooled 2-cylinder four-stroke engine with four valves per cylinder (operated via rocker arms), two overhead camshafts and wet-sump lubrication
Displacement	420 cc (420 cm^3)
Compression ratio	13:1
Nominal capacity	47 hp (35 kW), at RPM: 8750 min^{-1}

Torque	32 lb/ft (43 Nm), at RPM: 6750 min^{-1}
Maximum engine speed	max. 10000 min^{-1}
Idle speed	$1500^{\pm 50}$ min^{-1}, Engine at operating temperature

TRANSMISSION	
Transmission design	Claw-shifted 6-speed manual gearbox integrated in engine housing

REAR-WHEEL DRIVE	
Type of final drive	Chain drive
Secondary gear ratio	3.428 (48/14 teeth)

FRAME	
Location of type plate	Frame at front left on steering head
Location of the vehicle identification number	Frame at front right on steering head

RUNNING GEAR	
Front wheel	
Spring travel, front	7.1 in (180 mm), on front wheel
Rear wheel	
Type of rear-wheel guide	Two-arm aluminum swinging arm
Spring travel on the rear wheel	7.1 in (180 mm), on rear wheel

BRAKES	
Front wheel	
Type of front wheel brake	Hydraulic single-disk brake with 4-piston fixed calipers and floating brake disk
Front brake pad material	Sintered metal
Front brake disc thickness	0.17 in (4.4 mm), New condition min. 0.16 in (min. 4.0 mm), Wear limit
Rear wheel	
Type of rear wheel brake	Hydraulically operated disc brake with 1-piston floating caliper and fixed brake disk
Rear brake pad material	Organic
Rear brake disc thickness	0.18 in (4.5 mm), New condition min. 0.16 in (min. 4.0 mm), Wear limit

WHEELS AND TIRES	
Speed category of front/rear tires	S, minimum requirement: 112 mph (180 km/h)
Front wheel	
Front wheel design	Aluminum cast wheel
–with cross spoke wheels[OE]	Cross spoke wheel
Front-wheel rim size	2.50"×19"
Front tire designation	100/90-19
Load index for front tire	Min. 57
Permissible front-wheel imbalance	max. 0.2 oz (max. 5 g)

Rear wheel	
Rear wheel design	Aluminum cast wheel
–with cross spoke wheels OE	Cross spoke wheel
Rear-wheel rim size	3.50"×17"
Rear tire designation	130/80-17
Load index for rear tire	Min. 65
Permissible rear-wheel imbalance	max. 0.2 oz (max. 5 g)
Tire pressure	
Front tire pressure	24.7 psi (1.7 bar), One-up mode, with cold tires 24.7 psi (1.7 bar), Two-up and/or load, with cold tire
Rear tire pressure	27.6 psi (1.9 bar), One-up mode, with cold tires 31.9 psi (2.2 bar), Two-up and/or load, with cold tire

ELECTRICAL SYSTEM

Fuses	
Fuse 1	30 A, Main fuse
Fuse 2	3 A, Main relay
Fuse 3	5 A, Cut-off relay coil, instrument cluster
Fuse 4	10 A, CCP, FLC
Fuse 5	7.5 A, Radiator fan
Fuse 6	15 A, Central injection
Spare fuses	15 A, Spare fuse 1 30 A, Spare fuse 2

Spark plugs	
Spark plugs, manufacturer and designation	NGK LMAR9J-9E
Light sources	
All light sources	LED

BATTERY

Battery	
Battery design	AGM (Absorbent Glass Mat) battery, maintenance-free
Battery voltage	12 V
Battery capacity	9 Ah

DIMENSIONS

Motorcycle length	85.1 in (2161 mm), over license-plate carrier
Motorcycle height	47.6 in (1210 mm), Without mirror, with DIN unladen weight
Motorcycle width	34.2 in (869 mm), over mirrors 37.6 in (956 mm), with hand guard
Front-seat height	33.3 in (845 mm), Without rider, at DIN unloaded vehicle weight
Rider's inside-leg arc, heel to heel	74 in (1880 mm), at DIN unloaded vehicle weight; without rider

WEIGHTS	
Unloaded vehicle weight	392 lbs (178 kg), DIN unloaded vehicle weight, ready for road, fuel tank 90% full, without OE
Gross vehicle weight	783 lbs (355 kg)
Maximum payload	390 lbs (177 kg)

PERFORMANCE DATA	
Maximum speed	103 mph (165 km/h)
–with topcase OA	max. 81 mph (max. 130 km/h)
–with tank bag OA	max. 81 mph (max. 130 km/h)
–with side bag OA	max. 81 mph (max. 130 km/h)
–with rear bag OA	max. 81 mph (max. 130 km/h)

SERVICE

13

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REPORTING SAFETY DEFECTS

If you think that your vehicle has a fault which may cause an accident, injury or death, you must inform the NHTSA (National Highway Traffic Safety Administration) immediately and BMW of North America, LLC.

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

You can contact the NHTSA by calling 1–888–327–4236 to reach the Vehicle Safety Hotline (Teletypewriter TTY for the hearing impaired: 1–800–424–9153) for free, by visiting the website at http://www.safercar.gov, or by writing to Administrator, NHTSA, 1200 New Jersey Ave, SE., Washington, DC 20590. Further information on vehicle safety is available at the following website: http://www.safercar.gov.

Canadian customers who wish to report a safety-related defect to Transport Canada, Defect Investigations and Recalls may call the toll-free hotline 1–800–333–0510. You can also obtain other information about vehicle safety from http://www.tc.gc.ca/roadsafety.

RECYCLING

Disposal of a vehicle

When the vehicle has reached the end of its life cycle, BMW Motorrad recommends giving it to a collection point designated by the manufacturer.

The respective national legal requirements apply to this collection and recycling in general. Information about recycling and sustainability can be retrieved at the country-specific websites of the manufacturer. More information can be requested from your authorized BMW Motorrad dealer or another qualified service partner or a repair shop.

BMW MOTORRAD SERVICE

With its worldwide dealer network, BMW Motorrad can attend to you and your motorcycle in over 100 countries around the globe. Authorized BMW Motorrad dealers have the technical information and expertise needed to reliably conduct all preventive maintenance and repair procedures on your BMW.

You will find the nearest authorized BMW Motorrad dealer at our website: **bmw-motorrad.com**.

WARNING

Improperly performed maintenance work and repair procedures

Risk of accident due to subsequent damage

- BMW Motorrad recommends having corresponding work performed on the motorcycle by a repair shop, preferably by an authorized BMW Motorrad dealer.

To ensure that your BMW is always in optimum condition, BMW Motorrad recommends that you comply with the maintenance intervals specified for your motorcycle.

Have all preventive maintenance and repair procedures confirmed in the Service chapter in this manual. Documented proof of scheduled preventive maintenance is essential for generous treatment of claims submitted after the warranty period has expired (goodwill).

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

BMW MOTORRAD SERVICE HISTORY

Entries

Maintenance work that has been performed is recorded in the diagnostics and information system. Like a Service Booklet, these entries provide proof of regular preventive maintenance. If an entry is made in the vehicle's service history, service-related data is stored on the central IT systems that can be accessed via BMW.
When there is a change in vehicle owner, the data entered in the electronic Service History can also be viewed by the new vehicle owner. An authorized BMW Motorrad dealer or repair shop can view the data entered in the service history.

Objection

At an authorized BMW Motorrad dealer or repair shop, the vehicle owner can object to the entry of data in the service history with the related storage of data in the vehicle and the transfer of data to the vehicle manufacturer during his time as the vehicle owner. In this case, no entry is made in the vehicle's electronic Service History.

BMW MOTORRAD MOBILITY SERVICES

BMW Motorrad Mobility Services furnish you and your new BMW motorcycle with extra security by offering a wide array of assistance services in the event of a breakdown (mobile service, breakdown assistance, vehicle recovery and retrieval, etc.).
Your authorized BMW Motorrad dealer will be happy to provide information about the available range of mobility services and contract durations.

MAINTENANCE WORK

BMW pre-delivery check

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

BMW running-in check
The BMW running-in check must be carried out between 300 mi (500 km) and 750 mi (1200 km).

BMW Motorrad Service
BMW Motorrad service is carried out once a year. The scope of the services performed may be dependent on the age of the vehicle and the distance covered. Your authorized BMW Motorrad dealer confirms that the service has been performed and enters the date for the next service. For riders with a high annual distance traveled, it may be necessary to come in for service before the entered date. In these cases, a corresponding maximum distance covered will also be entered in the confirmation of service. Servicing has to be brought forward if this distance covered is reached before the next scheduled service appointment.

The service display in the display reminds you of the approaching service appointment approx. one month or 620 mi (1000 km) before the entered values.

More information on the topic of service is available at:
bmw-motorrad.com/service

The required scope of maintenance work for your vehicle can be found in the following maintenance schedule. The listed repair procedures are due at the respective specified mileage levels or the specified time intervals.

MAINTENANCE SCHEDULE

	500 - 1200 km 300 - 750 mls	10 000 km 6 000 mls	20 000 km 12 000 mls	30 000 km 18 000 mls	40 000 km 24 000 mls	50 000 km 30 000 mls	60 000 km 36 000 mls	70 000 km 42 000 mls	80 000 km 48 000 mls	90 000 km 54 000 mls	100 000 km 60 000 mls	12 months	24 months
1	X												
2		X	X	X	X	X	X	X	X	X	X	X[a]	
3		X	X	X	X	X	X	X	X	X	X	X[a]	
4		X[b]	X[b]	X[b]	X[b]	X[b]	X[b]	X[b]	X[b]	X[b]	X[b]	X[b]	
5			X		X		X		X		X		
6			X		X		X		X		X		
7				X			X			X			
8					X				X				
9					X				X				
10												X[c]	X[c]

1 BMW Motorrad break-in inspection (including oil and oil filter change)
2 Standard scope of BMW Motorrad service
3 Engine oil change with filter
4 Check or replace the air filter element
5 Replace all spark plugs
6 Replace the air filter insert
7 Oil change in the telescopic forks
8 Check valve clearance
9 Replace fuel filter and fuel hoses
10 Change brake fluid in the entire system

a Annually or every 6000 mi (10000 km) (whichever comes first)
b For offroad use
c At first after one year, then every two years

BMW MOTORRAD BREAK-IN SERVICE

BMW Motorrad break-in service

The BMW Motorrad break-in service repair procedures are listed below. The actual scope of maintenance required for your vehicle may differ.

–Performing the vehicle test using the BMW Motorrad diagnostic system
–Engine oil change with filter
–Checking the coolant level
–Checking the front brake fluid level
–Checking the rear brake fluid level
–Checking/adjusting clutch play
–Checking the chain sag and lubricating the drive chain
–Checking tire pressure
–Check the tension of the spokes and tighten as needed
–Adjusting the play of the steering-head bearing
–Checking the lighting and signal system
–Functional check for engine starting suppression
–Final inspection and road safety check
–Performing the vehicle test using the BMW Motorrad diagnostic system
–Setting the service due date and remaining distance before next service using the BMW Motorrad diagnostic system
–Confirming the BMW service in the vehicle literature

MAINTENANCE CONFIRMATIONS

BMW Motorrad Service standard scope

The repair procedures belonging to the BMW Motorrad Service standard package are listed below. The actual maintenance work applicable for your vehicle may differ.

–Performing the vehicle test using the BMW Motorrad diagnostic system
–Checking the coolant level
–Checking/adjusting clutch play
–Checking steering-head bearing
–Visual inspection of the brake lines, brake hoses and connections
–Checking the front brake pads and brake discs for wear
–Checking the rear brake pads and brake disc for wear
–Checking the front and rear brake fluid level
–Checking the tire pressure and tread depth
–Check the tension of the spokes and tighten as needed
–Checking and lubricating the chain drive
–Checking side stand for ease of movement
–Checking the lighting and signal system
–Functional check for engine starting suppression
–Final inspection and road safety check
–Performing the vehicle test using the BMW Motorrad diagnostic system
–Set the service date and remaining distance using the BMW Motorrad diagnostic system
–Checking charging state of battery
–Confirming the BMW Motorrad service in the vehicle literature

BMW Motorrad pre-delivery check

performed

on_____

Stamp, signature

BMW Motorrad break-in service

performed

on_____

at km_____

Next service

latest

on_____

or, if reached earlier

at km_____

Stamp, signature

BMW Motorrad Service
performed

on_____
at km_____

Next service
latest
on_____
or, if reached earlier
at km_____

Work performed

	Yes	No
BMW Motorrad Service	☐	☐
Oil change in engine with filter (with preventive maintenance)	☐	☐
Replacing all spark plugs (with preventive maintenance)	☐	☐
Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad Service
performed

on_____
at km_____

Next service
latest
on_____
or, if reached earlier
at km_____

Work performed

	Yes	No
BMW Motorrad Service	☐	☐
Oil change in engine with filter (with preventive maintenance)	☐	☐
Replacing all spark plugs (with preventive maintenance)	☐	☐
Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad Service
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on_____
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Work performed

	Yes	No
BMW Motorrad Service	☐	☐
Oil change in engine with filter (with preventive maintenance)	☐	☐
Replacing all spark plugs (with preventive maintenance)	☐	☐
Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

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BMW Motorrad Service	☐	☐
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Replacing all spark plugs (with preventive maintenance)	☐	☐
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Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

Stamp, signature

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at km_____

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or, if reached earlier
at km_____

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Oil change in engine with filter (with preventive maintenance)	☐	☐
Replacing all spark plugs (with preventive maintenance)	☐	☐
Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

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BMW Motorrad Service
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Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad Service
performed

on_____
at km_____

Next service
latest
on_____
or, if reached earlier
at km_____

Work performed

	Yes	No
BMW Motorrad Service	☐	☐
Oil change in engine with filter (with preventive maintenance)	☐	☐
Replacing all spark plugs (with preventive maintenance)	☐	☐
Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

Stamp, signature

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on_____
at km_____

Next service
latest
on_____
or, if reached earlier
at km_____

Work performed

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BMW Motorrad Service	☐	☐
Oil change in engine with filter (with preventive maintenance)	☐	☐
Replacing all spark plugs (with preventive maintenance)	☐	☐
Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

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on_____
at km_____

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latest
on_____
or, if reached earlier
at km_____

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BMW Motorrad Service	☐	☐
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Replacing all spark plugs (with preventive maintenance)	☐	☐
Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad Service
performed

on_____
at km_____

Next service
latest
on_____
or, if reached earlier
at km_____

Work performed

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BMW Motorrad Service	☐	☐
Oil change in engine with filter (with preventive maintenance)	☐	☐
Replacing all spark plugs (with preventive maintenance)	☐	☐
Replacing air filter insert (with preventive maintenance)	☐	☐
Checking or replacing air filter insert (during preventive maintenance)	☐	☐
Oil change in telescopic forks (with preventive maintenance)	☐	☐
Checking valve clearance (with preventive maintenance)	☐	☐
Replacing fuel filter and fuel hoses (during preventive maintenance)	☐	☐
Changing brake fluid in entire system	☐	☐

Notes

Stamp, signature

RADIO EQUIPMENT TFT INSTRUMENT CLUSTER

For all countries without EU

Model name: ICC65V2
Manufacturer

Robert Bosch GmbH
Robert-Bosch-Platz 1, 70839 Gerlingen, Germany

Technical Information

BT operating frq. Range: 2402 - 2480 MHz
BT version: 4.2 (no BTLE)
BT output power: < 4 dBm
WLAN operating frq. Range: 2412 - 2462 MHz
WLAN standards:
IEEE 802.11 b/g/n
WLAN output power: < 20 dBm

Country

Canada

Thi s device complies with Industry Canada's licence-exempt RSSs and part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
Radio Frequency (RF) Exposure Information
The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized. This device has also been evaluated and shown compliant with the IC RF Exposure limits under mobile exposure conditions.
Informations concernant l'exposition aux fréquences radio (RF)
La puissance de sortie émise par l'appareil de sans fil est inférieure à la limite d'exposition

aux fréquences radio d'Industry Canada (IC). Utilisez l'appareil de sans fil de façon à minimiser les contacts humains lors du fonctionnement normal. Ce périphérique a également été évalué et démontré conforme aux limites d'exposition aux RF d'IC dans des conditions d'exposition à des appareils mobiles (antennes sont supérieures à 20 cm à partir du corps d'une personne).

United States (USA)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This device complies with Industry Canada's licence-exempt RSSs and part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

RF exposure warning

This equipment must be installed and operated in accor-

dance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

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The descriptions and illustrations in this manual may vary from your own motorcycle's actual equipment, depending upon its equipment level and accessories as well as your specific national-market version. No claims shall 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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Original Rider's Manual, printed in Germany.

WARNING

Harmful substances
Operating and preventive maintenance of a passenger vehicle or off-road vehicle can expose you to substances such as exhaust gases, carbon monoxide, phthalates and lead, which are known to the State of California to be carcinogenic as well as detrimental to childbirth and reproduction.
- To minimize exposure, avoid breathing exhaust gases, do not put the engine in Neutral except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.
- Further information is available at: **www.P65Warnings.ca.gov/passenger-vehicle**

Important data for refueling stop:

Fuel	
Recommended fuel quality	Premium unleaded (Max. 10 % ethanol, E10) 89 AKI (95 ROZ/RON) 90 AKI
Alternative fuel quality	Regular unleaded (restrictions with regard to power and fuel consumption.) (Max. 10 % ethanol, E10) 87 AKI (91 ROZ/RON) 87 AKI
Usable fuel quantity	approx. 3.7 gal (approx. 14 l)
Reserve fuel quantity	approx. 2.6 quarts (approx. 2.5 l)
Tire pressure	
Front tire pressure	24.7 psi (1.7 bar), with tire cold
Rear tire pressure	27.6 psi (1.9 bar), One-up mode, with cold tires 31.9 psi (2.2 bar), Two-up and/or load, with cold tire

You can find further information on all aspects of your vehicle at:
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03.2026, 3rd edition, 07