



**BMW
MOTORRAD**

RIDER'S MANUAL

F 450 GS



MAKE LIFE A RIDE

Vehicle data

Model

Vehicle Identification Number

Colour code

Date of first registration

Registration number

Dealership details

Person to contact in Service department

Ms/Mr

Phone number

Dealership address/phone number (company stamp)

YOUR BMW.

We congratulate you on your choice of a vehicle from BMW Motorrad and welcome you to the community of BMW riders. Familiarise yourself with your new vehicle so that you can ride it safely and confidently in all traffic situations.

About this rider's manual

Read this rider's manual carefully before starting your new BMW. It contains important information on how to operate the controls and how to make the best possible use of all your BMW's technical features.

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

If the time comes to sell your BMW, please remember to hand over this rider's manual to the new owner. It is an important part of the vehicle.

We hope you will enjoy riding your BMW and that all your journeys will be pleasant and safe

BMW Motorrad.

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4 GENERAL INSTRUCTIONS

QUICK & EASY REFERENCE

An important aspect of this rider's manual is that it can be used for quick and easy reference. Consulting the extensive index at the end of this rider's manual is the fastest way to find information on a particular topic or item. To first read an overview of your vehicle, please go to Chapter 2. All maintenance and servicing work on the vehicle is documented in the "Service" section. The record of the maintenance work you have had performed on your vehicle is a precondition for generous treatment of goodwill claims.

ABBREVIATIONS AND SYMBOLS

 **CAUTION** Low-risk hazard. Non-avoidance can lead to slight or moderate injury.

 **WARNING** Medium-risk hazard. Non-avoidance can lead to fatal or severe injury.

 **DANGER** High-risk hazard. Non-avoidance leads to fatal or severe injury.

 **ATTENTION** Special notes and precautionary measures. Non-compliance can lead to damage to the vehicle or accessory and, consequently, to voiding of the warranty.

 Specific instructions on how to operate, control, adjust or look after items of equipment on the motorcycle.

• Instruction.

» Result of an activity.

▮▶ Reference to a page with more detailed information.

◁ Indicates the end of a passage relating to specific accessories or items of equipment.

 Tightening torque.

 Technical data.

NV National-market version.

OE	Optional equipment. The vehicles are assembled complete with all the BMW Motorrad optional equipment originally ordered.
OA	Optional accessories. You can obtain BMW Motorrad optional accessories through your authorised BMW Motorrad dealer; optional accessories have to be retrofitted to the vehicle.
ABS	Anti-lock brake system.
DTC	Dynamic Traction Control.
ERC	Easy Ride Clutch.
MSR	Dynamic engine brake control

EQUIPMENT

When you ordered your BMW Motorrad, you chose various items of custom equipment. This rider's manual describes optional equipment (OE) and selected optional accessories (OA) provided by BMW. Please bear in mind that

it may also contain descriptions of equipment that you might not have selected. Please note, too, that on account of country-specific differences, your motorcycle might not be exactly as illustrated.

If your motorcycle contains equipment that has not been described, its description can be found in a separate manual.

TECHNICAL DATA

All dimensions, weights and power ratings stated in the rider's manual are quoted to the standards and comply with the tolerance requirements of the Deutsches Institut für Normung e. V. (DIN).

Technical data and specifications in this rider's manual are guide values. 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 taken from the vehicle registration documents, or can be obtained from your authorised BMW Motorrad retailer or another qualified service partner or specialist workshop. The specifications in

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the vehicle documents always have priority over the information provided in this rider's manual.

CURRENCY

The high safety and quality standards of BMW motorcycles are maintained by constant development work on designs, equipment and accessories. Because of this, your vehicle may differ from the information supplied in the rider's manual. At the time of production of the motorcycle, the rider's manual is the most up-to-date source. Owing to updates subsequent to the date of publication, differences between the printed rider's manual and the online version are possible.

Up-to-date information is available at **bmw-motorrad.com/service**.

ADDITIONAL SOURCES OF INFORMATION

Authorised BMW Motorrad retailer

Your authorised BMW Motorrad retailer will be happy to answer any questions you may have.

Internet

The rider's manual for your vehicle, operating and installation instructions for accessories and general information about BMW Motorrad, in relation to technology, for example, are available for download from **bmw-motorrad.com/manuals**.

CERTIFICATES AND OPERATING LICENCES

The certificates for the vehicle and the General Operating Permits for accessories can be downloaded from **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

Control units are installed in the vehicle. Control units process data that they receive, for example, from vehicle sensors, or that they generate themselves or exchange between each other. Some control units

are required for the vehicle to function safely or provide assistance during riding, for example assistance systems. In addition, control units enable comfort or infotainment functions.

Information on data that has been stored or exchanged can be obtained from the manufacturer of the vehicle, for example via a separate booklet.

Personal reference

Each vehicle is identified with a clear vehicle identification number. Depending on the country, the vehicle identification number, the number plate and the corresponding authorities can be referenced to ascertain the registered keeper. There are also other ways to use data obtained from the vehicle to trace the rider or vehicle owner, for example using the Connected-Drive user account.

Data protection rights

In accordance with applicable data protection laws, vehicle users have certain rights in relation to the manufacturer of the vehicle or in relation to companies which collect or process personal data.

Vehicle users have the right to obtain full information at no cost from persons or entities storing personal data of the vehicle user.

These entities may include:

- Manufacturer of the vehicle
- Authorised BMW Motorrad Retailers
- Specialist workshops
- Service providers

Vehicle users have the right to request information on what personal data has been stored, for what purpose the data is used, and where the data comes from. To obtain this information, proof of ownership or use is required.

The right to information also includes information about data that has been shared with other companies or entities.

The website of the vehicle manufacturer contains the applicable data protection information. This data protection information includes information on the right to have data deleted or corrected. The manufacturer of the vehicle also provides their contact details and those of the data protection officer on their website.

8 GENERAL INSTRUCTIONS

The registered keeper can also pay an authorised BMW Motorrad Retailer or a specialist workshop to read out the data stored in the vehicle. The vehicle data is read out using the legally prescribed 12 V socket for on-board diagnosis (OBD) in the vehicle.

Legal requirements for the disclosure of data

As part of its legal responsibilities, the manufacturer of the vehicle is obligated to make its stored data available to the relevant authorities. This data is provided in the required scope in individual cases, for example to clarify a criminal offence. In the context of applicable laws, public agencies are entitled in individual cases to read out data from the vehicle themselves.

Operating data in the vehicle

Control units process data to operate the vehicle.

This includes, for example:

- Status reports of the vehicle and its individual components, for example wheel speed, wheel circumferential velocity, deceleration

- Environmental factors, for example, temperature

The data is only processed in the vehicle itself and is generally non-permanent. The data is not stored beyond the operating period.

Electronic components, for example control units, contain components for storing technical information. Information can be temporarily or permanently stored on the vehicle condition, component loads, incidents or errors.

This information is generally used to document the condition of a component, a module, a system or the surrounding area, for example:

- Operating conditions of system components, for example filling levels, tyre pressure
- Malfunctions and faults in important system components, for example, light and brakes
- Response of the vehicle in special riding situations, for example engagement of the driving dynamics systems
- Information on incidents resulting in damage to the vehicle

The data is necessary for the provision of control unit func-

tions. Furthermore, the data is used to detect and rectify malfunctions and to enable the vehicle manufacturer to optimise vehicle functions.

The vast majority of this data is non-permanent and is only processed in the vehicle itself. Only a small amount of the data is stored in incident or fault memories as required by events.

If services are accessed, for example repairs, service processes, warranty cases and quality assurance measures, this technical information can be read out of the vehicle together with the vehicle identification number.

The information can be read out by an authorised BMW Motorrad Retailer or a specialist workshop. The data is read out using the legally prescribed 12 V socket for on-board diagnosis (OBD) provided on the vehicle.

The data is obtained, processed and used by the relevant parts of the retailer network. The data is used to document the technical conditions of the vehicle, to help with error localization, to comply with warranty

obligations and to improve quality.

In addition, the manufacturer has various product monitoring obligations arising from product liability legislation. To meet these obligations, the vehicle manufacturer requires technical data from the vehicle. The data from the vehicle can also be used to check warranty claims from the customer.

Fault and event memories in the vehicle can be reset during servicing or repair work by an authorised BMW Motorrad Retailer or a specialist workshop.

Data input and data transfer in the vehicle

General

Depending on the equipment, comfort and customised settings can be stored in the vehicle and can be changed or reset at any time.

If required, data can be entered in the entertainment and communication system of the vehicle, for example using a smartphone.

Depending on the individual equipment, this includes:

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- Multimedia data, such as music for playback
- Contacts data for use in connection with a communication system or an integrated navigation system
- Entered destinations
- Data on the use of internet services. This data can be stored locally in the vehicle or is located on a device that is connected to the vehicle, for example smartphone, USB stick, MP3 player. If this data is stored in the vehicle, the data can be deleted at any time.

This data is transferred to third parties only if personally requested within the context of using online services. This depends on the selected settings when using the services.

Incorporation of mobile devices

Depending on the equipment, mobile devices connected to the vehicle, for example smartphones, can be controlled using the operating elements of the vehicle.

The image and sound of the mobile device can then be output via the multimedia system. At the same time, specific in-

formation is transferred to the mobile device. Depending on the type of integration, this includes, for example, position data and additional general vehicle information. This enables optimal use of the selected apps, for example navigation or music playback.

The type of additional data processing is determined by the provider of the respective app. The scope of the possible settings depends on the corresponding app and the operating system of the mobile device.

Services

General

If the vehicle has a wireless connection, this enables the exchange of data between the vehicle and other systems. The wireless connection is enabled by the vehicle's own transceiver unit or using personally integrated mobile devices, for example smartphones. Online functions can be accessed through this wireless connection. These include online services and apps that are provided by the vehicle manufacturer or by other providers.

Services of the vehicle manufacturer

For online services of the vehicle manufacturer, the individual functions are described at suitable points, for example, rider's manual, manufacturer's website. At the same time, information is also provided on the relevant data protection law. Personal data may be used to provide online services. Data is exchanged using a secure connection, for example with the IT systems provided by the vehicle manufacturer. Obtaining, processing and using personal data outside of the normal provision of services requires legal permission, contractual agreement or consent. It is also possible to have the entire data connection activated or deactivated. Statutory functions are excluded from this.

Services from other providers

When using online services from other providers, these services are subject to the responsibility and the data protection and operating conditions of the individual provider. The vehicle manufacturer has no influence on the con-

tent that is exchanged in this instance. Information on the type, scope and purpose of the data capture and use of personal data as part of the services of third parties can be ascertained from the individual provider.

BLUETOOTH

Bluetooth is a short-range wireless technology. Bluetooth devices are short-range devices transmitting on the license-free ISM band (industrial, scientific, medical) between 2.402...2.480 GHz. They can be operated anywhere in the world without a licence being required.

Although Bluetooth is designed to establish and sustain robust connections over short distances, as with every other wireless technology disruptions are possible. Interference can affect connections or connections can sometimes fail. Particularly when multiple devices operate in a Bluetooth network, with wireless technology of this nature it is not possible to ensure fault-free communications in every situation.

12 GENERAL INSTRUCTIONS

Possible sources of interference:

- Interference zones due to transmission masts and similar.
- Devices with non-compliant Bluetooth implementations.
- Proximity of other Bluetooth-compatible devices.
- Shielding by metal objects or bodies.

for example, the app has to be installed on the mobile device and paired to the instrument cluster. The app is used to start route guidance and adjust the navigation.



On some mobile devices, e.g. those with the iOS operating system, the BMW Motorrad Connected app has to be opened prior to use.

CONNECTIVITY FUNCTIONS

Connectivity functions include media, telephony and navigation. Connectivity functions can be used when the instrument cluster is connected to a mobile device and a helmet (▶ 59). For more information on the Connectivity functions go to:

bmw-motorrad.com/connectivity



Depending on the mobile end device, the scope of Connectivity functions might be restricted.

BMW Motorrad Connected app

The BMW Motorrad Connected app enables the user to call up usage data and vehicle status information. For some functions such as navigation,

GENERAL VIEWS

02

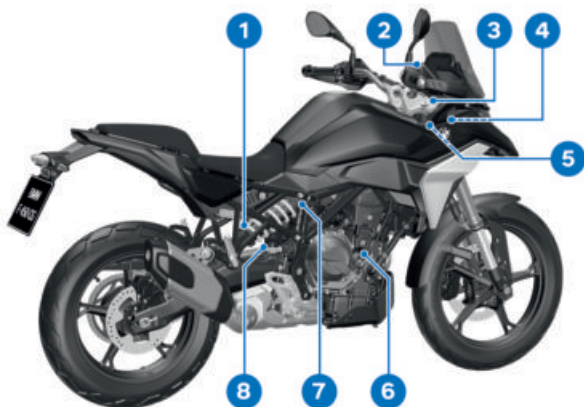
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16 GENERAL VIEWS

GENERAL VIEW, LEFT SIDE



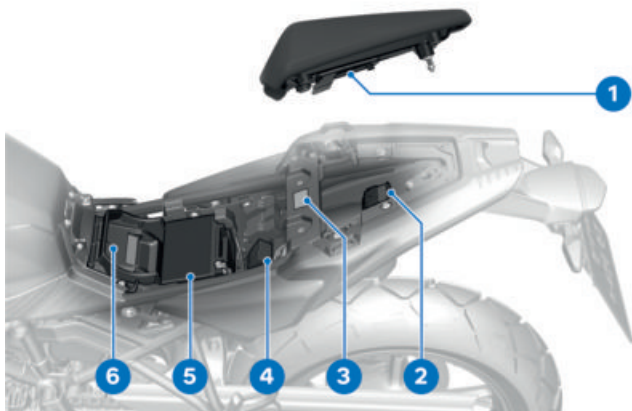
- 1 USB charging interface
( 162)
- 2 Seat lock ( 77)
- 3 Passenger grab handle
- 4 Rear footrest
- 5 Rider footrest

GENERAL VIEW, RIGHT SIDE

- | | |
|---|--|
| 1 Adjustment of spring preload (► 85) | 6 Oil filler opening and oil dipstick (► 126) |
| 2 Brake-fluid reservoir, front (► 131) | 7 Adjustment of damping (► 85) |
| 3 Adjustment of the damping on the front fork (► 85) | 8 Brake-fluid reservoir, rear (► 132) |
| 4 Vehicle identification number (on steering head)
Type plate (on the frame, front right) | |
| 5 Coolant-level indicator (► 134)
Coolant reservoir (► 135) | |

18 GENERAL VIEWS

UNDERNEATH THE SEAT



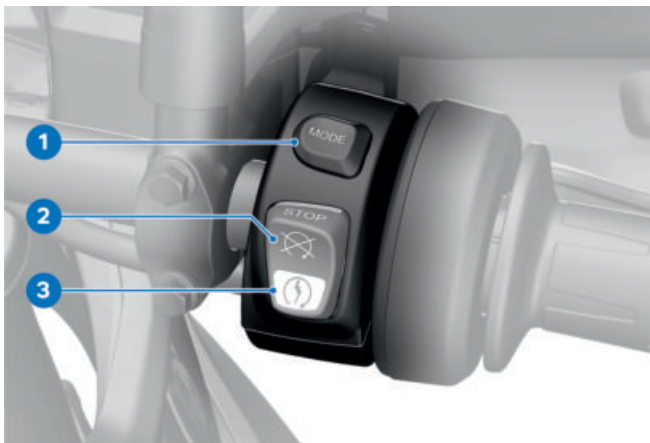
- 1** Toolkit (➡ 125)
- 2** Diagnostic connector
(➡ 158)
- 3** Table of tyre pressures
Payload table
- 4** Fuses (➡ 156)
- 5** Battery (➡ 153)
- 6** Air filter (underneath seat)
(➡ 149)

MULTIFUNCTION SWITCH, LEFT

- 1** Hazard warning lights
(71)
- 2** Traction control (DTC)
(71)
- 3** Turn indicators (71)
- 4** Horn
- 5** Rocker button (55)
- 6** Multi-Controller (54)
- 7** Grip heating (76)
- 8** High-beam headlight and headlight flasher (69)

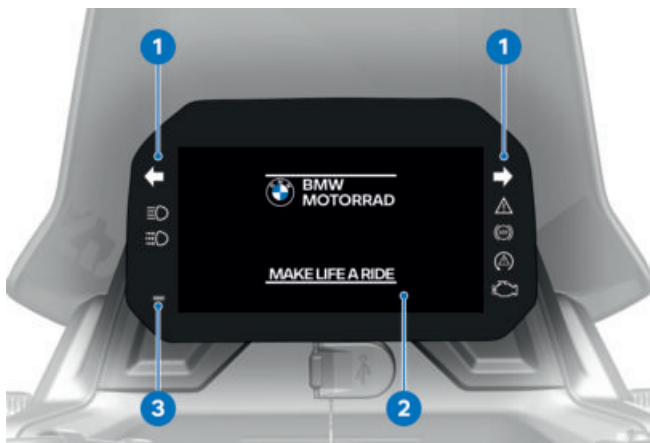
20 GENERAL VIEWS

MULTIFUNCTION SWITCH, RIGHT



- 1 Selecting the riding mode (➡ 75)
- 2 Emergency-off switch (kill switch) (➡ 69)
- 3 Starter button (➡ 94)

INSTRUMENT CLUSTER



- 1** Indicator and warning lights (➡ 24)
- 2** Instrument cluster (➡ 26)
- 3** Photosensor (for adapting the brightness of the instrument lighting)

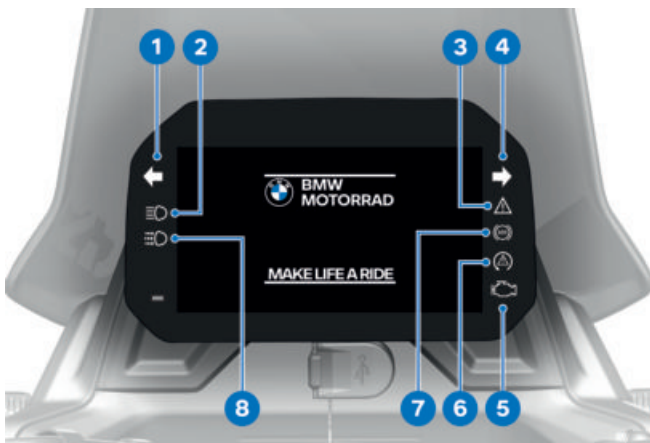
STATUS INDICATORS

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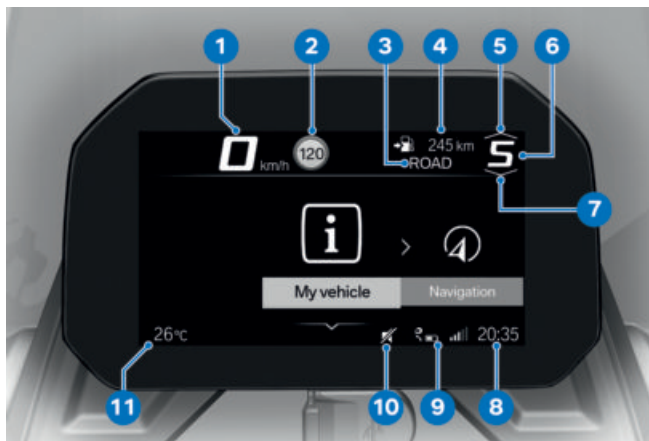
24 STATUS INDICATORS

INDICATOR AND WARNING LIGHTS



- 1 Turn indicators, left
(71)
- 2 High-beam headlight
(69)
- 3 General warning light
(32)
- 4 Turn indicators, right
(71)
- 5 Warning light, drive mal-
function (42)
- 6 DTC (46)
- 7 ABS (45)
- 8 Automatic daytime riding
light (70)

MENU VIEW

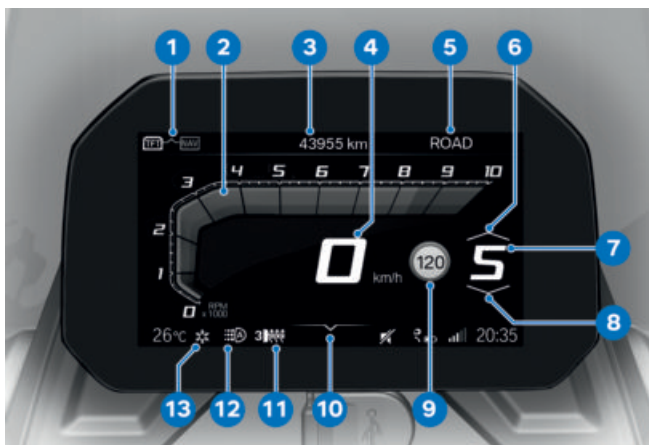


- 1 Speedometer
- 2 Speed Limit Info (►►► 63)
- 3 Riding mode (►►► 73)
- 4 Status line (►►► 57)
- 5 Recommendation to up-shift (►►► 28)
- 6 Gear indicator
- 7 Recommendation to downshift (►►► 28)
- 8 Clock (►►► 58)
- 9 Connection status (►►► 59)
- 10 Muting (►►► 58)
- 11 Ambient temperature

26 STATUS INDICATORS

PURE RIDE VIEW

START SCREEN



- | | |
|---|---|
| 1 Change of operating focus (►►► 60) | 12 Automatic daytime riding light (►►► 70) |
| 2 Rev. counter (►►► 27) | 13 Outside temperature warning (►►► 38) |
| 3 Status line (►►► 57) | |
| 4 Speedometer | |
| 5 Riding mode (►►► 73) | |
| 6 Recommendation to up-shift (►►► 28) | |
| 7 Gear indicator | |
| 8 Recommendation to downshift (►►► 28) | |
| 9 Speed Limit Info (►►► 63) | |
| 10 Operating help | |
| 11 Grip heating (►►► 76) | |

REV. COUNTER



- 1 Scale
- 2 Shift light ( 77)
- 3 Engine speed range
- 4 Upper/red engine speed range
- 5 Needle
- 6 Secondary indicator
- 7 Unit for engine speed display:
1000 revolutions per minute

 The red-hatched engine speed range 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 rpm range indicates the current maximum engine speed depending on, for example, whether the running-in check has yet to be performed or if there a fault in the engine control system.

 When the shift light flashes, the rotational-speed sensor also flashes.

28 STATUS INDICATORS

Range



Range readout **1** indicates how far you can ride with the fuel remaining in the tank. This distance is calculated on the basis of average consumption and the quantity of fuel on board.

–When the vehicle is propped on its side stand the slight angle of inclination means that the sensor cannot register the fuel level correctly. This is the reason why the range is recalculated only when the side stand is in the retracted position.

–The range is shown together with a warning once the fuel reserve has been reached.

–After a refuelling stop, range is recalculated if the amount of fuel in the tank is greater than the reserve quantity.

–The calculated range is only an approximate figure.

Recommended gear



The recommended gear appears in the status line **1** or in the view Pure Ride **2**.

The upshift recommendation indicates the economically best point in time to upshift. The downshift recommendation indicates the right point in 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}

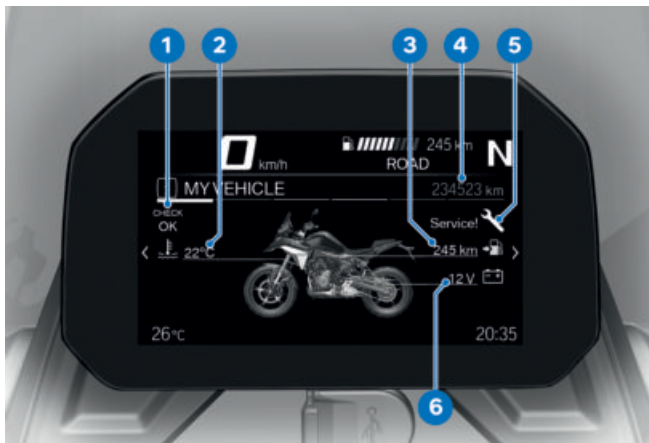


- 1** Maximum DTC torque reduction
- 2** Actual DTC torque reduction
- 3** Rev. counter
- 4** Maximum heel angle, left
- 5** Actual heel angle in corners for left and right
- 6** Maximum heel angle, right
- 7** Current retardation rate during braking
- 8** Maximum retardation rate

30 STATUS INDICATORS

MY VEHICLE VIEW

START SCREEN



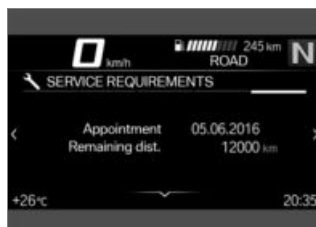
- 1** Check Control display
Mode of presentation
([➡ 32](#))
- 2** Coolant temperature
([➡ 41](#))
- 3** Range ([➡ 28](#))
- 4** Odometer
- 5** Service display ([➡ 50](#))
- 6** On-board voltage
([➡ 154](#))

On-board computer and trip computer



The ON-BOARD COMPUTER and TRIP COMPUTER menu screens display vehicle and trip data, such as average values.

Service requirements



When the next service is due within less than a month or within 1000 km, a white Check Control message is displayed.

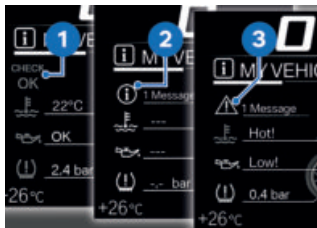
32 STATUS INDICATORS

WARNING INDICATORS

Mode of presentation

Warnings are indicated by the corresponding warning lights. Warnings are indicated by the 'General' warning light showing in combination with a dialogue in the instrument cluster. The 'General' warning light shows yellow or red, depending on the urgency of the warning.

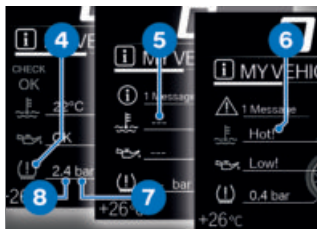
 The status of the 'General' warning light matches the most urgent warning. The possible warnings are listed on the next pages.



Check Control display

The messages differ in how they show on the display. Different colours and symbols are used depending on priority:

- Green CHECK OK **1**: No message, optimum values.
- White circle with small "i" **2**: Information.
- Yellow warning triangle **3**: Warning, value not ideal.
- Red warning triangle **3**: Warning, value critical.



Values display

Symbols **4** differ in how they show on the display. The colours used differ and reflect the urgency of the message. Along with numerical values **8** with units **7**, texts **6** are displayed as well:

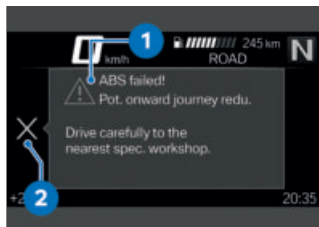
Colour of the symbol

- Green: (OK) Current value is ideal.
- 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: (---) No valid value available. Dashes **5** are displayed instead of a numerical value.

 To some extent, individual values can be processed only after the vehicle has covered a certain distance or has reached a certain speed. Dashes are displayed as placeholders for as long as a measured value cannot be displayed because the preconditions for measurement have still to be met. If there are no valid measured values, there will be no assessment in the form of a coloured symbol.

–Check Control messages are attached dynamically to the pages as additional tabs in the *My vehicle* menu. The message can be called up again as long as the fault persists.



Check Control dialogue

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

–If symbol **2** is actively displayed, it can be acknowledged by tilting the Multi-Controller to the left.

34 STATUS INDICATORS

Warnings, overview

Indicator and warning lights	Display text	Meaning
	is displayed.	Outside temperature warning (→ 38)
	Vehicle voltage low.	Voltage of the vehicle electrical system too low (→ 38)
 shows yellow.	 Vehicle voltage critical!	Voltage of the vehicle electrical system critical (→ 39)
 flashes yellow.	 Battery voltage critical!	Charging voltage critical (→ 39)
 shows yellow.	 The faulty bulb is displayed.	Bulb faulty (→ 40)
 flashes yellow.	 The faulty bulb is displayed.	
 shows yellow.	 Light control failure!	Light control failed (→ 41)
 shows yellow.	 Engine temp. high!	Engine temperature high (→ 41)
 shows red.	 Engine overheating!	Engine overheated (→ 42)
 Lights up or flashes.	 Drive!	Drive malfunction (→ 42)

Indicator and warning lights	Display text	Meaning
 flashes red.	 Serious fault in the engine control!	Serious drive malfunction (➡ 42)
 flashes.		
 shows yellow.	 No communication with engine control.	Engine control failed (➡ 43)
 shows.		
 shows yellow.	 Fault in the engine control.	Engine in emergency-operation mode (➡ 43)
 flashes red.	 Serious fault in the engine control!	Serious fault in engine control (➡ 44)
 shows yellow.	 Side stand monitoring faulty.	Malfunction, side stand monitor (➡ 44)
 flashes regularly.		ABS self-diagnosis not completed (➡ 45)
 shows yellow.	 Limited ABS availability!	ABS fault (➡ 45)
 shows.		
 shows yellow.	 ABS failure!	ABS failed (➡ 45)
 shows.		

36 STATUS INDICATORS

Indicator and warning lights	Display text	Meaning
 shows yellow.	 ABS Pro failure!	ABS Pro failed (▮▮▮ 46)
 shows.		
 flashes irregularly.		ABS control at front wheel only (▮▮▮ 46)
 quick-flashes.		DTC intervention (▮▮▮ 46)
 slow-flashes.		DTC self-diagnosis not completed (▮▮▮ 47)
 shows.	 Off!	DTC switched off (▮▮▮ 47)
	 Traction control deactivated.	
 shows yellow.	 Traction control limited!	DTC restricted (▮▮▮ 47)
 shows.		
 shows yellow.	 Traction control failure!	DTC fault (▮▮▮ 48)
 shows.		
 shows yellow.	 Tank reserve level reached.	Fuel down to reserve (▮▮▮ 48)
	 The gear indicator flashes.	Gear not taught (▮▮▮ 49)
 shows yellow.	 Clutch temperature high!	Clutch temperature high (▮▮▮ 49)

Indicator and warning lights	Display text	Meaning
 flashes green.		Hazard warning lights system
 flashes green.		is switched on (▶ 50)
	 is displayed in white. Service due!	Service due (▶ 50)
 shows yellow.	 is displayed in yellow. Service overdue!	Service-due date has passed (▶ 50)

38 STATUS INDICATORS

Ambient temperature

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

When the vehicle is at a standstill, the heat of the electrical machine can falsify the ambient-temperature reading. If the heat of the electrical machine is affecting it too much, dashes are temporarily shown in place of the value.



There is a risk of black ice if the ambient temperature falls below the limit value of approx. 3 °C.

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

Outside temperature warning



is displayed.

Possible cause:



The air temperature measured at the vehicle is lower than:

approx. 3 °C



WARNING

Risk of black ice forming even when temperature is above approx. 3 °C

Risk of accident

- Always take extra care when temperatures are low; remember that there is particular danger of black ice forming on bridges and where the road is in shade.

- Ride carefully and think well ahead.

Voltage of the vehicle electrical system too low



Vehicle voltage low. Switch off unnecessary consumers.

The voltage of the vehicle electrical system is too low. If you continue to ride the motorcycle the on-board electronics will drain the battery.

Possible cause:

Consumers with high power consumption are in operation (such as heated body warmers), too many consumers are in operation at one time, or battery faulty.

- Switch off non-essential consumers or disconnect them

from the vehicle's electrical system.

- If the fault persists or occurs without consumers connected, have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Voltage of the vehicle electrical system critical



shows yellow.



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



WARNING

Failure of the vehicle systems

Risk of accident

- Do not continue your journey.

The voltage of the vehicle electrical system is critical. The on-board electronics will drain the battery.

Possible cause:

Consumers with high power consumption are in operation (such as heated body warmers), too many consumers are

in operation at one time, or battery faulty.

- Switch off non-essential consumers or disconnect them from the vehicle's electrical system.
- If the fault persists or occurs without consumers connected, have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Charging voltage critical



flashes yellow.



Battery voltage critical! Accident risk. Stop driving.



WARNING

Failure of the vehicle systems

Risk of accident

- Do not continue your journey.

Battery is not being charged. The on-board electronics will drain the battery.

40 STATUS INDICATORS

Possible cause:

Alternator malfunction, battery faulty or fuse has blown.

- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

Bulb faulty

 shows yellow.

 The faulty bulb is displayed:

 High beam faulty!

 Front left turn indicator faulty! or
Front right turn indicator faulty!

 Low-beam headlight faulty!

 Front side light faulty!

 Daytime riding light faulty!

 Tail light faulty!

 Brake light faulty!

 Rear left turn indicator faulty! or
Rear right turn indicator faulty!

 Number plate light faulty!

–Have it checked by a specialist workshop.

 flashes yellow.

 The faulty bulb is displayed:

 Active headlight faulty.

WARNING

Vehicle overlooked in traffic due to failure of the lights on the vehicle

Safety risk

- Always replace a faulty bulb at the earliest possible opportunity. Consult a specialist workshop, preferably an authorised BMW Motorrad Retailer.

Possible cause:

One or more bulbs faulty.

- Identify faulty bulb or bulbs by visual check.
- Have LED light sources replaced as complete units; consult a specialist workshop, preferably an authorised BMW Motorrad retailer.

Light control failed

shows yellow.



Light control failure! Have it checked by a specialist workshop.

**WARNING****Vehicle overlooked in traffic on account of failure of the vehicle lighting**

Safety risk

- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

The vehicle lighting has partially or completely failed.

Possible cause:

Light control has diagnosed a communication fault.

- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

Engine temperature high

shows yellow.



Engine temp. high!
Continue riding with restriction to allow cooling.

**ATTENTION****Riding with overheated engine**

Engine damage

- Compliance with the information set out below is essential.

Possible cause:

The coolant level is too low.

- Check the coolant level.

(134)

If the coolant level is too low:

- Allow the motor to cool down. Top up the coolant. Have the cooling system checked by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Possible cause:

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

- If possible, ride in the part-load range to cool down the motor.
- If the motor temperature is frequently too high, have the fault rectified as soon as possible by a specialist work-

42 STATUS INDICATORS

shop, preferably an authorised BMW Motorrad retailer.

Engine overheated



shows red.



Engine overheating! Stop when it is safe to do so and switch off the engine.



ATTENTION

Riding with overheated engine

Engine damage

- Compliance with the information set out below is essential.

Possible cause:

The coolant level is too low.

- Check the coolant level. (11111111 134)

If the coolant level is too low:

- Allow the motor to cool down. Top up the coolant. Have the cooling system checked by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Possible cause:

Engine is overheated.

- Carefully bring the vehicle to a stop, switch off the engine and wait until the engine has cooled down.
- If engine overheating is a frequent occurrence, have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Drive malfunction



Lights up or flashes.



Drive! Have it checked by a specialist workshop.

Possible cause:

The motor control unit has diagnosed a fault that affects pollutant emissions and/or reduces power.

- Have the fault rectified by a specialist workshop, preferably an authorised BMW Motorrad retailer.
- » You can continue riding; pollutant emissions are higher than the threshold values.

Serious drive malfunction



flashes red.



flashes.



Serious fault in the engine control! Riding at mod. speed pos. Damage possible. Have checked by workshop.

Possible cause:

The engine control unit has diagnosed a fault that can lead to damage to the exhaust system.

- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

» It is possible to continue to ride but not recommended.

Engine control failed



shows yellow.



shows.



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

Possible cause:

Communication with the engine control unit has failed.

- You can continue to ride.

Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

Engine in emergency-operation mode



shows yellow.



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



WARNING

Unusual ride characteristics when engine running in emergency-operation mode

Risk of accident

- Avoid accelerating sharply and overtaking.

Possible cause:

The electronic control unit has diagnosed a fault. In exceptional cases, the engine stops and refuses to start. Otherwise, the engine runs in emergency operating mode.

44 STATUS INDICATORS

- You can continue to ride, but bear in mind that the usual engine performance might not be available.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

Serious fault in engine control



flashes red.



Serious fault in the engine control! Riding at mod. speed pos. Damage possible. Have checked by workshop.



WARNING

Emergency operation mode can damage the engine

Risk of accident

- Drive carefully and do not accelerate rapidly or overtake.
- If possible, have your vehicle collected and have the fault rectified by a specialist workshop, ideally an authorised BMW Motorrad Retailer.

Possible cause:

The filling 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.

- It is possible to continue to ride but not recommended.
- Avoid high load and rpm ranges if possible.
- Refuel. (104)
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

Malfunction, side stand monitor



shows yellow.



Side stand monitoring faulty. Onward journey possible. Engine will stop if stationary! Have checked by workshop.

Possible cause:



Side-stand switch or wiring damaged

The motor will switch off when speed drops below the minimum threshold. You cannot resume your journey.



Side-stand switch or wiring damaged

min. 5 km/h

- Consult a specialist workshop, preferably an authorised BMW Motorrad retailer.

ABS self-diagnosis not completed



flashes.

Possible cause:



ABS self-diagnosis not completed

The ABS function is not available, because self-diagnosis did not complete. (The vehicle has to reach a defined minimum speed with the engine running for the wheel sensors to be checked: min. 5 km/h)

- Pull away slowly. Bear in mind that the ABS function is not available until self-diagnosis has completed.

ABS fault



shows yellow.



shows.



Limited ABS availability! Onward journey possible. Ride carefully.

fully to next specialist workshop.

Possible cause:

The ABS control unit has detected a fault. The ABS function is available, subject to restrictions.

- You can continue to ride. Bear in mind the more detailed information on certain situations that can lead to an ABS fault message (111).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

ABS failed



shows yellow.



shows.



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

Possible cause:

The ABS control unit has detected a fault. The ABS function is not available.

- You can continue to ride. Bear in mind the more detailed information on certain situations that can

46 STATUS INDICATORS

lead to an ABS fault message (111).

- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

ABS Pro failed



shows yellow.



shows.



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

Possible cause:

Monitoring of the ABS Pro function has detected a fault. The ABS Pro function is not available. The ABS function is still available. ABS provides support only for braking in straight-ahead driving.

- You can continue to ride. Bear in mind the more detailed information on certain situations that can lead to an ABS Pro fault message (111).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably

an authorised BMW Motorrad Retailer.

ABS control at front wheel only

—with riding modes Pro^{OE}



flashes irregularly.

Possible cause:

ABS control for the rear wheel is switched off in the currently selected riding mode. The rear wheel brake can lock the rear wheel.

- Check the settings of the riding mode.
- For more information on setting up the riding modes, see the section entitled "Engineering details" (116).

DTC intervention



quick-flashes.

Possible cause:

The DTC has detected a degree of instability at the rear wheel and has intervened to reduce torque.

The indicator and warning light flashes longer than the duration of the DTC. This affords the rider visual feedback on control intervention even after the critical situation has been dealt with.

- You can continue to ride.
Ride carefully and think well ahead.

DTC self-diagnosis not completed



slow-flashes.

Possible cause:



DTC self-diagnosis not completed

The DTC function is not available, because self-diagnosis did not complete. (The motorcycle has to reach a defined minimum speed with the engine running for the wheel sensors to be checked: min. 5 km/h)

- Pull away slowly. Bear in mind that the DTC function is not available until self-diagnosis has completed.

DTC switched off



shows.



Off!



Traction control deactivated.

Possible cause:

The rider has switched off the DTC system.

- Switch on DTC. (→ 72)

DTC restricted



shows yellow.



shows.



Traction control limited! Onward journey possible.

Ride carefully to next specialist workshop.

Possible cause:

The engine control unit has detected a DTC fault.



ATTENTION

Damaged components

Damage to sensors, for example, which causes malfunctions

- Do not transport any objects underneath the driver or passenger seat.
- Secure the toolkit.

- Do not damage the angular rate sensor.
- Bear in mind that the DTC function and other dynamic control system functions are restricted.

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- You can continue to ride.
Bear in mind the more detailed information on situations that can lead to a DTC fault (➡ 114).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

DTC fault



shows yellow.



shows.



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

Possible cause:

The engine control unit has detected a DTC fault.



ATTENTION

Damaged components

Damage to sensors, for example, which causes malfunctions

- Do not transport any objects underneath the driver or passenger seat.
- Secure the toolkit.

- Do not damage the angular rate sensor.
- Bear in mind that the DTC function and other dynamic control system functions are not available.
- You can continue to ride.
Bear in mind the more detailed information on situations that can lead to a DTC fault (➡ 114).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

Fuel down to reserve



shows yellow.



Tank reserve level reached. Ride to the next filling station.



WARNING

Irregular engine operation or engine shutdown due to lack of fuel

Risk of accident, damage to catalytic converter

- Do not run the fuel tank dry.

Possible cause:

The fuel tank contains no more than the reserve quantity of fuel.



Reserve fuel

approx. 2.5 l

- Refuel. (► 104)

Gear not taught

—with shift assistant Pro^{OE}



The gear indicator flashes.

Possible cause:

The gearbox sensor is not fully trained.

- Start the engine. (► 94)
- Select neutral N.
- Extend and then retract the side stand, without touching the shift lever.
- Use clutch control to engage each gear in turn. In each gear repeatedly move the throttle twistgrip to the idle position and then re-open the throttle.
- » The gear indicator stops flashing when the gearbox sensor has been trained successfully.
- When the gearbox sensor has been taught successfully, Gear Shift Assistant Pro works as described (► 119).

- If teaching is not successful, have the fault rectified by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Clutch temperature high

—with Easy Ride Clutch^{OE}



shows yellow.



Clutch temperature high! Gear change recommended. Select 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.

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Hazard warning lights system is switched on



flashes green.



flashes green.

Possible cause:

The driver has switched on the hazard warning lights system.

- Operate the hazard warning flashers. (→ 71)

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 showing yellow.

If the service is overdue, a yellow Check Control message is displayed. Exclamation marks also draw your attention to the displays for service, service appointment and countdown distance in the MY VEHICLE and SERVICE REQUIREMENTS menu screens.



If the service-due indicator appears more than a month before the service date, the current date has to be corrected. This situation can occur if the battery was disconnected.

Service due



is displayed in white.

Service due! Have service performed by a specialist workshop.

Possible cause:

Service is due either because of the total distance covered or the date.

- Have your vehicle serviced regularly by a specialist workshop, preferably an authorised BMW Motorrad retailer.
- » The vehicle remains operationally reliable and road-worthy.
- » The vehicle retains its value.

Service-due date has passed



shows yellow.



is displayed in yellow.

Service overdue! Have service performed by a specialist workshop.

Possible cause:

Service is overdue because of the total distance covered or the date.

- Have your vehicle serviced regularly by a specialist workshop, preferably an authorised BMW Motorrad retailer.

- » The vehicle remains operationally reliable and road-worthy.
- » The vehicle retains its value.

INSTRUMENT CLUSTER

04

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WARNINGS



WARNING

Operation of a smartphone while riding the vehicle

Risk of accident

- Always comply with the road traffic regulations in force where you are riding.
- Do not use a smartphone while riding. This applies with the exception of applications without operation, such as hands-free telephony.



WARNING

Distraction from the road and loss of control

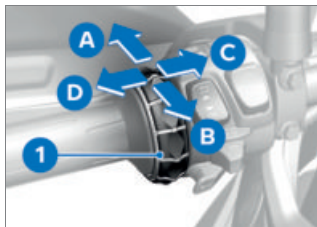
Operating the integrated information system and communication devices while driving results in a risk of accident

- Operate those systems or devices only when the traffic situation allows for it.
- If necessary, stop and operate the systems or devices when stationary.

Some functions can be used only when the vehicle is stationary.

CONTROLS

Multi-Controller



- 1** Multi-Controller
- A** Move the cursor up in lists
Increase volume
- B** Move the cursor down in lists
Reducing volume
- C** Activate function in accordance with feedback
Confirm selection/setting
Scrolling through menu screens
- D** Activate function in accordance with feedback or go back
Return to Menu view after making settings
Change up one level in the hierarchy
Scrolling through menu screens

Rocker button



Short-press the top section of rocker button 1:

- In Menu view: Change up one level.
- In Pure Ride view: Change the display for rider info. status line.

Long-press the top section of rocker button 1:

- In Menu view: Open the Pure Ride view.
- In Pure Ride view: Reset on-board computer value.
- Switch the operating focus to the Navigator.

Short-press the bottom section of rocker button 1:

- Change down a level.
- Confirm selection/setting.

Long-press the bottom section of rocker button 1:

- Change back to the last menu after a previous menu change effected by long-pressing the

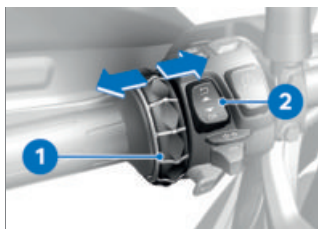
top section of the rocker button.

 Instructions given by the navigation system are displayed as a dialogue if the Navigation menu has not been called up. Operation of the rocker button is temporarily restricted.

MENUS

Requirement

Pure Ride view is displayed.



- Long-press the top section of the rocker button **2** to display the Pure Ride view.
- Short-press the bottom section of rocker button **2**.
- Repeatedly short-push Multi-Controller **1** to the right until the menu item you want is highlighted.
- Short-press the bottom section of rocker button **2** to open the corresponding menu.

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MY VEHICLE

Call up the on-board computer

- Call up the **My vehicle** menu.
- Scroll to the right until the **ON-BOARD COMPUTER** menu screen is displayed.

Reset the on-board computer



- Call up the **My vehicle** menu.
- Call up the **ON-BOARD COMPUTER** menu screen.
- Press the bottom section of the **1** rocker button.
- Select **Reset all values** or **Reset individual values** and confirm.
- Alternatively: Change to **Pure Ride** view.
- Repeatedly short-press the top section of rocker button **1** to select the value in the top status line.
- Long-press the top section of rocker button **1** to reset the selected value.

The following values can be reset:



Journey



Break



Current



Consump.



Speed

Call up the trip computer

- Call up the on-board computer. (→ 56)
- Scroll to the right until the **TRIP COMPUTER** menu screen is displayed.

Reset the trip computer



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

- Select Autom. reset or Reset all values and confirm.
- » If Autom. reset is selected, the trip computer is automatically reset when a minimum of 6 hours have passed and the date has changed since the ignition was switched off.

SETTINGS

Select the content of the top status line

- Change to Pure Ride view.
- » The instrument cluster shows all the information necessary for riding on public roads from the on-board computer (e.g. TRIP 1) and the trip computer (e.g. TRIP 2). The information can be displayed in the top status line.
- Navigate to Settings, Display, Status line content.
- Switch on the desired displays.
- » You can switch between the selected displays in the top status line. If no displays are selected, only the range will be displayed.

Changing display in top status line

- Select the content of the top status line. (► 57)



- Change to Pure Ride view.
- Repeatedly short-press button 1 to select the value in the top 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

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Break 1



Break 2



Speed 1 (Average)



Speed 2 (Average)



Fuel tank level



Range

Adjusting volume

- Connect the rider's and passenger's helmets. (160 60)
- Increase volume: Turn the Multi-Controller up.
- Reduce volume: Turn the Multi-Controller down.
- Mute: Turn the Multi-Controller all the way down.

Changing system settings

- Navigate to Settings, System settings.
 - » You can change the following system settings here:
 - Date and time
 - Units
 - Language

Switch GPS synchronisation on or off

-with preparation for navigation system^{OA}

- Navigate to Settings, System settings, Date and time.
- Switch GPS synchronisation on or off.
 - » If the corresponding option in the Navigator is activated, the clock time is taken from the Navigator.
 - » Special functions (168)

Adjusting brightness

- Navigate to Settings, Display, Brightness.
- Adjust display brightness.
 - » When ambient brightness drops below a defined threshold, the display is dimmed to the brightness set here.

Reset all settings

- Call up the Settings menu.
- Select Reset all and confirm.

The settings in the following menus are reset to their default factory settings:

- Vehicle settings
- System settings
- Connections
- Display
- Information

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

BLUETOOTH PAIRING

Pairing

Two Bluetooth devices have to recognise 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 devices, e.g. those with the iOS operating system, the BMW Motorrad Connected app has to be opened prior to 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 the audio system can recognise another device are as follows:

- The device's Bluetooth function must be active
- The device must be "visible" to others
- Other Bluetooth-compatible devices must be OFF (e.g.

mobile phones and navigation systems).

Please consult the operating instructions for your communication system.

Pairing

- Navigate to **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 devices is displayed.

Connect mobile device

- Perform pairing. (➡ 59)
 - Activate the mobile device's Bluetooth function (see mobile device's operating instructions).
 - Select **Mobile device** and confirm.
 - Select **Pair new mobile device** and confirm.
- Mobile devices are being searched for.



flashes in the bottom status line during pairing.

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Mobile devices found are displayed.

- Select and confirm mobile device.
- Follow the instructions on the mobile device.
- Confirm that the code matches.

» The connection is established and the connection status updated.

» If the connection is not established, consult the troubleshooting chart in the section entitled "Technical data". (181)

Connect rider's and passenger's helmet

- Perform pairing. (59)
- Select Rider's helmet or Passenger helm. and confirm.
- Make the helmet's communication system visible.
- Select Pair new rider's helmet or Pair new passenger. helmet and confirm.

Helmets are searched for.



flashes in the bottom status line during pairing.

Helmets found are displayed.

- Select and confirm helmet.
- » The connection is established and the connection status updated.

» If the connection is not established, consult the troubleshooting chart in the section entitled "Technical data". (181)

Delete connections

- Navigate to 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}

Change of operating focus

If the Navigator is connected, you can toggle between operation of the Navigator and operation of the instrument cluster.

Change the operating focus

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



- Secure the navigation device.
( 165)
- Long-press the top section of rocker button **1**.
» Dialog menu and progress indicator are shown.

The following selection is possible:

- Navigator operation
- Show Pure Ride

In Pure Ride view:

- Navigator operation
- Reset OBC values
- Press and hold down the top section of rocker button **1** until the progress indicator reaches maximum, or confirm Navigator operation.
» Operating focus changes to the Navigator.
» Operating navigation system
( 167)
- To change the view to the instrument cluster, short-press the bottom section of rocker button **1**.

NAVIGATION

Precondition

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

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

 On some mobile devices, e.g. those with the iOS operating system, the BMW Motorrad Connected app has to be opened prior to use.

Enter the destination address

- Connect a mobile device.
( 59)
- Call up the BMW Motorrad Connected app and start the route guidance.
- In the instrument cluster, call up the Navigation menu.
» Active route guidance is displayed.
» If active route guidance is not displayed, consult the troubleshooting chart in the section entitled "Technical data". ( 181)

Select destination from recent destinations

- Navigate to Navigation, Recent destinations.
- Select and confirm destination.

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- Select Start route guidance.

Select destination from favourites

- The FAVOURITES menu shows all the destinations saved as favourites in the BMW Motorrad Connected app. You cannot use the instrument cluster to add favourites to the list.
- Navigate to Navigation, Favourites.
- Select and confirm destination.
- Select Start guidance.

Enter special destinations

- Special destinations, such as points of interest, can be displayed on the map.
- Navigate to Navigation, POIs.

The following locations can be selected:

- At current location
 - At destination
 - Along the route
 - Select where the special destinations should be looked for.
- For example, the following special destination can be selected:
- Filling station
 - Select and confirm the special destination.
 - Select Start route guidance and confirm.

Set route criteria

- Navigate to Navigation, Route criteria.

The following criteria can be selected:

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

The number of avoidances activated is displayed in brackets.

View the route information

- Navigate to Navigation, Settings and select Route info.

You can choose between the following options:

- Dest.
- Waypoint
- Select the desired option.
- » Countdown distance and time are displayed.

Edit route guidance

- Navigate to Navigation, New destination.

You can choose from the following destinations:

- Recent destinations
- Favourites
- POIs
- Select a destination from one of the three destination categories.
- Select Change route guidance in the destination entry.

- Select **Add as waypoint** to add the selected destination as a waypoint.
- Select **Start guidance** to overwrite the current destination.

End route guidance

- In menu **Navigation**, tilt the Multi-Controller to the left.
- Alternatively, in menu **Active route guidance**, select and confirm **Option End route guidance**.

Switching spoken instructions on or off

- Connect the rider's and passenger's helmets. (▶ 60)
- Navigation instructions can be read out. For this purpose, **Spoken instruction** must be switched on.
- Navigate to **Navigation**, **Active route guidance**.
- Switch **Spoken instruction** on or off.

Repeat last spoken instruction

- Navigate to **Navigation**, **Active route guidance**.
- Select **Current instruction** and confirm.

Switch Speed Limit Info on or off

Requirement

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

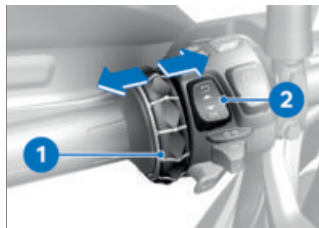
- **Speed Limit Info** shows the maximum speed permitted at the time, if this information is made available by the publisher of the map material in the navigation system.
- Navigate to **Settings**, **Display**.
- Switch **Speed Limit Info** on or off.

MEDIA

Precondition

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

Controlling music playback



- Call up the **Media** menu.

64 INSTRUMENT CLUSTER

- Adjust volume. (▶▶▶ 58)
- Next track: Short-tilt Multi-Controller **1** to the right.
- Preceding track or start of current track: Short-tilt Multi-Controller **1** to the left.
- Fast forward: Long-tilt Multi-Controller **1** to the right.
- Rewind: Long-tilt Multi-Controller **1** to the left.
- Call up context menu: Press bottom section of button **2**.

 Depending on the mobile end device, the scope of Connectivity functions might be restricted.

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

The settings possible in the **Audio settings** submenu are as follows:

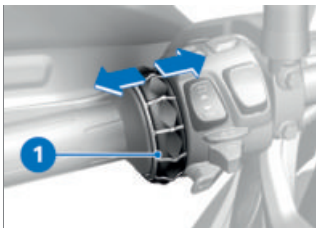
- Switch **Shuffle** on or off.
- Select **Repeat**: **Off**, **One** (current track) or **All**.

TELEPHONE

Precondition

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

Telephone calls



- Call up the **Telephone** menu.
- Accept call: Tilt Multi-Controller **1** to the right.
- Reject call: Tilt Multi-Controller **1** to the left.
- End call: Tilt Multi-Controller **1** to the left.

Muting

During active phone calls, the microphone in the helmet can be muted.

Phone calls with multiple participants

While a phone call is in progress, a second call can be accepted. The first phone call is put on hold. The number of active calls is shown in the **Telephone** menu. It is pos-

OPERATION

05

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FRONT AND REAR SEATS	77

68 OPERATION

IGNITION SWITCH/STEERING LOCK

Keys

You receive two vehicle keys. Ignition switch, fuel filler cap lock and seat lock are all operated with the same key.

Engaging steering lock

- Turn the handlebars all the way to the left.



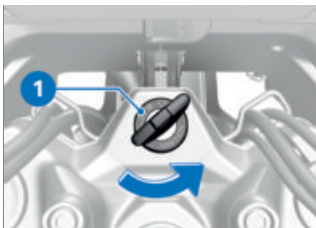
- Turn the key to position **1** while moving the handlebars slightly.
 - » Ignition, lights and all function circuits switched off.
 - » Steering lock engaged.
 - » Key can be removed.

Switching on ignition



- Turn the key to position **1**.
 - » Side lights and all function circuits switched on.
 - » Engine can be started.
 - » Pre-Ride-Check and self-diagnoses are performed.
( 95)

Switching off ignition



- Turn the key to position **1**.
 - » Lights switched off.
 - » Handlebars not locked.
 - » Key can be removed.
 - » Electrically powered accessories remain operational for a limited period of time.
 - » The battery can be recharged via the vehicle socket.

EMERGENCY-OFF SWITCH (KILL SWITCH)



- 1** Emergency-off switch (kill switch)



WARNING

Operation of the kill switch while riding

Risk of fall due to rear wheel locking

- Do not operate the kill switch when riding.

The emergency off switch is a kill switch for switching off the engine quickly and easily.



- A** Engine switched off
B Normal operating position (run)



You cannot start the engine unless the kill switch is in the run position.

LIGHTING

Low-beam headlight and sidelights

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



The side lights place a strain on the battery. Switch on the ignition for a limited time only.

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

High-beam headlight and headlight flasher

- Switch on the ignition.
( 68)

70 OPERATION



- Push switch **1** forward to switch on the high-beam headlight.
- Pull switch **1** back to operate the headlight flasher.

Headlight courtesy delay feature

- Switch off the ignition.
(68)



- Immediately after switching off the ignition, pull switch **1** back and hold it in that position until the headlight courtesy delay feature comes on.
 - » The vehicle's lights come on for one minute and then switch off automatically.

–This can be used to light up the path to the house door after the vehicle has been parked, for example.

Automatic daytime riding light

The changeover between daytime riding light and low-beam headlight including front side lights can be effected automatically.



WARNING

The automatic daytime riding light is not a substitute for the rider's personal judgement of the light conditions

Risk of accident

- Switch off the automatic daytime riding light in poor light conditions.

- Navigate to Settings, Vehicle settings, Lights and switch on the Auto. daytime light function.
 - » If ambient brightness drops below a certain value, the low-beam headlight is automatically switched on (e.g. in a tunnel). When sufficient ambient brightness is detected, the daytime riding light is switched back on.



The indicator light for the daytime riding light shows if the daytime riding light is active.

Operating hazard warning flashers

- Switch on the ignition.

(68)



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



- Press button **1** to switch on the hazard warning flashers.
- » Ignition can be switched off.
- Switch the ignition on and press button **1** again to switch off the hazard warning flashers.

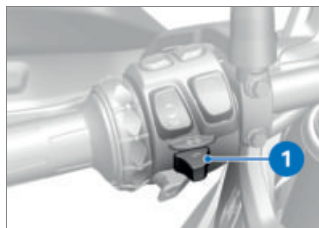
Operate the turn indicators

- Switch on the ignition.

(68)

- Navigate to **Settings**, **Vehicle settings** and select **Lights**.

- Switch **Comfort turn indicator** on or off.



- Push button **1** to the left or right, as appropriate, to switch on the turn indicators.
- » If the comfort turn indicators function is switched on, the turn indicators are cancelled automatically when the speed-dependent distance is covered.
- Alternatively: Press button **1** to cancel the turn indicators.

DYNAMIC TRACTION CONTROL (DTC)

Switching off DTC

- Switch on the ignition.



You have the option of deactivating Dynamic Traction Control (DTC) while the motorcycle is on the move.

72 OPERATION



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

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



shows.

Possible DTC system status **OFF!** is displayed.

- Release button **1** once the status has changed.



remains lit.

The new DTC system status **OFF!** is displayed briefly. The ABS system status remains unchanged.

» The DTC function is switched off.

Switch on DTC



- Press and hold down button **1** until the DTC indicator light changes status.

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



goes out; if self-diagnosis has not completed it starts flashing.

Possible DTC system status **ON** is displayed.

- Release button **1** once the status has changed.



remains off or continues to flash.

The new DTC system status **ON** is displayed briefly. The ABS system status remains unchanged.

» The DTC function is switched on.

- You also have the option of switching the ignition off and then on again.



A DTC fault has occurred if the DTC warning light shows when the motorcycle accelerates to a speed in excess of the minimum stated below after the ignition was switched off and then on again.

min. 5 km/h

- For more information on Dynamic Traction Control, see the section entitled "Engineering details" (113).

RIDING MODE

Using riding modes

BMW Motorrad has developed operational scenarios for your motorcycle from which you can select the scenario suitable for your situation:

Standard

- RAIN: Riding on rain-wet roads.
- ROAD: Riding on dry roads.
- ENDURO: Riding off-road with road tyres.

- with riding modes Pro^{OE}
with riding modes Pro
- ENDURO PRO: Riding off-road with cleated off-road tyres.

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

For more information on the riding modes, see the section entitled "Engineering details" (116).

Riding-mode preselection

- with riding modes Pro^{OE}

Riding mode preselection is a function for shortlisting the rider's subset of preferred riding modes.

Between two and a maximum of four riding modes can be added to the riding modes preselection shortlist.

Factory setting:

RAIN, ROAD and ENDURO

Configure riding-mode preselection

- with riding modes Pro^{OE}

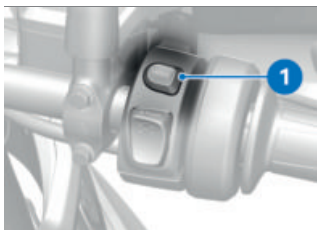
- Switch on the ignition.
(68)
- Navigate to Settings, Vehicle settings, Riding mode preselection.

74 OPERATION

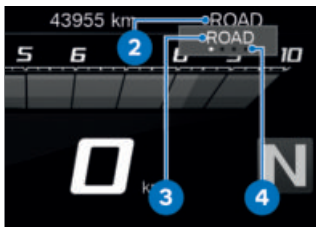
- Activate or deactivate riding modes for riding mode preselection.
 - » The activated riding modes are available for subsequent selection.
 - » If fewer than two riding modes are preselected, this message is displayed:
Action not possible.
Min. number reached.
 - » The list of preselected riding modes is retained in memory, even after the ignition is switched off.

Selecting the riding mode

- Switch on the ignition.
( 68)



- Press button **1**.



The riding mode currently active **2** is sent to the back and is displayed in the pop-up **3**. The guide **4** indicates how many riding modes are available.



ATTENTION

Activation of the off-road mode (ENDURO and ENDURO PRO) for on-road riding

Risk of crash due to lack of stability when the vehicle brakes in the control range of ABS or accelerates in that of. DTC

- Activate off-road mode (ENDURO and ENDURO PRO) only for riding off-road.

- Repeatedly press button **1** until the riding mode you want is displayed in the pop-up.
—with riding modes Pro^{OE}



The intervention of riding dynamics control systems can be restricted, depending on

which riding mode is selected and how the selected mode is configured.

Possible restrictions are indicated by a pop-up message, for example **Warning! ABS setting..**

The ABS indicator light flashes irregularly.

See the section entitled "Engineering details" for more information on riding dynamics control systems such as ABS.◁

—with riding modes Pro^{OE}

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

» With the vehicle at a standstill, the selected mode is activated after approximately 2 seconds.

» The following conditions must be met to activate a new riding mode while riding:

—Throttle grip is in neutral position.

—Brake is not applied.

» The mode selected in this way is retained with the engine-characteristic, ABS and DTC adaptation settings even after the ignition has been switched off.

RIDING MODE PRO

—with riding modes Pro^{OE}

Adjustment option

The Pro riding modes can be set up to suit individual rider needs and preferences.

Selecting Pro riding mode

- Switch on the ignition.
(▶▶▶ 68)
- Navigate to **Settings**,
Vehicle settings, Riding mode preselection.
- Select **ENDURO PRO** riding mode.

Setting up Enduro Pro

—with riding modes Pro^{OE}

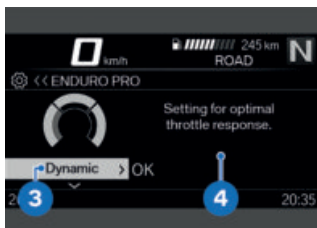
- Select Pro riding mode.
(▶▶▶ 75)
- Call up **Configuration**.



The **Engine** system has been selected. The current setting is displayed as a diagram **1** with explanatory texts relating to the system **2**.

76 OPERATION

- Select system and confirm.



You can browse through the available settings **3** and the corresponding explanations **4**.

- Set up the system.
 - » The Engine, DTC and ABS systems can be set up in the same way.

Resetting riding mode settings

- Select Pro riding mode. (III 75)
- Select Reset and confirm.
 - » The following factory settings apply for ENDURO PRO RIDING MODE:
 - ENGINE: Road
 - DTC: Enduro Pro
 - ABS: Enduro Pro

GRIP HEATING

Operating the grip heating

- Start the engine. (III 94)

 Grip heating can be activated only when the engine is running.

 The increase in power 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.



- Repeatedly press button **1** until the desired heating stage **2** is shown in front of the grip heating icon **3**.

The handlebar grips can be heated to three levels. High heating power is for heating the grips quickly: it is advisable to switch back to a lower heating power as soon as the grips are warm.



high heating power



medium heating power



low heating power

- » The selected heating stage will be saved if you allow a certain length of time to pass without making further changes.
- In order to switch off the grip heating, press button **1** repeatedly until the grip heating icon **3** is no longer shown on the display.

SHIFT LIGHT

Function



Shift light **1** indicates the engine speed at which the rider should upshift.

- Shift light flashes at preset frequency: Engine revving at upshift rpm

Switch the shift light on and off

- Navigate to Settings, Vehicle settings.

- Switch Shift light on or off.

Set the shift light

- Switch on the Shift light function.

- Navigate to 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 steady light.

» Changes to brightness and flashing frequency are demonstrated by the shift light lighting up or flashing.

FRONT AND REAR SEATS

Removing passenger seat

- Make sure the ground is level and firm and place the motorcycle on its stand.

78 OPERATION



- Turn vehicle key **1** counter-clockwise and hold it in this position.
- Slightly raise passenger seat **2** at the rear and release the vehicle key.
- Place the passenger seat, upholstered side down, on a clean, dry surface.

Installing passenger seat

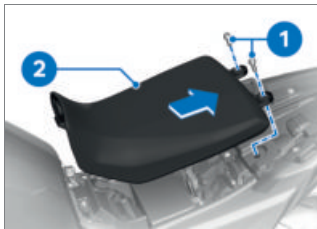


- Position passenger seat **1** in the rear frame at the front and press down on the seat at the rear.

» The passenger seat engages with an audible click.

Removing rider's seat Requirement

Passenger seat is removed.



- Remove screws **1** and remove seat **2** from stop **arrow** to the rear.
- Place the rider's seat, upholstered side down, on a clean, dry surface.

Installing rider's seat



- Insert and position rider's seat **2** in stop **arrow**.
- Install screws **1**.



Rider's seat on support bridge

M5×20

4 Nm

ADJUSTMENT

06

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DAMPING	85

82 ADJUSTMENT

MIRRORS

Adjusting mirrors



- Turn the mirror to the appropriate position.

Adjusting mirror arm



- Push protective cap **1** over the threaded fastener of the mirror arm up to expose the threaded fastener.
- Slacken nut **2**.
- Turn the mirror arm to the appropriate position.
- Tighten the nut to the specified torque, while holding the mirror arm to ensure that it does not move out of position.



Left mirror (lock nut) to adapter

M10×1.25

22 Nm



Right mirror (lock nut) to adapter

M10×1.25

22 Nm (Left-hand thread)

- Push the protective cap over the threaded fastener.

HEADLIGHT

Headlight beam throw and spring preload

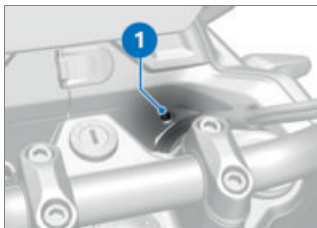
Headlight beam throw is generally kept constant when spring preload is adjusted to suit load.

Spring preload adjustment might not suffice only if the motorcycle is very heavily loaded. Under these circumstances, headlight beam throw has to be adjusted to suit the weight carried by the motorcycle.



If there are doubts about the correct headlight beam throw, have the setting checked by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Adjusting headlight beam throw



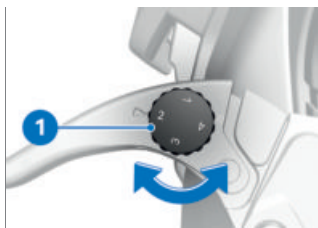
If, for a high load, the adjustment of the spring pre-load is no longer sufficient not to dazzle oncoming traffic:

- Adjust headlight beam throw by turning adjusting screw **1** with the tool from the on-board toolkit.

When the motorcycle is again ridden with a lower load:

- Return the headlight to its basic setting.

 The adjusting screw can be turned more easily if the clutch lever is pushed forward.



- Turn adjusting screw **1** clockwise to increase the span between the clutch lever and the handlebar grip.
- Turn adjusting screw **1** counter-clockwise to reduce the span between the clutch lever and the handlebar grip.
- Check the and protector. (III 98)

CLUTCH

Adjusting clutch lever



WARNING

Adjusting the clutch lever while riding

Risk of accident

- Adjust the clutch lever only when the motorcycle is at a standstill.

BRAKES

Adjusting handbrake lever



WARNING

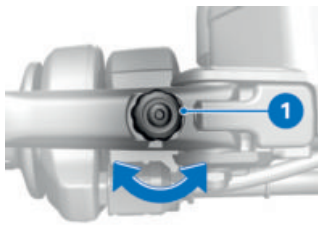
Adjusting the handbrake lever while riding

Risk of accident

- Do not attempt to adjust the handbrake lever unless the vehicle is at a standstill.

84 ADJUSTMENT

 The adjustment lever is easier to move when the handbrake lever is pushed forward.

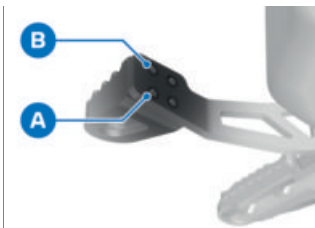


- Turn adjusting screw **1** clockwise to increase the span between the clutch lever and the handlebar grip.
- Turn adjusting screw **1** counter-clockwise to reduce the span between the clutch lever and the handlebar grip.
- Check the and protector.
( 98)

Adjust the footbrake lever peg



- Remove screws **1**.



- Position the foot plate in position **A** or position **B**.
 - » Position **A**: Low foot plate position
 - » Position **B**: High foot plate position



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



Peg to footbrake lever

M6×16

8 Nm

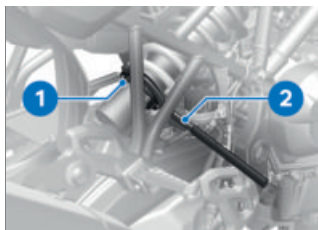
SPRING PRELOAD

Adjustment for rear suspension

It is essential to set spring preload of the rear suspension to suit the load carried by the motorcycle. Increase spring preload when the vehicle is heavily loaded and reduce spring preload accordingly when the vehicle is lightly loaded.

Adjusting spring preload for rear wheel

- Remove the rear seat. (▶▶▶ 77)
- Removing the toolkit.



WARNING

Spring preload setting and spring-strut damping setting not matched.

Impaired handling.

- Adjust spring-strut damping to suit spring preload.

- If you want to increase spring preload, use the toolkit **2** to turn the adjuster **1** clockwise.
- If you want to reduce spring preload, use the toolkit **2** to turn the adjuster **1** anti-clockwise.



Basic setting of the rear spring preload

Level 2 of 10 (One-up without luggage)

Level 5 of 10 (One-up with luggage)

Level 10 of 10 (Two-up with luggage)

- Stow the on-board toolkit in its correct position.
- Install the passenger seat. (▶▶▶ 78)

DAMPING

Effects of damping on drivability

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

86 ADJUSTMENT

Increased compression-stage damping

- Direct handling/drivability.
- Increased response to road conditions.
- Loss of comfort on bumpy or uneven road surfaces.

Reduced compression-stage damping

- Comfortable handling/drivability.
- Reduced response to road conditions.
- Increased vibration tendency.

Increased rebound-stage damping

- Direct handling/drivability.
- Increased response to road conditions.
- Reduced vibration tendency.
- Loss of comfort when driving over series of bumps.

Reduced rebound-stage damping

- Comfortable handling/drivability.
- Reduced response to road conditions.
- Increased vibration tendency.

Adjusting compression-stage damping for front wheel

–with sport suspension^{OE}



- Adjust compression-stage damping by turning adjusting screw **1** on the left fork leg.
- To increase damping: Turn adjusting screw **1** clockwise.
- To reduce damping: Turn adjusting screw **1** counter-clockwise.



Compression stage, basic setting, front

Turn the adjusting screw as far as it will go clockwise, then back it off 10 clicks (Standard)

Adjusting rebound-stage damping for front wheel

–with sport suspension^{OE}



- Adjust rebound-stage damping by turning adjusting screw **1** on the right fork leg.
- To increase damping: Turn adjusting screw **1** clockwise.
- To reduce damping: Turn adjusting screw **1** counter-clockwise.

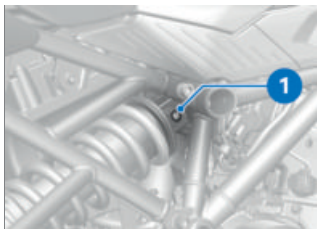


Rebound stage, basic setting, front

Turn the adjusting screw as far as it will go clockwise, then back it off 10 clicks (Standard)

Adjusting damping for rear wheel

- Make sure the ground is level and firm and place the motorcycle on its stand.



- Adjust the damping action by turning adjusting screw **1**.



- Turn the adjusting screw **1** clockwise to harden the damping action.
- Turn the adjusting screw **1** anticlockwise to soften the damping action.



Basic setting of rear-suspension damping characteristic

Turn the adjusting screw to the limit position clockwise, then back it off 10 clicks. (Standard)

RIDING

07

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SAFETY INFORMATION

Rider's equipment

Do not ride without the correct clothing! Always wear

- Helmet
- Suit
- Gloves
- Boots

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



WARNING

Loose textiles, items of luggage or straps snagged by open rotating parts of the vehicle (wheels, drive shaft)

Risk of accident

- Make sure that loosely worn or carried textiles cannot be snagged by openly rotating parts of the vehicle.
- Keep all items of luggage and straps well clear of openly rotating parts of the vehicle.

Vehicle equipment



DANGER

Unauthorised two-up mode

Risk of accident

- Only drive in two-up mode if the vehicle meets all legal requirements.

Loading correctly



WARNING

Handling adversely affected by overloading and imbalanced loads

Risk of falling

- Do not exceed the permissible gross weight and be sure to comply with the instructions on loading.
- Adjust spring preload setting and damping to the total weight.
–with topcase^{OA}
- Note the maximum permissible payload and maximum permissible speed, see also the section entitled "Accessories" (165).



Payload of topcase

max. 3 kg (Accessories)



Maximum speed for riding with a loaded top-case

max. 130 km/h◁

–with tank bag^{OA}

- Note the maximum permissible payload of the tank bag.



Payload of tank rucksack

max. 5 kg



Maximum speed for riding with a loaded tank bag

max. 130 km/h◁

–with rear softbag^{OA}

- Note the maximum payload of the rear softbag.



Payload of rear softbag

max. 5 kg



Maximum speed for riding with a loaded rear bag

max. 130 km/h◁

–With side bag^{OA}

- Note the maximum payload of the side bag.



Maximum load of side bag

max. 5 kg (per bag)



Speed limit for riding with side bag

max. 130 km/h◁

Speed



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



To prevent the tyres from overheating and to extend the service life of your tyres, 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 drivability of your vehicle. They include:

- Setup of the suspension
- Imbalanced load
- Loose clothing
- Insufficient tyre pressure
- Poor tyre tread

92 RIDING

Maximum speed with knobbly tyres or winter tyres



DANGER

Top speed of the motorcycle higher than the permissible tyre maximum speed

Risk of accident due to tyre damage at high speed

- Do not exceed the maximum speed for which the tyres are rated.

Always bear the maximum permissible speed of the tyres in mind when riding a motorcycle fitted with knobbly tyres or winter tyres.

Affix a label stating the maximum permissible speed to the instrument panel in the rider's field of vision.

Risk of poisoning

Exhaust fumes contain carbon monoxide, which is colourless and odourless but highly toxic.



WARNING

Exhaust gases adversely affecting health

Risk of asphyxiation

- Do not inhale exhaust fumes.
- Do not run the engine in an enclosed space.



WARNING

Inhalation of harmful vapours

Health hazard

- Do not inhale vapours from operating fluids and plastics.
- Use the vehicle only outdoors.

Risk of burning



CAUTION

Engine and exhaust system become very hot when the vehicle is in use

Risk of burning

- Always wear helmet, suit, gloves and boots.
- While riding and when you park the vehicle, make sure that no-one and no objects come into contact with the hot engine and exhaust system.

Catalytic converter



ATTENTION

Unburned fuel in catalytic converter

Damage to catalytic converter

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

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

The following guidelines must be observed:

- Do not run the fuel tank dry.
- Do not attempt to start or run the engine with a spark-plug cap disconnected.
- Stop the engine immediately if it misfires.
- Use only unleaded fuel.
- Comply with all specified maintenance intervals.

Risk of overheating



ATTENTION

Engine running for prolonged period with vehicle at standstill

Overheating due to insufficient cooling; in extreme cases vehicle fire

- Do not allow the engine to idle unnecessarily.
- Ride away immediately after starting the engine.

Tampering



ATTENTION

Tampering with the motorcycle (e.g. engine management ECU, throttle valves, clutch)

Damage to the affected parts, failure of safety-relevant functions, voiding of warranty

- Do not tamper with the vehicle in any way that could result in tuned performance.

REGULAR CHECK

Checklist

- At regular intervals, use the checklist below to check your motorcycle.

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When load status changes:

- Adjust the spring preload for the rear wheel. (111 85)
- Adjust the damping for the rear wheel. (111 87)
- with sport suspension^{OE}
- Adjust compression-stage damping at front wheel. (111 86)◁

Always before riding off:

- Check operation of the brake system.
- Check operation of the lights and signalling equipment.
- Check the clutch cable for damage.
- Check operation of the clutch. (111 133)
- Check the tyre tread depth. (111 136)
- Check the tyre pressures. (111 135)
- Check security of luggage.

Every 3rd refuelling stop:

- Check the engine oil level. (111 126)
- Check the brake pad thickness, front brakes. (111 129)
- Check the brake pad thickness, rear brakes. (111 129)
- Check the brake-fluid level, front brakes. (111 131)
- Check the brake-fluid level, rear brakes. (111 132)
- Check the coolant level. (111 134)

- Lubricate the chain. (111 147)
- Check the chain tension. (111 147)

STARTING

Starting engine



ATTENTION

Sufficient gearbox lubrication only with the engine is running.

Gearbox damage

- Do not allow the motorcycle to roll for a lengthy period of time or push it a long distance with the engine switched off.
- Switch on the ignition. (111 68)
- » Pre-Ride-Check and self-diagnoses are performed. (111 95)
- Select neutral or, if a gear is engaged, pull the clutch lever.



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



- Press starter button **1**.

 The start attempt is automatically interrupted if battery voltage is too low. Re-charge the battery before you start the engine, or use jump leads and a donor battery to start.

See the subsection on jump starting in "Maintenance" for more details.



The engine starts.

» If the engine refuses to start, consult the troubleshooting chart in the section entitled "Technical data". (► 180)
—with Easy Ride Clutch^{OE}

» If the 1st gear cannot be engaged, consult the troubleshooting chart in the section entitled "Technical data". (► 180)◁

Pre-Ride-Check and self-diagnosis

The instrument cluster runs a test of the instruments and the indicator and warning lights when the ignition is switched on. During the Pre-Ride-Check, all indicator and warning lights show temporarily.

» If the instrument cluster remains dark after the ignition is switched on, the troubleshooting chart in the Technical Data section can help. (► 182)

» Self-diagnosis checks the functional readiness of the BMW Motorrad ABS and the BMW Motorrad ASC/DTC.



flashes.



slow-flashes.

» The indicator and warning lights go out when a speed of 5 km/h is reached.

» Self-diagnosis has completed.

If an error message appears when self-diagnosis completes:

- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

RUNNING IN

Engine

- Until the running-in check, vary the throttle opening and engine-speed range frequently; avoid riding at constant engine rpm for prolonged periods.
- Try to do most of your riding during this initial period on twisting, fairly hilly roads, avoiding high-speed main roads and highways if possible.
- Comply with the running-in speeds.

	Running-in speed
	<6500 min ⁻¹ (Odometer reading 0...1200 km)
	No full load (Odometer reading 0...1200 km)
	• Note the mileage after which the running-in check should be carried out.
	Mileage until the first running-in check
	500...1200 km

Brake pads

New brake pads have to be run in before they can achieve their optimum frictional force. You can compensate for this initial reduction in braking efficiency by exerting greater pressure on the levers.



WARNING

New brake pads

Longer stopping distance, risk of accident

- Apply the brakes in good time.

Tyres

New tyres have a smooth surface. This must be roughened by riding in a restrained manner at various heel angles until the tyres are run in. This running in procedure is essential if the tyres are to achieve maximum grip.

Read the tyre manufacturer's information on how to run in new tyres correctly.

**WARNING**

New tyres losing grip on wet roads and at extreme bank angles

Risk of accident

- Ride carefully and avoid extremely sharp inclines.

OFF-ROAD USE**After off-riding**

BMW Motorrad recommends checking the following after off-riding:

Tyre pressure**WARNING**

Lower tyre pressure for off-riding in operation on smooth roads

Risk of accident due to impaired driving characteristics.

- Always check that the tyre pressures are correct.

Brakes**WARNING**

Driving on unpaved or dirt roads

Delayed braking efficiency due to soiled brake disks and brake pads.

- Brake early until the brakes are clean.

**ATTENTION**

Riding on unsurfaced or dirty roads

Increased brake pad wear

- Check the thickness of the brake pads more frequently and replace the brake pads in good time.

Spring preload and shock-absorber settings**WARNING**

Changed values for spring preload and spring strut damping for off-riding

Impaired driving characteristics on paved roads

- Before leaving the off-road terrain, set the correct spring preload and shock absorption.

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Wheel rims

BMW Motorrad recommends checking the rims for damage after off-roading.

Air filter element



ATTENTION

Dirty air filter element

Engine damage

- If you ride in dusty terrain check the air filter element for clogging at shorter intervals; clean or replace as necessary.

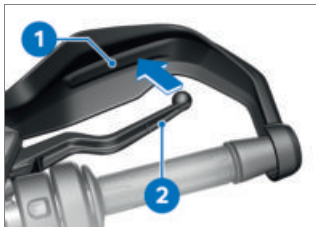
Operation in very dusty conditions (desert, steppes, or the like) necessitates the use of air filter elements specially designed for conditions of this nature.

Checking hand protector

If the hand protector is twisted out of position, a lack of clearance between hand protector and handlebar lever can lead to continuous actuation of the handlebar lever. Clutch or brake malfunctions are possible.

- Check the position of the hand protector and freedom of movement of the hand lever, particularly after the following events:

- Change of ergonomics settings
- Accident or fall
- Inappropriate transport
- Loosened threaded fasteners



- Check the clearance between hand protector **1** and handlebar lever **2** on left and right. If the handlebar lever contacts the hand protector or if the handlebar lever cannot be moved forward easily from its idle position:
- Have the hand protector positioned correctly by a specialist workshop, preferably an authorised BMW Motorrad retailer.

GEAR SHIFT ASSISTANT PRO

- with shift assistant Pro^{OE}

Gear Shift Assistant Pro



- Select the gears in the usual way by using the foot-operated gearshift lever.
 - » The shift assistant assists upshifts and downshifts without the rider having to pull the clutch or close the throttle.
 - This is not an automatic-shift system.
 - The rider is the most important part of the system and decides when to shift gears.
 - The sensor **1** on the gearshift shaft registers the gearshift request and triggers shift assistance.
 - » When riding at a steady speed in a low gear at high engine rpm, an attempt to shift gear without pulling the clutch can cause a severe load-change reaction.
 - BMW Motorrad recommends disengaging the clutch for shifts in these circumstances.
 - It is advisable to avoid using Gear Shift Assistant Pro at engine speeds close to the limits at which the governor cuts in to limit engine rpm.
 - » Shift assistance is not available in the following situations:
 - With clutch lever pulled.
 - Gearshift lever not in its initial position
 - Upshifts with the throttle valve closed (engine overrun) and when slowing.
 - Downshifts with throttle valve open and when accelerating.
 - Once the gearshift has completed, the gearshift lever has to be fully released before another gearshift with the Pro can take place. More detailed information on the Gear Shift Assistant Pro (119).

BRAKES

How can stopping distance be minimised?

Each time the brakes are applied, a load distribution shift takes place with the load shifting forward from the rear to the front wheel. The sharper the motorcycle decelerates, the more load is shifted to the front wheel. The higher the wheel load, the more braking force can be transmitted without the wheel locking.

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To optimise stopping distance, apply the front brakes rapidly and keep on increasing the force you apply to the brake lever. This makes the best possible use of the dynamic increase in load at the front wheel.

In the "emergency braking situations" that are trained so frequently, braking force is applied as rapidly as possible and with the rider's full force applied to the brake levers; under these circumstances the dynamic shift in load distribution cannot keep pace with the increase in deceleration and the tyres cannot transmit the full braking force to the surface of the road.

BMW Motorrad ABS Pro prevents the front wheel from locking up.

Emergency braking

If the motorcycle is braked sharply at a sufficient speed, the brake light flashes rapidly to warn following road users. If you brake until your speed is less than <15 km/h, the hazard warning lights start to flash as well. The hazard warning lights switch off automatically as soon as you start to acceler-

ate and vehicle speed reaches 20 km/h.

Descending mountain passes



WARNING

Braking mostly with the rear brake on mountain descents

Brake fade, destruction of the brakes due to overheating

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

Wet and dirty brakes



WARNING

Wetness and dirt result in diminished braking efficiency

Risk of accident

- Apply the brakes lightly while riding to remove wetness and dirt, or dismount and clean the brakes.
- Think ahead and brake in good time until full braking efficiency is restored.

Wetness and dirt on the brake discs and the brake pads diminish braking efficiency.

Delayed braking action or poor braking efficiency must be reckoned with in the following situations:

- Riding in the rain or through puddles of water.
- After the vehicle has been washed.
- Riding on salted or gritted roads.
- After work has been carried on the brakes, due to traces of oil or grease.
- Riding on dirt-covered surfaces or off-road.

ABS Pro

Physical limits applicable to motorcycling



WARNING

Braking when cornering

Risk of crash despite ABS Pro

- Invariably, it remains the rider's responsibility to adapt riding style to riding conditions.
- Do not take risks that would negate the additional safety offered by this system.

ABS Pro and the assisting function of the Dynamic Brake Con-

trol are available in all riding modes except Enduro PRO.

Possibility of a fall not precluded

Although ABS Pro and Dynamic Brake Control provide the rider with valuable assistance and constitute a huge advance in safety for braking with the motorcycle banked for cornering, they cannot under any circumstances be considered as re-defining the physical limits that apply to motorcycling. It is still possible for these limits to be overshoot due to misjudgement or rider error. In extreme cases this can result in a crash.

Use on public roads

ABS Pro and Dynamic Brake Control help make the motorcycle even safer for riding on public roads. When the brakes are applied because of an unforeseen hazard when the motorcycle is banked for cornering, within the physical limits that apply to motorcycling the ABS Pro system prevents the wheels from locking and skidding away. In emergency braking, Dynamic Brake Control increases the braking effect and intervenes if the throttle grip is

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accidentally turned during braking.

 ABS Pro was not developed to enhance individual braking performance with the motorcycle banked into corners.

PARKING YOUR MOTORCYCLE

Side stand

- Switch off the ignition.
( 68)



ATTENTION

Poor ground underneath the stand

Risk of damage to parts if vehicle topples

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



ATTENTION

Additional weight placing strain on the side stand

Risk of damage to parts if vehicle topples

- Do not sit or lean on the vehicle while it is propped on the side stand.
- Extend the side stand and prop the motorcycle on the stand.

- Turn the handlebars all the way to the left.
- On a gradient, the motorcycle should always face uphill; select 1st gear.
—with Easy Ride Clutch^{OE}



CAUTION

Rolling away of the parked vehicle

Danger 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.



Thanks to the operating principle of the ERC, the motorcycle can also roll with the gear engaged.

- See the Engineering details ( 120) section for more information on ERC.<

REFUELLING

Fuel grade Requirement

For optimum fuel consumption, fuel should be sulphur-free or as low-sulphur as possible.

**ATTENTION****Engine operation with leaded fuel**

Damage to catalytic converter

- Do not attempt to run the vehicle on leaded fuel or fuel with metallic additives (e.g. manganese or iron).

- Observe the maximum ethanol content of the fuel.



Fuel additives clean the fuel injection system and the combustion zone. It is advisable to use fuel additives when the engine is operated with low-grade fuel or if the vehicle is to be out of use for a lengthy period of time. More information is available from your authorised BMW Motorrad retailer.



Recommended fuel grade



Premium unleaded (max. 10 % ethanol, E10)



95 ROZ/RON
90 AKI

–With national-market version, India^{NV}



Recommended fuel grade

Premium unleaded (max. 25 % ethanol, E15/E25)
95 ROZ/RON
90 AKI◁



Alternative fuel grade

E5 Regular unleaded (power- and consumption-related restrictions.)
E10 (max. 10 % ethanol, E10)
91 ROZ/RON
87 AKI

–With national-market version, India^{NV}

Regular unleaded (power- and consumption-related restrictions.) (max. 25 % ethanol, E15/E20/E25)
91 ROZ/RON
87 AKI◁

» Pay attention to the following symbols in the fuel filler cap and on the fuel pump:



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Refuelling



WARNING

Fuel is highly flammable

Risk of fire and explosion

- Do not smoke. Never bring a naked flame near the fuel tank.



WARNING

Escape of fuel due to heat-induced expansion if fuel tank is overfilled

Risk of falling

- Do not overfill the fuel tank.



ATTENTION

Wetting of plastic surfaces by fuel

Damage to the surfaces (surfaces become unsightly or dull)

- Clean plastic surfaces immediately after contact with fuel.
- Make sure the ground is level and firm and place the motorcycle on its side stand.



- Open protective flap **1**.
- Unlock the cap of the fuel tank by turning vehicle key **2** clockwise in the lock and pop the cap open.



- Do not fill the tank past the bottom edge of the filler neck.



When refuelling after running on reserve, make sure that you top up the tank to a level above reserve, so that the new level is detected and the fuel reserve indicator light is switched off.



The "usable fuel capacity" specified in the technical data is the quantity that the fuel tank could hold if refilled

after it had been run dry and the engine had cut out due to a lack of fuel.



Usable fuel capacity

approx. 14 l



Reserve fuel

approx. 2.5 l

- Press the fuel tank cap down firmly to close.
- Remove the ignition key and close the protective cap.

SECURING MOTORCYCLE FOR TRANSPORTATION

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



ATTENTION

Vehicle topples to side when being lifted on to stand

Risk of damage to parts if vehicle topples

- Secure the vehicle to prevent it toppling, preferably with the assistance of a second person.
- Push the motorcycle on to the transportation flat and hold it in position: do not place it on the side stand or centre stand.



ATTENTION

Trapping of components

Component damage

- Do not trap components such as brake lines or cable legs.
- At the front, secure the straps to the bottom fork bridge on both sides and tighten the straps.



- At the rear, secure the straps to the rear frame on both sides and tighten the straps.
- Uniformly tighten all the straps.

ENGINEERING DETAILS

08

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GENERAL NOTES

To find out more about engineering, go to bmw-motorrad.com/technik.

ANTILOCK BRAKE SYSTEM (ABS)

How does ABS work?

The amount of braking force that can be transferred to the road depends on factors that include the coefficient of friction of the road surface. Loose stones, ice and snow or a wet road all have much lower coefficients of friction than a clean and dry asphalt surface. The lower the coefficient of friction, the longer the stopping distance.

If the rider increases braking pressure to the extent that braking force exceeds the maximum transferable limit, the wheels start to lock and the vehicle loses its directional stability; a fall is imminent. Before this situation can occur, ABS intervenes and adapts braking pressure to the maximum transferable braking force. The wheels continue to turn and the driving stability is retained irrespective of the road condition.



The default factory setting is ABS deactivated for the rear wheel when the ENDURO PRO riding mode is active.

What are the effects of surface irregularities?

Surface irregularities can cause the wheels to lose contact temporarily with the road surface. If this happens the braking force that can be transmitted to the road can drop to zero. If the brakes are applied under these circumstances the ABS has to reduce braking force to ensure that directional stability is maintained when the wheels regain contact with the road surface. At this instant the ABS must assume an extremely low coefficient of friction (gravel, ice, snow), so that the wheels will continue to rotate under all imaginable circumstances, because this is the precondition for ensuring directional stability. As soon as it registers the actual circumstances, the system reacts instantly and adjusts braking force accordingly to achieve optimum braking.

Rear wheel lift

Under very severe and sudden deceleration, however, under certain circumstances it is possible that the BMW Motorrad will be unable to prevent the rear wheel from lifting clear of the ground. If this happens the outcome can be a highsiding situation in which the motorcycle can flip over.



WARNING

Rear wheel lift due to severe braking

Risk of falling

- When you brake sharply, bear in mind that ABS control cannot always be relied on to prevent the rear wheel from lifting clear of the ground.

What is the design baseline for BMW Motorrad ABS?

Within the limits imposed by physics, the BMW Motorrad ABS ensures directional stability on any surface.

At speeds above 4 km/h, within the limits imposed by physics the BMW Motorrad ABS can ensure directional stability on any surface. Limitations inherent to the design principle mean that at lower speeds the BMW Motorrad ABS cannot provide optimum assistance on all surfaces.

The system is not optimised for special requirements that apply under extreme competitive conditions off-road or on the track.

Special situations

The speeds of the front and rear wheels are compared as one means of detecting a wheel's incipient tendency to lock. If the system registers implausible values for a lengthy period the ABS function is deactivated for safety reasons and an ABS fault message is issued. Self-diagnosis has to complete before fault messages can be issued. In addition to problems with the BMW Motorrad ABS, exceptional riding conditions can lead to a fault message being issued:

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- Riding for a lengthy period with the front wheel lifted off the ground (wheelie).
- Rear wheel rotating with the vehicle held stationary by application of the front brake (burn-out).
- Heating up with the motor-cycle on the centre stand or an auxiliary stand, engine idling or with a gear engaged.
- Rear wheel locked by the electrical machine's braking moment for a lengthy period, for example while descending on a loose or slippery surface.

If a fault message is issued on account of exceptional riding conditions, you can reactivate the ABS function by switching the ignition off and on again.

What significance devolves on regular servicing?



WARNING

Brake system not regularly serviced

Risk of accident

- In order to ensure that the BMW Motorrad ABS is always maintained in optimum condition, it is essential for you to comply strictly with the specified inspection intervals.

Safety reserves

The potentially shorter braking distances which BMW Motorrad ABS permits must not be used as an excuse for careless riding. The system is primarily a means of ensuring a safety margin in genuine emergencies.

Take care when cornering!

When you apply the brakes on a corner, the vehicle's weight and momentum take over and even BMW Motorrad ABS is unable to counteract their effects.

Evolution of ABS to ABS Pro

Until now, BMW Motorrad ABS has helped ensure a very high degree of safety for braking with the motorcycle upright and travelling in a straight line. Now ABS Pro offers enhanced safety for braking in corners as well. ABS Pro prevents the wheels from locking even under sharp braking. ABS Pro reduces abrupt changes in steering force, particularly in shock-braking situations, counteracting the vehicle's otherwise natural but undesirable tendency to straighten up.

ABS intervention

Technically speaking, depending on the riding situation ABS Pro adapts ABS intervention to the motorcycle's bank angle. Signals for rate of roll and rate of yaw and lateral acceleration are used to calculate bank angle. As the motorcycle is heeled over more and more as it banks into a corner, an increasingly strict limit is imposed on the brake-pressure gradient for the start of brake application. This slows the build-up of brake pressure to a corresponding degree. Addi-

tionally, pressure modulation is more uniform across the range of ABS intervention.

Advantages for the rider

The advantages of ABS Pro for the rider are sensitive response and high braking and directional stability combined with best-case deceleration of the motorcycle, even when cornering.

DYNAMIC TRACTION CONTROL (DTC)

How does traction control work?

Traction control compares the front and rear wheel circumferential velocities. The differential is used to compute slip as a measure of the reserves of stability available at the rear wheel. If slip exceeds a certain limit, the electrical machine management system intervenes and adapts torque accordingly. DTC factors in the lean angle and uses this 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

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the rider affects DTC control can be considerable (weight shifts when cornering, items of luggage loose on the vehicle), especially when the style of riding takes rider and machine close to the limits imposed by physics.

Activate ENDURO riding mode for off-roading. This mode delays DTC intervention slightly in order to permit controlled drifting.

The system is not optimised for special requirements that apply under extreme competitive conditions off-road or on the track. The BMW Motorrad DTC can be deactivated in these cases.



WARNING

Risky riding

Risk of accident despite DTC

- Invariably, the rider bears responsibility for assessing road and traffic conditions and adopting his or her style of riding accordingly.
- Do not take risks that would negate the additional safety offered by this system.

Special situations

In accordance with the laws of physics, the ability to accelerate is restricted more and more as the angle of heel increases. Consequently, there can be a perceptible reduction in acceleration out of very tight bends.

The speeds of the front and rear wheels are compared and the angle of heel taken into account as one means of detecting the rear wheel's incipient tendency to spin or slip sideways.

If the electronic processor receives values for the bank angle that it considers implausible over a lengthy period, a dummy value is used for the bank angle or the DTC function is switched off. Under these circumstances the indicator for a DTC fault shows. Self-diagnosis has to complete before fault messages can be issued.

The BMW Motorrad Traction Control can shut down automatically under the exceptional riding conditions outlined below.

Exceptional riding conditions:

- Riding for a lengthy period with the front wheel lifted off the ground (wheelie).
- Rear wheel rotating with the vehicle held stationary by application of the front brake (burn-out).
- Heating up with the motorcycle on an auxiliary stand, in neutral or with a gear engaged.

Accelerating the motorcycle to a defined minimum speed after switching the ignition off and then on again reactivates the DTC after a fault.



Minimum speed for activation of DTC

min. 5 km/h

If the front wheel lifts clear of the ground under severe acceleration, the DTC reduces engine torque in the RAIN and ROAD riding modes until the front wheel regains contact with the ground.

The ENDURO and ENDURO PRO riding modes are set up for off-road riding and are not suitable for on-road riding.

Front wheel lift-off detection allows brief wheelies in the ENDURO riding mode.

In ENDURO PRO riding mode, front wheel lift-off detection is switched off.

BMW Motorrad recommends turning the throttle grip back slightly when lifting the front wheel in order to reach a stable driving condition again as soon as possible.

In RAIN, ROAD and ENDURO riding modes, the DTC setting corresponds to the riding mode.

DTC can be adjusted to different settings in the ENDURO PRO riding mode.

DYNAMIC ENGINE BRAKE CONTROL

How does dynamic engine brake control work?

The purpose of dynamic engine brake control is to prevent the unstable riding states that can be produced by excessive engine braking moment acting on the rear wheel. Depending on the road condition and riding dynamic, excessive braking torque can produce a sharp rise in rear-wheel slip and impair directional stability. Dynamic engine brake control limits this slip at the rear wheel to a safe, mode-dependent regulated slip.

Causes for excessive slip at the rear wheel:

- Riding with engine overrun on a surface with a low coefficient of friction (e.g. wet leaves).
- Rear-wheel hop when rider downshifts.
- Sharp braking during sporty riding.

In the same way as dynamic traction control BMW Motorrad DTC, engine drag torque control compares the wheel circumferential velocities of the front and rear wheels calculated from the wheel speeds and the tyre radius. Dynamic engine brake control uses this differential to compute slip as a measure of the reserve of stability available at the rear wheel.

If slip overshoots the applicable limit value, the throttle valves are opened very slightly to increase engine torque. Slip is reduced and the vehicle is stabilised.

RIDING MODE

Selection

To adjust the motorcycle to the road condition and the desired driving experience, the following riding modes can be selected:

Standard

- RAIN
- ROAD (default mode)
- ENDURO

–with riding modes Pro^{OE}
with riding modes Pro
 –ENDURO PRO

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

In driving mode ENDURO PRO, the throttle response, ABS and DTC can be individually adjusted. (► 75)

DTC can be switched off in each riding mode. The explanations below always refer to the dynamic safety systems that are switched 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 adjusted individually (► 75).

ABS

 The default factory setting is ABS deactivated for the rear wheel when the ENDURO PRO riding mode is active.

Adjustment

- RAIN and ROAD: The ABS setting corresponds to ROAD riding mode.
- ENDURO and ENDURO PRO: The anti block system setting corresponds to the respective riding mode.

Tuning setup

- RAIN and ROAD: The ABS is set up for on-road riding.
- ENDURO: The ABS is set up for off-road riding with road tyres.
- ENDURO PRO: If the rider operates the footbrake lever, there is no ABS control on the rear wheel. The ABS is set up for off-road riding with cleated tyres.

Rear-wheel lift-off detection

- RAIN and ROAD: The rider receives maximum assistance from the rear wheel lift-off detection.
- ENDURO: Rear wheel lift-off detection provides reduced assistance and allows the rear wheel to lift off slightly.
- ENDURO PRO: Rear-wheel lift detection is inactive.

ABS Pro

- RAIN and ROAD: ABS Pro is fully available.
- ENDURO: The support of ABS Pro is reduced compared to RAIN and ROAD.
- ENDURO PRO: ABS Pro is not available in the default setting.

DTC

Tyres

- RAIN and ROAD: The DTC is set up for on-road riding with road tyres.
- ENDURO: DTC is set up for off-road riding with road tyres.
- ENDURO PRO: DTC is set up for off-road riding with cleated tyres.

Riding stability

- RAIN: DTC intervenes at an early stage to achieve maximum riding stability.

- ROAD: DTC intervenes later than in RAIN riding mode. This prevents the rear wheel from spinning whenever 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 when exiting corners are possible.
- ENDURO PRO: DTC control assumes that cleated tyres are used for off-road riding. DTC intervenes later than in ENDURO riding mode.
- In ENDURO PRO riding mode front-wheel lift-off detection is deactivated, so that wheelies of any length and angle are possible. In extreme cases, the vehicle can flip over backwards!

Effect of dynamic engine brake control

- RAIN and ROAD: Maximum stability.
- ENDURO: Reduced stability.
- with riding modes Pro^{OE}
- Engine drag torque control is inactive in ENDURO PRO.

DYNAMIC BRAKE CONTROL

How Dynamic Brake Control works

-  The Dynamic Brake Control function is inactive in riding mode ENDURO PRO.
-  When ABS is switched off, the Dynamic Brake Control function is switched off as well.

The Dynamic Brake Control function assists the rider in emergency braking situations.

Detection of emergency braking

- Sudden, sharp application of the front brake is interpreted as emergency braking.

Behaviour in emergency braking

- If emergency braking occurs at a speed in excess of 10 km/h, the ABS function is further assisted by Dynamic Brake Control.

Behaviour during accidental actuation of the throttle grip

- If the throttle is accidentally opened (throttle grip position > 5 %) during emergency braking, Dynamic Brake Control ensures the desired braking effect by ignoring actuation of the throttle grip. The

effectiveness of emergency braking is ensured.

- If the throttle is closed (throttle grip position < 5 %) while Dynamic Brake Control is in action, the engine torque requested by the ABS brake system is restored.
- If hazard braking ceases and the rider still has not changed the position of the throttle grip, Dynamic Brake Control steadily ramps engine torque back to the rider's requested level.

GEAR SHIFT ASSISTANT

-with shift assistant Pro^{OE}

Gear Shift Assistant Pro

Your vehicle is equipped with Gear Shift Assistant Pro, a system originally developed for racing and now adapted for the touring sector. It permits upshifts and downshifts without declutching or closing the throttle in virtually all load and rpm ranges.

The engine control system supports gear changes as a function of:

- Requested gear
- Engine rpm
- Position of the throttle twist-grip

The rider bears responsibility for use of the shift assistant and must take the riding situation and safety and comfort aspects duly into consideration.

Advantages

- A large proportion of gearshifts can be carried out without using the clutch.
- Less relative movement between rider and passenger because the shift pauses are shorter.
- It is not necessary to close the throttle twistgrip when shifting under acceleration.
- When downshifting (throttle twistgrip closed), engine speed is adjusted by blipping the throttle.
- Shift time is shorter than a gearshift with clutch actuation.

The rider indicates a gearshift request by moving the gearshift lever from what was an untouched position at normal to snappy speed in the appropriate direction and following this movement through to the mechanical limit position of the

gearshift operation. Once the gearshift has completed the shift lever has to be fully released before another gearshift with the Pro shift assistant can take place. In order to optimise shift quality when shifting gears with the Gear Shift Assistant Pro, the rider has to keep load state (throttle twistgrip position) constant before and during the gearshift. The Gear Shift Assistant Pro provides no assistance for gearshifts when the rider declutches.

Downshifting

–Downshifting is assisted until maximum rpm for the target gear to be selected is reached. This prevents over-revving.



Maximum engine speed

max. 10000 min⁻¹

Upshifting

–Upshifting is possible until engine speed drops below idle speed in the target gear. This prevents the engine from dropping below idle speed.
–On account of the operating principle, a certain loss of comfort and perceptibly sharper load-change reactions

can be experienced if the system is used for upshifts on overrun, particularly in low gears.

EASY RIDE CLUTCH

–with Easy Ride Clutch^{OE}

Easy Ride Clutch (ERC)

The ERC is a centrifugal clutch and allows you to drive off without actuating the clutch lever.

The ERC is always open when stationary. The motorcycle can also be pushed with the gear engaged. To make it easier to push, e.g. when manoeuvring, change into neutral.

Driving off is carried out by opening the throttle grip when the gear is engaged. When the clutch engagement speed is reached, the centrifugal unit closes the ERC. If the engine speed for pulling away 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 clutch engagement speed. The engine braking torque is comparable to a conventional clutch. When the idle speed is approached, the ERC opens so as not to stall the vehicle. If the vehicle rolls downhill with the gear engaged, for example, the ERC closes and engine braking torque is available. While driving, the clutch lever can be used to manually engage and disengage the clutch.

MAINTENANCE

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GENERAL NOTES

The Maintenance chapter describes straightforward procedures for checking and replacing certain wear parts.

Special tightening torques are listed as applicable. The tightening torques for the threaded fasteners on your vehicle are listed in the section entitled "Technical data".

Some of the work calls for special tools and a thorough knowledge of the technology involved. If in doubt consult a specialist workshop, preferably an authorised BMW Motorrad retailer.

Microencapsulated screws

The microencapsulation is a chemical thread-locker. An adhesive compound creates a secure connection between bolt and nut or between screw and component. Consequently, microencapsulated screws are for once-only use and are not intended for re-installation after being slackened.

Regardless of whether the procedure involves removal or installation, the threaded bore always has to be cleaned. After removal of the screw, clean

the internal thread to remove all traces of thread-locking compound. Always use new microencapsulated screws when re-assembling. Before removal, make sure that you have suitable tools for cleaning the thread and a new replacement screw. If the job is not done correctly there is no guarantee that the screw will remain secure, which means that you would be putting yourself at risk!

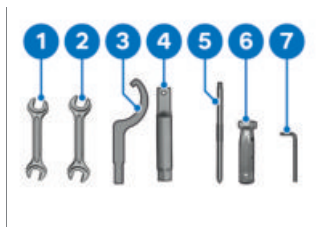
Non-reusable cable ties

Non-reusable cable ties are used at some points to secure cables and lines. To prevent damage to cables and lines when these items are being removed, it is essential to use a suitable tool, for example diagonal cutting pliers, for their removal.

Cables and lines detached beforehand by the removal of non-reusable cable ties have to be re-secured with new non-reusable cable ties.

Use cable-tie clippers to clip off the excess length of the cable ties.

TOOLKIT



- 1** Open-ended spanner
Width across flats 12/
14 mm
–Adjust the chain tension.
(147)
- 2** Open-ended spanner
Width across flats 10/
16 mm
–Adjust the mirror arm.
(82)
–Remove the battery.
(155)
- 3** Hook wrench
–Adjust the spring pre-
load for the rear wheel.
(85)
- 4** Extension for hook
wrench and ring spanner
- 5** Reversible screwdriver
blade with cross heads
- 6** Screwdriver handle
- 7** Allen key
5 mm

- 7** –Adjust headlight beam
throw. (83)

FRONT-WHEEL STAND

Installing front-wheel stand



ATTENTION

Use of the BMW Motorrad front-wheel stand without also using the auxiliary stand

Risk of damage to parts if vehicle topples

- Place the motorcycle on an auxiliary stand before lifting the front wheel with the BMW Motorrad front-wheel stand.
- Make sure the motorcycle is standing firmly.
- Place the motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad auxiliary stand.
- Install the rear-wheel stand.
(126)

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- See the instructions issued with the front-wheel stand for the details of the correct procedure for installation.
- BMW Motorrad offers an auxiliary stand suitable for every vehicle. Your BMW Motorrad retailer will be happy to help you with the selection of a suitable auxiliary stand.

REAR-WHEEL STAND

Install the rear-wheel stand



- The description of how to fit the rear-wheel stand correctly will be found in the instructions for the stand.
- BMW Motorrad offers an auxiliary stand suitable for every

vehicle. Your BMW Motorrad retailer will be happy to help you with the selection of a suitable auxiliary stand.

ENGINE OIL

Checking engine oil level

 To avoid unnecessary environmental impact, BMW Motorrad recommends checking the engine oil after riding min. 50 km.



ATTENTION

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

Engine damage due to incorrect oil filling

- Check the oil level only after a lengthy ride or when the engine is at operating temperature.
- Wipe the area around the oil filler opening clean.
- Allow the engine to idle until the fan starts up, then allow it to idle one minute longer.
- Switch off the engine.

**ATTENTION****Vehicle toppling sideways**

Risk of damage to parts if vehicle topples

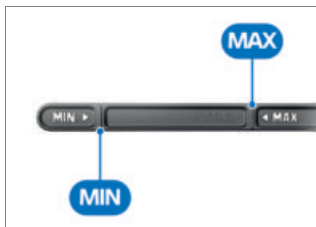
- Secure the vehicle, preferably with the assistance of a second person, so that it cannot topple sideways.
- Make sure the engine is at operating temperature and hold the motorcycle upright. BMW Motorrad recommends using a suitable auxiliary stand.



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



- Use a dry cloth to wipe gauge length **2** clean.
- Seat the oil dipstick on the oil filler neck, but do not engage the threads. Turn the dipstick one full turn backward to make the oil level easier to read.
- Remove the oil dipstick and check the oil level.



Engine oil, specified level

Between **MIN** and **MAX** marks

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Engine oil, quantity for topping up

max. 0.5 l (Difference between **MIN** and **MAX**)

If the oil level is below the **MIN** mark:

- Topping up the engine oil.
(128)

If the oil level is above the **MAX** mark:

- Have the oil level corrected by a specialist workshop, preferably an authorised BMW Motorrad retailer.
- Install the oil dipstick.

Topping up engine oil

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Wipe the area around the filler neck clean.



- Remove oil dipstick **1**.



ATTENTION

Use of insufficient engine oil or too much engine oil

Engine damage due to incorrect oil filling

- Always make sure that the engine oil level is correct.

- Top up the engine oil to the specified level.
- Check the engine oil level.
(126)
- Install the oil dipstick.

BRAKE SYSTEM

Check operation of the brakes

- Pull the handbrake lever.
 - » The pressure point must be clearly perceptible.
- Press the footbrake lever.
 - » The pressure point must be clearly perceptible.

If pressure points are not clearly perceptible:

**ATTENTION**

Work on brake system not in compliance with correct procedure

Risk to operational reliability of the brake system

- Have all work on the brake system undertaken by trained and qualified specialists.

- Have the brakes checked by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Checking brake pad thickness, front brakes

- Make sure the ground is level and firm and place the motorcycle on its stand.



- Visually inspect the left and right brake pads to ascertain their thickness. Viewing direction: between wheel and front

suspension toward the brake caliper **1**.



Brake-pad wear limit, front

min. 4 mm (Friction lining with carrier plate)

If the wear indicating marks are no longer clearly visible:

**WARNING**

Brake-pad thickness less than permissible minimum

Diminished braking effect, damage to the brakes

- In order to ensure the dependability of the brake system, do not permit the brake pads to wear past the minimum permissible thickness.

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

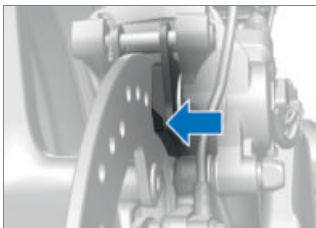
Checking brake pad thickness, rear brakes

- Make sure the ground is level and firm and place the motorcycle on its stand.

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- Visually inspect the brake pads to ascertain their thickness. Viewing direction: from the rear toward brake caliper 1.



Brake-pad wear limit,
rear

min. 4.3 mm (Friction lining with carrier plate. The wear marks, i.e. the chamfers, must be clearly visible.)

If the brake pads are worn:

**WARNING****Brake-pad thickness less than permissible minimum**

Diminished braking effect, damage to the brakes

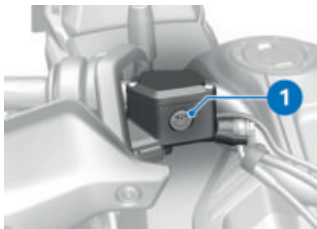
- In order to ensure the dependability of the brake system, do not permit the brake pads to wear past the minimum permissible thickness.
- Have the brake pads replaced by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Checking brake-fluid level, front brakes**WARNING****Not enough brake fluid in brake fluid reservoir, or contaminants in brake fluid**

Considerably reduced braking power due to presence of air, contaminants or water in the brake system

- Cease operation of the vehicle immediately and do not ride it until the fault has been rectified.
- Check the brake-fluid levels at regular intervals.
- Always make sure that the lid of the brake fluid reservoir and the area around the lid are cleaned before opening.
- Make sure that only fresh brake fluid from a sealed container is used.
- Make sure the ground is level and firm and hold the motorcycle upright.
- Move the handlebars to the straight-ahead position.

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



Wear of the brake pads causes the brake fluid level in the reservoir to sink.



Brake fluid level, front

Brake fluid, DOT4

You should never allow the brake fluid level to drop below the **MIN** mark. (Brake-fluid reservoir horizontal, motorcycle upright)

If the brake fluid level drops below the permitted level:

- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Checking brake-fluid level, rear brakes



WARNING

Not enough brake fluid in brake fluid reservoir, or contaminants in brake fluid

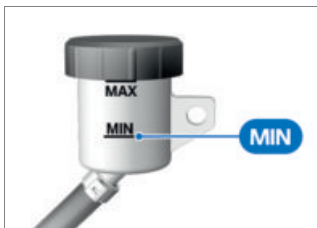
Considerably reduced braking power due to presence of air, contaminants or water in the brake system

- Cease operation of the vehicle immediately and do not ride it until the fault has been rectified.
 - Check the brake-fluid levels at regular intervals.
 - Always make sure that the lid of the brake fluid reservoir and the area around the lid are cleaned before opening.
 - Make sure that only fresh brake fluid from a sealed container is used.
-
- Make sure the ground is level and firm and hold the motorcycle upright.



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

 Wear of the brake pads causes the brake fluid level in the reservoir to sink.



 Brake fluid level, rear (visual inspection)

Brake fluid, DOT4

You should never allow the brake fluid level to drop below the **MIN** mark.

If the brake fluid level drops below the permitted level:

- Have the fault rectified as quickly as possible by a specialist workshop, preferably an

authorised BMW Motorrad retailer.

CLUTCH

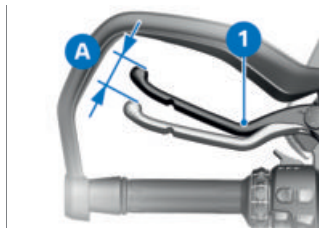
Checking operation of the clutch

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

If the pressure point is not clearly perceptible:

- Have the clutch checked by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Checking the clutch cable



- Repeatedly pull clutch lever **1** tight against the grip.
 - Operate clutch lever **1** lightly until resistance can be felt, while observing the clutch cable play **A**.
- with Easy Ride Clutch^{OE}

 The clutch cable play may vary depending on the rotational speed. Check the clutch cable play while station-

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ary when the engine is not running and adjust it if necessary.◁



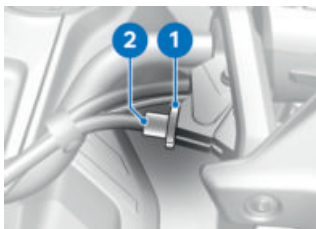
Clutch cable play

3...5 mm (at the outer end of the handlebar lever, handlebars in straight-ahead position, engine cold)

Clutch cable play is out of tolerance:

- Adjust clutch cable play.
(▶▶ 134)

Adjusting clutch cable play



- Loosen lock nut **1**.
- To increase clutch cable play: Tighten adjusting screw **2** into the handlebar fitting.
- To reduce clutch cable play: Back off adjusting screw **2** in the handlebar fitting.

 The distance between locknut and adjusting nut (measured at the inside) must be no more than 8 ± 1.5 mm. Consult a specialist workshop, preferably an authorised

BMW Motorrad Retailer, should it only be possible to set the correct clutch cable play by unscrewing further.

- Check the clutch cable.
(▶▶ 133)
- Tighten locknut **1** while counter-holding adjusting screw **2**.

COOLANT

Check the coolant level

- Make sure the ground is level and firm and position the motorcycle upright.
- Turn the handlebars all the way to the right.



- Check the coolant level in expansion tank **1**.



Specified coolant level

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

If the coolant drops below the permitted level:

- Top up the coolant.

Topping up coolant



WARNING

Opening radiator cap

Risk of burning

- Do not open the radiator cap when the system is hot.
- Check and, if necessary, top up the coolant in the expansion tank only.



- Open cap **1** of the expansion tank.
- Using a suitable funnel, top up with coolant until the level is correct.
- Check the coolant level. (→ 134)
- Close cap **1** of the expansion tank.

TYRES

Checking tyre pressures



WARNING

Incorrect tyre pressure

Impaired handling characteristics of the motorcycle, shorter useful tyre life

- Always check that the tyre pressures are correct.



WARNING

Tendency of valve inserts installed vertically to open by themselves at high riding speeds

Sudden loss of tyre pressure

- Install valve caps fitted with rubber sealing rings and tighten firmly.

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Check tyre pressures against the data below.



Tyre pressure, front

1.7 bar (One-up, tyre cold)

1.7 bar (Riding with passenger and/or luggage, with cold tyres)



Tyre pressure, rear

1.9 bar (One-up, tyre cold)

2.2 bar (Riding with passenger and/or luggage, with cold tyres)

With incorrect tyre pressure:

- Correct tyre pressure.

Check the tyre tread depth



WARNING

Riding with badly worn tyres

Risk of accident due to impaired handling

- If applicable, have the tyres changed in good time before they wear to the minimum tread depth permitted by law.

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Measure the tyre tread depth in the main tread grooves with wear marks.



Each tyre has wear indicators integrated

into the main tread grooves.

The tyre has reached its wear limit when the tread has worn

down to the level of the wear indicators. The locations of the marks are indicated on the edge of the tyre, e.g. by the letters TI, TWI or by an arrow.

If the tyre tread is worn to minimum:

- Replace tyre or tyres, as applicable.

WHEEL RIMS

Checking rims

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Visually inspect the rims for defects.
- If damage is suspected, have the rims checked and, if necessary, replaced by a specialist workshop, preferably an authorised BMW Motorrad retailer.

WHEELS

Effect of wheel size on chassis and suspension control systems

Wheel size is very important as a parameter for the ABS running-gear control system. In particular, the diameter and the width of a vehicle's wheels are programmed into the control unit and are fundamental to all calculations. Any change in these influencing variables, caused for example by a switch to wheels other than those installed ex-works, can have serious effects on the performance of the control systems.

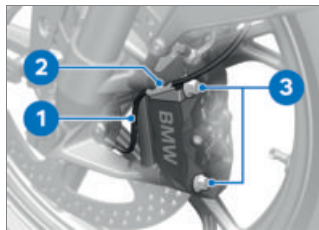
The sensor rings are essential for correct road-speed calculation, and they too must match the motorcycle's control sys-

tems and consequently cannot be changed.

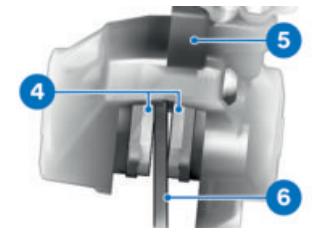
If you decide that you would like to fit non-standard wheels to your motorcycle, it is very important to consult a specialist workshop beforehand, preferably an authorised BMW Motorrad retailer. In some cases, the data programmed into the control units can be changed to suit the new wheel sizes.

Removing front wheel

- Make sure the ground is level and firm and place the motorcycle on its stand.



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



- Force brake pads **4** slightly apart by rocking brake caliper **5** back and forth against brake disc **6**.



ATTENTION

Use of hard or sharp-edged objects in proximity to component

Component damage

- Take care not to scratch components; cover or mask as necessary.
- Mask off the part of the wheel rim that could be scratched in the process of removing the brake caliper.

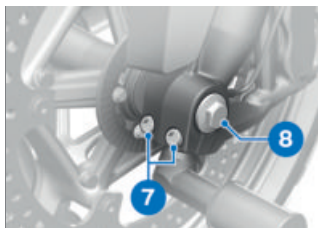


ATTENTION

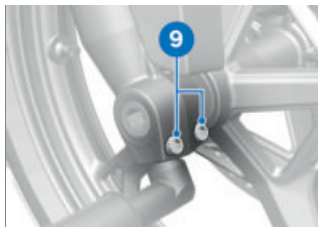
Unwanted inward movement of the brake pads

Component damage on attempt to install the brake caliper or because brake pads have to be forced apart

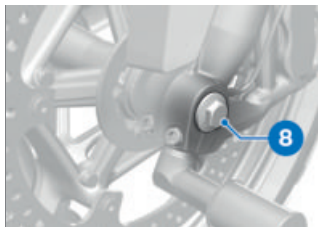
- Do not operate the brakes with a brake caliper not correctly secured.
- Carefully pull the brake caliper back and out until clear of the brake disc.
- Place the motorcycle on a suitable auxiliary stand.
- Install the rear-wheel stand. (126)
- Raise front of motorcycle until the front wheel can turn freely. BMW Motorrad recommends the BMW Motorrad front-wheel stand for lifting the motorcycle.
- Install the front-wheel stand. (125)



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



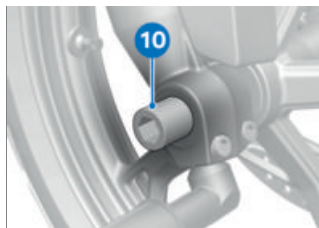
- Loosen the clamping bolts **9** on the right.



- Press quick-release axle with screw **8** slightly toward the inside, so as to be better able

to grip it on the right-hand side.

- Remove screw **8**.



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

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



- Remove spacing bushing **11** from the left-hand side of the wheel hub.

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Installing front wheel

WARNING

Use of a non-standard wheel

Malfunctions in operation of ABS and DTC

- See the information on the effect of wheel size on the ABS and DTC systems at the start of this chapter.

ATTENTION

Tightening threaded fasteners to incorrect tightening torque

Damage, or threaded fasteners work loose

- Always have the security of the fasteners checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.



- Lubricate the running surface of spacer bush **11**.



Lubricant

Unirex N3 wheel bearing grease

- Insert spacer bushing **14**, turned with the collar facing out, into the wheel hub on the left-hand side.

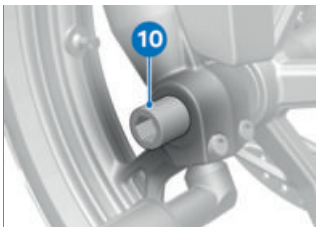


ATTENTION

Front wheel installed wrong way round

Risk of accident

- Note direction-of-rotation arrows on tyre or rim.
 - Roll the front wheel into position between the forks of the front suspension.
-  When removing and installing the wheel, do not damage the wheel speed sensor.



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



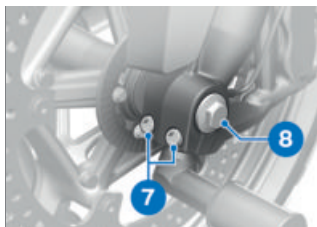
Lubricant

Unirex N3 wheel bearing grease

**WARNING****Improper installation of the quick-release axle**

Loosening of the front wheel

- After securing the brake calipers and relieving the front forks, tighten the quick-release axle and the axle clamping to the specified tightening torque.
- Raise the front wheel and insert quick-release axle **10** until seated.



- Install axle screw **8** and tighten to the specified torque. In this process, counter-hold the quick-release axle on the right side.

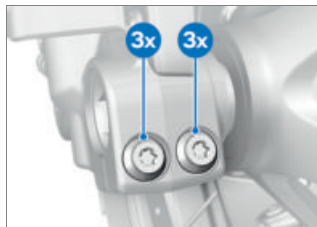


Axle screw in front quick-release axle

M12×20

50 Nm

- Remove front-wheel stand and firmly compress front forks several times. Do not operate the handbrake lever in this process.
- Install the front-wheel stand. (111 ▶ 125)
- Tighten left axle clamping screws **7** to the specified torque.



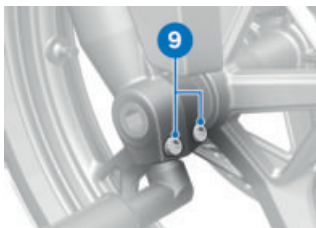
Clamp of quick-release axle

Tightening sequence: Tighten screws six times in alternate sequence

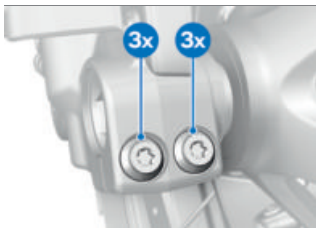
M8×30

19 Nm

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



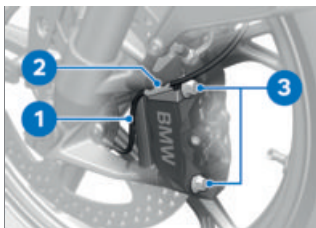
Clamp of quick-release axle

Tightening sequence: Tighten screws six times in alternate sequence

M8×30

19 Nm

- Ease the brake caliper onto the brake disc.



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



Brake caliper to telescopic fork

M10

38 Nm

- Remove the adhesive tape from the wheel rim.



WARNING

Brake pads not lying against the brake disc

Risk of accident due to delayed braking effect.

- Before driving, check that the brakes respond without delay.

- Operate the brake several times until the brake pads are bedded.
- Seat the cable for the wheel speed sensor in holding clip **2**.

- Remove the front-wheel stand.

Removing rear wheel



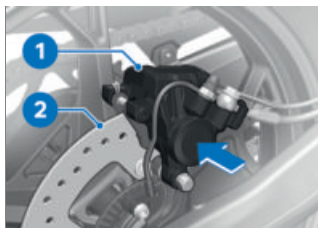
ATTENTION

Unwanted inward movement of the brake pads

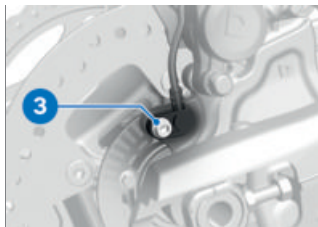
Component damage on attempt to install the brake caliper or because brake pads have to be forced apart

- Do not operate the brakes with a brake caliper not correctly secured.

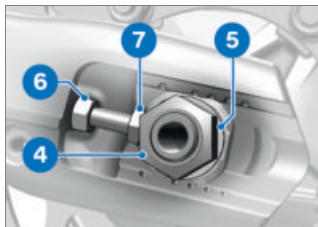
- Make sure the ground is level and firm and place the motorcycle on a suitable auxiliary stand.
- Install the rear-wheel stand. (126)
- Slip wooden chocks or similar under the rear wheel to prevent it from dropping out after the quick-release axle has been removed.



- Press the brake caliper **1** against the brake disc **2**.
» Brake pistons are pushed back.



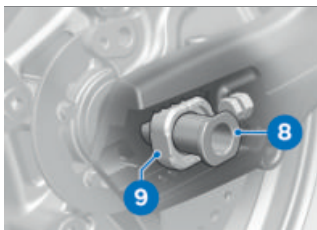
- Remove screw **3** and remove the wheel speed sensor from its bore.



- Remove axle nut **4** and washer **5**.

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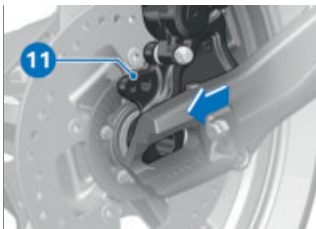
- Loosen lock nuts **6** on both sides.
- Screw in screw **7** as far as possible.



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



- Roll the rear wheel as far forward as possible and dis-engage chain **10** from the sprocket.



- Roll the rear wheel to the rear and clear of the swinging arm and at the same time pull brake-caliper carrier **11** back far enough to allow the rear wheel to clear it.

 The chain sprocket and the spacer bushes on left and right are loose fits in the wheel. Make sure that these parts are not damaged or get lost on removal.

Installing rear wheel



WARNING

Use of a non-standard wheel

Malfunctions in operation of ABS and DTC

- See the information on the effect of wheel size on the ABS and DTC systems at the start of this chapter.

**ATTENTION**
Tightening threaded fasteners to incorrect tightening torque

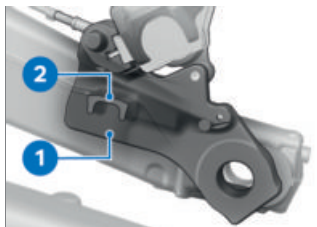
Damage, or threaded fasteners work loose

- Always have the security of the fasteners checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.

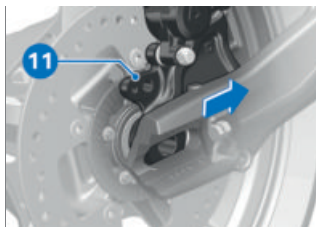


The chain sprocket and the spacer bushes on left and right are loose fits in the wheel. When installing, make sure that no parts are not damaged or mislaid.

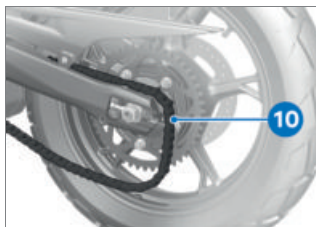
- Roll the rear wheel on the support into the swinging arm as far as necessary to permit the brake-caliper carrier to be inserted.



- Insert brake-caliper mounting bracket **1** into guide **2**.

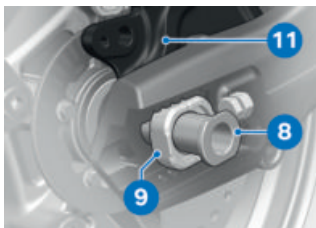


- Roll the rear wheel further into the swinging arm, while pushing brake-caliper carrier **11** forward at the same time.



- Roll the rear wheel as far forward as possible and loop chain **10** over the sprocket.

146 MAINTENANCE



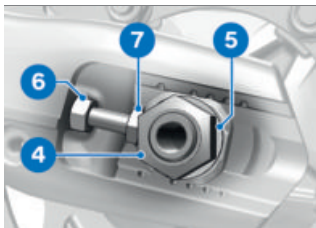
- Insert the sliding piece left and right **9** into the swinging arm.
- Lubricate wheel spindle **8** and install it in brake caliper mounting bracket **11** and rear wheel.



Lubricant

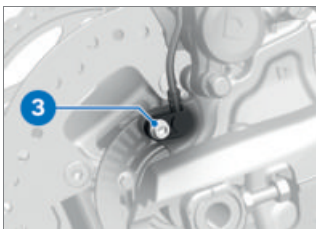
Unirex N3 wheel bearing grease

- 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.
- Screw the screw **7** anti-clockwise to tighten the drive chain

and slightly tighten the lock nut **6**.



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



Wheel-speed sensor, rear, to brake caliper carrier

M6×20

10 Nm



WARNING

Brake pads not lying against the brake disc

Risk of accident due to delayed braking effect.

- Before driving, check that the brakes respond without delay.
- After completing work, operate the brake several times until the brake pads are bedded.

- Adjust the chain tension.
( 147)
- Check the chain tension.
( 147)

CHAIN

Lubricate the chain



ATTENTION

Inadequate cleaning and lubrication of the drive chain

Accelerated wear

- Clean and lubricate the drive chain at regular intervals.
- Lubricate the drive chain every third fuel stop.
- Lubricate the chain more frequently if the motorcycle is ridden in wet, dusty or dirty conditions.
- Switch the ignition off and select neutral.
- Clean the drive chain with a suitable cleaning product, dry it and apply chain lubricant.
- To prolong chain life, BMW Motorrad recommends using BMW Motorrad chain lubricant, or:



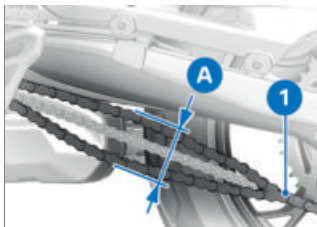
Lubricant

Chain spray, O-ring compatible

- Wipe off excess lubricant.

Check the chain tension

- Make sure the ground is level and firm and place the motorcycle on its stand.



- Turn the rear wheel until it reaches the position of least chain sag.
- Use a screwdriver to push the chain **1** up and down at a point midway between the chain pinion and sprocket and measure difference **A**.



Chain deflection

40...50 mm (Motorcycle with no weight applied, supported on its side stand)

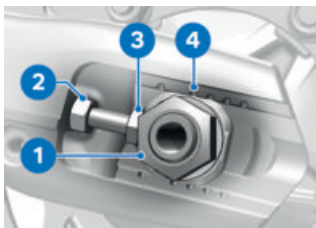
If measured value is outside permitted tolerance:

- Adjust the chain tension.
( 147)

Adjust the chain tension

- Make sure the ground is level and firm and place the motorcycle on its stand.

148 MAINTENANCE



- Slacken axle nut **1**.
- Loosen lock nuts **2** on chain tensioner left and right.
- Use adjusting screws **3** on left and right to adjust chain tension.
- Check the chain tension.
(▶ 147)
- Make sure that scale readings **4** are the same on left and right.
- Tighten lock nuts **2** on chain tensioner left and right.



Locknut of the final-drive chain tensioning screw

M8

19 Nm

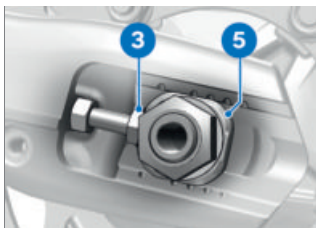
- Tighten quick-release axle nut **1** to the specified torque.



Rear quick-release axle in swinging arm

M18×1.5

100 Nm



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

Check the chain wear

Requirement

Chain tension is correct.

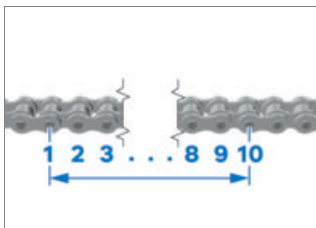
- Make sure the ground is level and firm and place the motor-cycle on its stand.



- Check whether the mark on the sliding piece **1** is in the area of the last groove of the swinging arm **2**.

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

- Engage 1st gear.
- Turn the rear wheel in the normal direction of travel until the chain is tensioned.
- Measure the length of the chain, rivet centre to rivet centre, over 10 rivets below the rear wheel swinging arm.
- Turn the rear wheel in the forward direction of travel and measure chain length at 3 different points.

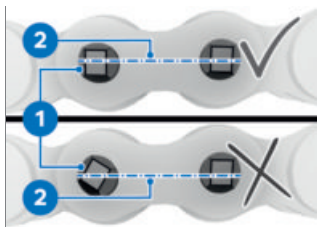


Permissible chain length

max. 144 mm (measured from the **centre** of 10 rivets, chain pulled taut)

If the chain has stretched to the maximum permissible length:

- Consult a specialist workshop, preferably an authorised BMW Motorrad retailer.



- Check whether a rivet head **1** has twisted out of line. Rivet heads are parallel to the chain centreline **2**.
- Chain riveting is OK.

If one or more rivet heads have twisted out of line:

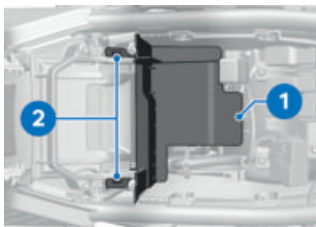
- Consult a specialist workshop, preferably an authorised BMW Motorrad retailer.

AIR FILTER

Remove the air filter

- Remove the rear seat. (➡ 77)
- Remove the rider's seat. (➡ 78)
- Remove the battery. (➡ 155)

150 MAINTENANCE



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

Install the air filter

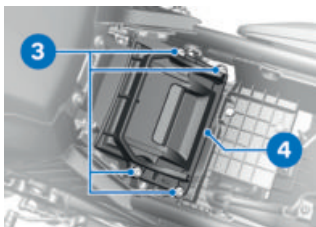


ATTENTION

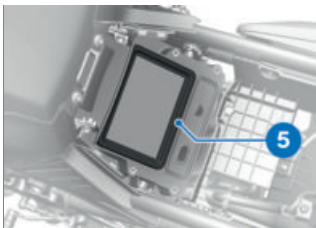
Poor filter function, drawing in of dirt particles. Air filter insert slips during insertion.

Component damage

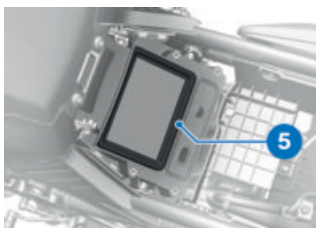
- Correctly insert the air filter insert in the filter frame and hook into the pins.



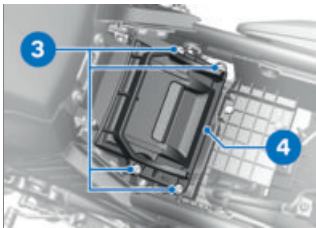
- Remove screws **3** and remove air filter cover **4**.



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



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

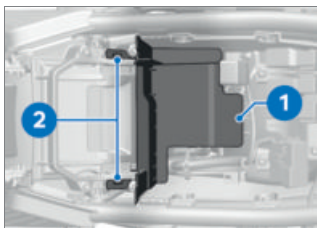


- Install air filter cover **4** and tighten screws **3** with torque.



Air filter cover to intake
air silencer

1.5 Nm



- Install cover **1** with retaining lugs **2**.
- Install the battery. (➡ 156)
- Install the rider's seat. (➡ 78)
- Install the passenger seat. (➡ 78)

LIGHTING

Replacing LED light sources



WARNING

Vehicle overlooked in traffic due to failure of the lights on the vehicle

Safety risk

- Always replace a faulty bulb at the earliest possible opportunity. Consult a specialist workshop, preferably an authorised BMW Motorrad Retailer.

All light sources of the vehicle are LED light sources. The service life of the LED light sources is longer than the presumed vehicle service life. If an LED light source is faulty contact a specialist workshop, preferably an authorised BMW Motorrad retailer.

JUMP-STARTING



CAUTION

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

Electric shock

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

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ATTENTION

Excessive current flowing when the motorcycle is jump-started

Wiring smoulders/ignites or damage to the on-board electronics

- If the motorcycle has to be jump-started connect the leads to the battery terminals; never attempt to jump-start the engine by connecting leads to the on-board socket.



ATTENTION

Contact between crocodile clips of jump leads and vehicle

Risk of short-circuit

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



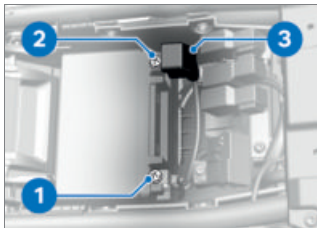
ATTENTION

Jump-starting with a voltage greater than 12 V

Damage to the on-board electronics

- Make sure that the battery of the donor vehicle has a voltage rating of 12 V.

- Remove the rear seat. (→ 77)
- Remove the rider's seat. (→ 78)
- When jump-starting the engine, do not disconnect the battery from the on-board electrical system.



- Flip open positive terminal cover **3**.
- Begin by connecting one end of the red jump lead to positive terminal **2** of the discharged battery and the other end to the positive terminal of the donor battery.
- Connect one end of the black jump lead to the negative terminal of the donor battery, then connect the other end to negative terminal **1** of the discharged battery.
- Run the engine of the donor vehicle at a slightly increased rotational speed during the jump start process.

 Do not use proprietary start-assist sprays or other products to start the engine.

- Start the engine of the vehicle with the discharged battery in the usual way; if the engine does not start, wait a few minutes before repeating the attempt in order to protect the starter motor and the donor battery.
- Allow both engines to idle for a few minutes before disconnecting the jump leads.
- Disconnect the jump lead from the negative terminals first, then disconnect the second lead from the positive terminals.
- Install the rider's seat. (▶▶▶ 78)
- Install the passenger seat. (▶▶▶ 78)

BATTERY

Maintenance instructions

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

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

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



Battery type

AGM battery (Absorbent Glass Mat), maintenance-free



ATTENTION

On-board electronics (e.g. clock) draining connected battery

Battery is deep-discharged; this voids the guarantee

- Connect a float charger to the battery if the motorcycle is to remain out of use for more than four weeks.



BMW Motorrad has developed a float charger specially designed for compatibility with the electronics of your motorcycle. The float charger allows quick and convenient charging via the 12V power socket. In order to maintain the battery charge

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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 authorised BMW Motorrad Retailer.

Recharging connected battery

ATTENTION

Charging the battery that is connected to the vehicle via the battery terminals

Damage to the on-board electronics

- Disconnect the battery at the battery terminals before charging.

Recharging disconnected battery

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

 The battery has to be recharged at regular intervals in the course of a lengthy period of disuse. See

the instructions for caring for your battery. Always fully recharge the battery before restoring it to use.

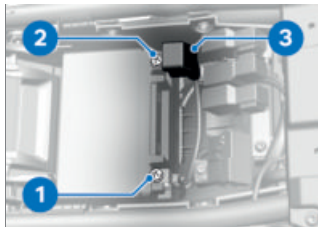
Disconnecting battery from motorcycle

ATTENTION

Battery not disconnected in accordance with correct procedure

Risk of short-circuit

- Always proceed in compliance with the specified disconnection sequence.
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Remove the rear seat. (→ 77)
- Remove the rider's seat. (→ 78)
- Switch off the ignition.



- Disconnect negative battery cable **1**.

- Flip open positive terminal cover **3**.
- Disconnect positive battery cable **2**.

Connecting battery to motorcycle

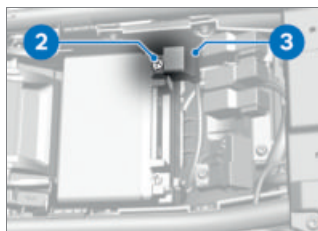


ATTENTION

Battery not connected in accordance with correct procedure

Risk of short-circuit

- Always proceed in compliance with specified installation sequence.



- Connect positive battery cable **2**.

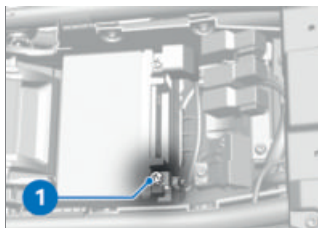


Wiring harness to battery

M6 x 13.5

5 Nm

- Place positive terminal cover **3** in position.



- Install negative battery cable **1**.



Wiring harness to battery

M6 x 13.5

5 Nm

- Install the rider's seat. (11111 78)
- Install the passenger seat. (11111 78)

Removing battery

- Disconnect the battery from the motorcycle. (11111 154)



- Lift the battery **1** up and out; work it slightly back and forth if it moves stiffly.

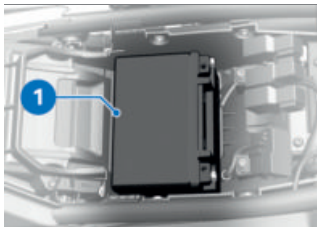
156 MAINTENANCE

Installing battery

 If the vehicle has been disconnected from the battery for a significant time, the current date will have to be reset to guarantee correct operation of the service display.

 After a change of battery type, the Fault in the on-board battery. Limited onward journey possible. Drive carefully to nearest specialist workshop. message is displayed once.

If you decide that you would like to change to a different battery type for your motorcycle, it is very important to consult a specialist workshop beforehand, preferably an authorised BMW Motorrad retailer.



- Place the battery **1** in the battery compartment with the

positive terminal on the right in the direction of travel.

- Connect the battery to motorcycle. (→ 155)
- Change the system settings. (→ 58)

FUSES

Replacing fuse



ATTENTION

Jumpering of blown fuses

Risk of short-circuit and fire

- Never attempt to jumper a blown fuse.
 - Always replace a defective fuse with a new fuse of the same amperage.
- Switch off the ignition.
 - Make sure the ground is level and firm and place the motorcycle on its stand.
 - Remove the rear seat. (→ 77)
 - Remove the rider's seat. (→ 78)



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

 If fuse defects recur frequently have the electric circuits checked by a specialist workshop, preferably an authorised BMW Motorrad retailer.

	Fuse 1
30 A (Main fuse)	
	Fuse 2
3 A (Main relay)	
	Fuse 3
5 A (Coil, cut-off relay, instrument cluster)	
	Fuse 4
10 A (CCP, FLC)	

	Fuse 5
7.5 A (Radiator fan)	
	Fuse 6
15 A (Single point injection)	
	Reserve fuses
15 A (Reserve fuse 1)	
30 A (Reserve fuse 2)	
	Fuses
All electrical circuits are protected electronically. If a circuit has been switched off by the electronic fuse, the circuit is once again active after having switched on the ignition and as soon as the activating fault has been eliminated. • Install the rider's seat. (78) • Install the passenger seat. (78)	

DIAGNOSTIC CONNECTOR

Disengaging diagnostic socket



CAUTION

Incorrect disconnection of the diagnostic socket for on-board diagnosis

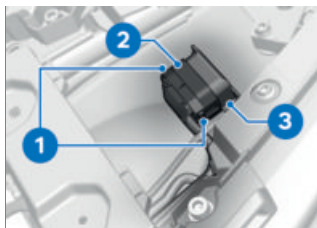
Malfunctions of the vehicle

- Do not disconnect the diagnostic socket or allow it to be disconnected except in the course of a BMW Motorrad service by a specialist workshop or by other authorised persons.
 - Have the work carried out by appropriately trained personnel.
 - Comply with the stipulations of the vehicle manufacturer.
- Remove the rear seat. (► 77)

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

Securing diagnostic socket

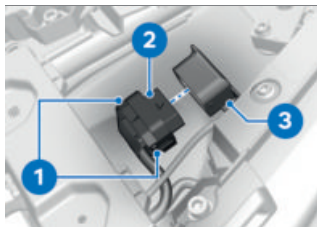
- Disconnect the interface for the diagnosis and information system.



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

» The locks **1** engage.

- Install the passenger seat. (► 78)



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

ACCESSORIES

10

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NAVIGATION SYSTEM	165

GENERAL NOTES



CAUTION

Use of other-make products

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 vehicles without constituting a safety hazard. Country-specific official authorisation does not suffice as assurance. Tests conducted by these instances cannot make provision for all operating conditions experienced by BMW vehicles and, consequently, they are not sufficient in some circumstances.
- Use only parts and accessories approved by BMW for your vehicle.

BMW has conducted extensive testing of the parts and accessory products to establish that they are safe, functional and suitable. Consequently, BMW accepts responsibility for the products. BMW accepts no liability whatsoever for parts and accessories that it has not approved.

All modifications must be in compliance with legal requirements. Make sure that the vehicle does not infringe the national road-vehicle construction and use regulations applicable in your country.

Your authorised BMW Motorrad retailer can offer expert advice on the choice of genuine BMW parts, accessories and other products. To find out more about accessories go to:

bmw-motorrad.com/equipment

USB CHARGING SOCKET

Notes on use



WARNING

Obstruction of the steering angle and risk of fire due to improperly routed cables

Driving safety is impaired

- Do not wind cables around the handlebars, and ensure that the handlebars can move freely.
- When routing the cable, ensure that the cable does not come into contact with hot components.



ATTENTION

Vibrations when vehicle is moving

Damage to mobile phones carried on the vehicle

- Make sure that the mobile phone carried on the vehicle is suitable for use on the vehicle. Ask the manufacturer about related usage restrictions and comply with the information provided.

Automatic shutdown

The USB charging sockets are shut down automatically under the following circumstances:

- If battery charge state is too low, to maintain the vehicle's start capability.
- If the maximum load capacity as stated in the technical data is exceeded.
- During the starting operation.

Connection of electrical devices

You can start using electrical devices connected to the USB charging sockets only when the ignition is switched on. The power supply to the USB charging sockets is switched off 60 seconds after the ignition is switched off, in order to

prevent overloading of the on-board electrics.

While riding in the rain, you should disconnect the device from the interface in order to protect against damage.

To prevent dirtying, keep the protective cover closed when no device is connected.

Cable routing

Note the following with regard to the routing of cables from USB charging sockets to items of electronic equipment:

- Make sure that cables do not impede the rider.
- Make sure that cables do not restrict the steering angle or obstruct handling.
- Make sure that cables cannot be trapped.

TOPCASE

- with topcase^{OA}

Opening topcase Light

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



The release levers are locked when the key is in the horizontal position.

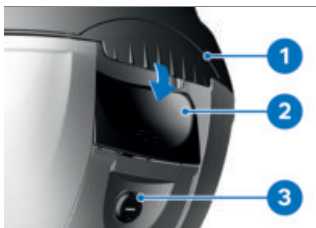
164 ACCESSORIES



- Push release lever **2** in the direction of the arrow.
- Open topcase lid **1**.

Closing topcase Light

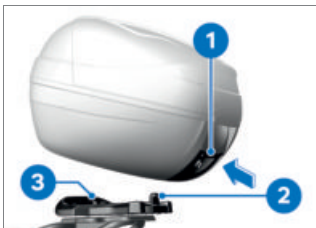
- Turn the key until it is vertical in the lock.



- Close topcase lid **1**. Make sure that nothing is trapped between lid and case and that release lever **2** engages.
 - Turn the key in topcase lock **3** to the horizontal position and remove the key.
- » The release levers are locked. You can neither open the topcase nor remove it from the adapter.

Removing topcase Light

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



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

Installing topcase Light



WARNING

Topcase not properly secured

Driving safety is impaired

- The topcase must not wobble and must be secured free from play.
- Turn the key until it is vertical in the lock.



- Insert base **5** into slot **4**.
- Position mount **6** on hook **2**.
- Make sure that release lever **1** engages and that the topcase is securely connected to 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

Note the maximum payload and the maximum permissible speed.

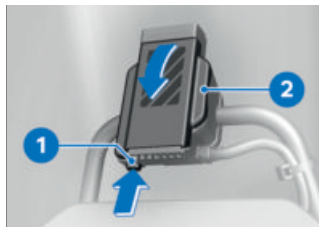
	Maximum speed for riding with a loaded topcase
	max. 130 km/h
	Payload of topcase
	max. 3 kg (Accessories)

NAVIGATION SYSTEM

—with preparation for navigation system^{OA}

Secure the navigation device

- Switch on the ignition.
(68)



- Long-press button **1**.
» The ConnectedRide Mount is unlocked and cover **2** can be pivoted forward and removed.



- 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.

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- Check that the navigation system **2** fits firmly in the ConnectedRide Mount.
- Switch off the ignition.
( 68)

Removing the navigation device

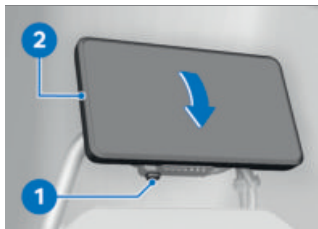


ATTENTION

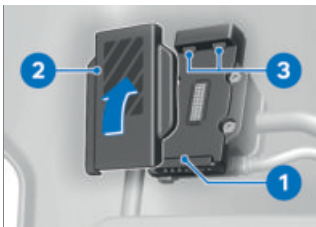
Dust and dirt on contacts of ConnectedRide Mount

Damage to the contacts

- Always reinstall the cover at the end of each ride.
- Switch on the ignition.
( 68)



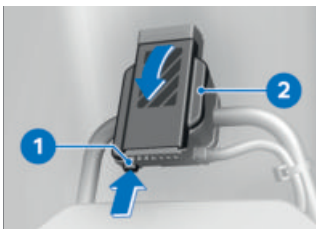
- Long-press button **1**.
» ConnectedRide Mount is unlocked and navigation system **2** can be removed towards the front using a rotational movement.



- 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.
- Switch off the ignition.
( 68)

Adjusting ConnectedRide Mount settings

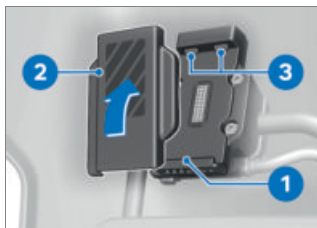
- Switch on the ignition.
( 68)



- Long-press button **1**.
» The ConnectedRide Mount is unlocked and cover **2** can be pivoted forward and removed.



- Loosen 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.
- Switch off the ignition.
( 68)

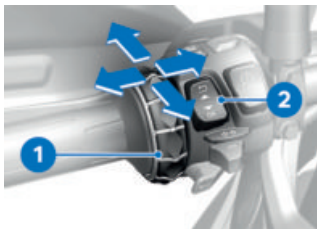
Operating navigation system

 The description below is based on the BMW Motorrad ConnectedRide Navigator.

 Only the latest version of the BMW Motorrad communication system is supported. A software update of the BMW Motorrad communication system may be necessary. If this is the case, consult your authorised BMW Motorrad retailer.

If the BMW Motorrad ConnectedRide Navigator is installed and the operating focus is switched to the Navigator ( 60), some of its functions can be operated without the rider removing a hand from the handlebars.

If the BMW Motorrad ConnectedRide Navigator is connected, all the connections on the vehicle are automatically disconnected and re-established via the Navigator. The Navigation, Media and Telephone functions are now connected via the Navigator.



The navigation system is operated using Multi-Controller **1** and the rocker button **2**.

Turning Multi-Controller 1 up/down

- Select menu
- Change volume
- Zoom map

Short-tilting Multi-Controller 1 to left/right

- Confirm or cancel

Pressing bottom section of rocker button 2

Switch operating focus to instrument cluster.

Special functions

For more details see the operating instructions of the ConnectedRide Navigator.

Security settings

Always follow the safety instructions in the operating instructions of the BMW Motorrad Connected-Ride Navigator.

CARE

11

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CARE PRODUCTS



ATTENTION

Use of unsuitable cleaning and care products

Damage to vehicle parts

- Do not use solvents such as cellulose thinners, cold cleaners, fuel or the like, and do not use cleaning products that contain alcohol.



ATTENTION

Use of strongly acidic or strongly alkaline cleaning agents

Damage to vehicle parts

- Dilute in accordance with the dilution ratio stated on the packaging of the cleaning agent.
- Do not use strongly acidic or strongly alkaline cleaning agents.

BMW Motorrad recommends that you use the cleaning and care products you can obtain from your authorised BMW Motorrad retailer. The substances in BMW Care Products have been tested in laboratories and in practice;

they provide optimised care and protection for the materials used in your vehicle.

WASHING THE VEHICLE



WARNING

Wet brake discs and brake pads after vehicle wash, after riding through water and in rainy conditions

Diminished braking effect, risk of accident

- Apply the brakes in good time to allow the friction and heat to dry the brake discs and brake pads.



ATTENTION

Damage caused by high water pressure from high-pressure or steam-jet cleaners

Corrosion or short circuit, damage to stickers, seals, hydraulic brake system, electrics and seat

- Do not clean the vehicle cockpit and switch using high-pressure or steam-jet cleaners.
- Use high-pressure or steam-jet cleaners with care.

BMW Motorrad recommends that you use BMW insect re-

mover to soften and wash off insects and stubborn dirt on painted parts prior to washing the vehicle.

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

Remove dirt from the fork legs at regular intervals.

Make sure that the vehicle is washed frequently, especially during the winter months or if it is ridden on salted roads.



ATTENTION

Effect of road salt intensified by warm water

Corrosion

- Use only cold water to remove road salt deposits.

To remove road salt deposits, clean the vehicle and mounted parts, as applicable, with cold water immediately after every trip.



After a ride in the rain, when humidity is high or after the vehicle has been washed, condensation might form inside the headlight. This can cause temporary fogging on the headlight lens. If moisture is constantly present inside

the headlight consult a specialist workshop, preferably an authorised BMW Motorrad retailer.

CLEANING EASILY DAMAGED COMPONENTS

Plastics



ATTENTION

Use of unsuitable cleaning agents

Damage to plastic surfaces

- Do not use cleaning agents that contain alcohol, solvents or abrasives.
- Do not use insect-remover pads or cleaning pads with hard, scouring surfaces.

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

- Windscreen and slipstream deflectors
- Headlight lens made of plastic
- Glass cover of the instrument cluster
- Black, unpainted parts



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

174 CARE

Instrument cluster

Clean the instrument cluster with warm water and washing-up liquid. Then dry it with a clean cloth, e.g. a paper towel.

Chrome

Carefully clean chrome parts with plenty of water and motorcycle cleaner from the BMW Care Products range. This is particularly important to counter the effects of salt. Use BMW Motorrad high-gloss polish for additional treatment.

Radiator

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



ATTENTION

Bending of radiator fins

Damage to radiator fins

- Take care not to bend the radiator fins when cleaning.

Rubber



ATTENTION

Application of silicone sprays to rubber seals

Damage to the rubber seals

- Do not use silicone sprays or care products that contain silicon.

Treat rubber components with water or BMW rubber-care products.

CARE OF PAINTWORK



ATTENTION

Damage to paintwork due to metal polish

Risk of damage

- Do not treat painted surfaces and chrome-painted surfaces with metal polish.

Washing the vehicle regularly will help counteract the long-term effects of substances that can damage the paint, especially if your vehicle is ridden in areas with high air pollution or natural sources of dirt, for example tree resin or pollen. Remove particularly aggressive substances immediately, however, as otherwise the paint can be affected or become

discoloured. Substances of this nature include spilt fuel, oil, grease, brake fluid and bird droppings. For this, we recommend BMW Motorrad solvent cleaner followed by BMW Motorrad gloss polish for preservation.

Marks on the paintwork are particularly easy to see after the vehicle has been washed. Remove stains of this kind at the earliest possible opportunity, using benzine or petroleum spirit on a clean cloth or ball of cotton wool. BMW Motorrad recommends using BMW tar remover for removing specks of tar. Then apply preserving agent to the areas treated in this way.

PAINT PRESERVATION

If water no longer rolls off the paint, the paint must be preserved.

For paint preservation, BMW Motorrad recommends the use of BMW Motorrad gloss polish or agents containing carnauba wax or synthetic wax.

 Do not use chrome polish to preserve chrome paints. Use only the agents recommended by BMW Motorrad.

LAYING UP MOTORCYCLE

- Fill the motorcycle's fuel tank.

 Fuel additives clean the fuel injection system and the combustion zone. It is advisable to use fuel additives when the engine is operated with low-grade fuel or if the vehicle is to be out of use for a lengthy period of time. More information is available from your authorised BMW Motorrad retailer.

- Clean the motorcycle.
- Remove the battery.
- Spray the brake and clutch lever pivots and the side stand pivot mounts with a suitable lubricant.
- Coat bright metal and chrome-plated parts with an acid-free grease (e.g. Vaseline).
- Stand the motorcycle in a dry room in such a way that there is no load on either wheel (preferably using the front-wheel and rear-wheel stands from BMW Motorrad).

RESTORING MOTORCYCLE TO USE

- Remove the protective wax coating.
- Clean the motorcycle.

CARE

- Checklist. (▮▮▮▮▮➔ 93)

TECHNICAL DATA

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TROUBLESHOOTING CHART

The engine does not start:

Possible cause	Rectification
Side stand extended and gear engaged	Select neutral or retract the side stand.
Gear engaged and clutch not disengaged	Select neutral or pull the clutch lever.
No fuel in tank	Refuel.
Battery flat	Recharge the battery.
Starter motor overheating protection has tripped. The starter motor can be operated for a limited time only.	Allow the starter motor to cool down for approximately 1 minute before trying again.

—with Easy Ride Clutch^{OE}

Gear cannot be engaged:

Possible cause	Rectification
1st gear cannot be engaged	Move the vehicle or approach the clutch engagement engine speed 3000 min^{-1} by actuating the throttle grip briefly so that the centrifugal clutch closes easily. Then engage 1st gear with the throttle grip closed. The process may need to be repeated.

The Bluetooth connection is not established.

Possible cause	Rectification
The steps required for pairing were not carried out.	Check the necessary steps for pairing in the operating instructions for the communication system.
The communication system was not connected automatically despite successful pairing.	Switch off the helmet's communication system and reconnect it after a minute or two.
Too many Bluetooth devices are saved on the helmet.	All pairing entries on the helmet are deleted (see the communication system operating instructions).
There are other vehicles with Bluetooth-capable devices in the vicinity.	Avoid simultaneously pairing with more vehicles.

Active route guidance is not displayed in the instrument cluster.

Possible cause	Rectification
Navigation from the BMW Motorrad Connected app was not transmitted.	Call up the BMW Motorrad Connected app on the paired mobile device prior to departure.
The route guidance cannot be started.	Make sure that the mobile device has a data connection and check the map data on the mobile device.

182 TECHNICAL DATA

The instrument cluster remains dark after the ignition is switched on.

Possible cause	Rectification
There is a software error which leads to a function failure of the instrument cluster.	Switch ignition off and on again.
The instrument cluster is damaged.	Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

THREADED FASTENERS

Front wheel	Value	Valid
Brake caliper to telescopic fork		
M10	38 Nm	
Clamp of quick-release axle		
M8×30	Tightening sequence: Tighten screws six times in alternate sequence	
	19 Nm	
Axle screw in front quick-release axle		
M12×20	50 Nm	
Rear wheel	Value	Valid
Rear quick-release axle in swinging arm		
M18×1.5	100 Nm	
Locknut of the final-drive chain tensioning screw		
M8	19 Nm	
Wheel-speed sensor, rear, to brake caliper carrier		
M6×20	10 Nm	

184 TECHNICAL DATA

Mirror arm	Value	Valid
Left mirror (lock nut) to adapter		
M10×1.25	22 Nm	
Right mirror (lock nut) to adapter		
M10×1.25	Left-hand thread, 22 Nm	

Gearshift lever	Value	Valid
Gearshift lever (clamp) on gearshift shaft		
M6×30	8 Nm	

Air filter	Value	Valid
Air filter cover to intake air silencer		
	1.5 Nm	

FUEL

Recommended fuel grade	 Premium unleaded (max. 10 % ethanol, E10)  95 ROZ/RON 90 AKI
–With national-market version, India ^{NV}	Premium unleaded (max. 25 % ethanol, E15/E25) 95 ROZ/RON 90 AKI
Alternative fuel grade	 Regular unleaded (power- and consumption-related restrictions.) (max. 10 % ethanol, E10)  91 ROZ/RON 87 AKI
–With national-market version, India ^{NV}	Regular unleaded (power- and consumption-related restrictions.) (max. 25 % ethanol, E15/E20/E25) 91 ROZ/RON 87 AKI
Usable fuel capacity	approx. 14 l
Reserve fuel	approx. 2.5 l
Fuel consumption	3.80 l/100 km, in accordance with WMTC
CO2 emission	88 g/km, in accordance with WMTC
Exhaust emissions standard	EU5
–with Canada export ^{NV}	TIER 2

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ENGINE OIL

Engine oil, capacity	approx. 2.4 l, with filter change
Specification	SAE 5W-40, API SL / JASO MA2, Additives (e.g. molybdenum-based) are not permissible because they can attack coated components of the engine, BMW Motorrad recommends BMW Motorrad ADVANTEC Ultimate oil.
Engine oil, quantity for topping up	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 cam followers, two overhead camshafts and wet-sump lubrication
Displacement	420 cm ³
Compression ratio	13:1
Nominal capacity	35 kW, at rpm: 8750 min ⁻¹
Torque	43 Nm, at rpm: 6750 min ⁻¹
Maximum engine speed	max. 10000 min ⁻¹

Idle speed	1500 min ⁻¹ , Engine at regular operating temperature
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TRANSMISSION

Type of transmission	Claw-shifted 6-speed manual gearbox integrated in the engine housing
----------------------	--

FINAL DRIVE

Type of final drive	Chain drive
Secondary transmission ratio	3.428 (48/14 teeth)

FRAME

Type plate location	Frame, front left at steering head
Position of the vehicle identification number	Frame, front right on steering head

CHASSIS AND SUSPENSION

Front wheel

Spring travel, front	180 mm, at front wheel
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Rear wheel

Type of rear suspension	Two-arm aluminium swinging arm
Spring travel at rear wheel	180 mm, at rear wheel

188 TECHNICAL DATA

BRAKES

Front wheel

Type of front brake	Hydraulically actuated single-disc brake with 4-piston fixed calipers and floating brake disc
Brake-pad material, front	Sintered metal
Brake disc thickness, front	4.4 mm, When new min. 4.0 mm, Wear limit

Rear wheel

Type of rear brake	Hydraulically actuated disc brake with 1-piston floating caliper and fixed disc
Brake-pad material, rear	Organic material
Brake disc thickness, rear	4.5 mm, When new min. 4.0 mm, Wear limit

WHEELS AND TYRES

Speed category, front/rear tyres	S, required at least: 180 km/h
----------------------------------	--------------------------------

Front wheel

Front-wheel type	Aluminium cast wheel
Front-wheel rim size	2.50"×19"
Tyre designation, front	100/90-19
Load index, front tyre	min. 57
Permissible front-wheel imbalance	max. 5 g

Rear wheel

Rear-wheel type	Aluminium cast wheel
Rear wheel rim size	3.50"×17"
Tyre designation, rear	130/80-17
Load index, rear tyre	min. 65
Permissible rear-wheel imbalance	max. 5 g

Tyre pressure

Tyre pressure, front	1.7 bar, One-up, tyre cold 1.7 bar, Riding with passenger and/or luggage, with cold tyres
Tyre pressure, rear	1.9 bar, One-up, tyre cold 2.2 bar, Riding with passenger and/or luggage, with cold tyres

ELECTRICAL SYSTEM**Fuses**

Fuse 1	30 A, Main fuse
Fuse 2	3 A, Main relay
Fuse 3	5 A, Coil, cut-off relay, instrument cluster
Fuse 4	10 A, CCP, FLC
Fuse 5	7.5 A, Radiator fan
Fuse 6	15 A, Single point injection
Reserve fuses	15 A, Reserve fuse 1 30 A, Reserve fuse 2

Spark plugs

Spark plugs, manufacturer and designation	NGK LMAR9J-9E
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Lighting

All light sources	LED
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190 TECHNICAL DATA

BATTERY

Battery

Battery type	AGM battery (Absorbent Glass Mat), maintenance-free
Battery rated voltage	12 V
Battery rated capacity	8 Ah

DIMENSIONS

Length of motorcycle	2161 mm, over number-plate carrier
Height of motorcycle	1210 mm, without mirrors, at DIN unladen weight
Width of motorcycle	869 mm, via mirror 956 mm, with hand protectors
Height of rider's seat	845 mm, Without rider; at DIN unladen weight
Rider's inside-leg arc, heel to heel	1880 mm, at DIN unladen weight, without rider

WEIGHTS

Vehicle kerb weight	178 kg, DIN unladen weight, ready for road, 90 % load of fuel, without optional extras (OE)
Permissible gross vehicle weight	355 kg
Maximum payload	177 kg

PERFORMANCE FIGURES

Top speed	165 km/h
-with topcase ^{OA}	max. 130 km/h
-with tank bag ^{OA}	max. 130 km/h
-With side bag ^{OA}	max. 130 km/h
-with rear softbag ^{OA}	max. 130 km/h

SERVICE

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REPORTING SAFETY-RELEVANT DEFECTS

—with Canada export^{NV}

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the NHTSA (National Highway Traffic Safety Administration) in addition to notifying the 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 it may order a recall and remedy campaign. However, the NHTSA cannot become involved in individual problems between you, your retailer, or BMW of North America, LLC. You can contact the NHTSA by calling the Vehicle Safety Hotline on 1-888-327-4236 (teletypewriter TTY for the hearing impaired: 1-800-424-9153) toll-free, by visiting the website at <http://www.safercar.gov> or by writing to Administrator, NHTSA, 400 Seventh Street, SW., Washington, DC 20590. Further information on vehicle safety is available at <http://www.safercar.gov>.

Canadian customers who wish to report a safety-related defect to Transport Canada, Defect Investigations and Recalls can call the toll-free hotline 1-800-333-0510. You can obtain further information about motor vehicle safety from <http://www.tc.gc.ca/roadsafety>.

RECYCLING

Disposal of an EOL vehicle

BMW Motorrad recommends disposing of a vehicle that has reached the end of its useful life by taking it to a manufacturer-designated receiving centre for EOL vehicles.

In general, the laws of the country in question apply for receiving and recycling of EOL vehicles. Information about recycling and sustainability can be viewed on the country-specific websites of the manufacturer. Additional information can be obtained on request from your authorised BMW Motorrad retailer or another qualified service partner, or from a specialist workshop.

Disposal of the rider's manual

—with France export^{NV}



Dispose of this rider's manual by depositing it in the container provided for the purpose.

BMW MOTORRAD SERVICE

BMW Motorrad has an extensive network of retailers in place to look after you and your motorcycle in more than 100 countries. Authorised BMW Motorrad retailers have the technical information and the technical know-how to carry out reliably all preventive maintenance and repair work on your BMW.

You can locate the nearest authorised BMW Motorrad retailer by visiting our website: **bmw-motorrad.com**.



WARNING

Incorrectly performed maintenance work and repair tasks

Risk of accident due to subsequent damage

- BMW Motorrad recommends having corresponding work on the motorcycle carried out by a specialist workshop, preferably by an authorised BMW Motorrad Retailer.

In order to help ensure that your BMW is always in optimum condition, BMW Motorrad recommends compliance with the maintenance intervals specified for your motorcycle.

Have all maintenance and repair work carried out confirmed in the "Service" chapter in this manual. Evidence of regular preventive maintenance is essential for generous treatment of claims submitted after the warranty period has expired.

You can inquire about the content of BMW Motorrad services at your authorised BMW Motorrad retailer.

BMW MOTORRAD SERVICE HISTORY

Entries

Maintenance work that has been carried out is entered in the proof of maintenance. The entries are like a Service Booklet and provide proof of regular maintenance.

When an entry is made in the electronic service booklet of the vehicle, service-relevant data is saved in the central IT systems accessible through BMW.

If there is a change in vehicle ownership, the data saved in the electronic service booklet can also be viewed by the new vehicle owner. An authorised BMW Motorrad retailer or a specialist workshop can also view data that is stored in the electronic service booklet.

Objection

The vehicle owner can object to entries being made by the authorised BMW Motorrad retailer or a specialist workshop in the electronic service

booklet along with the corresponding storage of data in the vehicle and transfer of data to the vehicle manufacturer for the period of time that they are the vehicle owner. In this instance, no entry is made in the electronic service booklet of the vehicle.

BMW MOTORRAD MOBILITY SERVICES

As the owner of a new BMW motorcycle, you are protected by a range of BMW Motorrad mobility services in the event of a breakdown (e.g. roadside assistance, breakdown assistance, vehicle recovery).

Your authorised BMW Motorrad Retailer 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 performed by your authorised BMW Motorrad retailer before the vehicle is handed over to you.

BMW Running-in Check

The BMW running-in check has to be performed when the vehicle has covered between 500 km and 1200 km.

BMW Motorrad Service

The BMW Motorrad Service is carried out once a year; the extent of servicing can vary, depending on the age of the vehicle and the distance it has covered. Your authorised BMW Motorrad retailer confirms that the service work has been carried out and enters the date when the next service will be due.

Riders who cover long distances in a year might have to bring in their vehicles for service before the next scheduled date. It is to allow for these cases that a maximum odometer reading is entered as well in the confirmation of service. Servicing has to be brought forward if this distance covered is reached before the next scheduled service appointment.

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The service-due indicator in the display reminds you about one month or 1000 km in advance when the time for a service is approaching.

To find out more about service go to:

bmw-motorrad.com/service

The maintenance tasks necessary for your vehicle are set out in the maintenance schedule below. The tasks listed are due either when the vehicle has covered the stated distances, or periodically at the stated times.

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 running-in check (including oil change and oil filter change)
- 2 BMW Motorrad Service, standard scope
- 3 Engine-oil change, with filter
- 4 Check or replace air filter insert
- 5 Replace all spark plugs
- 6 Replace air-filter element
- 7 Oil change in the telescopic forks
- 8 Check valve clearances
- 9 Replace fuel filters and fuel hoses
- 10 Change brake fluid, entire system
 - a annually or every 10000 km (whichever comes first)
 - b for off-riding
 - c for the first time after one year, then every two years

BMW MOTORRAD RUNNING-IN CHECK

BMW Motorrad running-in check

The tasks included in the BMW Motorrad running-in check are listed below. The actual scope of work applicable for your vehicle may vary.

- Performing vehicle test with BMW Motorrad diagnostic system
- Engine-oil change, with filter
- Check the coolant level
- Checking brake-fluid level, front brakes
- Checking brake-fluid level, rear brakes
- Check/adjust the clutch play
- Checking chain tension and lubricating chain
- Checking tyre pressures
- Adjusting steering-head bearing play
- Checking lighting and signalling system
- Function test, engine start suppression
- Final inspection and check of roadworthiness
- Performing vehicle test with BMW Motorrad diagnostic system
- Setting service due date and countdown distance with BMW Motorrad diagnosis system
- Confirm the BMW service in the on-board literature

MAINTENANCE CONFIRMATIONS

BMW Motorrad Service standard scope

The tasks included in the BMW Motorrad Service standard scope are listed below. The actual scope of maintenance work applicable for your vehicle may vary.

- Performing vehicle test with BMW Motorrad diagnostic system
- Check the coolant level
- Check/adjust the clutch play
- Checking steering-head bearing
- Visual inspection of the brake lines, brake hoses and connections
- Check the front brake pads and brake discs for wear
- Check the rear brake pads and brake disc for wear
- Check the brake fluid level, front and rear
- Check the tyre pressures and tread depth
- Checking and lubricating the chain drive
- Check the side stand's ease of movement
- Checking lighting and signalling system
- Function test, engine start suppression
- Final inspection and check of roadworthiness
- Performing vehicle test with BMW Motorrad diagnostic system
- Setting service-due date and countdown distance with BMW Motorrad diagnostic system
- Checking battery state of charge
- Confirm the BMW Motorrad service in the on-board literature

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BMW Motorrad pre-delivery check

carried out

on _____

Stamp, signature

BMW Motorrad running-in check

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Work performed

	Yes	No
BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Work performed

	Yes	No
BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Work performed

	Yes	No
BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Work performed

	Yes	No
BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Work performed

	Yes	No
BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Work performed

	Yes	No
BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Work performed

	Yes	No
BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

odometer reading _____

Work performed

	Yes	No
BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

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BMW Motorrad service

carried out

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BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
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Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

BMW Motorrad service

carried out

on _____

odometer reading _____

Next service

at the latest

on _____

or, when reached earlier

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Work performed

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BMW Motorrad service	☐	☐
Oil change in the engine with a filter (during service)	☐	☐
Replacing all spark plugs (during service)	☐	☐
Replacing air filter insert (during service)	☐	☐
Checking or replacing the air filter element (during service)	☐	☐
Oil change in the telescopic forks (during service)	☐	☐
Checking valve clearance (during service)	☐	☐
Replacing the fuel filters and fuel hoses (during service)	☐	☐
Changing the brake fluid in the entire system	☐	☐

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DECLARATION OF CONFORMITY

Manufacturer

Bayerische Motoren Werke Aktiengesellschaft
Petuelring 130, 80809 Munich, Germany

Simplified EU Declaration of Conformity according to EU RED (2014/53/EU).



Simplified UK Declaration of Conformity according to Radio Equipment Regulations 2017 of the United Kingdom.



Hereby, BMW AG declares that the radio equipment components listed below are in compliance with Directive 2014/53/EU and with Radio Equipment Regulations 2017 of the United Kingdom. The full text of the EU/UK declarations of conformity are available at the following internet address: **bmw-motorrad.com/certification**

Technical information

Radio equipment	Component	Frequency band	Output/Transmission Power
EWS4	EWS	134 kHz	50 dB μ V/m
HUF5794	Keyless Ride	433.92 MHz	10 mW
HUF8485	Keyless Ride	134.45 kHz	42 dB μ V/m
ZB001	Keyless Ride	134.5 kHz	allowed 66 dB μ A/m @ 10m

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Radio equip- ment	Compo- nent	Frequency band	Output/ Transmis- sion Power
ZB002	Keyless Ride	433.92 MHz	max. 10 dBm e.r.p
TXBM- WMR	DWA 8	433.05 MHz - 434.79 MHz	18.8 dBm
RDC3	RDC	433.92 MHz	< 13 mW
Wus Moto gen 3	RDC	433.05 MHz - 434.79 MHz	< 10 mW e.r.p.
Wus Moto gen 3 4x4	RDC	433.92 MHz	-16,75 dBm
MC24- MA4	RDC		
WCA Motor- rad-Lade- staufach	Charging compart- ment	110 kHz - 115 kHz	< 6 W
ICC6.5in	Instru- ment Cluster	Bluetooth: 2402 MHz - 2480 MHz WLAN: 2412 MHz - 2462 MHz	Bluetooth: < 4 dBm WLAN: < 20 dBm
ICC65V2	Instru- ment Cluster	Bluetooth: 2400 MHz - 2480 MHz WLAN: 2400 MHz - 2480 MHz	Bluetooth: < 10 mW WLAN: < 100 mW
ICC10in	Instru- ment Cluster	Bluetooth: 2402 MHz - 2480 MHz WLAN: 2402 MHz - 2472 MHz	Bluetooth: < 4 dBm WLAN: < 14 dBm

Radio equipment	Component	Frequency band	Output/Transmission Power
MR-Re14FCR	ACC	76 - 77 GHz	Peak max. 32 dBm Nom max. 27 dBm
ARS513	Front radar	77 GHz	Peak max. 30 dBm
SRR521	Rear radar	77 GHz	Peak max. 30 dBm
TL1P22	Intelligent emergency call	832 MHz - 862 MHz 880 MHz - 915 MHz 1710 MHz - 1785 MHz 1920 MHz - 1980 MHz 2500 MHz - 2570 MHz 2570 MHz - 2620 MHz GNSS: 1559 MHz - 1610 MHz	23 dBm 33 dBm 30 dBm 24 dBm 23 dBm 23 dBm
TL1M-23NE	Intelligent emergency call	703 MHz - 748 MHz 832 MHz - 862 MHz 880 MHz - 915 MHz 1710 MHz - 1785 MHz 1920 MHz - 1980 MHz 2300 MHz - 2400 MHz 2500 MHz - 2570 MHz 2570 MHz - 2620 MHz GNSS: 1559 MHz - 1610 MHz	23 dBm 23 dBm 33 dBm 30 dBm 24 dBm 23 dBm 23 dBm 23 dBm
MCR001	Audio system		
ZB005	Keyless Ride Main Unit	134.5 kHz 433.92 MHz	< 66 dBμA/m

Radio equipment	Component	Frequency band	Output/Transmission Power
ZB006	Keyless Ride Active Key	134.5 kHz 433.92 MHz	< 10 mW e.r.p.
LIN2BTLE Gateway	Instrument Cluster	2400 MHz - 2483.5 MHz	< 3 dBm

BATTERY DIRECTIVE

Batteries are generally subject to the battery directive 2006/66/EC/ EU. Consumer information on the batteries can be found in the relevant sections of this manual.

Batteries are integrated in the following components:

Technical information

Component	Type	Contact
RDC sensor	17109	LID TECHNOLOGIES, 3 rue Giotto, 31520 Ramonville, Saint Agne, France E-mail: contact@lid.tech www.lid.tech
RDC sensor	171090	LID TECHNOLOGIES, 3 rue Giotto, 31520 Ramonville, Saint Agne, France E-mail: contact@lid.tech www.lid.tech
KLR Key	HUF5794	Huf Hülsbeck & Fürst GmbH & Co. KG, Steeger Str.17, 42551 Velbert, Germany E-mail: info@huf-group.com www.huf-group.com

Component	Type	Contact
KLR Key	ZB002	ZADI S.p.A., Via Carlo Marx 138, 41012 Carpi (MO), Italy E-mail: info@zadi.com www.zadi.com
KLR Key	ZB006	ZADI S.p.A., Via Carlo Marx, 138 41012 Carpi (MO), Italy E-mail: info@zadi.com www.zadi.com
DWA8 ECU	DWA8	Meta System S.p.A, Via Tancredi Galimberti 5, 42124 Reggio Emilia, Italy www.metasystemcorporation.com
DWA8 RC	TXBMWMR	Meta System S.p.A, Via Tancredi Galimberti 5, 42124 Reggio Emilia, Italy www.metasystemcorporation.com
DWA9	DWA9	Bury Sp. z o.o., ul. Wojska Polskiego 4, 39-300 Mielec, Poland E-mail: info@bury.com www.bury.com

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BATTERY LABELLING INDIA

EPR Reg. No:

7246340534301062961

EPR Reg. No:

7247774285328982820

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

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.

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).

Paraguay



NR.: 2023-03-I-0156

Mexico

La operación de este equipo está sujeta a las siguientes dos condiciones:

- (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y
- (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

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

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

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

Errors and omissions excepted.

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80788 Munich, Germany

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Original rider's manual, printed in Germany.

Important data for refuelling:

Fuel

Recommended fuel grade	 Premium unleaded (max. 10 % ethanol, E10)  95 ROZ/RON 90 AKI
–With national-market version, India ^{NV}	Premium unleaded (max. 25 % ethanol, E15/E25) 95 ROZ/RON 90 AKI
Alternative fuel grade	 Regular unleaded (power- and consumption-related restrictions.) (max. 10 % ethanol, E10)  91 ROZ/RON 87 AKI
–With national-market version, India ^{NV}	Regular unleaded (power- and consumption-related restrictions.) (max. 25 % ethanol, E15/E20/E25) 91 ROZ/RON 87 AKI
Usable fuel capacity	approx. 14 l
Reserve fuel	approx. 2.5 l
Tyre pressure	
Tyre pressure, front	1.7 bar, tyre cold
Tyre pressure, rear	1.9 bar, One-up, tyre cold 2.2 bar, Riding with passenger and/or luggage, with cold tyres

For further information on all aspects of your vehicle, visit: **bmw-motorrad.com**

