BMW
MOTORRAD

RIDER'S MANUAL

M 1000 XR

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.

GENERAL INSTRUCTIONS

01

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.
DDC	Dynamic Damping Control.
DTC	Dynamic Traction Control.
DWA	Anti-theft alarm.
EWS	Electronic immobiliser.
RDC	Tyre pressure monitoring.

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. This explains why the manual 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 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 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 official operating licences for accessories can be downloaded from **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 vehicle owner. There are also other ways to use data obtained from the vehicle to trace the rider or vehicle owner, for example using the ConnectedDrive 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
–Qualified service partners
–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.
The vehicle owner can also request that a BMW Motorrad

retailer or another qualified service partner or specialist workshop read out the data that is stored in the vehicle for a charge.
The vehicle data is read out using the legally prescribed 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 conditions, 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 a BMW Motorrad retailer or another qualified service partner or specialist workshop. The legally stipulated socket for on-board diagnosis (OBD) in the vehicle is used to read out the data. 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.
Error and incident memories in the vehicle can be reset during servicing or repair work by a BMW Motorrad retailer or another qualified service partner or 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:

–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 information 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, website of the manufacturer. 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 content 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.

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.

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 (➠ 67). 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, 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.

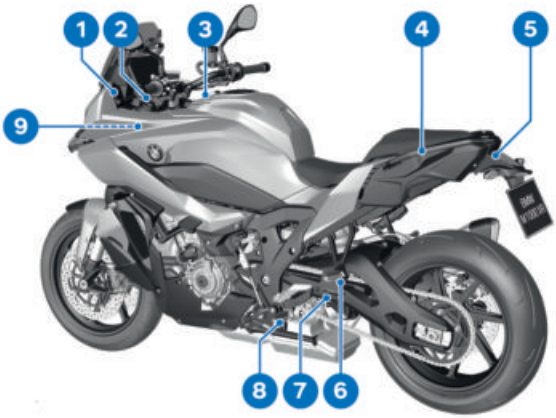
On some mobile devices, e.g. those with the iOS operating system, the BMW Motorrad Connected app has to be opened prior to use.

GENERAL VIEWS

02

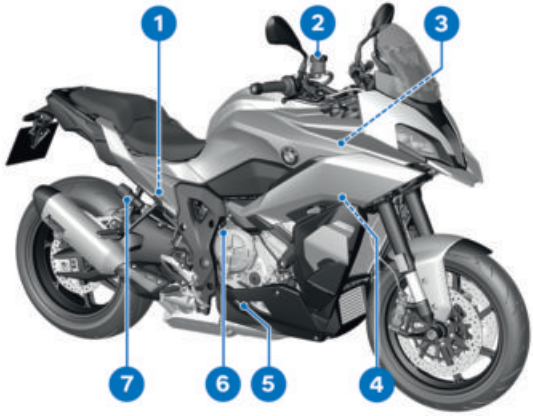
16 GENERAL VIEWS

GENERAL VIEW, LEFT SIDE



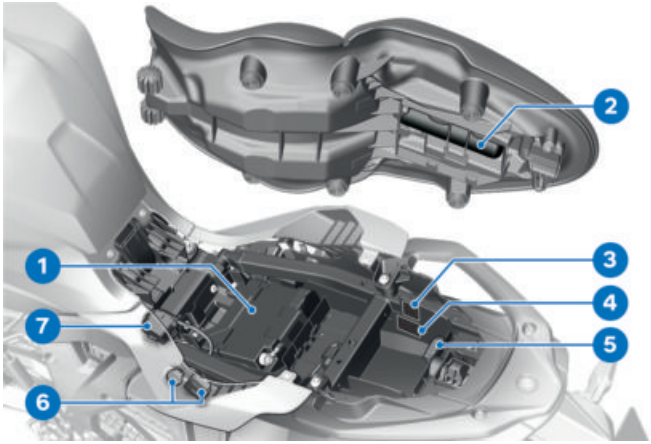
1 Power socket (➠ 202)
2 Spring preload at front wheel (➠ 107)
3 Storage compartment (➠ 99)
4 Passenger grab handle
5 Seat lock (➠ 98)
6 Rear footrest
7 Note on chain sag
8 Rider footrest
9 Type plate (on steering-head bearing)

GENERAL VIEW, RIGHT SIDE



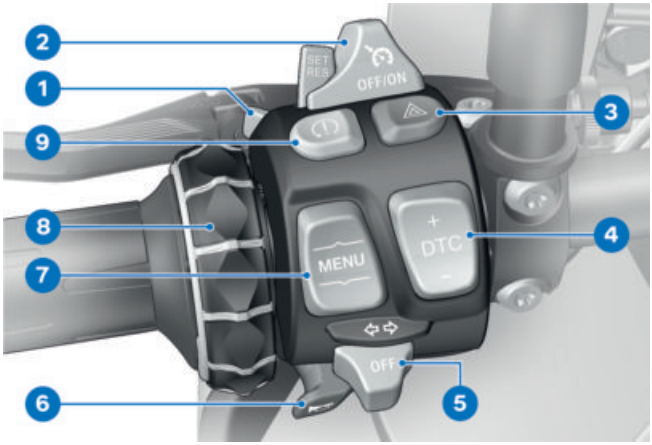
1 Brake-fluid reservoir, rear (➠ 173)
2 Brake-fluid reservoir, front (➠ 172)
3 Vehicle identification number (on steering-head bearing)
4 Coolant expansion tank (➠ 176)
5 Engine oil level indicator (➠ 168)
6 Oil filler opening (➠ 169)
7 Spring preload at rear wheel (➠ 108)

UNDERNEATH THE SEAT



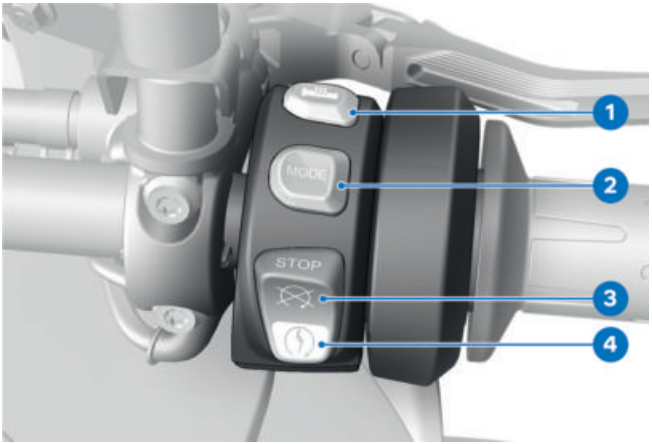
1 Battery (➠ 193)
2 Toolkit (➠ 167)
3 Tyre pressures table
4 Payload table
5 USB charging socket (➠ 203)
6 Fuses (➠ 197)
7 Diagnostic connector (➠ 199)

MULTIFUNCTION SWITCH, LEFT



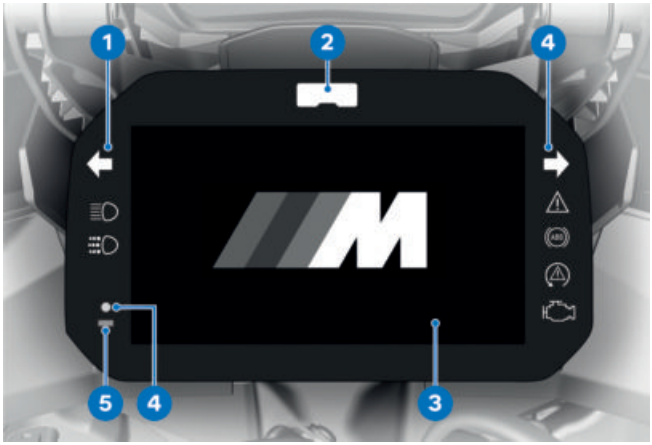
1 High-beam headlight and headlight flasher (➠ 83)
2 Cruise control (➠ 90)
3 Hazard warning lights (➠ 85)
4 Adapt DTC (➠ 140)
5 Turn indicators (➠ 85)
6 Horn
7 MENU rocker button (➠ 63)
8 Multi-Controller (➠ 62)
9 DTC (➠ 85)

MULTIFUNCTION SWITCH, RIGHT



1 Heated grips (➠ 97)
2 Riding mode (➠ 87)
3 Emergency-off switch (kill switch) (➠ 82)
4 Starter button (➠ 115)

INSTRUMENT CLUSTER



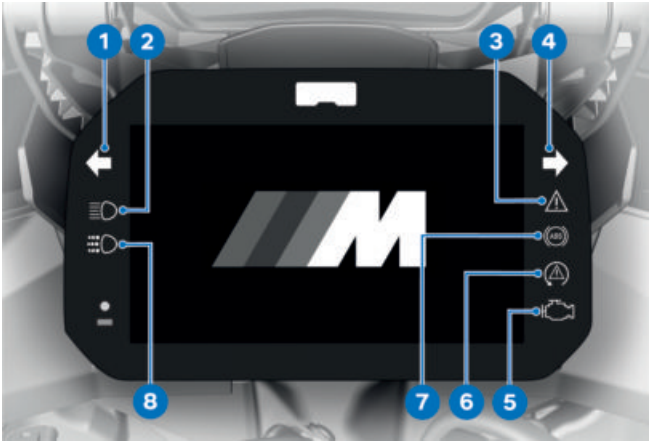
1 Indicator and warning lights (➠ 24)
2 Shift light (➠ 120)
3 Display (➠ 26)
4 Indicator light
DWA (➠ 95)
Keyless Ride (➠ 78)
5 Photosensor (for adapting the brightness of the instrument lighting)

STATUS INDICATORS

03

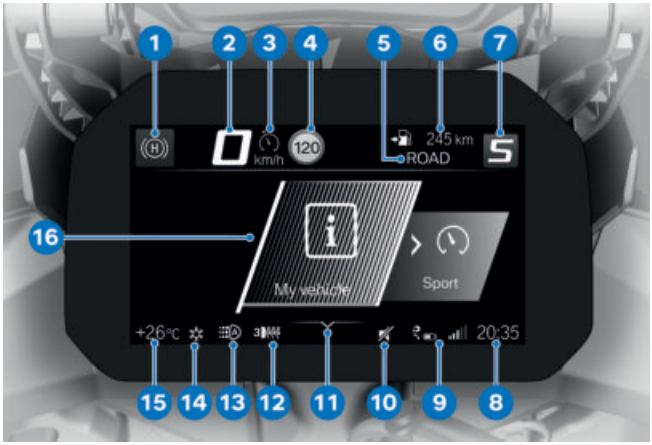
24 STATUS INDICATORS

INDICATOR AND WARNING LIGHTS



1 Turn indicators, left (➠ 85)
2 High-beam headlight (➠ 83)
3 General warning light (➠ 32)
4 Turn indicators, right (➠ 85)
5 Warning light, drive malfunction (➠ 45)
6 DTC (➠ 53)
7 ABS
8 Automatic daytime riding light (➠ 84)

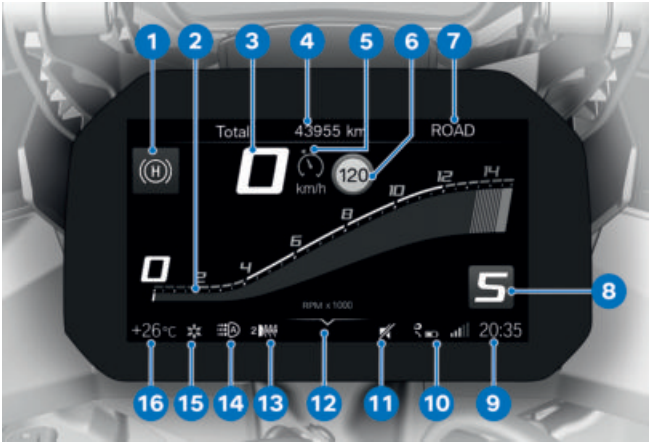
MENU VIEW



1 Hill Start Control (➠ 56)
2 Speedometer
3 Cruise control (➠ 90)
4 Speed Limit Info (➠ 72)
5 Riding mode (➠ 87)
6 Rider info. status line (➠ 64)
7 Gear indicator
8 Clock (➠ 66)
9 Connection status (➠ 67)
10 Muting (➠ 66)
11 Operating help
12 Heating stages, handlebar grips (➠ 97)
13 Automatic daytime riding light (➠ 84)
14 Outside temperature warning (➠ 39)
15 Ambient temperature
16 Menu section

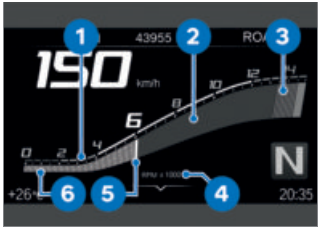
PURE RIDE VIEW

START SCREEN



1 Hill Start Control (➠ 56)
2 Rev. counter (➠ 27)
3 Speedometer
4 Rider info. status line (➠ 64)
5 Cruise control (➠ 90)
6 Speed Limit Info (➠ 72)
7 Riding mode (➠ 87)
8 Gear indicator
9 Clock (➠ 66)
10 Connection status (➠ 67)
11 Muting (➠ 66)
12 Operating help
13 Heating stages, handlebar grips (➠ 97)
14 Automatic daytime riding light (➠ 84)
15 Outside temperature warning (➠ 39)
16 Ambient temperature

Rev. counter



1 Scale
2 Low engine speed range
3 Upper/red engine speed range
4 Unit for engine speed display:
1000 revolutions per minute
5 Needle
6 Secondary indicator

The red engine speed range changes depending on the coolant temperature: The colder the engine, the lower the engine speed at which the red engine speed range starts.
The warmer the engine, the higher the speed at which the red engine speed range starts.
When operating temperature is reached, the display of the red engine speed range no longer changes.

The solid red rpm range indicates the current maximum engine speed, depending for example on whether the running-in check still has to be performed, Launch Control is active or the electronic engine management system is experiencing a fault.

When the shift light flashes the secondary indicator flashes as well, even in the solid red rpm range.

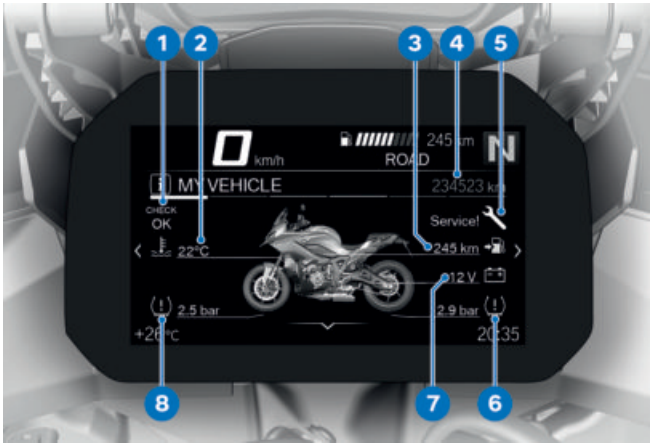
Range

You can view the range **1** reading in the status line of the instrument cluster (➠ 64).
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.

MY VEHICLE VIEW

START SCREEN



1 Check Control display (➠ 32)
2 Coolant temperature (➠ 44)
3 Range (➠ 27)
4 Odometer
5 Service display (➠ 58)
6 Tyre pressure, rear (➠ 30)
7 On-board voltage (➠ 194)
8 Tyre pressure, front (➠ 30)

On-board computer and trip computer

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

Tyre pressure

In addition to the MY VEHICLE menu screen and the Check Control messages, there is also the TYRE PRESSURE screen for showing the tyre pressures:

The values on the left are for the front wheel; those on the right are for the rear wheel. Actual and specified tyre pressures and the difference between them are displayed for each wheel.

Immediately after the ignition is switched on, only dashes are displayed. The sensors do not start transmitting tyre pressure signals until the first time the vehicle accelerates to more than the minimum speed stated below:

RDC sensor is not active
min 30 km/h (The RDC sensor does not transmit its signal to the vehicle until a certain minimum speed has been reached.)

The tyre-pressure readings in the instrument cluster are temperature-compensated and are always referenced to the following tyre-air temperature:
20 °C

If the tyre symbol appears as well, showing yellow or red, this is a warning. The pressure difference is highlighted with an exclamation point in the same colour.

If the value in question is close to the limit of the permissible tolerance range, the reading is accompanied by the 'General' warning light showing yellow.

The 'General' warning light flashes red if the tyre pressure registered by the sensor is outside the permissible tolerance range.

For further information about BMW Motorrad RDC, see the section entitled "Engineering details" (➠ 159).

Service requirements

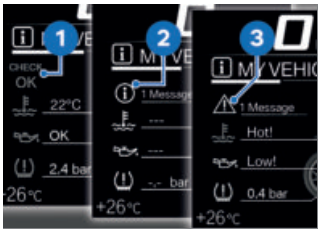
When the next service is due within less than a month or within 1000 km, a white Check Control message is displayed.

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.

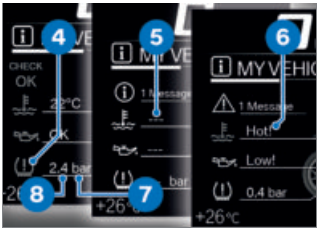
The status of the 'General' warning light matches the most urgent warning.
The possible warnings are listed on the next pages.



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

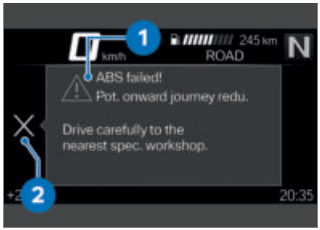
Symbols **4** differ in how they show on the display. The colours used differ and reflect the urgency of the message. Along with numerical values **8** with units **7**, texts **6** are displayed as well:

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 dialogue

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

– If there are two or more Check Control messages of equal priority, the messages keep changing in the order of their occurrence until they are acknowledged.
– If symbol **2** is actively displayed, it can be acknowledged by tilting the Multi-Controller to the left.
– 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.

Warnings, overview

Indicator and warning lights	Display text	Meaning
	 is displayed.	Outside temperature warning (➠ 39)
 lights up yellow.	 Remote key not in range.	Radio-operated key out of range (➠ 39)
 lights up yellow.	 Keyless Ride failure	Keyless Ride failed (➠ 40)
 lights up yellow.	 Remote key battery weak.	Replacing battery of radio-operated key (➠ 40)
	 Vehicle voltage low.	Voltage of the vehicle electrical system too low (➠ 40)
 lights up yellow.	 Vehicle voltage critical!	Voltage of the vehicle electrical system critical (➠ 41)
 flashes yellow.	 Battery voltage critical!	Charging voltage critical (➠ 41)
 lights up yellow.  flashes yellow.	 The faulty bulb is displayed.  The faulty bulb is displayed.	Bulb faulty (➠ 42)
 lights up yellow.	 Light control failure!	Light control failed (➠ 43)

Indicator and warning lights	Display text	Meaning
	Alarm system batt. capacity weak.	Anti-theft alarm battery weak (➠ 43)
	Alarm system battery empty.	Anti-theft alarm battery flat (➠ 43)
	Alarm system failure	DWA failed (➠ 44)
 lights up yellow.	Engine temp. high!	Engine temperature high (➠ 44)
 lights up red.	Engine overheating!	Engine overheated (➠ 44)
 shows.	Engine!	Drive malfunction (➠ 45)
 flashes red.  flashes.	Serious fault in the engine control!	Serious drive malfunction (➠ 45)
 lights up yellow.  shows.	No communication with engine control.	Engine control failed (➠ 46)
 lights up yellow.	Fault in the engine control.	Engine in emergency-operation mode (➠ 46)
 flashes red.	Serious fault in the engine control!	Serious fault in engine control (➠ 46)

36 STATUS INDICATORS

Indicator and warning lights	Display text	Meaning
 lights up yellow.	 Tyre pressure does not match setpoint	Tyre pressure close to limit of permitted tolerance (➠ 48)
 flashes red.	 Tyre pressure does not match setpoint  Tyre press. control. Loss of pressure.	Tyre pressure outside permitted tolerance (➠ 49)
	 "---"	Transmission fault (➠ 49)
 lights up yellow.	 "---"	Sensor faulty or system fault (➠ 50)
 lights up yellow.	 Tyre pressure check failure!	Tyre pressure monitoring (RDC) failed (➠ 50)
 lights up yellow.	 RDC sensor battery weak.	Battery for tyre pressure sensor weak (➠ 51)
	 Drop sensor faulty.	Malfunction, drop sensor (➠ 51)
	 Cannot start engine.	Motorcycle dropped (➠ 51)
 lights up yellow.	 Side stand monitoring faulty.	Malfunction, side stand monitor (➠ 51)
 flashes regularly.		ABS self-diagnosis not completed (➠ 52)

Indicator and warning lights	Display text	Meaning
 lights up yellow. shows.	Limited ABS availability!	ABS fault (➠ 52)
 lights up yellow. shows.	ABS failure!	ABS failed (➠ 52)
 lights up yellow. shows.	ABS Pro failure!	ABS Pro failed (➠ 53)
 flashes irregularly.		ABS control at front wheel only (➠ 53)
 quick-flashes.		DTC intervention (➠ 53)
 slow-flashes.		DTC self-diagnosis not completed (➠ 54)
 shows.	Off! Traction control deactivated.	DTC switched off (➠ 54)
 lights up yellow. shows.	Traction control failure!	DTC fault (➠ 54)

Indicator and warning lights	Display text	Meaning
 lights up yellow.  shows.	 Traction control limited!	DTC restricted (➠ 55)
 lights up yellow.	Spring strut adjustment faulty!	DDC fault (➠ 56)
	 Tank reserve level reached.	Fuel down to reserve (➠ 56)
	 shows green.	Hill Start Control active (➠ 56)
	 flashes yellow.	Hill Start Control automatically deactivated (➠ 57)
	 is displayed. HSC not available. Engine not running.	Hill Start Control cannot be activated (➠ 57)
	 The gear indicator flashes.	Gear not taught (➠ 57)
flashes green. flashes green.		Hazard warning lights system is switched on (➠ 57)
	 is displayed in white. Service due!	Service due (➠ 58)
lights up yellow.	 is displayed in yellow. Service overdue!	Service-due date has passed (➠ 58)

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 following limit value.

 Limit value for the ambient temperature
approx. 3 °C

The first time the temperature drops below this value, the ambient-temperature reading and the ice crystal symbol flash in the status line of the display.

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.

Radio-operated key out of range

lights up yellow.

`Remote key not in range. Not possible to switch on ignition again.`

Possible cause:

Communication between radio-operated key and propulsion-unit electronics is disrupted.

- Check the battery in the radio-operated key.
- Replace the battery of the radio-operated key. (➠ 81)
- Use the spare key to continue your journey.
- Loss of the radio-operated key. (➠ 80)

- Remain calm if the Check Control dialogue appears on the display while you are riding. You can continue your journey, the engine will not switch off.
- Have the faulty radio-operated key replaced by an authorised BMW Motorrad retailer.

Keyless Ride failed

 lights up yellow.

 `Keyless Ride failure Do not stop the engine. It may not be poss. to restart the engine.`

Possible cause:

The Keyless Ride control unit has diagnosed a communication fault.

- Do not switch off the motor. Proceed as directly as possible to an authorised workshop, preferably an authorised BMW Motorrad retailer.

» Motor start with Keyless Ride can no longer be initiated.

» DWA can no longer be activated.

Replacing battery of radio-operated key

 lights up yellow.

 `Remote key battery weak. Function limited. Change battery.`

Possible cause:

- The integral battery in the radio-operated key has lost a significant proportion of its original capacity. There is no assurance of how long the radio-operated key can remain operational.
- Replace the battery of the radio-operated key. (➠ 81)

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

 lights up 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.

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

 lights up 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. Have it checked by a specialist workshop.`

 **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

 lights up 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.

Anti-theft alarm battery weak

–with anti-theft alarm (DWA) OE

Alarm system batt. capacity weak. No restrictions. Make an appointment at a specialist workshop.

This error message is displayed briefly only after the Pre-Ride-Check completes.

Possible cause:

The integral battery in the anti-theft alarm has lost a significant proportion of its original capacity. There is no assurance of how long the anti-theft alarm can remain operational if the vehicle's battery is disconnected.

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

Anti-theft alarm battery flat

–with anti-theft alarm (DWA) OE

Alarm system battery empty. No independent alarm. Make an appointment at a specialist workshop.

This error message is displayed briefly only after the Pre-Ride-Check completes.

Possible cause:

The integral battery in the anti-theft alarm (DWA) has lost its entire original capacity. The system cannot guarantee the DWA function if the vehicle battery is disconnected.

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

DWA failed

–with anti-theft alarm (DWA) OE

Alarm system failure
Have it checked by a specialist workshop.

Possible cause:

The DWA control unit has diagnosed a communication fault.

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

» DWA can no longer be activated or deactivated.

» False alarm possible.

Engine temperature high

lights up 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. (➠ 176)

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 workshop, preferably an authorised BMW Motorrad retailer.

Engine overheated

lights up 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. (➠ 176)

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

 shows.

 `Engine! 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

 lights up 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

 lights up 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.

- 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

Engine damage when running in emergency-operation mode

Risk of accident

- Ride slowly, avoid accelerating sharply and overtaking.
- If possible, have the vehicle picked up and have the fault rectified by a specialist workshop, preferably an authorised BMW Motorrad Retailer.

Possible cause:

The engine control unit has diagnosed a fault that can lead to serious consequential faults. 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.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Tyre pressure

In addition to the MY VEHICLE menu screen and the Check Control messages, there is also the TYRE PRESSURE screen for showing the tyre pressures:

The values on the left are for the front wheel; those on the right are for the rear wheel. Actual and specified tyre pressures and the difference between them are displayed for each wheel.

Immediately after the ignition is switched on, only dashes are displayed. The sensors do not start transmitting tyre pressure signals until the first time the vehicle accelerates to more than the minimum speed stated below:

 RDC sensor is not active
min 30 km/h (The RDC sensor does not transmit its signal to the vehicle until a certain minimum speed has been reached.)
 The tyre-pressure readings in the instrument cluster are temperature-compensated and are always referenced to the following tyre-air temperature:
20 °C

 If the tyre symbol appears as well, showing yellow or red, this is a warning. The pressure difference is highlighted with an exclamation point in the same colour.

 If the value in question is close to the limit of the permissible tolerance range, the reading is accompanied by the 'General' warning light showing yellow.

 The 'General' warning light flashes red if the tyre pressure registered by the sensor is outside the permissible tolerance range.

For further information about BMW Motorrad RDC, see the section entitled "Engineering details" (➠ 159).

Tyre pressure close to limit of permitted tolerance

 lights up yellow.

 `Tyre pressure does not match setpoint Check tyre pressure.`

Possible cause:

Measured tyre pressure is close to the limit of permitted tolerance.

- Correct tyre pressure.
- Before adjusting tyre pressure, read the information on temperature compensation and adjusting pressure in the section entitled "Engineering details":

» Temperature compensation (➠ 160)
» Pressure adaptation (➠ 160)
» Find the correct tyre pressures in the following places:
– Back cover of the rider's manual
– Instrument cluster in the `TYRE PRESSURE` view
– Tyre pressures table

Tyre pressure outside permitted tolerance

 flashes red.

 `Tyre pressure does not match setpoint Stop immediately! Check tyre pressure.`

 `Tyre press. control. Loss of pressure. Stop immediately! Check tyre pressure.`

WARNING

Tyre pressure outside the permitted tolerance.
Risk of accident, degradation of the vehicle's driving characteristics.
- Adapt your style of riding accordingly.

Possible cause:

Measured tyre pressure is outside permitted tolerance.
- Check the tyre for damage and to ascertain whether the vehicle can be ridden with the tyre in its present condition.

If the vehicle can be ridden with the tyre in its present condition:
- Correct the tyre pressure at the earliest possible opportunity.
- Before adjusting tyre pressure, read the information on temperature compensation and adjusting pressure in the section entitled "Engineering details":
» Temperature compensation (➠ 160)
» Pressure adaptation (➠ 160)
» Find the correct tyre pressures in the following places:
– Back cover of the rider's manual
– Instrument cluster in the `TYRE PRESSURE` view
– Tyre pressures table
- Have the tyre checked for damage by a specialist workshop, preferably an authorised BMW Motorrad retailer.

If you are unsure whether the vehicle can be ridden with the tyre in its present condition:
- Do not continue your journey.
- Notify the breakdown service.

Transmission fault

 "---"

Possible cause:

The vehicle has not reached the minimum speed (➠ 159).

 RDC sensor is not active
min 30 km/h (The RDC sensor does not transmit its signal to the vehicle until a certain minimum speed has been reached.)

- Increase speed above this threshold and observe the RDC readings. Assume that a permanent fault has not occurred unless the 'General' warning light comes on to accompany the symptoms. Under these circumstances:
- Have the fault rectified by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Possible cause:

Wireless communication with the RDC sensors has been disrupted. Possible causes include radio-communication systems operating in the vicinity and interfering with the link between the RDC control unit and the sensors.

- Move to another location and observe the RDC readings. Assume that a permanent fault has not occurred unless the 'General' warning light comes on to accompany the symptoms. Under these circumstances:
- Have the fault rectified by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Sensor faulty or system fault

 lights up yellow.

 "---"

Possible cause:

Vehicle is fitted with wheels not equipped with RDC sensors.

- Retrofit a set of wheels equipped with RDC sensors.

Possible cause:

One or both RDC sensors have failed or a system fault has occurred.

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

Tyre pressure monitoring (RDC) failed

 lights up yellow.

 Tyre pressure check failure! Function limited. Have it checked by a specialist workshop.

Possible cause:

The tyre pressure control (RDC) control unit has diagnosed a communication fault.

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

» Tyre pressure warnings not available.

Battery for tyre pressure sensor weak

 lights up yellow.

RDC sensor battery weak. Function limited. Have it checked by a specialist workshop.

This error message is displayed briefly only after the Pre-Ride-Check completes.

Possible cause:

The integral battery in the tyre-pressure sensor has lost a significant proportion of its original capacity. There is no assurance of how long the tyre pressure monitoring system can remain operational.

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

Malfunction, drop sensor

Drop sensor faulty. Have it checked by a specialist workshop.

Possible cause:

The drop sensor is not available.

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

Motorcycle dropped

Cannot start engine. Stand motorcycle upright. Switch ignition on/off. Start the engine.

Possible cause:

The fall sensor has detected a fall and has cut out the motor.

- Hold the vehicle upright and check it for damage.
- Switch the ignition off and then on again or switch the kill switch on and then off again.

Malfunction, side stand monitor

 lights up yellow.

Side stand monitoring faulty. Onward journey possible. Engine will stop if sta-

tionary! 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.
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

lights up yellow.

shows.

Limited ABS availability! Onward journey possible. Ride carefully 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 (➠ 150).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

ABS failed

lights up 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 lead to an ABS fault message (➠ 150).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

ABS Pro failed

 lights up 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 (➠ 150).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

ABS control at front wheel only

 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" (➠ 156).

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. (➠ 86)

DTC fault

 lights up 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 (➠ 153).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

DTC restricted

 lights up 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.
- You can continue to ride. Bear in mind the more detailed information on situations that can lead to a DTC fault (➠ 153).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

DDC fault

 lights up yellow.

 `Spring strut adjustment faulty! Onward journey possible. Ride carefully to next specialist workshop.`

Possible cause:

The DDC control unit has detected a fault.

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

» In this condition, the motorcycle may have too much damping and is uncomfortable to drive, especially on roads in poor condition.

Possible cause:

A DDC sensor fault has been detected.

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

» The semi-active functionality is deactivated.

Fuel down to reserve

 `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.

 Fuel reserve
approx. 4 l

- Refuel. (➠ 124)

Hill Start Control active

 shows green.

Possible cause:

Hill Start Control (➠ 162) has been activated by the rider.

- Switch off Hill Start Control.
- Operate Hill Start Control Pro. (➠ 93)

Hill Start Control automatically deactivated

 flashes yellow.

Possible cause:

Hill Start Control has been automatically deactivated.

- Side stand has been extended.

» Hill Start Control is deactivated when the side stand is extended.

- Engine has been switched off.

» Hill Start Control is deactivated when the engine is switched off.

- Operate Hill Start Control Pro. (➠ 93)

Hill Start Control cannot be activated

 is displayed.

`HSC not available. Engine not running.`

Possible cause:

Hill Start Control cannot be activated.

- Retract the side stand.

» Hill Start Control is operational only with the side stand retracted.

- Start the engine.

» Hill Start Control is operational only while the engine is running.

Gear not taught

–with shift assistant Pro OE

 The gear indicator flashes.

Possible cause:

The gearbox sensor is not fully trained.

- Start the engine. (➠ 115)
- 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 (➠ 161).

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

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. (➠ 85)

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, because of either distance covered or time expired.

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

» The vehicle remains operationally reliable and roadworthy.

» The vehicle retains its value.

Service-due date has passed

 lights up yellow.

 is displayed in yellow.

Service overdue! Have service performed by a specialist workshop.

Possible cause:

Service is overdue because of the driving performance or the date.

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

» The vehicle remains operationally reliable and roadworthy.
» The vehicle retains its value.

INSTRUMENT CLUSTER

04

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

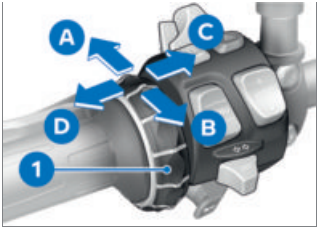
Distraction from the road and loss of control

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.

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

MENU rocker button

Short-press the top section of MENU 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 MENU rocker button 1:

–In Menu view: Open the Pure Ride view.
–In Pure Ride view: Switch the operating focus to the Navigator.

Short-press the bottom section of MENU rocker button 1:

–Change down a level.

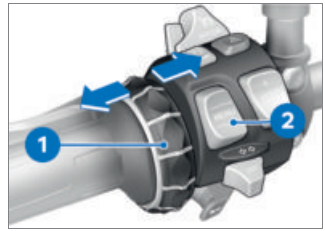
Long-press the bottom section of MENU rocker button 1:

–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 MENU rocker button is temporarily restricted.

OPERATION

Calling up menu



- Long-press the top section of MENU rocker button **2** to open the Pure Ride view.
- Short-press the bottom section of MENU rocker button **2**.

The following menus can be called up:

–`My vehicle`
–`Sport`
–`Navigation`
–`Media`
–`Telephone`
–`Settings`

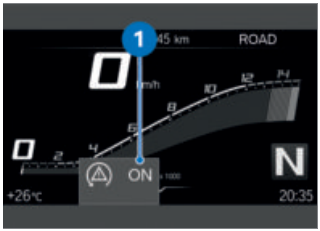
- Repeatedly short-push Multi-Controller **1** to the right until

the menu item you want is highlighted.
- Short-press the bottom section of MENU rocker button **2** to open the corresponding menu.

The Settings menu can only be called up when the vehicle is stationary.

System status displays

The system status is displayed in the lower area of the menu if a function is switched on or off.



Example:

–DTC function **1** is switched on.

Select the display of the top status line

Requirement

The vehicle is at a standstill. The Pure Ride view is displayed.

- Switch on the ignition. (➠ 79)

» 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.

» Information from the tyre pressure monitoring can also be displayed.

- Select the content of the top status line. (➠ 65)

- Long-press button **1** to obtain the 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


Break 1


Break 2


Speed 1 (Average)


Speed 2 (Average)


Tyre pressure


Fuel tank level


Range

Select the content of 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.

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 MENU rocker button.
- Select Reset all values or Reset individual values and confirm.

The following values can be reset:

–Break
–Journey
–Current (TRIP 1)
–Speed
–Consump.

Call up the trip computer

- Call up the on-board computer. (➠ 65)
- 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 MENU 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 or the date has changed since the ignition was switched off.

SETTINGS

Adjusting volume

- Connect the rider's and passenger's helmets. (➠ 68)
- 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

- Switch on the ignition. (➠ 79)
- Navigate to Settings, System settings.

» You can change the following system settings here:

–Date and time
–Units
–Language

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

» Existing Bluetooth connections are not deleted.

» The pairing of the vehicle to the current BMW Motorrad ConnectedRide account is reset.

BLUETOOTH

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. (➠ 67)
- 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.

Mobile devices found are displayed.

- Select and confirm mobile device.

If the fuel tank is between the mobile device and the instrument cluster, the Bluetooth connection may be restricted. BMW Motorrad recommends keeping the mobile device above the fuel tank (e.g. carried in a jacket pocket).

- 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". (➠ 218)
» Depending on the mobile device, telephone data is transferred to the vehicle automatically.
» Telephone data (➠ 74)
» If the phonebook is not displayed, consult the troubleshooting chart in the section entitled "Technical data". (➠ 219)
» If the Bluetooth connection does not work as expected, consult the troubleshooting chart in the section entitled "Technical data". (➠ 219)

Connect rider's and passenger's helmet

- Perform pairing. (➠ 67)
- 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 passeng. 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". (➠ 218)
» If the Bluetooth connection does not work as expected, consult the troubleshooting chart in the section entitled "Technical data". (➠ 219)

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 OE

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

–with preparation for navigation system OE

–with navigation system OA

- Secure the navigation system. (➠ 205)
- Long-press the top section of the MENU rocker button to open the Pure Ride view.
- Long-press the top section of the MENU button again.

» Operating focus switches to the Navigator or the instrument cluster, as applicable. The active device is highlighted on the left in the top status line. Operator actions affect the currently active device until the operating focus is changed again.

–with preparation for navigation system OE

» Operating navigation system (➠ 206)◁

NAVIGATION

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.

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. (➠ 67)
- 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". (➠ 219)

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

- Navigate to Navigation, Active route guidance.
- Select End route guidance and confirm or tilt the Multi-Controller to the left.

Switching spoken instructions on or off

- Connect the rider's and passenger's helmets. (➠ 68)
- 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.

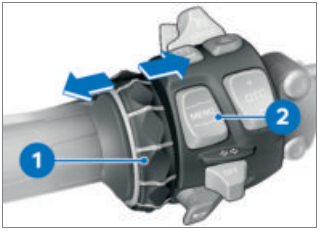
- `Speed Limit Info` shows the maximum speed permitted at the time, if this information is made available by the publisher of the map material in the navigation system.
- Navigate to `Settings`, `Display`.
- Switch `Speed Limit Info` on or off.

MEDIA

Precondition

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

Controlling music playback



- Call up the `Media` menu.

BMW Motorrad recommends setting the volume for media and phone calls on the mobile device to maximum before riding off.

- Adjust volume. (➠ 66)
- 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`.

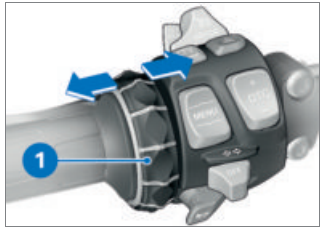
The settings possible in the `Audio settings` submenu are as follows:
– Switch `Shuffle` on or off.
– Select `Repeat`: `Off`, `One` (current track) or `All`.

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 possible to switch between two phone calls.

Telephone data

Depending on the mobile device, when pairing (➠ 67) completes telephone data are automatically sent to the vehicle.

`Phone book`: List of contacts saved on the mobile device

`Call list`: List of calls with the mobile device

`Favourites`: List of favourites saved on the mobile device

SOFTWARE VERSION

- Navigate to `Settings`, `Information`, `Software version`.

LICENCE INFORMATION

- Navigate to `Settings`, `Information`, `Licences`.

OPERATION

05

IGNITION

Radio-operated key

The indicator light for the radio-operated key flashes while the search for the radio-operated key is in progress.
The light goes out as soon as the radio-operated key or the emergency key is found.
The light goes out briefly if the search times out without the radio-operated key or the emergency key being found.

You receive one radio-operated key and one spare key. If a key is lost or mislaid, consult the notes on the electronic immobiliser (EWS) (➠ 80).
Ignition, fuel filler cap and anti-theft alarm system all work with the radio-operated key.
Seat lock, topcase and cases can be locked and unlocked manually.

The vehicle cannot be started if the radio control key is not within range (e.g. key inside one of the cases or the topcase).
If the radio-operated key remains out of range the ignition is switched off after about 90 seconds to protect the battery.

It is advisable to keep the radio-operated key on your person (e.g. in a jacket pocket) and to have the emergency key with you as an alternative.

Range of the Keyless Ride radio-operated key
approx. 1 m

Locking the steering lock

Requirement

The handlebars are turned towards the left. Radio-operated key is within range.

- Press and hold down button **1**.
» The steering lock engages with an audible click.
» Ignition, lights and all function circuits switched off.
- To unlock the steering lock, briefly press button **1**.

Switching on ignition
Requirement
Radio-operated key is within range.

- The steering lock can be unlocked once the ignition is switched on.

Steering lock is engaged:
- Press and hold down button **1**.

» The steering lock disengages.
» Side lights and all function circuits are switched on.
» Daytime riding light is switched on.
» Pre-Ride-Check is performed. (➠ 116)
» ABS self-diagnosis is performed. (➠ 116)
» DTC self-diagnosis is performed. (➠ 117)

The steering lock is disengaged:
- Short-press button **1**.

» Side lights and all function circuits are switched on.
» Daytime riding light is switched on.
» Pre-Ride-Check is performed. (➠ 116)
» ABS self-diagnosis is performed. (➠ 116)
» DTC self-diagnosis is performed. (➠ 117)

Switching off ignition
Requirement
Radio-operated key is within range.

- The steering lock can be locked once the ignition is switched off.

To switch off the ignition and engage the steering lock:
- Turn the handlebars all the way to the left.
- Press and hold down button **1**.

» Light is switched off.
» The steering lock engages.

To switch off the ignition and do not engage the steering lock:

- Short-press button **1**.

» Light is switched off.
» The steering lock does not engage.

- Lock the steering lock. (➠ 78)

Electronic immobiliser (EWS)

The on-board electronics access the data saved in the radio-operated key via a ring aerial in the R/C ignition lock. The ignition is not enabled for starting until the engine control unit has recognised the radio-operated key as "authorised" for your vehicle.

A second radio-operated key attached to the same ring as the radio-operated key used to start the engine could "irritate" the electronics, in which case the enabling signal for starting is not issued. Always keep the radio-operated keys separate from each other.

If you lose a radio-operated key, you can have it barred by your authorised BMW Motorrad retailer. In order to have a key barred you must bring along all the other keys belonging to the motorcycle.

The engine cannot be started by a barred radio-operated key, but a radio-operated key that has been barred can subsequently be reactivated.

You can obtain spare keys only through an authorised BMW Motorrad retailer. The radio-operated keys are part of an integrated security system, so the retailer is under an obligation to check the legitimacy of all applications for replacement/extra keys.

Loss of the radio-operated key

Consult the information on the electronic immobiliser (EWS) if a key is lost or mislaid.

If the radio-operated key is lost or mislaid while you are on a journey, you can use the spare key to start the vehicle.

- Hold spare key **1** close to the fuel tank with the spare key positioned above aerial **2**.

Time during which the motor has to be started. The unlocking procedure has to be repeated if this time is allowed to expire.
30 s

» Pre-Ride-Check is performed.
– Spare key has been recognised.
– Engine can be started.
– Spare key can be removed.
- Start the engine. (➠ 115)

Replacing battery of radio-operated key

If the radio-operated key does not react when you short-press or long-press a button:
- Battery of the radio-operated key is not at full capacity.

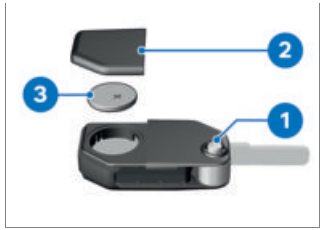
Remote key battery weak. Function limited. Change battery.

DANGER

Swallowing a battery

Risk of injury or death
- An ignition key contains a button cell as its battery. Batteries or button cells, if swallowed, can cause serious or fatal injury within two hours, for example resulting from internal burns or caustic action.
- Keep ignition keys and batteries out of reach of children.
- If there is any suspicion that a battery or button cell has been swallowed or is inside a part of the body, seek medical assistance immediately.

- Change the battery.



- Press button **1**.
» Key bit flips out.
- Push battery cover **2** up.
- Remove battery **3**.

- Dispose of the old battery in accordance with all applicable laws and regulations; do not attempt to dispose of batteries as domestic waste.

ATTENTION

Unsuitable or incorrectly inserted batteries

Component damage

- Use a battery compliant with the manufacturer's specifications.
- When inserting the battery, always make sure polarity is correct.

- Insert the new battery with the positive terminal up.

Battery type
For Keyless Ride radio-operated key
CR 2032

- Install battery cover **2**.

» Red LED in the instrument cluster flashes.

» The radio-operated key is again ready for use.

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)

LIGHTING

Side light

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.

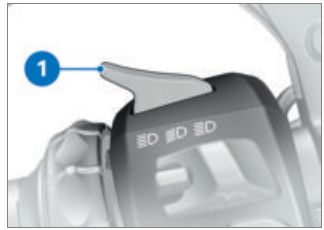
Low-beam headlight

- Switch on the ignition. (➠ 79)

- Alternatively: With the ignition switched on, pull switch **1**.

High-beam headlight and headlight flasher

- Switch on the ignition. (➠ 79)



- 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. (➠ 79)

- 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.

Parking lights

- Switch off the ignition. (➠ 79)

- Immediately after switching off the ignition, push button **1** to the left and hold it in that position until the parking lights come on.
- Switch the ignition on and off again to switch off the parking lights.

Automatic daytime riding light

The changeover between daytime riding light and low-beam headlight including front side lights is automatic.

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.

shows.

» 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 detec-

ted, the daytime riding light is switched back on.

shows when daytime riding light is active.

Hazard warning lights

- Switch on the ignition. (➠ 79)

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 lights system.

» Ignition can be switched off.

- To switch off the hazard warning lights system, switch on the ignition if necessary and press button **1** again.

Turn indicators

- Switch on the ignition. (➠ 79)
- 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. (➠ 79)

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

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

The new DTC system status OFF! is displayed.

shows.

Possible DTC system status OFF! is displayed.

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

The new DTC system status OFF! is displayed.

remains lit.

» 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 ON is 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 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" (➠ 153).

DYNAMIC DAMPING CONTROL (DDC)

Possibilities for adjustment

Dynamic Damping Control (DDC) automatically adapts the suspension to the characteristics of the terrain.

For more information on DDC see the section headed "Engineering details" (➠ 155).

Adjusting suspension damping and load

- Switch on the ignition. (➠ 79)
- To adjust the suspension damping setting, navigate to `Settings`, `Assist`, `Damping`.
- Navigate to the `Road`, `Dynamic` setting or the `Race` setting.
- To adjust the load setting, navigate to `Settings`, `Assist`, `Load`.
- Select the `Solo` setting or the `With pillion` setting.
- Adjust spring preload to suit load (➠ 106).

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:

–RAIN: Riding on rain-wet roads.

–ROAD: Riding on dry roads.

–DYNAMIC: Dynamic riding on dry roads.

–RACE: Riding on race tracks with sport tyres or slicks.

–RACE PRO 1/2/3: Riding on race circuits with provision for the rider's custom settings.

The optimum interplay of engine characteristic, ABS control and DTC control is provided for each of these scenarios.

The chassis adjustment also adapts to the selected scenario.

Riding-mode preselection

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, DYNAMIC and RACE

Configure riding-mode preselection

- Switch on the ignition. (➠ 79)
- Navigate to `Settings`, `Vehicle settings`, `Riding mode preselection`.
- 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.

Select the riding mode

- Switch on the ignition. (➠ 79)
- Configure riding-mode preselection. (➠ 88)

- 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.

- Repeatedly press button **1** until the riding mode you want is displayed.

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.

For more information on riding dynamics control systems such as ABS, see the section entitled "Engineering details".

» The availability of the riding modes depends on the custom configuration of the riding modes preselection function.

» With the motorcycle at a standstill, the selected mode is activated after approximately two seconds.

» The following conditions must be satisfied for activation of a new riding mode while riding:

– Throttle grip is in idle position.

– Brake is not applied.

– Cruise control is deactivated.

CRUISE CONTROL

Display when adjusting settings (Speed Limit Info not active)

Symbol **1** for cruise control is displayed in the Pure Ride view and in the top status line.

Display when adjusting settings (Speed Limit Info active)

Symbol **1** for cruise control is displayed in the Pure Ride view and in the top status line.

Switching on cruise control

- Slide switch **2** to the right.

» Button **1** is enabled for operation.

Setting road speed

- Short-push button **1** forward.

Adjustment range for cruise control (gear-dependent)
30...220 km/h

shows.

» The motorcycle maintains your current cruising speed and the setting is saved.

Accelerating

- Short-push button **1** forward.

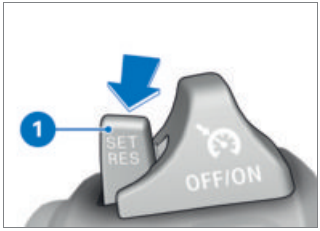
» Speed is increased by approx. 1 km/h each time you push the button.

- Push button **1** forward and hold it in this position.

» The vehicle accelerates smoothly.

» The current speed is maintained and saved if button **1** is not pushed again.

Decelerating



- Short-push button **1** back.

» Speed is reduced by approx. 1 km/h each time you push the button.

- Push button **1** back and hold it in this position.

» The vehicle decelerates smoothly.

» The current speed is maintained and saved if button **1** is not pushed again.

Deactivating cruise control

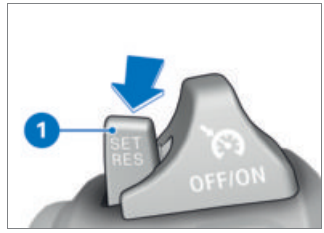
- Brake, pull the clutch lever or turn the throttle grip (close the throttle by turning the grip back past the idle position) to deactivate adaptive cruise control.

For safety reasons, cruise control is automatically deactivated when Gear Shift Assistant Pro downshifts. Cruise control remains active during upshifts.

For safety reasons, cruise control is automatically deactivated whenever ABS or DTC intervention occurs. If DTC is deactivated by the rider, cruise control is deactivated as well.

» Indicator light for adaptive cruise control goes out.

Resuming former cruising speed



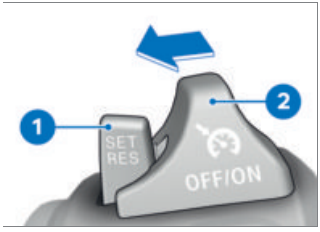
- Short-push button **1** back to return to the speed saved beforehand.

Opening the throttle overrides cruise control briefly, without deactivating it. When the throttle twistgrip is released, speed drops back to the setting saved beforehand.

If you want to reduce speed further you have to deactivate cruise control, for example by applying the brakes.

 shows.

Switching off cruise control



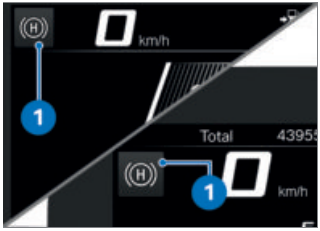
- Slide switch **2** to the left.

» The system is deactivated.

» Button **1** is disabled.

HILL START CONTROL (HSC)

Display



Symbol **1** for Hill Start Control is displayed in the Pure Ride view and in the top status line.

Adjust Hill Start Control Pro

- Switch on the ignition. (➠ 79)
- Navigate to `Settings`, `Vehicle settings`.
- Select `HSC Pro`.
- To switch off Hill Start Control Pro, select `Off`.

» Hill Start Control Pro is deactivated.

- To switch on manual Hill Start Control Pro, select `Manual`.

» Hill Start Control Pro can be activated by forcefully operating the handbrake or footbrake lever.

- To switch on automatic Hill Start Control Pro, select `Auto`.

» Hill Start Control Pro can be activated by forcefully operating the handbrake or footbrake lever.

» If the brake is actuated for approximately one second after the vehicle has come to a standstill and the motorcycle is on a gradient of at least 3 %, Hill Start Control Pro is automatically activated.

» The selected setting remains stored even after the ignition is switched off.

Operating Hill Start Control Pro

Requirement

Vehicle stationary and upright, engine running.

ATTENTION

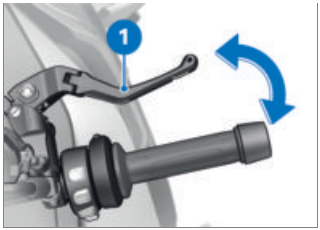
Non-availability of Hill Start Control

Risk of accident

- Apply the brakes manually to hold the vehicle.

Hill Start Control Pro is purely a comfort system that facilitates hill starts and consequently, is not to be confused with a parking brake.

Hill Start Control Pro should not be used on gradients steeper than 40 %.



- Apply firm pressure to handbrake lever **1** or to the footbrake lever and then quickly release the lever.
- Alternatively, apply the brake for about one second beyond the vehicle reaching a standstill on an incline of at least 3 %.

shows green.

» Hill Start Control Pro is activated.

- To switch off Hill Start Control Pro, operate handbrake lever **1** or the footbrake lever again.

If Hill Start Control Pro has been deactivated by means of the handbrake lever, automatic Hill Start Control is deactivated for the next 4 m.

disappears.

- Alternatively, ride off in 1st or 2nd gear.

Pulling away from rest with the throttle grip turned to open the throttle automatically deactivates Hill Start Control Pro.

disappears as soon as the brake is fully released.

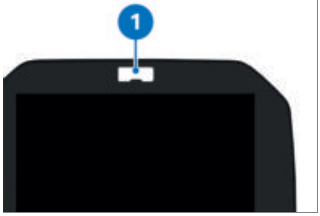
» Hill Start Control Pro is deactivated.

- For more information on Hill Start Control Pro see the sec-

tion headed "Engineering details" (➠ 162).

SHIFT LIGHT

Switch the shift light on and off



- Navigate to Settings, Vehicle settings.
- Switch Shift light on or off.

When the shift light flashes the secondary indicator flashes as well, even in the solid red rpm range.

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 the flashing frequency are demonstrated by the shift light with it briefly lighting up or flashing.

ANTI-THEFT ALARM (DWA)

–with anti-theft alarm (DWA) OE

Activation

- Switch on the ignition. (➠ 79)
- Customise the anti-theft alarm settings. (➠ 96)
- Switch off the ignition.

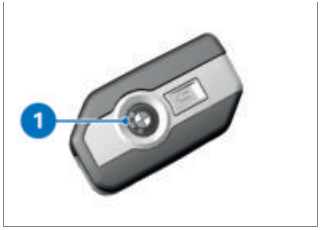
» If the anti-theft alarm system (DWA) is activated, the alarm system is armed automatically when you switch the ignition off.

» Activation takes approximately 30 seconds to complete.

» Turn indicators flash twice.

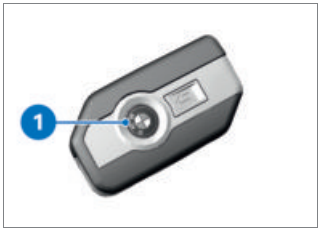
» Confirmation tone sounds twice (if programmed).

» Anti-theft alarm (DWA) is active.



- Switch off the ignition.
- Press button **1** on the radio-operated key twice.

» Activation takes approximately 30 seconds to complete.
» Turn indicators flash twice.
» Confirmation tone sounds twice (if programmed).
» Anti-theft alarm (DWA) is active.



- To deactivate the tilt sensor (for example if you are about to transport the motorcycle on a train and the swaying movement of the moving train could trip the alarm), press button **1** on the radio-operated key again during the activation phase.

» Turn indicators flash three times.
» Confirmation tone sounds three times (if programmed).
» Tilt sensor is deactivated.

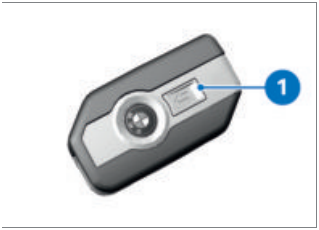
Alarm signal

A DWA alarm can be triggered by:
– Tilt sensor
– Switch-on attempt with an unauthorised vehicle key.
– Disconnection of the DWA anti-theft alarm from the vehicle's battery (DWA internal battery in the anti-theft alarm provides power - acoustic alarm only, the turn indicators do not flash)

When the radio-operated key is within range, an alarm triggered by the tilt alarm sensor is suppressed.

All functions are sustained even if the internal battery of the DWA anti-theft alarm system is flat; the only difference is that an alarm cannot be triggered if the system is disconnected from the vehicle's battery.

An alarm lasts for approximately 26 seconds. While an alarm is in progress an alarm tone sounds and the turn indicators flash. The type of acoustic alarm tone can be set by an authorised BMW Motorrad retailer.



You can cancel an alarm at any time by pressing button **1** on the radio-operated key; this does not deactivate the DWA.

If an alarm was triggered while the motorcycle was unattended, the rider is notified accordingly by an alarm tone sounding once when the ignition is switched on. The DWA LED then indicates the reason for the alarm for one minute.

Light signals issued by the indicator light:

–Flashes 1x: Tilt sensor 1
–Flashes 2x: Tilt sensor 2
–Flashes 3x: Ignition switched on with unauthorised key
–Flashes 4x: Disconnection of the DWA anti-theft alarm from the motorcycle's battery
–Flashes 5x: Tilt sensor 3

Deactivating anti-theft alarm system (DWA)

- Switch on the ignition.

» Turn indicators flash once.
» Confirmation tone sounds once (if programmed).
» DWA is switched off.

Customise the anti-theft alarm settings

- Switch on the ignition. (➠ 79)
- Navigate to `Settings`, `Vehicle settings`, `Alarm system`.

» The following adaptation settings are available:

–Adapting `Warning signal`
–Switch `Tilt sensor` on or off
–Switch `Arming tone` on or off
–Switch `Arm automatically` on or off

Possibilities for adjustment

`Warning signal`: Set the rising and falling or intermittent alarm tone.
`Tilt sensor`: Activate tilt sensor to monitor the inclination of the vehicle. The anti-theft alarm is tripped if any attempt is made to steal a wheel

or lift the vehicle for towing, for example.

When the vehicle is going to be transported, deactivate the tilt sensor to prevent the anti-theft alarm (DWA) from being triggered.

`Arming tone`: In addition to turn indicators flashing, alarm tone sounds as confirmation of activation/deactivation of the DWA.

`Arm automatically`: Automatic activation of the alarm function after the ignition is switched off.

TYRE PRESSURE MONITORING (RDC)

Switch the target-pressure warning on or off

- The system can be set to issue a specified-pressure warning when tyre pressure drops to the defined minimum.
- Navigate to `Settings`, `Vehicle settings`, `RDC`.
- Switch `Target pressure warn.` on or off.

HEATED GRIPS

Operating heated handlebar grips

The heating in the heated handlebar grips can be activated only when the engine is running.

The increase in power consumption caused by having the heated handlebar grips switched on can drain the battery if you are riding at low engine speeds. If the charge level is low, the heated handlebar grips are switched off to ensure the battery's starting capability.

- Start the engine. (➠ 115)

- Repeatedly press button **1** until desired heating stage **2** appears in front of heated grip symbol **3**.

The handlebar grips can be heated to three levels.

Low heating power

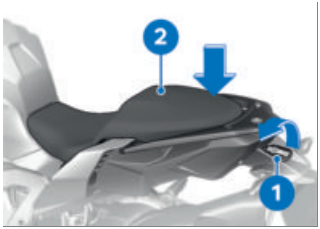
Medium heating power

High heating power

» The 3rd stage is for heating the grips quickly: it is advisable to switch back to a lower stage as soon as the grips are warm.
» The selected heating stage will be saved if you allow a certain length of time to pass without making further changes.
- To switch off the heated grips, repeatedly press button **1** until heated grip symbol **3** disappears.

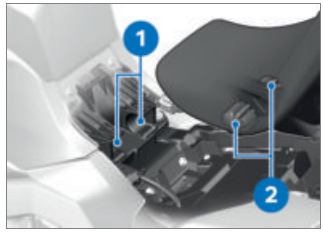
SEAT

Removing seat



- Press down on the rear part of seat **2** to relieve the strain on the lock and at the same time unlock the seat lock by turning vehicle key **1** counterclockwise.
- Lift the seat at the rear and remove.
- Lay the seat on a clean surface.

Installing seat



- Position the seat with mounts **1** in buffers **2** on left and right.
- Lower the rear of the seat and engage the seat in the latching mechanism.

STORAGE COMPARTMENT

Opening and closing storage compartment

ATTENTION

High temperatures in the storage compartments, particularly in summer

Damage to objects stowed away, particularly electronic devices, such as mobile phones

- In summer, do not place heat-sensitive items in the storage compartment.
- Ask the manufacturer about possible usage restrictions and comply with the information provided.

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.

- To open the storage compartment, press button **1** and open the lid of the storage compartment.
- To close the storage compartment, push the lid closed.

The storage compartment cannot be locked.

ADJUSTMENT

06

MIRRORS

Adjusting mirrors

- Turn the mirror to the appropriate position.

–with handlebar end mirrors OE

DANGER

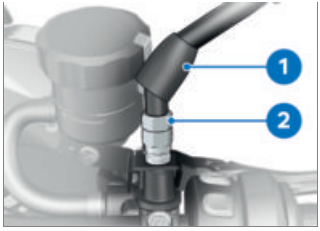
Functional impairment due to incorrect installation position

Risk of crash and accident

- Do not change the installation position of the mirror.

- Turn the mirror head to the desired position.◁

Adjusting mirror arm



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

Mirror with lock nut to adapter
M10 x 1.25
22 Nm (Left-hand thread)

- Push protective cap **1** over the threaded fastener.

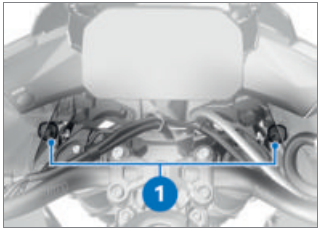
HEADLIGHT

Headlight beam throw and spring preload

Headlight beam throw is generally kept constant when spring preload is adjusted to suit load. Headlight beam throw is set correctly ex-works.

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:

- Use adjusting screws **1** on left and right to adjust beam throw for both headlights.

When the motorcycle is again ridden with a lower load:

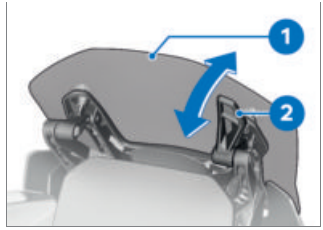
- Return the headlight to its basic setting.

WINDSCREEN

Adjusting windscreen

Requirement

The motorcycle is at a standstill.



WARNING

Adjusting the windscreen while riding

Risk of falling

- Do not attempt to adjust the windscreen unless the motorcycle is at a standstill.

- Pull lever **2** down to raise windscreen **1**.
- Push lever **2** up to lower windscreen **1**.

BRAKES

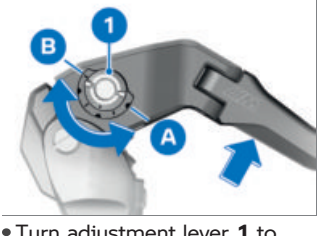
Adjusting handbrake lever

WARNING

Relocated brake fluid tank
Air in the brake system
- Do not turn the handlebars or the handlebar fitting on the handlebar.

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.



- Turn adjustment lever **1** to the desired position.

The adjuster knob is easier to turn when the handbrake lever is pushed slightly forward.

» Adjustment options:

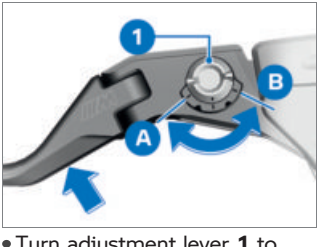
– From position **A**: Narrowest span between handlebar grip and handbrake lever.
– In 5 steps toward position **B** to increase the span between handlebar grip and handbrake lever.

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.



- Turn adjustment lever **1** to the desired position.

The adjuster knob is easier to turn when the clutch lever is pushed slightly forward.

» Adjustment options:

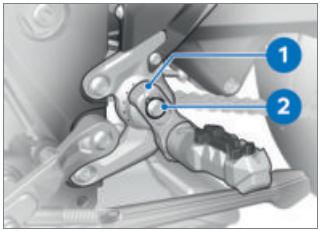
– From position **A**: Narrowest span between handlebar grip and clutch lever.
– In 4 steps toward position **B** to increase the span between handlebar grip and clutch lever.

FOOTREST SYSTEM

– with Billet pack[OE]

Adjust the rotor

- Setting of the rotor is the same on the right and left.
- The position of the rotor must be set identically on the right and left.



- Rotor **1** enables foot clearance and foot position to be adjusted.
- Slacken screw **2**.

» Rotor **1** can be adjusted to any of 5 positions around its axis of rotation.
» Rotor **1** can be adjusted to any of 3 positions along its longitudinal axis.

- Set rotor **1** to the desired position and tighten screw **2**.

Rotor to base plate
M8 x 35
28 Nm

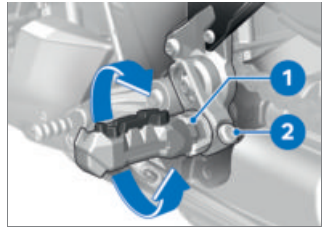
WARNING

Incorrectly adjusted footrest as a result of movement of the rotor.
Risk of falling
- The footrest setting must be adjusted accordingly if the rotor has moved.

- The footrest may only fold upwards and slightly towards the rear.

Adjusting footrest hinge

- Setting of the footrest joint is the same on the right and left.



- Slacken screw **2**.

» Footrest joint **1** can be turned.

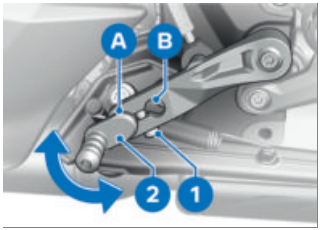
- Position footrest joint **1** so that the footrest can be

flipped up and slightly to the rear.
- Tighten screw **2**.

Footrest hinge to rotor
M8 x 30
28 Nm

Adjusting peg

The procedure described here for adjusting the peg on the gearshift lever applies by analogy for the peg on the footbrake lever.



- Slacken screw **1**.
- Install peg **2** in mount **A** or **B**.
- Turn peg **2** to the desired position.

A peg that has been set too high or too low can lead to problems when shifting gear. Check the position of the peg if you experience shifting problems.
- Tighten screw **1** to the specified tightening torque.

Peg to gearshift lever
M6 x 25
Thread-locking compound: micro-encapsulated
9 Nm

Peg to footbrake lever
M6 x 25
Thread-locking compound: micro-encapsulated
9 Nm

SPRING PRELOAD

Adjustment

Spring preload has to be adjusted to suit the weight of rider, passenger and luggage. Increase spring preload for heavy loads, decrease spring preload for light loads.

Lifting the motorcycle

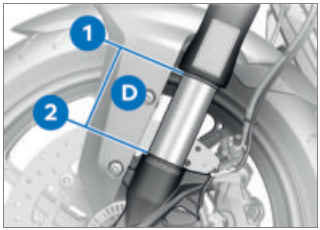
Adjusting spring preload as recommended by BMW Motorrad requires the use of an engine lifter. The procedure for use of this equipment is not detailed here.

As an alternative, spring preload can also be gauged by a test ride. If you are not sure whether this work is within your capability contact a specialist workshop, preferably an

authorised BMW Motorrad retailer.

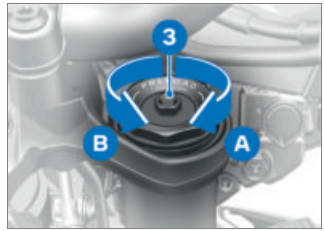
Adjusting spring preload for front wheel

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Lift the motorcycle with an engine lifter until there is no load on the front wheel.



- Measure distance **D** between points **1** and **2**.
- Remove the engine lifter.
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Apply the rider's weight to the motorcycle.
- With the assistance of a second person, measure the distance **D** between the points **1** and **2** again and calculate the difference (compression) between the measured values.

Load-dependent adjustment of spring preload
Negative spring displacement of front wheel
40 mm (with rider 85 kg)



WARNING

Unmatched spring-preload and front-fork damping settings.

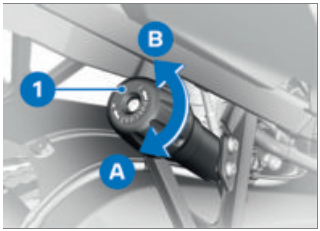
Impaired handling.

- Adjust the front-fork damping characteristic to suit spring preload.

- To reduce compression (increase spring preload), use the tool from the on-board toolkit to turn adjusting screw **3** in direction **A**.
- To increase compression (reduce spring preload), use the tool from the on-board toolkit to turn adjusting screw **3** in direction **B**.

Adjusting spring preload for rear wheel

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



WARNING

Spring preload setting and spring-strut damping setting not matched.
Impaired handling.
- Adjust spring-strut damping to suit spring preload.

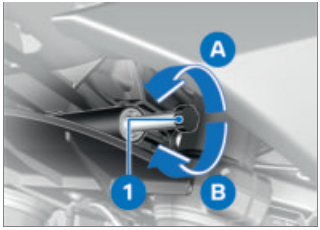
- To increase spring preload, turn adjuster knob **1** in direction **A**.
- To reduce spring preload, turn adjuster knob **1** in direction **B**.

Basic setting of the rear spring preload
Turn the adjuster as far as it will go counter-clockwise, then back it off 3.5 turns clockwise (Rider approx. 75 kg)

Basic setting of the rear spring preload
Turn the adjuster as far as it will go counter-clockwise, then back it off 5.5 turns clockwise (Rider approx. 85 kg)
Turn the adjuster as far as it will go counter-clockwise, then back it off 7 turns clockwise (Rider approx. 95 kg)
Turn the adjuster as far as it will go counter-clockwise, then back it off 8 turns clockwise (Rider approx. 105 kg)
Turn the adjuster as far as it will go counter-clockwise, then back it off 18.5 turns clockwise (Two-up)

STEERING

Adjusting steering damper



WARNING

Adjusting the steering damper while riding.
Risk of accident
- Do not attempt to adjust the steering damper unless the motorcycle is at a standstill.

- To reduce damping: Turn adjusting screw **1** in direction **A**.
- To increase damping: Turn adjusting screw **1** in direction **B**.

Steering damper basic setting
Turn the adjusting screw to the limit position in direction **B**, then turn it 4 clicks in direction **A**. (On-road riding and race-track riding)

RIDING

07

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.

Load

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 soft cases OA

- Make sure that the weight is uniformly distributed between right and left.
- Pack heavy items at the bottom and toward the inboard side.
- Note the maximum permissible payload and maximum permissible speed, see also the section entitled "Accessories" (➠ 207).◁

Speed

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

–Settings of the spring-strut and shock-absorber system
–Imbalanced load
–Loose clothing
–Insufficient tyre pressure
–Poor tyre tread

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 burn injury

- When you park the vehicle make sure that no-one and no objects can come into contact with the hot engine and exhaust system.

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.

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.

ATTENTION

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

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

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

Always before riding off
–Check operation of the brake system (➠ 170).
–Check operation of the lights and signalling equipment.
–Check operation of the clutch (➠ 175).
–Check the tyre tread depth (➠ 178).
–Check the tyre pressures (➠ 177).
–Check security of luggage.

Every 3rd refuelling stop

–Check the engine oil level (➠ 168).
–Check the brake pad thickness, front brakes (➠ 170).
–Check the brake pad thickness, rear brakes (➠ 172).
–Check the brake-fluid level, front brakes (➠ 172).
–Check the brake-fluid level, rear brakes (➠ 173).
–Check the coolant level (➠ 176).
–Lubricate the chain (➠ 189).
–Check chain sag (➠ 188).
–Check chain wear (➠ 190).

STARTING

Starting engine

- Switch on the ignition.

» Pre-Ride-Check is performed. (➠ 116)
» ABS self-diagnosis is performed. (➠ 116)
» DTC self-diagnosis is performed. (➠ 117)

- 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.

To ensure rapid operational readiness of the catalytic converter, idle speed is increased for a short time after engine start.

» Low temperatures can impact on the starting response. Repeated, brief application of load on the battery causes battery temperature to rise, so more battery power is available for starting the engine.

- Press starter button **1** and hold it down until the engine fires.

The start attempt is automatically interrupted if battery voltage is too low. Recharge the battery before you start the engine, or use jump leads and a donor battery to start.
See the subsection on jump starting in "Maintenance" for more details.

» The engine starts.

» Consult the troubleshooting chart below if the engine refuses to start. (➠ 218)

Pre-Ride-Check

The instrument cluster runs a test of the instruments and the indicator and warning lights when the ignition is switched on. This test is known as the Pre-Ride-Check. The test is aborted if you start the engine before it completes.

Phase 1

All indicator and warning lights are switched on.
After a longer vehicle standstill period, an animation is displayed when the system starts up.

Phase 2

The 'General' warning light changes from red to yellow.

Phase 3

All the indicator and warning lights switched on in the initial phase are switched off in reverse sequence.

The malfunction indicator lamp (MIL) does not go out until 15 seconds have elapsed.

If one of the indicator and warning lights did not switch on:

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

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.
For more information on riding dynamics control systems such as ABS, see the section entitled "Engineering details".

ABS self-diagnosis

BMW Motorrad Integral ABS performs self-diagnosis to ensure its operability. Self-diagnosis starts automatically when you switch on the ignition.

Phase 1

» Test of the diagnosis-compatible system components with the vehicle at a standstill.

 flashes.

Phase 2

» Test of the wheel-speed sensors as the vehicle pulls away from rest.

 flashes.

ABS self-diagnosis completed

» The ABS indicator and warning light goes out.

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)

If an indicator showing an ABS fault is displayed after ABS self-diagnosis completes:

- You can continue to ride. Bear in mind that neither the ABS function nor the integral braking function is available.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad retailer.

DTC self-diagnosis

BMW Motorrad DTC performs self-diagnosis to ensure its operability. Self-diagnosis is performed automatically when you switch on the ignition.

Phase 1

» Test of the diagnosis-compatible system components with the vehicle at a standstill.

 slow-flashes.

Phase 2

» Pullaway test of the diagnosis-compatible system components.

 slow-flashes.

DTC self-diagnosis completed

» The DTC symbol no longer shows.

- Observe all the indicator and warning lights.

 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)

If an indicator showing an DTC fault is displayed after DTC self-diagnosis completes:

- You can continue to ride. Bear in mind that the DTC function is not available or the functionality might be subject to certain restrictions.
- 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.
- Comply with the running-in speeds.

 Running-in speed
<7000 min^{-1} (Odometer reading 0...300 km)
<9000 min^{-1} (Odometer reading 300...1000 km)
No full load (Odometer reading 0...1000 km)

- Note the mileage after which the running-in check should be carried out.

 Mileage until the running-in check
500...1200 km

Brake pads

New brake pads have to be run in before they can achieve their optimum friction levels. 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.

WARNING

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

Risk of accident

- Ride carefully and avoid extremely sharp inclines.

SHIFTING GEAR

Gear Shift Assistant Pro

For safety reasons, cruise control is automatically deactivated when Gear Shift Assistant Pro downshifts. Cruise control remains active during upshifts.

- 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.

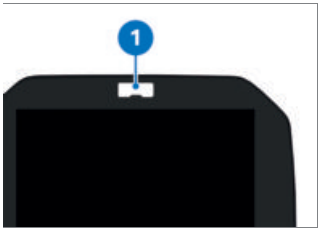
– The rider is the most important part of the system and decides when to shift gears.

– The sensor **1** on the gearshift shaft registers the gearshift request and triggers shift assistance.

» When you are riding at constant speed or in overrun in a low gear with the engine revving high, shifting gear without disengaging the clutch can cause a severe reaction to the load change. BMW Motorrad recommends disengaging the clutch for shifts in these circumstances.

» Shift assistance is not available in the following situations:
– With clutch lever pulled.
– Gearshift lever is not in its initial position
• For more information on Gear Shift Assistant Pro see the section headed "Engineering details" (➠ 161).

Shift light



Shift light **1** indicates that the engine speed at which the rider should upshift is approaching.
– Shift light flashes at preset frequency: Approaching upshift rpm
– Shift light goes out: Engine revving at upshift rpm

The engine-speed thresholds and the way in which the shift light indicates the various states can be customised by navigating to `Settings`, `Vehicle settings` also see the section on operation (➠ 94).

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 vehicle 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.
To optimise stopping distance, apply the front brakes rapidly and keep steadily 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. Remember to pull the clutch at the same time.
BMW Motorrad ABS prevents the front wheel from locking up.
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. In the absence of load on the wheel the ABS has to intervene to prevent the front wheel from locking even if the brakes are applied only very lightly. This leads to a reduced braking effect.

Emergency braking

If you brake sharply from a speed in excess of >50 km/h, the brake light flashes rapidly as a warning for road users behind you.

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 accelerate 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 is activated in RAIN, ROAD and DYNAMIC riding modes.

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 redefining the physical limits that apply to motorcycling. It is still possible for these limits to be overshot 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 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 engine.
- On a gradient, the motorcycle should always face uphill; select 1st gear.

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.

- Extend the side stand and prop the motorcycle on the stand.

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.

- If the camber of the roadway permits, turn the handlebars all the way to the left.

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
E5 E10	Premium Plus unleaded (max. 5 % ethanol, E5) 98 RON, 93 AKI
	Alternative fuel grade
E5 E10	Premium unleaded (power- and consumption-related restrictions) (max 10 % ethanol, E10) 95 ROZ/RON 90 AKI

» Look for these symbols on the fuel filler cap and on the fuel pump:

E5

E10

Refuelling
Requirement
The steering lock is disengaged.

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 stand.
- Switch off the ignition. (➠ 79)

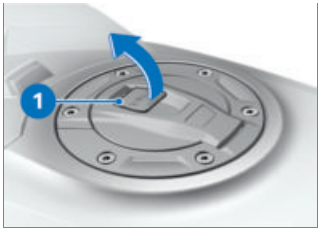
The fuel filler cap can be opened within the defined waiting time after the ignition has been switched off, without

the radio-operated key being within range.

Waiting time for opening the fuel filler cap
2 min

» There are **two variant ways** of opening the fuel filler cap:
– Within the waiting time.
– After the waiting time has expired.

Variant 1
Requirement
Within the waiting time



- Slowly pull tab **1** on the fuel filler cap up.

» Fuel filler cap unlocks.

- Fully open the fuel filler cap.

Variant 2
Requirement
After the waiting time has expired

- Bring the radio-operated key into range.
- Slowly pull tab **1** up.

» The indicator light for the radio-operated key flashes while the search for the radio-operated key is in progress.

- Slowly pull tab **1** on the fuel filler cap up again.

» Fuel filler cap unlocks.

- Fully open the fuel filler cap.

- Refuel with fuel of the grade stated above; 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. 20 l
Fuel reserve
approx. 4 l

- Press down firmly on the filler cap of the fuel tank.

» The fuel filler cap engages with an audible click.

» The fuel filler cap locks automatically when the waiting time expires.

» The engaged fuel filler cap locks immediately when you secure the steering lock or switch on the ignition.

Opening fuel filler cap emergency release

Fuel filler cap cannot be opened.

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

- Remove screws **1**.
- Remove emergency release **2**.

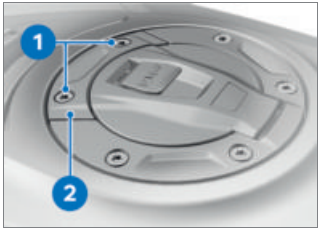
» Fuel filler cap unlocks.

- Fully open the fuel filler cap.
- Refuel. (➠ 124)
- Close the fuel filler cap emergency release. (➠ 126)

Closing fuel filler cap emergency release

Requirement

Fuel filler cap is in closed position.



- Hold emergency release **2** in position.
- Install screws **1**.

SECURING MOTORCYCLE FOR TRANSPORTATION

- Make sure that all components that might come into contact with tensioning 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 onto the transportation flat and hold it in position: do not place it on the side stand.
- Have a helper hold the motorcycle to make sure that it cannot topple.

ATTENTION

Trapping of components

Component damage

- Do not trap components such as brake lines or cable legs.

- At the front, loop a strap over the bottom fork bridge on each side.
- Pull the straps down and tight.

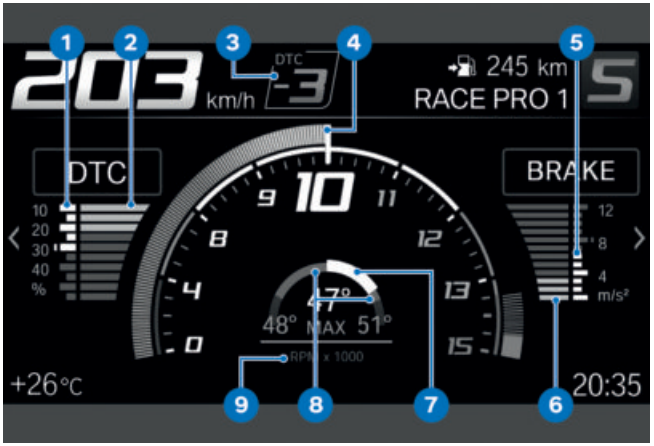
- At the rear, secure the straps to the rear frame on both sides and tighten the straps.
- Tighten all the straps uniformly; the vehicle's suspension should be compressed as tightly as possible front and rear.

ON THE RACE TRACK

08

STATUS INDICATORS FOR RACING

SPORT 1



1 Maximum DTC torque reduction

2 Current DTC torque reduction

3 DTC control value

4 Rev. counter

5 Maximum braking deceleration

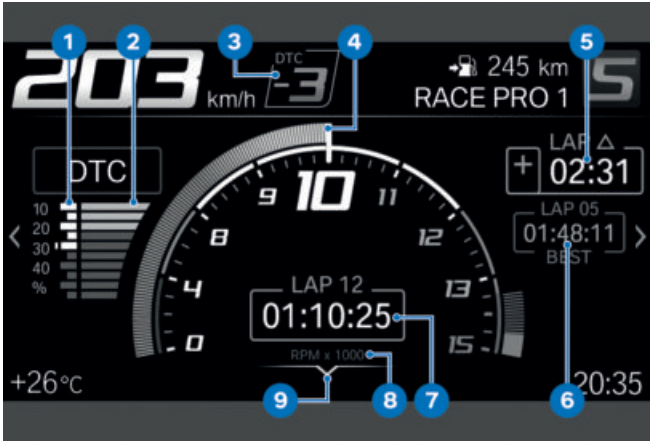
6 Current braking deceleration

7 Current lean angle

8 Maximum lean angle

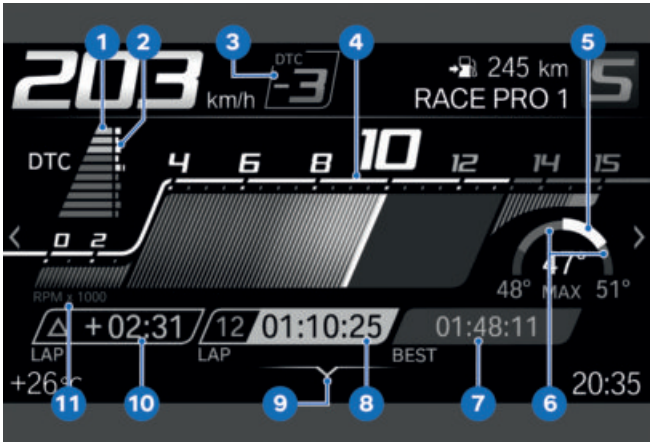
9 Unit for engine speed display: 1000 revolutions per minute

SPORT 2



1 Maximum DTC torque reduction
2 Current DTC torque reduction
3 DTC control value
4 Rev. counter
5 Difference between the last lap time and reference time or difference between current lap time and reference time
6 Reference time: Fastest of the currently saved laps or all-time fastest saved lap
7 Current lap time (➠ 135)
8 Unit for engine speed display: 1000 revolutions per minute
9 Operating help

SPORT 3 DISPLAY



1 Current DTC torque reduction
2 Maximum DTC torque reduction
3 DTC control value
4 Rev. counter
5 Current lean angle
6 Maximum lean angle
7 Reference time: Fastest of the currently saved laps or all-time fastest saved lap (➠ 135)
8 Current lap time
9 Operating help
10 Difference between the last lap time and reference time or difference between current lap time and reference time
11 Unit for engine speed display: 1000 revolutions per minute

LAPTIMER

Start the timing

- Call up the Sport and switch to the Sport 2 display.
- Start the engine. (➠ 115)

- Press button **1**.

» Time recording is running.

- Every time you cross the start/finish line, press button **1** again to start recording for the next lap.

» The data of the preceding lap are written into memory.

» The time for the current lap starts again from 00:00:00.

» The stopped time for a lap is displayed for an adjustable Disp. duration time before the display switches to elapsed time for the current lap.

» Recording continues even if you exit the display mode during recording.

Ending time recording and managing times

Requirement

Sport 2 is displayed.

- Press down the MENU rocker button.

» The LAPTIMER menu is displayed.

– Timing in progress can be ended with Stop recording.

– You can go to the current lap times and riding data by using Laps. 99 laps can be saved. If the laps have not been deleted in the meantime, additional laps overwrite the first laps.

– All laps can be deleted with Delete all laps.

– You can use Reset Best Ever to reset the all-time best lap (Best Ever).

Set up the laptimer

- Navigate to Settings, Vehicle settings, Laptimer. The following settings are available:

» Debounce time: If the headlight flasher has been actuated, the headlight flasher can be actuated again within this time without affecting lap time measurement.

–with M GPS-Laptrigger[OE]
» Trigger: Change of actuation. Manual: Actuation by headlight flasher. External: Actuation by M GPS-Laptrigger. Automatic signalling of each new lap and evaluation of the logged data require the optional M Datalogger accessory including GPS-Laptrigger.◁
» Disp. duration: Within this time, the stopped lap time is displayed before the current lap time is shown.
» Reference: Selection of which best time is displayed as a reference. Best: Best time of the current recording session or Best Ever: Best-ever measured time.
» Best lap in progress: When this function is activated, the difference between the current lap time and the reference time is displayed instead of the difference between the last lap time and the reference time.

Best-ever lap

The best-ever lap (Best Ever) is the fastest of all recorded laps and is updated once a faster lap has been recorded. The best-ever lap remains stored in memory even if the recorded laps are deleted. This means that other races can subsequently be timed and the lap times of those races compared with the best-ever lap from earlier races.
The best-ever lap can be deleted in the LAPTIMER menu. If the best-ever lap is from a saved recording, it is accompanied on the display by the relevant lap number. If the best-ever lap shows without a lap number, this means that it comes from a recording that has been deleted.

RACE PRO RIDING MODES

Configuration for the race track

The RACE PRO riding modes enable pro-rider tweaks to be made to the chassis and suspension, braking and engine control systems. This means that individual rider requests, track characteristics and weather conditions can be taken into account.

The following parameters can be adjusted:

–Engine
–Engine Brake
–Traction (DTC)
–Wheelie (DTC)
–ABS
–DDC

For further information about the parameters, see (➠ 156).

Three RACE PRO riding modes can be configured.

One RACE PRO riding mode can also be selected by pressing the MODE button (➠ 87).

Configuring RACE PRO riding modes

- Navigate to Settings, Vehicle settings and select Riding mode preselection.
- Activate at least one RACE PRO riding mode.
- Select Configuration.

» The current configurations are shown as an overview.

- Select a configuration.

- Select a parameter.

» The current setting is displayed graphically and numerically. In addition, explanatory texts are displayed for the relevant setting.

–If a setting is also saved in a standard riding mode, this riding mode is specified.

- Change the setting as desired.

Restore the factory defaults

- Select a configuration.
- Scroll down the list of parameters and select the last entry Reset.

LAUNCH CONTROL

Racing start with Launch Control

Launch Control assists the rider by revving the engine to the ideal speed for a racing start.

Engine rpm after activation of Launch Control with throttle fully open
9000 min^{-1}

When Launch Control is active engine torque is reduced so that forward propulsion is maximised on the flat with the front wheel just starting to lift off the ground. Torque is temporarily reduced slightly when the electronics detect front-wheel lift.

Launch Control is switched off in the following circumstances:
– Third gear is engaged.
– Bank angle is greater than 30°.
– The engine or the ignition is switched off.
– The brake is applied.

The number of consecutive starts using Launch Control is limited in order to protect the clutch. The number of possible starts remaining appears on the display, e.g. `Launch Control: 3 starts still avail.`.

Operating Launch Control

CAUTION

Launch Control permits maximum acceleration, so unfamiliar riding situations can occur.
Risk of accident through increased acceleration.
- Use Launch Control only on race tracks.

- Bring vehicle to starting position.

» Vehicle is stationary, engine is running.

- Press and hold down starter button **1** until the display shows the number of starts with Launch Control still permitted.

» If no more starts are possible, `L-Con not available. Clutch too hot.` is displayed.

- Allow the clutch to cool.

Clutch cooling time
approx. 3 min (with engine running)
approx. 20 min (with engine stopped)

- Proceed in the normal way when starting; open the throttle only as far as necessary to reach the rpm limit.
- After engaging the clutch, open the throttle completely.

» Shift light shows or flashes.
» Launch Control controls optimum torque at the rear wheel.

- Keep the throttle twistgrip fully open.

» As soon as rpm limitation ceases, engine rpm increases because the throttle twistgrip is in the full-throttle position.
» Throttle-twistgrip reaction is normal again.
» If in third gear or leaning further than 30°, the shift light disappears.
» The racing start with Launch Control is concluded.

PIT LANE LIMITER

Limiting speed with Pit Lane Limiter

The Pit Lane Limiter is an assistance system for complying with a speed limit, for example in the pit lane. To do so, a maximum rpm is specified for the engine when riding in 1st gear.

The speed resulting from the maximum rotational speed is dependent on the ratio and tyre size.

Range of values

–3500...8000 min^{-1}

Setting up Pit Lane Limiter

- Navigate to `Settings`, `Vehicle settings` and activate `Pit Lane Limiter`.
- Select `Configuration`.
- Set up `RPM`.

Operating Pit Lane Limiter

- Ride in 1st gear.

- Press and hold down starter button **1**.
- Open throttle grip until the set maximum rpm has been reached.

» Engine speed is limited to the set rpm.

WARNING

As soon as the starter button is released the vehicle accelerates in accordance with the position of the throttle twistgrip.
Risk of crashing due to severe jerk forward if throttle twistgrip in full load position.
- Do not fully open the throttle twistgrip; instead, turn it only to the position at which the engine reaches its speed-limit rpm.

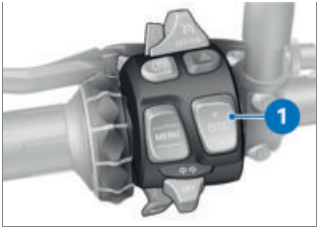
- Release starter button **1**.

» The vehicle accelerates at the maximum rate.

DTC

DTC setting

The DTC controls permissible rear-wheel slip in accordance with your selected riding mode. Control can be fine-tuned in the configuration of the RACE PRO riding modes. Configuring RACE PRO riding modes (➠ 137)



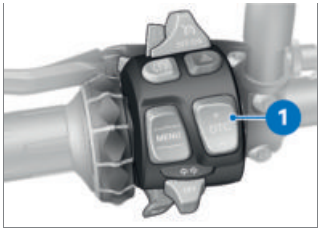
You can use the DTC rocker button **1** on the left handlebar fitting to change the DTC setting while riding.

Adapt DTC

- Configure the RACE PRO riding modes. (➠ 137)
- Select the desired RACE PRO riding mode.

DTC while the motorcycle is on the move.

If `RACE PRO riding mode` is activated, `Speed Limit Info` **1** is hidden and DTC control value **2** is displayed instead.



- Short-press the top section of rocker button **1** to increase DTC control.

WARNING

Loss of stability because of rear wheel spinning when DTC control is reduced.

Risk of falling

- Reduce DTC for riding on racing circuits only.
- Only change DTC control by one level at a time and carefully test the effects on drivability.

- Short-press bottom section of DTC rocker button **1** to reduce DTC control.

» The set value is shown in the display and is between `-7` and `7`:

» `1` ... `7`: Reduce slip at the rear wheel in a maximum of seven stages. `7` is the value corresponding to earliest DTC intervention.

» `-1` ... `-7`: Increase slip at the rear wheel in a maximum of seven steps. `-7` is the value corresponding to latest DTC intervention.

» `0`: Works default setting

» `DTC` indicator not showing: DTC is switched off.

DTC shutdown

On very loose surfaces (for example in a gravel trap of a race track) the DTC's attempts to control propulsive power might reduce drive to the extent that the machine cannot propel itself forward. Under these circumstances, BMW Motorrad recommends temporarily switching off DTC. Bear in mind that the rear wheel will spin on the loose surface and close the throttle in good time before you reach a firm surface.

Switching off DTC also deactivates traction control and wheelie suppression.

Switch DTC on again as soon as temporary shutdown is no longer necessary.

Switch on DTC (➠ 86)

MIRRORS

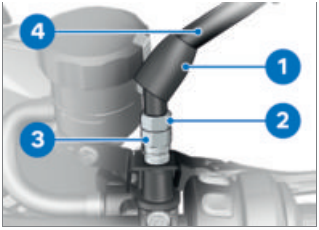
Remove the mirrors

ATTENTION

Removal of the mirrors

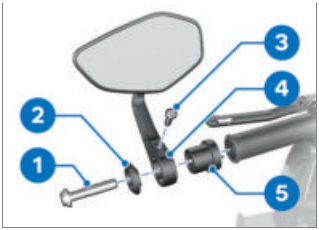
Voiding of homologation for riding on public roads

- With the mirrors removed, do not ride the motorcycle on public roads.



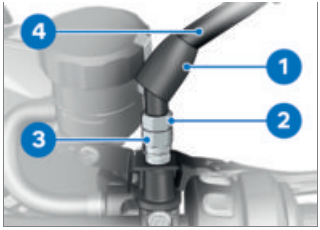
- Push protective cap **1** up the mirror arm to expose the threaded fastener.
- Loosen lock nut **2**.
- Remove mirror arm **4** from threaded adapter **3**.

–with handlebar end mirrors OE



- Remove screw **1** and remove cover cap **2**.
- Slacken screw **3** and remove mirror **4**.
- Remove decoupling element **5**.◁

Install the mirrors

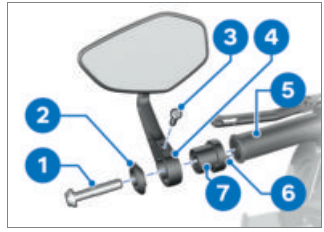


- Install mirror arm **4** in threaded adapter **3**.
- Turn mirror arm **4** to the appropriate position.
- Tighten lock nut **2** to the specified tightening torque, while holding the mirror arm to ensure that it does not move out of position.

Mirror with lock nut to adapter
M10 x 1.25
22 Nm (Left-hand thread)

- Adjust the mirrors. (➠ 102)

–with handlebar end mirrors[OE]



- Hold decoupling element **7** in position on handlebars **5**, noting retaining lug **6**.
- Slip mirror **4** into position and tighten screw **3**.

Mirror to decoupling element
M5 × 20
Thread-locking compound: micro-encapsulated
2.5 Nm

- Hold cover cap **2** in position and install screw **1**.

Mirror on handlebars
M10 × 60
38 Nm

- Adjust the mirrors. (➠ 102)◁

DATA RECORDING AND 2D SOFTWARE

–with M GPS-Laptrigger[OE]

Data recording and 2D software

You can access all the information about and support for working with the software from 2D, exporting and analysing the performance logs by visiting:
2d-datarecording.com/en/m-gps-laptrigger.

ENGINEERING DETAILS

09

GENERAL NOTES

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

ANTILOCK BRAKE SYSTEM (ABS)

Partially integral brakes

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

When actively intervening in the braking process, the BMW Motorrad partially integral ABS adapts braking-force distribution between front and rear brakes to suit the load on the motorcycle, and so ABS intervention helps achieve the shortest possible stopping distance.

ATTENTION

Attempted burn-out despite integral braking function

Damage to rear brake and clutch

- Do not attempt a burn-out unless the vehicle is at a complete standstill. A burn-out is not use of the vehicle as intended by the manufacturer and can, therefore, lead to fault memory entries.

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 brak-

ing pressure to the maximum transferable braking force. The wheels continue to turn and the driving stability is retained irrespective of the road condition.

What are the effects of surface irregularities?

Humps and 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, so that the wheels will continue to rotate under all imaginable circumstances, because this is the precondition for ensuring directional stability. As soon as is registers the actual circumstances, the system reacts instantly and adjusts braking force accordingly to achieve optimum braking.

What feedback does the rider receive from the ABS?

If ABS has to reduce braking force on account of the circumstances described above, vibration is perceptible through the handbrake lever.

When the handbrake lever is pulled, brake pressure is also built up at the rear wheel by the integral function. If the brake pedal is depressed after the handbrake lever is pulled, the brake pressure built up beforehand is perceptible as counter-pressure sooner than is the case when the brake pedal is depressed either before or at the same time as the brake lever is pulled.

Rear wheel lift

Under very severe and sudden deceleration, however, under certain circumstances it is possible that the ABS 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 ABS?

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

At speeds above min 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:
- Heating up with the motorcycle 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 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 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.

WARNING

Braking when cornering
Risk of accident despite ABS
- 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 margin of safety offered by this system.

ABS Pro

ABS Pro increases safety, particularly for braking with the machine banked over in bends. 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. They come from the angular rate sensor, an integral component of Dynamic Traction Control (DTC) and Dynamic ESA.
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. Additionally,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.

ABS Pro is activated in all riding modes. In RACE PRO riding mode, ABS Pro can be parametrised to suit the rider's individual needs and preferences.

Brake Slide Assist

Brake Slide Assist is an extension of BMW Motorrad ABS Pro and is designed as a rider assistance system for riding with slicks on race tracks.
Under sharp deceleration by application of the front and rear brakes, Brake Slide Assist calculates the current drift angle, taking the wheel centrifugal velocities of both wheels, the steering angle and the bank angle into account.
If drift angle exceeds a limit calculated by Brake Slide Assist, brake pressure at the rear wheel is limited and the engine drag torque control electronics intervene to reduce slip and stabilise the motorcycle.
Close to the limits of what is physically possible in motorcycling, both the rider and external influences such as track conditions and suspension settings have considerable effect on the ability of Brake Slide Assist. to control drift

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. BMW Motorrad DTC is designed as an assistant system for the rider and for use on public roads. The extent to which 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.
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.

With DTC, 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 lean angle values are identified as implausible over an extended period of time, a substitute value is used for the lean angle or the DTC 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 applying the front brake (burnout).
–Heating up with the motorcycle on an auxiliary stand, in neutral or with a gear engaged.

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 and bank-angle-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 DTC traction control, dynamic engine brake control compares the wheel circumferential velocities of the front and rear wheels. Additional information on the bank angle enables dynamic engine brake control to calculate slip and the reserve of stability at the rear wheel.
If slip overshoots the applicable limit, the throttle valves are opened very slightly to increase engine torque. Slip is reduced and the vehicle is stabilised.

DYNAMIC DAMPING CONTROL (DDC)

How does DDC work?

Dynamic Damping Control (DDC) is as semi-active suspension-adaptation system that reacts automatically to riding manoeuvres and to road conditions. By interpreting ride height sensor signals, DDC detects movements in the chassis and suspension and responds by adjusting the damper valves. This enables the suspension to adapt to the terrain.

Possibilities for adjustment

DDC is preset to a setting appropriate to the selected riding mode. The settings available for setting up the suspension for the desired riding experience are as follows:

Damping modes

–Road: Damping for comfortable on-road riding (default setting in RAIN and ROAD riding modes)
–Dynamic: Damping for dynamic on-road riding (default setting in DYNAMIC riding mode)
–Race: Damping for riding on the race track (default setting in RACE riding mode)

In addition, the damping values for the front wheel and the rear wheel can be set in the RACE PRO CONFIGURATION menu on a 14-level scale (level 1: "softest" setting; level 14: "hardest" setting.) Rebound and compression damping can be altered on the back wheel separately.
A spring travel sensor (racing accessory) has to be installed on the front forks for separate compression-stage and rebound-stage adjustment of the damping values for the front suspension.

Load settings

In Road and Dynamic damping modes, the suspension can also be adapted to the load carried on the vehicle. The following settings are available:
–One-up riding
–Two-up (with luggage)

RIDING MODE

Selection

To adjust the motorcycle to the road condition and the desired driving experience, the following riding modes can be selected:
–RAIN
–ROAD
–DYNAMIC
–RACE
–RACE PRO 1
–RACE PRO 2
–RACE PRO 3

A maximum of four riding modes can be preselected by means of the riding mode preselection function.

A coordinated setting for the systems Engine, Engine Brake, DTC, Wheelie (DTC), ABS and DDC is available for each riding mode.

In RACE PRO riding modes, the settings for the Engine, Engine Brake, Traction (DTC), Wheelie (DTC), ABS and DDC systems can be individually adjusted.

Torque and throttle response
–RAIN: Gentle throttle response, reduced torque in low gears.
–ROAD and DYNAMIC: Optimum throttle response, reduced torque in low gears.
–RACE and RACE PRO: Optimum throttle response, maximum torque.
–RACE PRO in addition: Gentle or direct throttle response, maximum torque.

Braking effect of the engine
–RAIN and ROAD: Maximum braking effect of the engine. Maximum stability.
–DYNAMIC, RACE and RACE PRO: Reduced braking effect of the engine. High stability.
–RACE PRO in addition: Minimum braking effect of the engine. Reduced stability.

Effect of dynamic engine brake control
–RAIN and ROAD: Maximum stability.
–DYNAMIC, RACE and RACE PRO: High stability.
–RACE PRO in addition: Maximum performance. On a poor road surface or with unsuitable tyres, stability might be impaired.

Traction control (DTC)
–RAIN: Maximum stability on wet roads. Acceleration on dry roads might be reduced.
–ROAD: High stability on dry roads. Acceleration on dry roads might be slightly reduced.
–DYNAMIC: High performance on dry roads. If road conditions are poor, optimum stability cannot be ensured.
–RACE and RACE PRO: Maximum performance. On a poor road surface or with unsuitable tyres such as touring tyres for example, stability might be impaired.

In RACE PRO riding modes, traction control can be finely adjusted using the DTC rocker button while riding to ensure optimum performance.

Wheelie (DTC) - front wheel lifted clear of the ground
–RAIN: Maximum stability. Efforts are made to suppress a Wheelie.
–ROAD, DYNAMIC, RACE and RACE PRO: Shallow Wheelie possible, optimum drive.
–RACE PRO with setting 1: High Wheelie possible. The rider has to control the speed of the rear wheel to prevent the Wheelie. The system only intervenes late.
–RACE PRO with setting 0: The system is deactivated.

ABS
–The rear wheel lift-off assistant is active in the RAIN, ROAD and DYNAMIC riding modes.
–RAIN, ROAD and DYNAMIC: The ABS is set up for on-road riding.
–RACE: The ABS is set up for race-track riding with slicks. The rear-wheel lift-off assistant permits high stoppies.
–In RACE PRO riding modes: The deployment of ABS can be adjusted individually.

Brake Slide Assist
–RAIN, ROAD and DYNAMIC: Brake Slide Assist is deactivated. Maximum stability for braking into corners.
–RACE and RACE PRO with setting 2: Maximum performance. Drifts when braking into corners are possible.
–RACE PRO with setting 1: Brake Slide Assist is inactive. The rear wheel can lock up under sharp braking.

Brake force distribution Application of the front wheel brake

–RAIN and ROAD: Maximum possible brake force is distributed to the rear wheel.
–DYNAMIC: Less brake force is distributed to the rear wheel than in RAIN and ROAD modes.
–RACE and RACE PRO: Even less brake force is distributed to the rear wheel than in DYNAMIC mode.
–RACE PRO in addition: The distribution of brake force to the rear wheel can be set up to suit the rider's preference.

Dynamic Damping Control DDC

–RAIN and ROAD: Damper characteristic set up for comfortable riding.
–DYNAMIC: Damper characteristic set up for sporty riding.
–RACE: Damper characteristic set up for riding on the race track.
–RACE PRO: Damper characteristic can be set up to suit the rider.

DYNAMIC BRAKE CONTROL

How Dynamic Brake Control works

The Dynamic Brake Control function is active in all riding modes. It can be deactivated in the DYNAMIC PRO riding mode only, by custom parametrisation of the ABS.

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 min 10 km/h, the ABS function is further assisted by Dynamic Brake Control.
–When partially integral braking at a high brake pressure gradient is initiated, Dynamic Brake Control increases the integral brake pressure at the rear wheel. The stopping distance shortens and controlled braking is possible.

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 emergency 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.

TYRE PRESSURE CONTROL (RDC)

Function

A sensor integrated into each tyre measures the air temperature and the air pressure inside the tyre and transmits this information to the control unit. Each sensor has a centrifugal-force tripswitch that does not enable transmission of the measured values until the motorcycle has accelerated to a defined minimum speed for the first time.

 Minimum speed for transmission of the RDC measured values:
min 30 km/h

The display shows –– for each tyre until the tyre-pressure signal is received for the first time. The sensors continue to transmit the measured-value signals for some time after the vehicle comes to a stop.

 Time for transmission of measured values after vehicle comes to a stop:
min 15 min

An error message is issued if wheels without sensors are fitted to a vehicle equipped with an RDC control unit.

Tyre pressure ranges

The RDC control unit distinguishes between three tyre pressure ranges matched to the vehicle:

–Filling pressure within the permissible tolerance
–Filling pressure in the limit range of the permissible tolerance

– Filling pressure outside permitted tolerance

Temperature compensation

Tyre pressure is a temperature-dependent variable: pressure increases as tyre-air temperature rises and decreases as tyre-air temperature drops. Tyre air temperature depends on ambient temperature as well as on the style of riding and the duration of the ride.

 The tyre-pressure readings in the instrument cluster are temperature-compensated and are always referenced to the following tyre-air temperature:
20 °C

The air lines available to the public in petrol stations and motorway service areas have gauges that do not compensate for temperature; the reading shown by a gauge of this nature is the temperature-dependent tyre-air pressure. In most instances, therefore, these gauge readings will not tally with the pressures shown by the instrument cluster.

Pressure adaptation

Compare the RDC value in the instrument cluster with the value in the table on the back cover of the rider's manual. Then use the air-line gauge at a service station to compensate for the difference between the RDC reading and the value in the table.

 Example
According to the operating instructions, the tyre pressure should be:
2.5 bar
The instrument cluster shows the following value:
2.3 bar
So pressure is low by:
0.2 bar
The gauge on the air line shows:
2.4 bar
You must now increase tyre pressure until the value is:
2.6 bar

GEAR SHIFT ASSISTANT

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 twistgrip

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 overrevving.

Maximum engine speed
max 14600 min^{-1}

Upshifting

– Upshifting is assisted until engine speed is below idle rpm 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.

HILL START CONTROL

Hill Start Control function

Hill Start Control Pro is a pullaway assistant that operates on the partially integral ABS system to prevent the vehicle from rolling back on a gradient, without the rider having to keep pressure applied to the brake lever.

When Hill Start Control Pro is activated, pressure is built up in the rear brake system to keep the machine at a standstill on a gradient (➠ 92).
The brake pressure in the brake system is dependent on the gradient.

Effect of an incline on brake pressure and drive-off behaviour

– If the motorcycle is stopped on a gentle incline, only low brake pressure is built up. In this case, the brakes are quickly released when driving off.
– If the motorcycle is stopped on a steep incline, high brake pressure is built up. In this case, the brakes take longer to release when driving off. More torque is required for driving off which also requires the rider to turn the throttle grip again.

Behaviour when the motorcycle rolls or slips

– If the vehicle starts to roll while Hill Start Control Pro is active, brake pressure is increased.
– If the rear wheel locks up, the brake is released again after approx. 1 m. This pre-

vents the vehicle slipping with a locked rear wheel, for example.

Brake release when engine is stopped or after time-out

Hill Start Control Pro is deactivated if the rider stops the engine by hitting the emergency-off switch (kill switch) or when the side stand is extended or at the end of a ten-minute timeout.

In addition to the indicator and warning lights, the rider should be made aware that Hill Start Control Pro has been deactivated by the following behaviour:

Brake warning jolt

– The brake is released briefly and reactivated immediately.
– This creates a jolt which the rider feels.
– The partial integral ABS brake system limits the speed of movement to approx. 1...2 km/h.
– The rider must brake the motorcycle manually.
– After two minutes, or if the brake is actuated, the partially integral ABS brake system stops speed-control intervention.

The holding pressure is released immediately without a brake warning jolt as soon as the ignition is switched off.

CORNERING HEADLIGHT

Function

In addition to the bulbs for low beam, high beam and, if applicable, daytime riding light or side light, the headlight has separate LED segments for the cornering light. The LED segments are activated as a function of bank angle in addition to the low-beam headlight, enabling the headlight to illuminate the inside of the bend as the motorcycle banks for cornering. The cornering headlight is optimised for slight to moderate bank angles.

The cornering headlight is activated under the following conditions:

– Cornering at a slight to moderate bank angle.
– Speed is min 10 km/h.
– The low-beam headlight is switched on.

MAINTENANCE

10

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

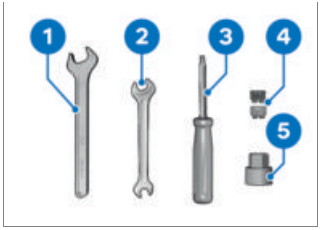
The microencapsulation is a chemical thread-locker. An adhesive compound creates a secure connection between bolt and nut or between screw and component. Consequently, microencapsulated screws are for once-only use and are not intended for re-installation after being slackened.
Regardless of whether 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. Prior to disassembly make sure that you have suitable tools for cleaning the threads and a new replacement for each screw to be removed. 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

Content of toolkit



1 Open-ended spanner
Width across flats 14 mm
–Adjust the mirror arm. (➠ 102)

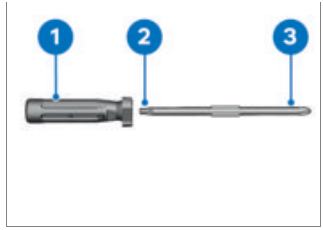
2 Open-ended spanner
Width across flats 8/10 mm
–Adjust the spring preload for front wheel. (➠ 107)
–Disconnect the battery from the motorcycle. (➠ 195)

3 Reversible screwdriver blade
Phillips PH1 and Torx T25

4 Reserve fuses
Miniature fuses, 7.5 A and 15 A

5 Plastic cap
–Adjust the spring preload for front wheel. (➠ 107)

Preparing screwdriver



- Push Torx T25 bit **2** or Phillips PH1 bit **3** into screwdriver handle **1**.

FRONT-WHEEL STAND

Install the 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.

- Place the motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad rear-wheel stand.

- Install the rear-wheel stand. (➠ 168)

- 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

ATTENTION

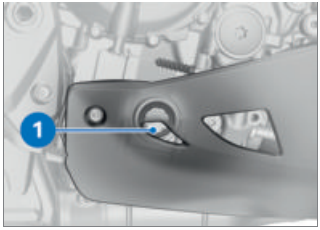
Misinterpretation of oil level reading, because oil level is temperature-dependent (the higher the temperature, the higher the oil level)

Engine damage due to incorrect oil filling

- Check the oil level only after a lengthy ride or when the engine is at operating temperature.

- Allow the engine to idle for one minute.
- Switch off the ignition.
- Wait five minutes for the oil to drain into the oil pan.

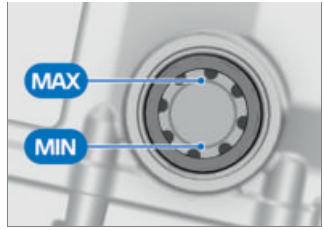
To avoid unnecessary environmental impact, BMW Motorrad recommends checking the engine oil after riding min 50 km.



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 ground is level and firm and hold the motorcycle upright.
- Check the oil level in sight glass **1**.



Engine oil, specified level
Between **MIN** and **MAX** marks

If the oil level is below the **MIN** mark:
- Topping up the engine oil. (➠ 169)

If the oil level is above the **MAX** mark:
- Have the oil level corrected by a specialist workshop, preferably an authorised BMW Motorrad retailer.

Topping up engine oil
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Wipe the area around the oil filler opening clean.

- Remove cap **1** of the oil filler opening.

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.

Engine oil, quantity for topping up
max 1.3 l (Difference between **MIN** and **MAX**)

- Check the engine oil level. (➠ 168)
- Install cap of oil filler opening **1**.

BRAKE SYSTEM

Check operation of the brakes
- Operate the brake lever.
» The pressure point must be clearly perceptible.
- Press the footbrake lever.
» The pressure point must be clearly perceptible.

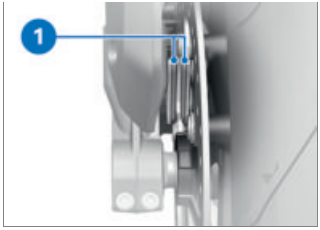
If pressure points are not clearly perceptible:

ATTENTION

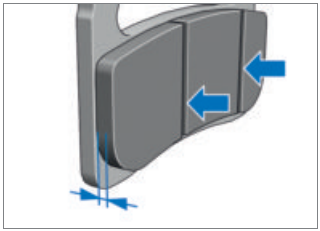
Work on brake system not in compliance with correct procedure
Risk to operational reliability of the brake system
- Have all work on the brake system undertaken by trained and qualified specialists.

- 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.
- Turn the handlebars to the full-lock position.



- Visually inspect the left and right brake pads to ascertain their thickness. Viewing direction: from the front toward brake pads **1**.



Brake-pad wear limit, front
min 1.0 mm (Friction pad only, without backing plate. The wear indicators (grooves) 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.
- If the brake pads installed are not genuine BMW Motorrad brake pads, it is absolutely essential to measure the thickness of the brake-pad carrier plates.

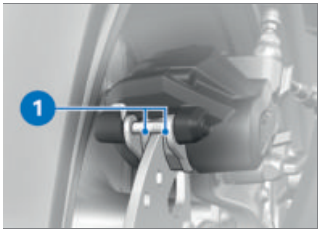
WARNING

Use of unsuitable brake pads
Failure of the brake system due to loss of the brake pads
- Use only brake pads with brake pad carrier plates of adequate thickness.

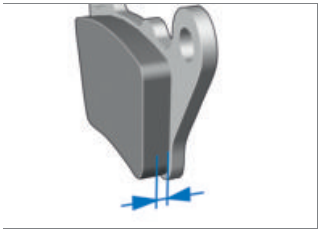
- BMW Motorrad recommends installing only genuine BMW Motorrad brake pads.

Checking brake pad thickness, rear brakes

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



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



Brake-pad wear limit, rear
min 1.0 mm (Friction pad only, without backing plate.)

If the wear indicating mark is no longer 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-fluid level, front brakes

- Make sure the ground is level and firm and hold the motorcycle upright.
- Turn the handlebars to a position in which the brake fluid reservoir is horizontal.

- 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
It is not permissible for the brake fluid level to be below the **MIN** mark (Brake-fluid reservoir horizontal)

If the brake fluid level drops below the permitted level:

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.

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

Checking brake-fluid level, rear brakes

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

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.

- 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
Brake fluid, DOT4
It is not permissible for the brake fluid level to be below the **MIN** mark. (Brake-fluid reservoir horizontal)

If the brake fluid level drops below the permitted level:

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.

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

CLUTCH

Checking operation of the clutch

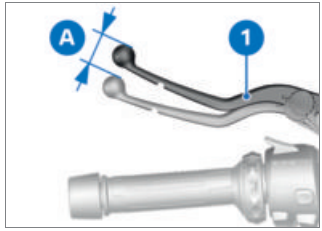
- Pull the clutch lever.

» 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.

Check the clutch-lever play

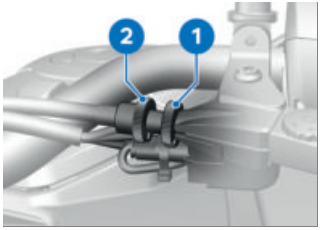


- Pull clutch lever **1** until resistance is perceptible.
- In this position, measure clutch play **A** between the handlebar fitting and the clutch lever.

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

Clutch play is out of tolerance:
- Adjust the clutch-lever play. (➠ 176)

Adjusting clutch-lever play

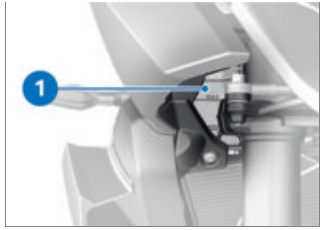


- Loosen lock nut **1**.
- To increase clutch play: Tighten screw **2** into the handlebar fitting.
- To reduce clutch play: Back off screw **2** in the handlebar fitting.
- Check the clutch-lever play. (➠ 175)
- Repeat the steps in this procedure until clutch play is set correctly.
- Tighten locknut **1**.

COOLANT

Check the coolant level

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



- Check the coolant level in expansion tank **1**. Viewing direction: From in front toward the inside of the right side panel.

Coolant, specified level
Between **MIN** and **MAX** marks on the expansion tank (engine cold)

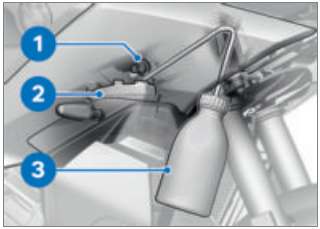
If the coolant drops below the permitted level:
- Top up the coolant.

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.

- Use a suitable container, such as a laboratory flask, for topping up the coolant.



- Open cap **1** of expansion tank **2**.
- Using laboratory flask **3**, top up the coolant to the specified level.

Coolant top-up quantity
0.15 l (Difference between **MIN** and **MAX**)
2.4 l (Coolant circuit, total)
FROSTOX HT-12 (Coolant)

- Check the coolant level. (➠ 176)
- Close cap **1** of expansion tank **2**.

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 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
2.3 bar (One-up, tyre cold)
2.5 bar (Two-up with luggage, tyre cold)

 Tyre pressure, rear
2.5 bar (One-up, tyre cold)
2.9 bar (Two-up with luggage, tyre cold)

If tyre pressure is too low:
- 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.

WARNING

Unnoticed structural damage
Risk of accident
- After a fall or a significant impact effect (e.g. riding through a pothole), have carbon wheels checked by a specialist workshop, preferably an authorised BMW Motorrad retailer.

- 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 suspension control systems such as DTC, for example. 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 systems 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 these cases, the data programmed into the control units has to be changed to suit the new wheel sizes.

Removing front wheel

- Place the motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad rear-wheel stand.
- Install the rear-wheel stand. (➠ 168)

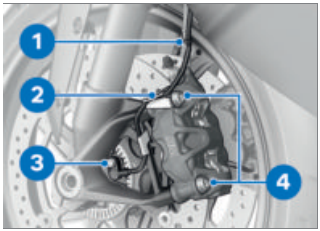
ATTENTION

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 parts of the wheel rim that could be scratched in the process of removing the brake calipers.



- Disengage the cable for the wheel speed sensor from holding clips **1** and **2**.
- Remove screw **3** and remove the wheel speed sensor from its bore.

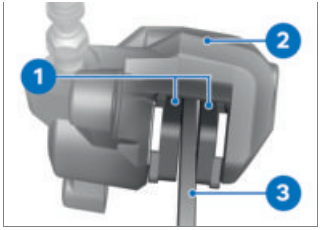
ATTENTION

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

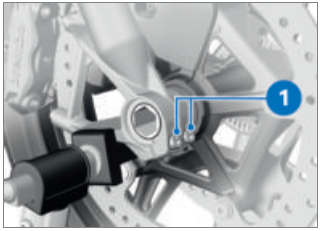
- Do not operate the brakes with a brake caliper not correctly secured.

- Remove securing screws **4** of the left and right brake calipers with holding clips **2**.



- Force brake pads **1** slightly apart by rocking brake caliper **2** back and forth against brake disc **3**.
- Carefully pull the brake calipers back and out until clear of the brake discs.

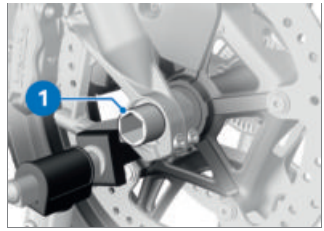
- Lift the front of the motorcycle until the front wheel is clear of the ground, preferably using a BMW Motorrad front-wheel stand.
- Install the front-wheel stand. (➠ 167)



ATTENTION

Incorrect gap between sensor ring and wheel speed sensor due to misaligned threaded bush in front suspension
Damage to wheel speed sensor. ABS malfunction
- Left clamp locates the threaded bush; do not loosen or remove this clamp.

- Slacken axle clamping screws **1**.



- Support the front wheel and remove quick-release axle **1**.
- Set down front wheel and roll forwards out of the front suspension.

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.

ATTENTION

Front wheel installed wrong way round

Risk of accident

- Note direction-of-rotation arrows on tyre or rim.

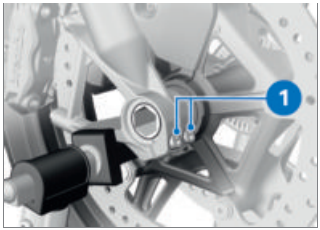
- Roll the front wheel into position between the forks of the front suspension.

- Lubricate quick-release axle **1**.

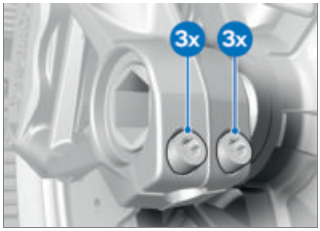
Lubricant
Unirex N3

- Raise the front wheel, install quick-release axle **1** and tighten to specified torque.

Quick-release axle in threaded bush
M24 x 1.5
50 Nm

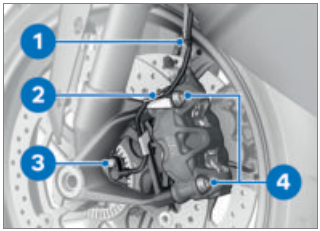


- Tighten axle clamping screws **1** to the specified torque.



Clamping screws in axle holder
Tightening sequence: Tighten screws six times in alternate sequence
M8 x 35
19 Nm

- Position left and right brake calipers on the brake discs.



- Install holding clips **2** with securing screws **4** on left and right and tighten to the specified torque.

Radial brake caliper to axle holder
M10 x 65

Radial brake caliper to axle holder
38 Nm

- Insert the cable for the wheel speed sensor into holding clips **1** and **2**.
- Insert the wheel speed sensor into the bore hole and install screw **3**.

Wheel speed sensor to fork leg
M6 x 16
Thread-locking compound: micro-encapsulated
8 Nm

WARNING

Brake pads not lying against the brake disc

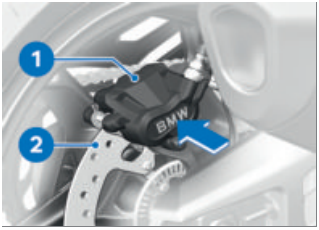
Risk of accident due to delayed braking effect.

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

- Operate the brake several times until the brake pads are bedded.
- Remove the adhesive tape from the wheel rim.
- Remove the front-wheel stand and the auxiliary stand.

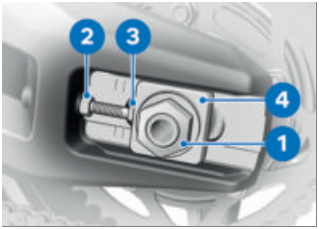
Removing rear wheel

- Lift the motorcycle, preferably with a BMW Motorrad rear-wheel stand.
- Install the rear-wheel stand. (➠ 168)
- Slip wooden chocks or similar under the rear wheel to prevent it from dropping out after the quick-release axle has been removed.

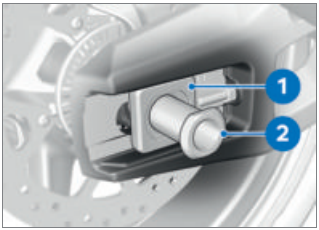


- Press the brake caliper **1** against the brake disc **2**.

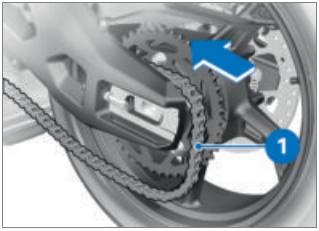
» Brake pistons are pushed back.



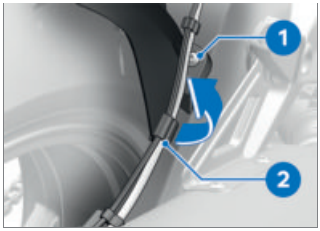
- Remove nut **1** with washer.
- Loosen lock nuts **2** on left and right.
- Loosen adjusting screws **3** on left and right.
- Remove adjusting plate **4** and push the axle in as far as it will go.



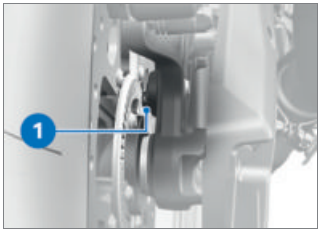
- Remove quick-release axle **2** and remove adjustment plate **1**.



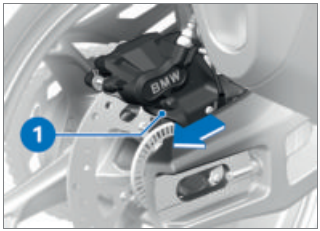
- Roll the rear wheel as far forward as possible and disengage chain **1** from the sprocket.



- Remove screw **1** and disengage the brake line from holder **2**.



- When rolling the rear wheel clear of the motorcycle, take care not to damage wheel-speed sensor **1**.



- Roll the rear wheel to the rear and clear of the swinging arm and at the same time pull brake-caliper carrier **1** 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.

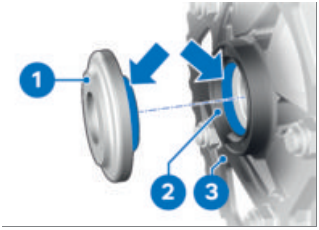
Installing rear wheel

ATTENTION

Change in tyre size
Effect on control systems
- Have the new parameters encoded by a specialist workshop, preferably by an authorised BMW Motorrad Retailer.

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.



- Clean dirt and old lubricant off spacer bushing **1** and radial shaft seal **2** on chain sprocket support **3**.
- Lubricate spacer bushing **1** and radial shaft seal **2** on the surfaces indicated by the **arrows**.

Lubricant
Unirex N3

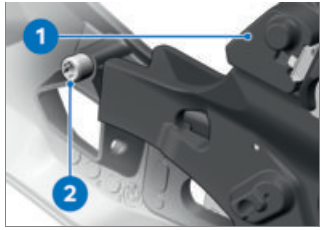
- Check judder damping elements **2** for damage, deformation and wear; replace if necessary.

The adaptation values have to be reset with the BMW Motorrad diagnostic system after replacement of the judder-damper elements. Consult a specialist workshop, preferably an authorised BMW Motorrad retailer.

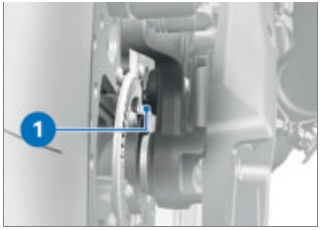
- Lubricate judder damping elements **2** and install.

Installation tool
Silicone spray

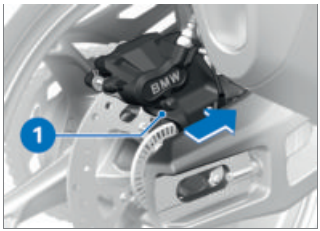
- Install chain sprocket carrier **1**.
- Roll the rear wheel on the support into the swinging arm as far as necessary to permit the brake-caliper carrier to be inserted.



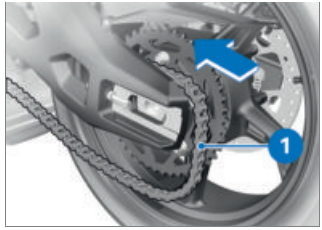
- Insert the brake-caliper carrier **1** into guide **2**.



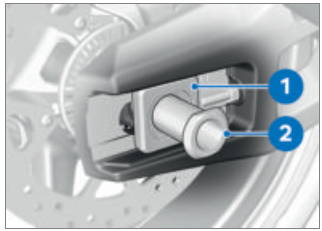
- When rolling the rear wheel into position, take care not to damage wheel-speed sensor **1**.



- Roll the rear wheel farther into the swinging arm, while pushing brake-caliper carrier **1** forward at the same time.



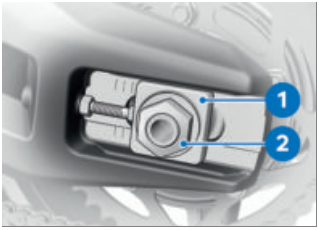
- Roll the rear wheel as far forward as possible and loop chain **1** over the sprocket.



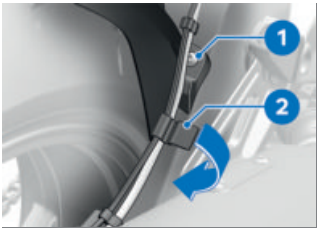
- Install adjustment plate on the right **1** in the swinging arm.
- Lubricate quick-release axle **2**.

Lubricant
Unirex N3

- Lift the rear wheel and work quick-release axle **2** through the adjustment plate in the brake-caliper carrier and the rear wheel.
- Make sure that the quick-release axle fits into the recess for the flats.



- Insert left adjustment plate **1**.
- Install nut **2** with its washer, but do not tighten the nut at this point.



- Secure the brake line in holder **2** and install screw **1**.

WARNING

Brake pads not lying against the brake disc

Risk of accident due to delayed braking effect.

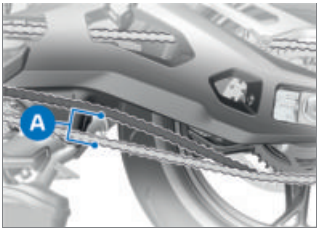
- Before driving, check that the brakes respond without delay.

- Operate the brake several times until the brake pads are bedded.
- Adjust the chain sag. (➠ 189)

CHAIN

Check chain sag

- Push the motorcycle to turn the rear wheel and find the position at which chain sag is at its minimum.
- Make sure the ground is level and firm and place the motorcycle on its stand.

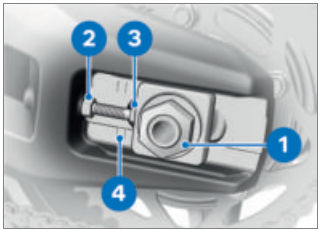


- Use a screwdriver to push the chain up at a point midway between the pinion and sprocket and measure chain sag **A**.

Chain deflection
45...50 mm (Motorcycle with no weight applied, supported on its side stand)

If chain deflection is outside permitted tolerance:
- Adjust the chain sag. (➠ 189)

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



- Slacken nut **1**.
- Loosen lock nuts **3** on left and right.
- Use the adjusting screws **2** on left and right to adjust chain sag.
- Check chain sag. (➠ 188)
- Make sure that scale readings **4** are the same on left and right.
- Tighten lock nuts **3** on left and right to the specified tightening torque.

Locknut of the final-drive chain tensioning screw
M8
19 Nm

- Tighten nut **1** to the specified tightening torque.

Rear quick-release axle in swinging arm
M24 x 1.5
Thread-locking compound: mechanical
125 Nm

Lubricating and caring for low-maintenance chain

ATTENTION

Inadequate cleaning and lubrication of the drive chain
Accelerated wear
- Clean and lubricate the drive chain at regular intervals.

The low-maintenance drive chain is cleaned and lubricated as part of the annual service. For optimum durability, the low-maintenance chain can also be lubricated at intervals by application of a chain lubricant suitable for low-maintenance chains. If riding involves above-average wear and tear due to exposure to salt or dust and dirt, carry out lubrication at correspondingly more frequent intervals.
- Switch the ignition off and select neutral.

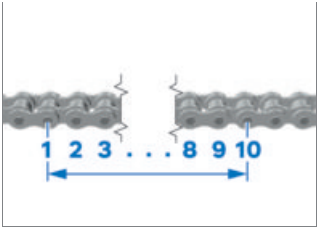
- Clean the drive chain with a suitable cleaning product, dry it and apply chain lubricant. To prolong chain life, BMW Motorrad recommends the use of BMW Motorrad chain lubricant or:

Lubricant
Chain spray, O-ring compatible

- Wipe off excess lubricant.

Check the chain wear

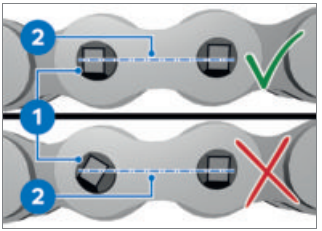
- Engage 1st gear.
- Turn the rear wheel in the normal direction of travel until the chain is tensioned.
- Determine the length of the chain underneath the rear wheel swinging arm above the middle of 10 rivets in 3 different places.



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.

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.

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.

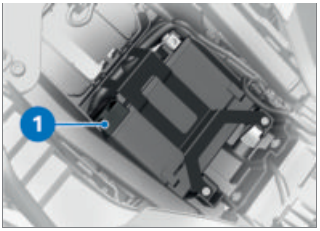
ATTENTION

Jump-starting with a voltage greater than 12 V

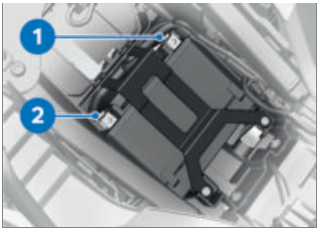
Damage to the on-board electronics

- Make sure that the battery of the donor vehicle does not exceed a voltage of 12 V.

- When jump-starting the engine, do not disconnect the battery from the on-board electrical system.
- Remove the seat. (➠ 98)
- Run the engine of the donor vehicle during jump-starting.



- Remove positive terminal cover **1**.



- Connect one end of the red jump lead to positive terminal of discharged battery **2** 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 of discharged battery **1**.
- 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 repeat-

ing the attempt in order to protect the starter motor and the donor battery.

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

- 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.

- Close positive terminal cover **1**.
- Install the seat. (➠ 98)

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
Lithium-ion, 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. Using this charger, the battery can be kept charged during long peri-

ods of disuse, without having to be disconnected from the vehicle's on-board systems. For more information, consult an authorised BMW Motorrad retailer.

Charging battery when connected

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.

ATTENTION

Recharging a fully discharged battery via the power socket or extra socket
Damage to the vehicle electronics
- If a battery has discharged to the extent that it is completely flat (battery voltage less than 12 V, indicator lights and multifunction display remain off when the ignition is switched on) always charge the **disconnected** battery with the charger connected directly to the battery terminals.

ATTENTION

Unsuitable chargers connected to a socket
Damage to charger and vehicle electronics
- Use suitable BMW chargers. The suitable charger is available from your authorised BMW Motorrad dealer.

- With the battery connected to the vehicle's on-board electrical system, charge via the power socket.

The motorcycle's on-board electronics know when the battery is fully charged. The on-board socket is switched off when this happens.

- Comply with the operating instructions of the charger.

If you are unable to charge the battery through the on-board socket, you may be using a charger that is not compatible with your motorcycle's electronics. If this happens, charge the battery directly at the terminals of the battery that is disconnected from the vehicle.

Charging battery when disconnected

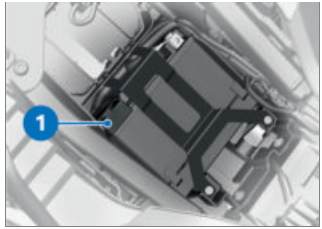
- Disconnect the battery from the motorcycle. (➠ 195)
- Charge the battery using a suitable charger.
- Comply with the operating instructions of the charger.
- Once the battery is fully charged, disconnect the charger's terminal clips from the battery terminals.

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.

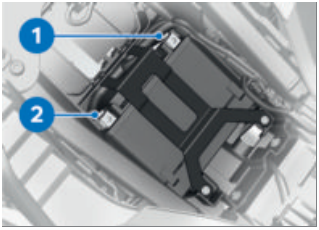
- Connect the battery to the motorcycle. (➠ 196)

Disconnecting battery from motorcycle

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Remove the seat. (➠ 98)



- Remove positive terminal cover **1**.



ATTENTION

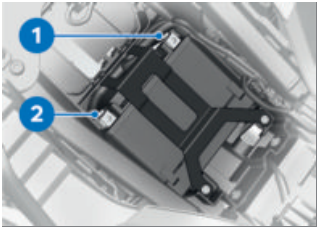
Battery not disconnected in accordance with correct procedure

Risk of short-circuit

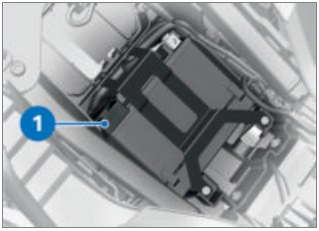
- Always proceed in compliance with the specified disconnection sequence.

- First disconnect negative battery cable **1**.
- Then disconnect positive battery cable **2**.

Connecting battery to motorcycle



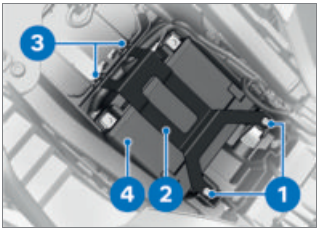
- First connect positive battery cable **2**.
- Then connect negative battery cable **1**.



- Close positive terminal cover **1**.
- Install the seat. (➠ 98)

Removing battery

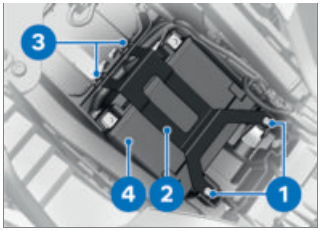
- Remove the seat. (➠ 98)
- Disconnect the battery from the motorcycle. (➠ 195)



- Remove screws **1**.
- Disengage holder **2** from bracket **3** and remove.
- Lift battery **4** up and out; work it slightly back and forth if it is difficult to remove.

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.



- Insert battery **4** into the battery compartment, positive terminal on the right in the forward direction of travel.
- Insert holder **2** into bracket **3** and install.
- Install screws **1**.
- Connect the battery to the motorcycle. (➠ 196)
- Install the seat. (➠ 98)
- Change the system settings. (➠ 66)

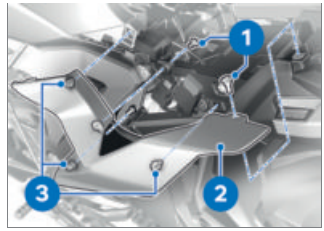
FUSES

Replacing fuses

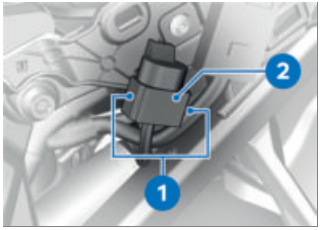
ATTENTION

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 seat. (➠ 98)



- Remove screw **1**.
- Carefully disengage side cover **2** from holding clips **3**.



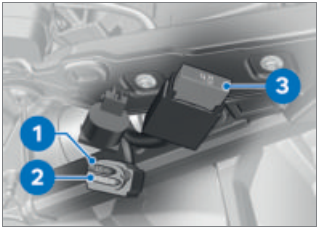
- Press locks **1** on both sides.
- Remove fuse box **2**.
- Consult the fuse assignment diagram and replace the defective fuse.

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

- Re-insert fuse box **2**. Make sure that locks **1** engage on both sides.

- Install side cover **2** in holding clips **3**.
- Install screw **1**.
- Install the seat. (➠ 98)

Fuse assignment



1 15 A
Instrument cluster
Anti-theft alarm (DWA)
Ignition switch
Diagnostic socket
Coil, isolating relay

2 7.5 A
Multifunction switch, left
Sensor box

3 40 A
Main fuse
Alternator regulator

DIAGNOSTIC CONNECTOR

Disengaging diagnostic socket

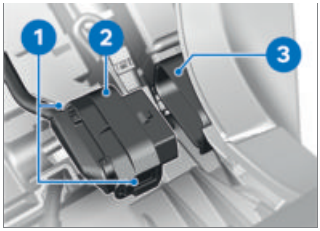
CAUTION

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 seat. (➠ 98)

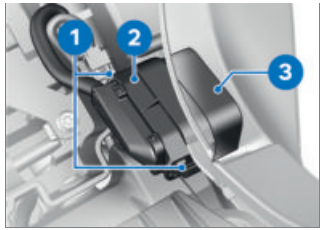


- Press locks **1**.
- Disengage diagnostic socket **2** from holder **3**.

» 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.

- Remove the seat. (➠ 98)

ACCESSORIES

11

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

POWER SOCKET

Connection of electrical devices
–You can start using electrical devices connected to the motorcycle's sockets only when the ignition is switched on.

Cable routing

– The cables from the power sockets to the auxiliary devices must be routed in such a way that they do not impede the rider.
– The cable routing should not restrict the steering angle or obstruct handling.
– The cables must not be trapped.

Automatic shutdown

– The power supply to the socket is interrupted automatically during the start procedure.
– The power supply to the socket is switched off no more than 60 seconds after the ignition is switched off, in order to prevent overloading of the on-board electrics. Low-wattage electrical accessories might not be recognised by the vehicle's electronics. In these cases the power supply to the socket is switched off very shortly after the ignition is turned off.
– If the battery charge state is likely to drop too low to maintain the motorcycle's start capability, the power supply to the socket is switched off.
– The power supply to the socket is switched off if maximum load capability as stated in the technical data is exceeded.

USB CHARGING SOCKET

Notes on use:

Charge current

This is a 5 V USB charging interface that provides a maximum charge current of 2.4 A.

Automatic shutdown

The USB charging interface is 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 socket 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
BMW Motorrad recommends using the BMW Motorrad

pouch for smartphone to protect your smartphone against water and vibration. To prevent dirtying, keep the protective cover of the USB charging interface closed when no device is connected.

Cable routing

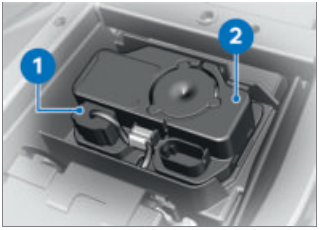
Make sure that cables are routed in such a way that they cannot be trapped.

CONNECTOR FOR OPTIONAL ACCESSORIES

Equipment

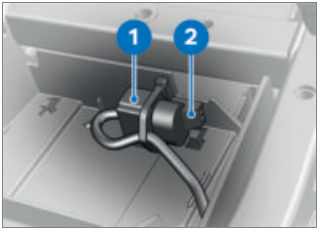
The vehicle is fitted with the following plugs for optional accessories and racing accessories:
–M data logger

Underneath the seat
–with anti-theft alarm (DWA) OE



1 Connector for DWA and M data logger
2 DWA

Underneath the seat
–without anti-theft alarm (DWA) OE



1 Connector for DWA and M data logger
2 Terminating resistor

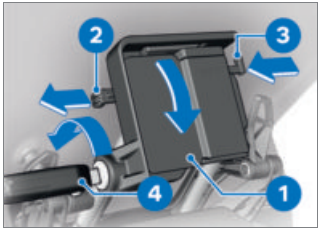
NAVIGATION SYSTEM

Securing navigation system

–with preparation for navigation system OE
–with navigation system OA

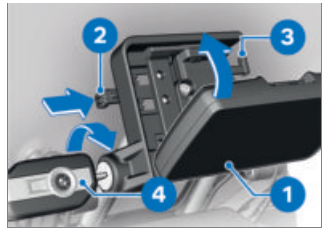
Navigation preparation is suitable from BMW Motorrad Navigator IV onward.

The latching system of the Mount Cradle is not designed to protect against theft.
Always remove the navigation system and stow it away safely as soon as you finish your ride.



- Turn ignition key **4** counterclockwise.
- Pull lock retainer **2** to the **left**.
- Press the lock **3** in.

» The Mount Cradle is unlocked and cover **1** can be pivoted forward and removed.



- Insert navigation system **1** at bottom and pivot it toward the rear.

» The navigation system engages with an audible click.

- Push lock retainer **2** all the way to the **right**.

» Lock **3** is locked.

- Turn ignition key **4** clockwise.

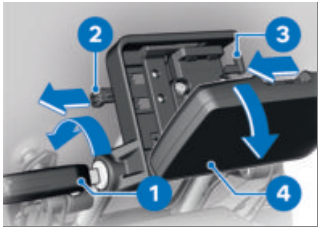
» The navigation system is secured and the ignition key can be removed.

Removing navigation system and installing cover

–with preparation for navigation system OE
–with navigation system OA

ATTENTION

Dust and dirt on the Mount Cradle contacts
Damaged contacts
- Always reinstall the cover as soon as you finish your ride.



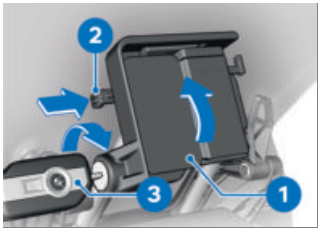
- Turn ignition key **1** anti-clockwise.
- Pull the lock retainer **2** all the way to the **left**.

» Lock **3** is unlocked.

- Push lock **3** all the way to the **left**.

» Navigation system **4** is unlocked.

- Tilt navigation system **4** and work it down to remove.



- Insert cover **1** in the lower section and swing to the top with a rotational movement.

» The cover engages with an audible click.

- Push lock retainer **2** to the **right**.
- Turn ignition key **3** clockwise.

» The cover **1** is secured.

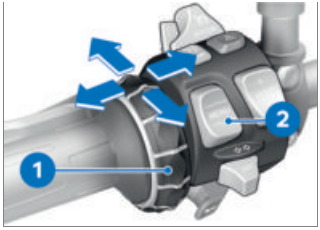
Operating navigation system

–with preparation for navigation system OE

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 (➠ 69), 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 MENU 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 MENU rocker button 2
Switch operating focus to instrument cluster.

Special functions
–with preparation for navigation system OE

The ConnectedRide Navigator has a n automatic operating focus changeover. 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 ConnectedRide Navigator.

MAXIMUM PAYLOAD AND MAXIMUM SPEED

–with saddlebag OA

Note the maximum payload and the maximum permissible speed.
The values for the combination described here are as follows:

Maximum speed for riding with saddlebags installed
max 130 km/h

Payload per saddlebag
max 5 kg

CARE

12

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 due to high water pressure from high pressure cleaners or steam cleaners
Corrosion or short circuit, damage to labels, seals, hydraulic brake system, electrical system and the motorcycle seat
- Exercise restraint when using a steam jet or high pressure cleaning equipment.

BMW Motorrad recommends that you use BMW insect remover 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.

Carbon parts

Clean Carbon parts with water and a microfibre cloth.

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. (➠ 196)
- Spray the brake-lever and clutch-lever pivots mounts with suitable lubricant.

The pivot mount of the side stand is maintenance-free and requires no lubrication.

- 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.

RESTORING MOTORCYCLE TO USE

- Remove the protective wax coating.
- Clean the motorcycle.

- Install the battery. (➠ 197)
- Note the checklist (➠ 114).

TECHNICAL DATA

13

TROUBLESHOOTING CHART

Engine does not start or is difficult to start.

Possible cause	Rectification
Side stand extended and gear engaged	Retract the side stand.
Gear engaged and clutch not disengaged	Select neutral or pull the clutch lever.
No fuel in tank	Refuel. (➠ 124)
Battery flat	Charge the battery when disconnected. (➠ 195)
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.

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.

Bluetooth connection is interrupted.

Possible cause	Rectification
The Bluetooth connection to the mobile device is interrupted.	Switch off energy saving mode.
The Bluetooth connection to the helmet is interrupted.	Switch off the helmet's communication system and reconnect it after a minute or two.
The volume in the helmet cannot be adjusted.	Switch off the helmet's communication system and reconnect it after a minute or two.

Phonebook is not displayed in the instrument cluster.

Possible cause	Rectification
The phonebook was not transmitted to the vehicle.	Confirm transmission of the phone data (➠ 74) when pairing the mobile device.

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.

THREADED FASTENERS

Front wheel	Value	Valid
Quick-release axle in threaded bush		
M24 x 1.5	50 Nm	
Clamping screws in axle holder		
M8 x 35	**Tightening sequence: Tighten screws six times in alternate sequence**	
	19 Nm	
Radial brake caliper to axle holder		
M10 x 65	38 Nm	

Rear wheel	Value	Valid
Locknut of the final-drive chain tensioning screw		
M8	19 Nm	
Nut on swinging arm axle		
M18 x 1.5, Replace nut mechanical	100 Nm	
Rear quick-release axle in swinging arm		
M24 x 1.5 mechanical	125 Nm	

Rear wheel	Value	Valid
Swinging-arm adapter to rear wheel swinging arm		
M8 x 30	20 Nm	
Spring strut at deflection lever		
M12 x 1.5 x 75 - 10.9 micro-encapsulated	100 Nm	

Mirrors	Value	Valid
Mirror with lock nut to adapter		
M10 x 1.25	Left-hand thread, 22 Nm	

Footrest system	Value	Valid
Rotor to base plate		
M8 x 35	28 Nm	–with Billet pack OE
Footrest hinge to rotor		
M8 x 30	28 Nm	–with Billet pack OE
Peg to footbrake lever		
M6 x 25 micro-encapsulated	9 Nm	–with Billet pack OE

FUEL

Recommended fuel grade	E5 E10 Premium Plus unleaded (max. 5 % ethanol, E5) 98 RON, 93 AKI
Alternative fuel grade	E5 E10 Premium unleaded (power- and consumption-related restrictions) (max 10 % ethanol, E10) 95 ROZ/RON 90 AKI
Usable fuel capacity	approx. 20 l
Fuel reserve	approx. 4 l
Fuel consumption	6.5 l/100 km, in accordance with WMTC
CO2 emission	152 g/km, in accordance with WMTC
Exhaust emissions standard	EU 5
–with Canada export NV	TIER 2, measured in accordance with FTP75

ENGINE OIL

Engine oil, capacity	approx. 4.0 l, with filter change
Specification	SAE 5W-40, API SJ / 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 1.3 l, Difference between **MIN** and **MAX**

BMW recommends ADVANTEC ORIGINAL BMW ENGINE OIL

COOLANT

Coolant top-up quantity	0.15 l, Difference between **MIN** and **MAX** 2.4 l, Coolant circuit, total FROSTOX HT-12, Coolant

ENGINE

Engine number location	Crankcase, bottom part, right
Engine type	A10A10C
Engine design	Oil/liquid-cooled 4-cylinder, 4-stroke in-line engine, four valves per cylinder
Displacement	999 cm^3
Cylinder bore	80 mm
Piston stroke	49.7 mm
Compression ratio	13.3:1

Nominal capacity	148 kW, at engine speed: 12750 min^{-1}
Torque	113 Nm, at engine speed: 11000 min^{-1}
Maximum engine speed	max 14600 min^{-1}
Idle speed	1270$^{\pm 50}$ min^{-1}, Engine at regular operating temperature

CLUTCH

Clutch type	Multi-plate oil-bath (anti-hopping) with self-reinforcement

TRANSMISSION

Type of transmission	Claw-shift 6-speed gearbox, integrated into engine block

FINAL DRIVE

Type of final drive	Chain drive
Chain deflection	45...50 mm, Motorcycle with no weight applied, supported on its side stand
Permissible chain length	max 144 mm, measured from the **centre** of 10 rivets, chain pulled taut
Final drive, number of teeth (Pinion / sprocket)	17/47
Secondary transmission ratio	2.765

FRAME	
Frame type	Aluminium composite bridge frame, load-bearing engine
Type plate location	Frame, front left at steering head
Position of the vehicle identification number	Frame, front right, top

CHASSIS AND SUSPENSION	
Front wheel	
Type of front suspension	Upside-down telescopic fork
Spring travel, front	138 mm, at wheel
Rear wheel	
Type of rear suspension	Two-arm aluminium swinging arm
Design of the rear-wheel suspension	Central spring strut with coil spring and fluid reservoir, adjustable rebound-stage and compression-stage damping, adjustable spring preload
Spring travel, rear	138 mm, at wheel

BRAKES	
Front wheel	
Type of front brake	Twin disc brake, diameter 320 mm, 4-piston fixed caliper
Brake-pad material, front	Sintered metal
Brake disc thickness, front	5.0 mm, When new min 4.5 mm, Wear limit
Free travel of brake controls (Front wheel brake lever)	0.7...1.7 mm, at piston

Rear wheel	
Type of rear brake	Single-disc brake, diameter 265 mm, 2-piston floating caliper
Brake-pad material, rear	Organic material
Brake disc thickness, rear	5 mm, When new min 4.5 mm, Wear limit

WHEELS AND TYRES	
Recommended tyre combinations	Your authorised BMW Motorrad retailer will be happy to supply an up-to-date list of the approved wheel/tyre combinations.
Speed category, front/rear tyres	W, required at least: 270 km/h
Front wheel	
Front-wheel type	Forged aluminium wheels
–with M carbon wheels OE	Carbon wheel
Front-wheel rim size	3.50" x 17"
Tyre designation, front	120/70 ZR 17
Load index, front tyre	min. 58
Permissible front-wheel imbalance	max 5 g

Rear wheel	
Rear-wheel type	Forged aluminium wheels
–with M carbon wheels[OE]	Carbon wheel
Rear wheel rim size	6.0" x 17"
Tyre designation, rear	200/55 ZR 17
Load index, rear tyre	min. 78
Permissible rear-wheel imbalance	max 5 g
Tyre pressure	
Tyre pressure, front	2.3 bar, One-up, tyre cold
	2.5 bar, Two-up with luggage, tyre cold
Tyre pressure, rear	2.5 bar, One-up, tyre cold
	2.9 bar, Two-up with luggage, tyre cold

ELECTRICAL SYSTEM

Fuses	
Main fuse	40 A, Alternator regulator, isolating relay, BCL, BMS-O, ABS, SAF, fuse box (slot 1 direct and slot 2 with isolating relay)
Fuse 1	15 A, Instrument cluster, anti-theft alarm system (DWA) ignition switch, diagnostic socket, ignition coil isolating relay
Fuse 2	7.5 A, Multifunction switch left, sensor box
Electrical rating of on-board sockets	max 5 A, Total for all sockets

Battery	
Battery type	Lithium-ion, maintenance-free
Battery rated voltage	12 V
Battery rated capacity	5 Ah
Spark plugs	
Spark plugs, manufacturer and designation	NGK LMAR9FI-10G
Lighting	
All light sources	LED

ANTI-THEFT ALARM	
Activation time on arming	approx. 30 s
Alarm duration	approx. 28 s
Battery type (For Keyless Ride radio-operated key)	CR 2032

DIMENSIONS	
Length of motorcycle	2170 mm, over rear wheel, at DIN unladen weight
Height of motorcycle	1382 mm, without mirrors, over windscreen, at DIN unladen weight
Width of motorcycle	850 mm, without mounted parts, with handlebar weights
Height of rider's seat	850 mm, without rider, at DIN unladen weight
–with M Sport seat, low[OE]	820 mm, without rider, at DIN unladen weight
–with M Sport seat, high[OE]	870 mm, without rider, at DIN unladen weight

Rider's inside-leg arc, heel to heel	1905 mm, without rider, at DIN unladen weight
–with M Sport seat, low OE	1870 mm, without rider, at DIN unladen weight
–with M Sport seat, high OE	1935 mm, without rider, at DIN unladen weight

WEIGHTS

Vehicle kerb weight	223 kg, DIN vehicle kerb weight, ready for road, 90 % load of fuel, without optional extras (OE)
Wheel load, front, at unladen weight	119 kg
Permissible wheel load, front	max 180 kg
Wheel load, rear, at unladen weight	104 kg
Permissible wheel load, rear	max 300 kg
Permissible gross vehicle weight	450 kg
Maximum payload	227 kg
Payload per saddlebag	max 5 kg

PERFORMANCE FIGURES

Top speed	>200 km/h
Maximum speed for riding with saddlebags installed	max 130 km/h

SERVICE

14

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

–with France export[NV]

Disposal of the rider's manual

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

Maintenance and repair work not in compliance with correct procedure
Risk of accident due to consequential damage
- BMW Motorrad recommends having work of this nature carried out on the vehicle by a specialist workshop, preferably an authorised BMW Motorrad dealer.

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 owner of a new BMW vehicle, in circumstances in which assistance is required you can benefit from the protection afforded by the various BMW Motorrad mobility services (e.g. Mobile Service, breakdown service, vehicle recovery service). Your authorised BMW Motorrad retailer will be happy to provide information about the mobility services available to you.

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 odometer reading is reached before the next scheduled date for the service.

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			x			x			
5				x			x			x			
6				x			x			x			
7		x	x	x	x	x	x	x	x	x	x		
8				x			x			x			
9												x[b]	x[b]

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 valve clearances
5 Check timing
6 Replace all spark plugs
7 Replace air-filter element
8 Oil change in the telescopic forks
9 Change brake fluid, entire system

[a] annually or every 10000 km (whichever comes first)
[b] 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.

–Setting service-due date and countdown distance with BMW Motorrad diagnostic system
–Deleting running-in rpm limitation with BMW Motorrad diagnostic system
–Performing vehicle test with BMW Motorrad diagnostic system
–Engine-oil change, with filter
–Check the clutch cable and clutch-lever play
–Check the brake-fluid level, front wheel brake
–Check the brake-fluid level, rear wheel brake
–Check the coolant level
–Check chain sag
–Check the tyre pressures and tread depth
–Checking lighting and signalling system
–Function test, engine start suppression
–Final inspection and check of roadworthiness
–Performing vehicle test with BMW Motorrad diagnostic system
–Confirm the BMW Motorrad 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
–Visual inspection of the brake lines, brake hoses and connections
–Check the front brake pads and brake discs for wear
–Check the brake-fluid level, front wheel brake
–Check the rear brake pads and brake disc for wear
–Check the brake-fluid level, rear wheel brake
–Checking steering-head bearing
–Check the coolant level
–Check the clutch cable and clutch-lever play
–Checking and lubricating the chain drive
–Check the tyre pressures and tread depth
–Check the carbon wheels
–Check the side stand's ease of movement
–Checking lighting and signalling system
–Function test, engine start suppression
–Final inspection and check of roadworthiness
–Checking battery state of charge
–Performing vehicle test with BMW Motorrad diagnostic system
–Setting service-due date and countdown distance with BMW Motorrad diagnostic system
–Confirm the BMW Motorrad service in the on-board literature

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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
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	☐	☐
Engine oil change with filter	☐	☐
Checking valve clearance	☐	☐
Checking the timing (cylinder head cover removed)	☐	☐
Renewing all spark plugs	☐	☐
Replacing the air filter element	☐	☐
Changing the oil in the telescopic fork	☐	☐
Changing the brake fluid in the entire system	☐	☐

Notes

Stamp, signature

SERVICE CONFIRMATIONS

The table is intended as a record of maintenance and repair work, the installation of optional accessories and, if appropriate, technical campaign work.

Work performed	odometer reading	Date

Work performed	odometer reading	Date

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).

CE

Simplified UK Declaration of Conformity according to Radio Equipment Regulations 2017 of the United Kingdom.

UK CA

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 dBµV/m
HUF5794	Keyless Ride	433.92 MHz	10 mW
HUF8485	Keyless Ride	134.45 kHz	42 dBµV/m

Radio equipment	Component	Frequency band	Output/ Transmission Power
ZB001	Keyless Ride	134.5 kHz	allowed 66 dBµA/ m @ 10m
ZB002	Keyless Ride	433.92 MHz	max. 10 dBm e.r.p
TXBM-WMR	DWA	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.
MC24-MA4	RDC		
WCA Motorrad-Ladestaufach	Charging compartment	110 kHz - 115 kHz	< 6 W
ICC6.5in	Instrument Cluster	Bluetooth: 2402 MHz - 2480 MHz WLAN: 2412 MHz – 2462 MHz	Bluetooth: < 4 dBm WLAN: < 20 dBm
ICC65V2	Instrument Cluster	Bluetooth: 2400 MHz - 2480 MHz WLAN: 2400 MHz – 2480 MHz	Bluetooth: < 10 mW WLAN: < 100 mW
ICC10in	Instrument 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	TFT Instrument Cluster	2400 MHz - 2483.5 MHz	< 3 dBm

RADIO EQUIPMENT TFT INSTRUMENT CLUSTER

For all Countries without EU

Model name: ICC6.5in
Manufacturer

Robert Bosch GmbH
Robert Bosch Str. 200, 31139 Hildesheim, Germany

Technical information

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

Argentina

RAMATEL
C-24711

Canada

Thi s device complies with Industry Canada's licence-exempt RSSs and part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.

Taiwan

根據 NCC 低功率電波輻射性電機 管理辦法 規定: 第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用 者均不得擅自變更頻率、加大功率 或變更原設計之特性及功能。 第十四條
低功率射頻電機之使用不得影響飛 航安全及干擾合法通信；經發現有 干擾現象時，應立即停用，並改善 至無干擾時方得繼續使用。
前項合法通信， 指依電信法規定作業之無線電通 信。
低功率射頻電機須忍受合法通信或 工業、科學及醫療用電波輻射性電 機設備之干擾。

RADIO EQUIPMENT ELECTRONIC IMMOBILISER

For all countries without EU

Model name: EWS 4
Manufacturer
BECOM Electronics GmbH
Technikerstraße 1, A-7442
Hochstraß, Austria

Technical information

Frequency Band: 134 kHz
Transponder: TMS37145/Type DST80, TMS3705 Transponder
Base Station IC
Output Power: 50 dBµV/m

Country

Argentina

H-25246

Australia/New Zealand

R-NZ

Brunei

TA No: DTA-007061

Canada

Contains IC:
10430A-MREWS5012
This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is

subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.
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'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

India

ETA-SD-20200905860

Israel

מספר אישור אלחוטי של משרד התקשורת הוא
51-74908
אסור להחליף את האנטנה המקורית של המכשיר ולא לעשות בו כל שינוי טכני אחר

Malaysia

MCMC

RFCL/47A/0920/S(20-3358)

Indonesia

72790/SDPPI/2021
13349
Dilarang melakukan perubahan Spesifikasi yang dapat Menimbulkan gangguan fisik dan/atau elektromagnetik terhadap lingkungan sekitarnya

Paraguay

CONATEL

NR: 2020-11-I-0834

Philippines

NTC

Type Approved
No.: ESD-RCE-2023298

Serbia

P1620118300

Singapore

Complies with
IMDA Standards
N3504-20

South Africa

TA-2020/6131
APPROVED

Taiwan

低功 電波 射性電機管 辦法 第十二條 經型式認證合格之低 功率射頻電 機，非經許可，公 司、商號或使用者均不得擅 自變 更頻率、加大功率或變更原設計 之特性及功能。第十四條 低功 率射頻電機之使用不 得影響飛航 安全及干擾合法通信；經發現有 干 擾現象時，應立即停用，並改 善至無干擾時方 得繼續使用。 前 項合法通信，指依電信法規定作 業之無線電 通信。

Vietnam

ICT
A1109091120AF04A3

KEYLESS RIDE KEY

For all Countries without EU

Model name: HUF5794
Manufacturer
Huf Hülsbeck & Fürst GmbH & Co. KG
Steeger Str. 17, 42551 Velbert, Germany

Technical information

Frequenzy band: 433,92 MHz
Output/Transmission Power: 10 mW

Country

Canada

This device complies with part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.
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;
(2) L'utilisateur de l'appareil doit acceptor tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Indonesia
81598/SDPPI/2022
13349

Malaysia

HIDF17000037

Morocco
AGREE PAR L'ANRT MAROC
Numéro d'agrément :
MR00031289ANRT2022
Date d'agrément :
06/01/2022

Nigeria
Connection and use of this communications equipment is permitted by the Nigerian Communications Commission

Pakistan

TAC NO: 9.140/2022

Paraguay

2022-01-I-0051

Philippines

Type Approved
No. ESD-RCE-2228693

Serbia

И005 22

Singapore
Complies with
IMDA Standards
DA105282

South Africa

TA-2022/0252
APPROVED

Sultanate of Oman
OMAN - TRA
R/13021/22
D100428

Taiwan

取得審驗證明之低功率射頻器材，非 經核准，公司、商號或使用者均不得 擅自變更頻率、加大功率或變更原設 計之特性及功能。低功率射頻器材之 使用 不得影響飛航安全及干擾合法通信; 經發現有干擾現象時，應立即停用， 並改善至無干擾時方得繼續使用。前 述合法通信，指依電信管理法規定作 業之 無線電通信。低功率射頻器材須忍受 合法通信或工業、科學及醫療用電波 輻射性電機設備之干擾

Vietnam

THACO AUTO
C900248

KEYLESS RIDE ECU

For all Countries without EU

Model name: HUF8485
Manufacturer
Huf Hülsbeck & Fürst GmbH & Co. KG
Steeger Str. 17, 42551 Velbert, Germany

Technical information

Frequenzy band: 134,45 kHz
Output/Transmission Power: 42 dBµV/m

Country

Canada

This device complies with part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.
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;
(2) L'utilisateur de l'appareil doit acceptor tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Indonesia

81597/SDPPI/2022
13349

Malaysia

HIDF17000037

Morocco

AGREE PAR L'ANRT MAROC
Numéro d'agrément :
MR00031290ANRT2022
Date d'agrément :
06/01/2022

Nigeria

Connection and use of this communications equipment is permitted by the Nigerian Communications Commission

Pakistan

TAC NO: 9.122/2022

Paraguay

2022-01-I-0052

Philippines

Type Approved
No. ESD-RCE-2228692

Singapore

Complies with
IMDA Standards
DA105282

South Africa

TA-2022/0251
APPROVES

Sultanate of Oman

OMAN - TRA
R/13020/22
D100428

Vietnam

THACO AUTO
C900248

RADIO EQUIPMENT TYRE PRESSURE CONTROL (RDC)

For all countries without EU

Model name:
Wus moto gen 3
Manufacturer
LDL Technology S.A.S.
Parc Technologique du Canal, 3 rue Giotto, 31520 Ramonville, France

Technical information

Frequency band: 433,92 MHz
Maximum effective radiated power: 16,75 dBm

Country

Argentina

H-23422

Australia

Malaysia

RBEF/29A/0919/S(19-3776)

Mexico

IFETEL: IFT/223/UCS/DG-AUSE/2418/2019

Morocco

AGREE PAR L'ANRT MAROC
Numéro d'agrément :
MR 20577 ANRT 2019
Date d'agrément :
26/07/2019

Singapore

Complies with
IMDA Standards
N3305-19

South Africa

TA-2019/1178
APPROVED

Taiwan

第十二條 經型式認證合格之低功率射頻電機，非 經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。 第十 四條 低功率射頻電機之使用不得影響飛航安全及 干擾合法通信； 經發現有干擾現象時，應立即停 用，並改善至無干擾時方得繼續使用。 前項合法 通信，指依電信法規定作業之無線電通信。 低功 率射頻電機須忍受合法通信或工業、科學及醫療 用電波輻射性電機設備之干擾。

CERTIFICATION TIRE PRESSURE CONTROL

TPC

Canada

IC: 2546A-BC5A4
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'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
WARNING: Changes or modifications not expressively approved by the party responsible for compliance could void the user's authority to operate the equipment. The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

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.

Original rider's manual, printed in Germany.

Important data for refuelling:

Fuel	
Recommended fuel grade	E5 E10 Premium Plus unleaded (max. 5 % ethanol, E5) 98 RON, 93 AKI
Alternative fuel grade	E5 E10 Premium unleaded (power- and consumption-related restrictions) (max 10 % ethanol, E10) 95 ROZ/RON 90 AKI
Usable fuel capacity	approx. 20 l
Fuel reserve	approx. 4 l
Tyre pressure	
Tyre pressure, front	2.3 bar, One-up, tyre cold
	2.5 bar, Two-up with luggage, tyre cold
Tyre pressure, rear	2.5 bar, One-up, tyre cold
	2.9 bar, Two-up with luggage, tyre cold

For further information on all aspects of your vehicle, visit: **bmw-motorrad.com**

Order No.: 01 40 5 A90 A27
08/2023, 1st edition, 01