



**BMW
MOTORRAD**

RIDER'S MANUAL (US MODEL)

R nineT



MAKE LIFE A RIDE

Vehicle data

Model

Vehicle identification number

Color number

First registration

License plate

Retailer data

Contact in Service

Ms./Mr.

Phone number

Retailer's address/Phone (company stamp)

YOUR BMW.

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

About these operating instructions

Read these operating instructions before starting your new BMW. It contains important notes about operating the vehicle that will enable you to make full use of the technical assets of your BMW.

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

If you should decide to sell your BMW one day, please remember to hand over these operating instructions as well. They are an important part of your vehicle.

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

BMW Motorrad.

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QUICK & EASY REFERENCE

Chapter 2 of these operating instructions will provide you with an initial overview of your motorcycle. All maintenance and repair procedures carried out on your motorcycle will be documented in the "Service" chapter. Documentation of the maintenance work performed is a prerequisite for generous treatment of claims.

If you should decide to sell your BMW at some point in the future, please remember to hand over these operating instructions; they are an important part of the motorcycle.

ABBREVIATIONS AND SYMBOLS

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

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

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

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

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

• Instruction.

» Result of a repair procedure.

 Reference to a page with more detailed information.

< Indicates the end of accessory or equipment-dependent information.

 Tightening torque.

 Technical data.

OE Optional equipment. BMW Motorrad optional equipment is already completely installed during motorcycle production.

OA	Optional accessories. BMW Motorrad optional accessories can be purchased and retrofitted at your authorized BMW Motorrad retailer.
ABS	Anti-Lock Brake System.
ASC	Automatic Stability Control.
DTC	Dynamic Traction Control.
DWA	Anti-theft alarm.
EWS	Electronic immobilizer.
MSR	Engine drag torque control.

EQUIPMENT

When you ordered your BMW Motorrad, you chose various custom equipment items. This rider's manual describes optional equipment (OE) and selected optional accessories (OA) offered by BMW. This explains why the manual may also contain descriptions of equipment which you have not ordered. Please note, too, that your motorcycle might not be exactly as illustrated in this

manual on account of country-specific differences.

If your motorcycle features equipment that is not described here, you can find these features described in a separate manual.

TECHNICAL DATA

All dimensions, weights and performance data contained in this rider's manual refer to the German Institute for Standardization i.e. DIN (Deutsches Institut für Normung e. V.) and comply with their tolerance specifications.

The technical data and specifications in this rider's manual serve as points of reference. The vehicle-specific data may vary, for instance due to the selected optional equipment, national-market version or country-specific measuring procedures. Detailed values can be obtained from the registration documents or requested from your BMW Motorrad retailer or other qualified service partner or repair shop. The information on the vehicle documents always takes precedence over the information in this rider's manual.

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CURRENTNESS OF THIS MANUAL

The high safety and quality levels of BMW motorcycles are maintained by constant development work on design, equipment and accessories. For this reason, some aspects of your vehicle may vary from the descriptions in this rider's manual. In addition, BMW Motorrad cannot guarantee the total absence of errors. We hope you will appreciate that no claims can be recognized that are based on the data, illustrations or descriptions in this manual.

ADDITIONAL SOURCES OF INFORMATION

Authorized BMW Motorrad retailer

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

Internet

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

CERTIFICATES AND OPERATING PERMITS

The certificates for the vehicle and the official operating permits for possible accessories are available at **bmw-motorrad.com/certification**.

DATA MEMORY

General information

Control units are installed in the vehicle. Control units process data received from vehicle sensors, self-generated data or data exchanged between control units, for example. Some control units are required for safe vehicle operation or provide riding assistance, such as rider assistance systems. Control units also make comfort and infotainment functions possible.

Information about the stored or exchanged data can be obtained from the vehicle manufacturer, such as in the form of a separate booklet.

Personal references

Every vehicle is marked with a unique vehicle identification number. Depending on the country, the vehicle owner can be identified using the

vehicle identification number and license plate and with the help of the relevant authorities. There are also other ways to trace data obtained from the vehicle back to the rider or vehicle owner, such as via the ConnectedDrive Account that was used.

Data privacy laws

In accordance with applicable data privacy laws, vehicle users have certain rights over the vehicle manufacturer or company that collects or processes personal data.

Vehicle users have the right to obtain comprehensive information without charge from the locations that store the vehicle user's personal data.

These locations may be:

- The vehicle manufacturer
- Qualified service partners
- Specialist workshops
- Service providers

Vehicle users may request information about the type of personal data that is stored, the purpose for which the data will be used and the source of the data. This information can only be obtained by a registered owner or a person with written

proof authorizing use of the vehicle.

The right to information also includes information related to data transmitted to other companies or locations.

The vehicle manufacturer's website contains the appropriate privacy policy notices. The privacy policy notices contain information on the right to delete or correct data. The vehicle manufacturer also provides the manufacturer contact information and the contact information of the data security officer on the Internet.

The vehicle owner can have a BMW Motorrad retailer or other qualified service partner or specialist workshop read out the data stored in the vehicle for a fee if required.

The vehicle data is read out via the vehicle's legally mandated diagnostic socket.

Legal requirements for the disclosure of data

The vehicle manufacture is required by the law applicable in this context to provide authorities with the data stored by the manufacturer. The provision of this data within the scope required is on a case-by-case

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basis, for instance to clarify a criminal offense.

Government agencies are authorized by the law applicable in this context to read out the data from the vehicle themselves in individual cases.

Operating data in the vehicle

Control units process data so that the vehicle can run.

Examples of this include:

- Status messages from the vehicle and its individual components, such as wheel RPM, wheel centrifugal velocity and deceleration
- Ambient conditions, such as temperature

The data is processed only in the vehicle itself and is usually temporary. The data is not stored beyond the period in which the vehicle is operating. Electronic components such as control units contain components for storing technical information. This may be information about the vehicle's condition, component load, events or faults stored temporarily or permanently.

This information generally documents the condition of a component, module, system or the surrounding area; for example:

- Operating conditions of system components, such as fill levels and tire pressure
- Malfunctions and faults in key system components, such as lights and brakes
- Vehicle responses in specific riding situations, such as the activation of riding dynamics systems
- Information about events causing damage to the vehicle

The data is necessary for providing control unit functions. In addition, it is used by the vehicle manufacturer to detect and eliminate malfunctions as well as to optimize vehicle functions.

The majority of this data is temporary and is processed only within the vehicle itself. Only a small amount of event-driven data is stored in the event data recorder and fault memory.

When a vehicle is serviced, such as for repairs, servicing processes, warranty cases and quality assurance measures, this technical information can be read out from the vehicle together with the vehicle identification number.

The information can be read out by a BMW Motorrad retailer or other qualified service partner or specialist workshop. The vehicle's legally mandated diagnostic socket is used to read out the data.

The data is collected, processed and used by the respective service network locations. The data documents the vehicle's technical states and helps with fault finding, compliance with warranty obligations and quality improvements.

The manufacturer also has product monitoring obligations arising from product liability law. The vehicle manufacturer requires technical data from the vehicle in order to fulfill these obligations. The data from the vehicle can also be used to verify customer warranty and guarantee claims. The fault memory and event data recorder in the vehicle can be reset by a BMW Motorrad retailer or other qualified service partner or specialist workshop as part of a repair or servicing.

Data input and data transfer in the vehicle

General information

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

It is possible to introduce data into the vehicle entertainment and communication system via a smartphone, for instance.

Depending on the individual equipment, this includes:

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

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

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settings when using the services.

Incorporating mobile end devices

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

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

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

Services

General information

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

Vehicle manufacturer services

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

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

Services of other providers

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

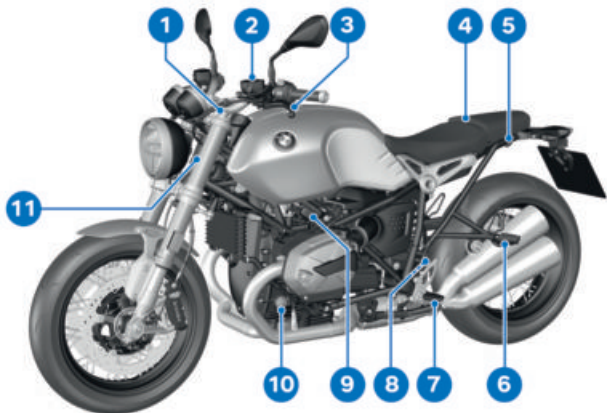
OVERVIEWS

02

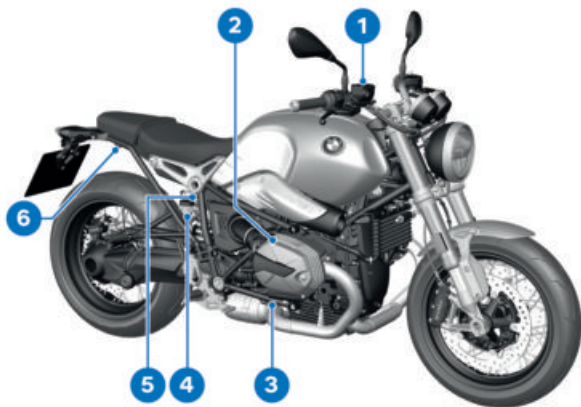
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OVERALL VIEW, LEFT SIDE



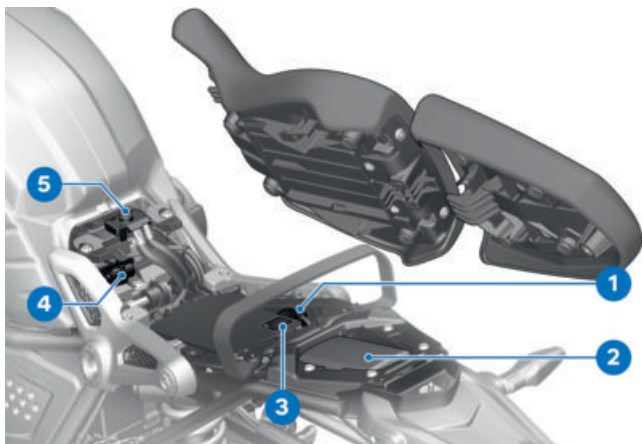
- | | |
|---|---|
| 1 Adjusting damping on front wheel (➡ 68) | 11 Nameplate (on the steering-head bearing)
Tire pressure table (➡ 114) |
| 2 Checking the clutch function (➡ 114) | |
| 3 Fuel filler opening (➡ 87) | |
| 4 Grab strap | |
| 5 Correct loading (➡ 135) | |
| 6 Passenger footrest | |
| 7 Rider footrest | |
| 8 Adjusting damping at the rear wheel (➡ 69) | |
| 9 USB charging socket (➡ 134) | |
| 10 Checking the engine oil level (➡ 108) | |

OVERALL VIEW, RIGHT SIDE

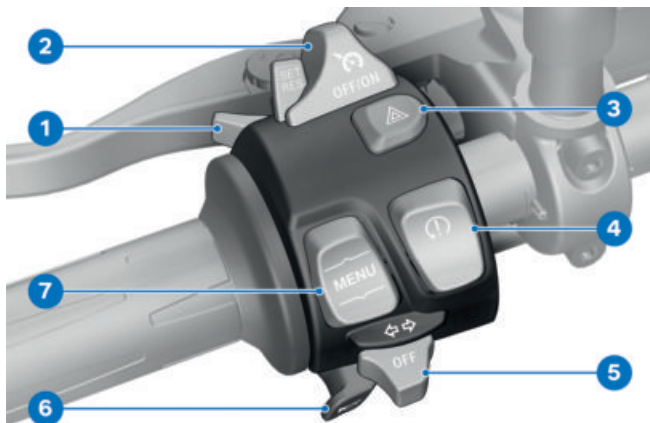
- 1** Checking the front brake fluid level (➡ 112)
- 2** Topping up the engine oil (➡ 109)
- 3** Vehicle identification number (front right, at the bottom of the rear frame)
- 4** Checking the rear brake fluid level (➡ 113)
- 5** Adjusting spring preload (➡ 67)
- 6** Removing the passenger seat (➡ 58)

16 OVERVIEWS

UNDERNEATH THE SEAT



- 1** Detaching the diagnostic socket (▮▮▮ 130)
- 2** Onboard vehicle tool kit (▮▮▮ 106)
- 3** Payload table
- 4** Fuse box (▮▮▮ 129)
- 5** Jump-start terminal (▮▮▮ 126)

MULTIFUNCTION SWITCH, LEFT

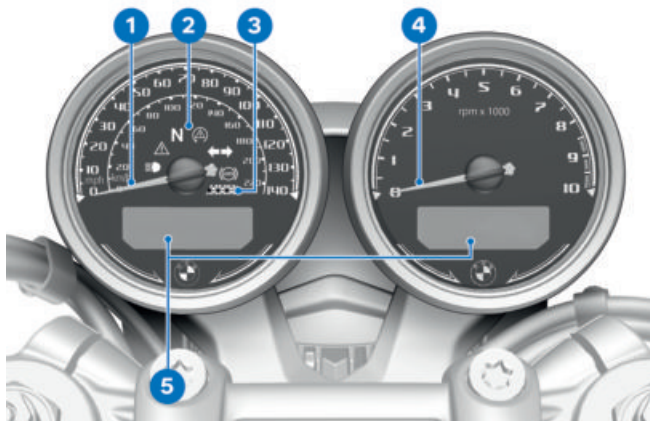
- 1 High beams and headlight flasher (➡ 41)
- 2 Cruise control (➡ 55)
- 3 Hazard warning lights (➡ 42)
- 4 Traction control (ASC/DTC) (➡ 53)
- 5 Turn signals (➡ 42)
- 6 Horn
- 7 Rocker button MENU (➡ 43)

18 OVERVIEWS

MULTIFUNCTION SWITCH, RIGHT



- 1** Operating heated grips
(57)
- 2** Select riding mode
(54)
- 3** Emergency-off switch
(40)
- 4** Starter button (81)

INSTRUMENT CLUSTER

- 1 Speedometer
- 2 Indicator and warning lights (➡ 22)
- 3 Photosensor for brightness control in the multifunction display
—with anti-theft alarm system (DWA)^{OE}
DWA LED (➡ 51)
- 4 Tachometer
- 5 Multifunction displays (➡ 23)

DISPLAYS

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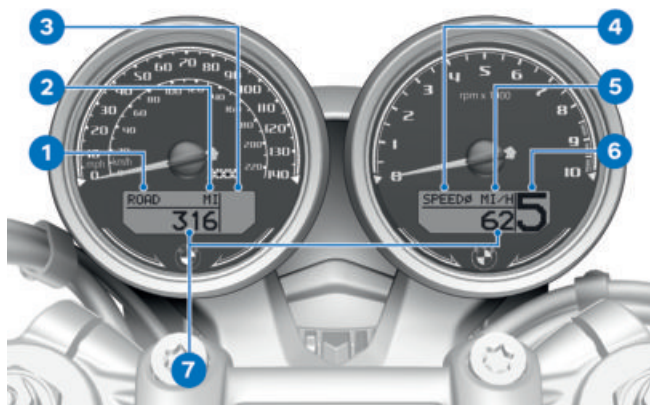
22 DISPLAYS

INDICATOR AND WARNING LIGHTS



- 1** High-beam indicator light
( 41)
- 2** General warning light
Display in combination
with warning symbols in
the multifunction display
( 24)
- 3** Neutral indicator light
- 4** ASC/DTC indicator and
warning light ( 30)
- 5** Turn signal indicator light
( 42)
- 6** ABS indicator and warn-
ing light

MULTIFUNCTION DISPLAYS



- | | |
|---|-----------------------|
| <p>1 Select riding mode
(54)</p> <p>2 Onboard computer
Selecting displays in the
speedometer (43)
Unit of the selected
display</p> <p>3 Status
Warning symbol (24)</p> <p>4 Onboard computer
Selecting displays in the
rotational-speed sensor
(45)</p> <p>5 Unit of the selected
display</p> <p>6 Gear indicator</p> | <p>7 Value</p> |
|---|-----------------------|

24 DISPLAYS

INDICATOR LIGHTS

Layout

Warnings are indicated by the corresponding warning light. If two or more warnings occur at the same time, all the appropriate warning lights appear. Warnings are displayed in alternation with warning symbols associated with them. You will find an overview of the potential warnings on the following pages.



Warnings that do not have their own warning light are shown as a warning symbol **1** in the multifunction display in conjunction with the general warning light **2**. The general warning light lights up or blinks, depending on the urgency of the warning.

Overview of warning indicators

Indicator and warning lights	Display text	Meaning
 lights up.	 is displayed.	Electronic immobilizer is active (▮▮▮ 27)
 lights up.	 is displayed.	Engine in emergency-operation mode (▮▮▮ 27)
 lights up.	 is displayed.	Engine temperature sensor malfunction (▮▮▮ 27)
 flashes.	 is displayed.	Engine warning (▮▮▮ 28)
 flashes.	 is displayed.	Severe drive malfunction (▮▮▮ 28)
 lights up.	 is displayed.	Vehicle voltage critical (▮▮▮ 28)
 lights up.	 is displayed.	Vehicle voltage too low (▮▮▮ 29)
	 is displayed.	External temperature warning (▮▮▮ 29)
 lights up.	 is displayed.	Light source defective (▮▮▮ 29)
 flashes.		ABS self-diagnosis not completed (▮▮▮ 30)
 lights up.		ABS error (▮▮▮ 30)
 flashes rapidly.		ASC/DTC intervention (▮▮▮ 30)

26 DISPLAYS

Indicator and warning lights	Display text	Meaning
 flashes.		ASC/DTC self-diagnosis not completed (→ 31)
 lights up.		ASC/DTC switched off (→ 31)
 lights up.		ASC/DTC fault (→ 31)
	 is displayed.	Anti-theft alarm system battery discharged (→ 31)
 lights up.	 and odometer KM R or MI R are displayed.	Fuel down to reserve (→ 32)
	 is displayed.	Service due (→ 32)
 lights up.	 is displayed.	Service overdue (→ 33)

Electronic immobilizer is active



lights up.



is displayed.

Possible cause:

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

- Remove other ignition keys from the ignition key ring.
- Have defective ignition keys replaced, preferably by an authorized BMW Motorrad retailer.

Engine in emergency-operation mode



lights up.



is displayed.



WARNING

Unusual handling when the engine is in emergency operation

Accident hazard

- Avoid rapid acceleration and passing maneuvers.

Possible cause:

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

- Continued driving is possible, however the accustomed engine power output may not be available.
- Have the malfunction corrected as soon as possible at a specialist workshop, preferably an authorized BMW Motorrad retailer.

Engine temperature sensor malfunction



lights up.



is displayed.

Possible cause:

The engine temperature sensor is faulty or the communication between the engine temperature sensor and engine electronics is faulty.

- Only ride in partial load range.
- Have the malfunction corrected as soon as possible at a specialist workshop, preferably an authorized BMW Motorrad retailer.

28 DISPLAYS

Engine warning



flashes.



is displayed.



WARNING

Damage to engine during emergency operation

Accident hazard

- Drive slowly and avoid rapid acceleration and passing maneuvers.
- If possible, have the vehicle picked up and the fault eliminated at a specialist workshop, preferably an authorized BMW Motorrad retailer.

Possible cause:

The engine control unit has diagnosed a fault, which can lead to a severe secondary fault.

The engine is in the emergency-operation mode.

- Avoid high load and engine speed ranges if possible.
- Have the malfunction corrected as soon as possible at an authorized service facility, preferably an authorized BMW Motorrad Retailer.

» Continued driving is possible, however it is not recommended.

Severe drive malfunction



flashes.



is displayed.

Possible cause:

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

- Have the malfunction corrected as soon as possible at a specialist workshop, preferably an authorized BMW Motorrad retailer.
- » Continued driving is possible, however it is not recommended.

Vehicle voltage critical



lights up.



is displayed.

Generator power is no longer sufficient to supply all consumers and charge the battery. In order to ensure that the engine can be started and the vehicle driven, the vehicle electronics switch off individual electrical consumers.

Possible cause:

Too many electrical consumers are turned on. Vehicle voltage tends to drop particularly when the engine is running at low RPMs or idling.

- When riding at low rotational speeds, switch off electrical consumers that are not necessary for driving safety (e.g. heating vests).

Vehicle voltage too low



lights up.



is displayed.



WARNING

Failure of vehicle systems

Accident hazard

- Do not continue riding.

Possible cause:

Alternator or alternator belt is faulty.

- Have the malfunction corrected as soon as possible at an authorized service facility, preferably an authorized BMW Motorrad Retailer.

External temperature warning



is displayed.

Possible cause:



The outside temperature measured on the motorcycle is less than:

Approx. 37 °F (Approx. 3 °C)



WARNING

Risk of black ice, even above Approx. 37 °F (Approx. 3 °C)

Risk of accident

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

- Use caution when riding.

Light source defective



lights up.



is displayed.



WARNING

Overlooking the vehicle in traffic due to a defective light source on the vehicle

Safety risk

- Replace defective light sources as quickly as possible. For details please contact a specialist service facility, preferably an authorized BMW Motorrad Retailer.

ABS self-diagnosis not completed



flashes.

Possible cause:

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

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

ABS error



lights up.

Possible cause:

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

- It is possible to continue riding if you make allowance for the failed ABS function. You should also take account of the additional information on situations that can lead to an ABS fault (► 95).
- Have the malfunction corrected as soon as possible at a specialist workshop, preferably an authorized BMW Motorrad retailer.

ASC/DTC intervention



flashes rapidly.

ASC/DTC has detected instability at the rear wheel and responded by reducing the torque. The ASC/DTC indicator and warning light flashes longer than the ASC/DTC intervention lasts. This provides the rider with visual feedback for the control action that was taken even after the critical situation has passed.

ASC/DTC self-diagnosis not completed



flashes.

Possible cause:



ASC/DTC self-diagnosis not completed

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

- Ride off slowly. It must be noted that the ASC/DTC function and the dynamic engine brake control are not available until the self-diagnosis has been completed.

ASC/DTC switched off



lights up.

Possible cause:

The ASC/DTC system has been switched off by the rider.

- Turning on the ASC/DTC function (▮▮▮▮ 53).

ASC/DTC fault



lights up.

Possible cause:

The ASC/DTC control unit has detected a fault. The ASC/DTC function and the engine drag torque control are not available at all or are restricted.

- You may continue riding. Note that the ASC/DTC function and the dynamic engine brake control are not available at all or are restricted. Observe additional information on situations that can lead to a ASC/DTC fault (▮▮▮▮ 98).
- Have the malfunction corrected as soon as possible at a specialist workshop, preferably an authorized BMW Motorrad retailer.

Anti-theft alarm system battery discharged

—with anti-theft alarm system (DWA)^{OE}



is displayed.



This fault message is only shown for a short time immediately following the Pre-Ride-Check.

32 DISPLAYS

Possible cause:

The DWA battery no longer has any charging capacity. Operation of the DWA is no longer guaranteed when the vehicle battery is disconnected.

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

Fuel reserve

The fuel quantity in the fuel tank when the low-fuel warning light turns on depends on the riding dynamics. The more the fuel moves around in the fuel tank (due to frequently changing lean angles, frequent braking and acceleration), the harder it is to accurately determine the fuel reserve. For this reason, the fuel reserve cannot be indicated precisely.

 After the low-fuel warning light is switched on, the odometer for the fuel reserve KM R or MI R is displayed automatically.

The distance that can still be traveled with the fuel reserve depends on the riding style (on the consumption) and on the fuel quantity that was still available when the light turned on. The trip distance recorder for the fuel reserve is reset when

the fuel quantity after refueling is greater than the fuel reserve.

Fuel down to reserve



lights up.



and odometer KM R or MI R are displayed.



WARNING

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

Accident hazard, damage to catalytic converter

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

Possible cause:

At the most, the fuel tank still contains the reserve fuel quantity.



Reserve fuel quantity

Approx. 3.7 quarts (Approx. 3.5 l)

- Refueling procedure (►► 88).

Service due



is displayed.

Possible cause:

Service is due because of the mileage or the date.

- Have service performed regularly by a specialist workshop, preferably an authorized BMW Motorrad retailer.
- » The operating safety and road safety of the vehicle remains unchanged.
- » The best-possible value retention of the vehicle is ensured.

Service overdue



lights up.



is displayed.

Possible cause:

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

- Have service performed regularly by a specialist workshop, preferably an authorized BMW Motorrad retailer.
- » The operating safety and road safety of the vehicle remains unchanged.
- » The best-possible value retention of the vehicle is ensured.

SERVICE DISPLAY



If service is due within a month, the icon for service **3** and the service due date **1** are displayed. **SERV 2** is displayed briefly after the Pre-Ride-Check, or if called up on the onboard computer.



If service is due within 600 miles (1000 km), the icon for service **3** and the remaining distance **1** are displayed and counted down in increments of 100 miles/kilometers. **SERV 2** is displayed briefly after the Pre-Ride-Check, or if called up on the onboard computer.

34 **DISPLAYS**



If the service display appears more than one month before the service date, the date stored in the instrument cluster must be set. This situation may occur if the battery is disconnected from the vehicle.

OPERATION

04

IGNITION SWITCH/STEERING LOCK	38
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38 OPERATION

IGNITION SWITCH/STEERING LOCK

Ignition keys

You are provided with 2 ignition keys and one key for removing the passenger seat (► 58).

Should you lose your keys, refer to the notes regarding the electronic immobilizer (EWS) (► 39).

The ignition key fits the ignition steering lock and fuel filler cap.

Locking the steering lock



ATTENTION

Handlebars turned in wrong direction when motorcycle propped on side stand.

Component damage caused by tipping over

- On level ground, always turn the handlebars to the left to set the steering lock.
 - Otherwise the angle of the ground determines whether the handlebars are set to the left or right.
- Turn handlebars to full left or right lock position.



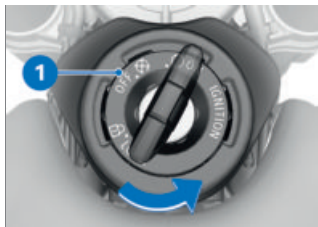
- Turn the ignition key to position **1** while moving the handlebars somewhat.
 - » Ignition, lights and all electrical circuits turned off.
 - » Steering lock locked.
 - » The ignition key can be removed.

Turning on the ignition



- Turn the ignition key to position **1**.
 - » Parking lights and all function circuits turned on.
 - » Engine can be started.
 - » ABS self-diagnosis is performed. (► 82)
 - » ASC/DTC self-diagnosis is performed. (► 83)

Turning off the ignition



- Turn the ignition key to position 1.
 - » Lights are turned off.
 - » Steering lock is not locked.
 - » The ignition key can be removed.
 - » Electrically powered accessories remain operational for a limited period of time.

Electronic immobilizer (EWS)

The motorcycle's electronics monitor the data stored in the ignition key through a ring antenna incorporated in the ignition switch / steering lock. The engine control unit does not enable engine start until this key has been recognized as "authorized" for your motorcycle.

 An additional ignition key attached to the same ring as the ignition key used to start the engine could "irritate" the electronics, in which case the

enabling signal for a start is not issued. The warning is displayed in the multifunction display with the key symbol. Always store ignition keys separately from the ignition key used for starting the vehicle.

If you lose an ignition key, you can have it disabled by your authorized BMW Motorrad retailer.

For this purpose, you should also bring all of the motorcycle's remaining ignition keys with you. The engine can no longer be started using a disabled ignition key; however, a disabled ignition key can be enabled again.

Ignition keys can only be obtained from an authorized BMW Motorrad retailer. The ignition keys are part of an integrated safety system, so the retailer is under obligation to check the legitimacy of all applications for spare keys.

40 OPERATION

EMERGENCY-OFF SWITCH



1 Emergency-off switch



WARNING

Operation of the emergency ON/OFF switch when riding

Danger of falling due to blocking of rear wheel

- Do not operate the emergency ON/OFF switch when riding.

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



A Engine turned off

B Operating position



The engine can only be started in the operating position.

LIGHTING

Low beams

- Turning on the ignition (➡ 38).
- Starting the engine (➡ 81).



- Alternative: With the ignition turned on, pull the switch 1.

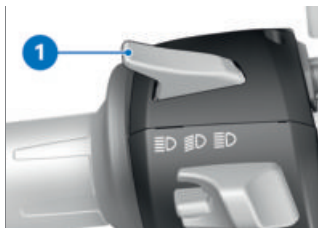
Parking lights

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

 The parking light is a load on the battery. Turn on the ignition only for a limited period.

High beams and headlight flasher

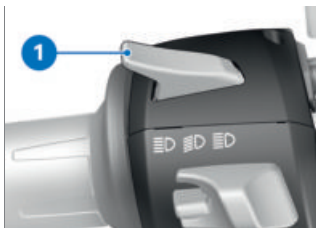
- Turning on the ignition (➡ 38).



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

Headlight courtesy delay feature

- Turning off the ignition (➡ 39).



- Immediately after turning off the ignition, pull switch **1** back and hold until the headlight courtesy delay feature turns on.
- » The vehicle lights light up for one minute and then turn off automatically.
- This can be used, for example, to illuminate the path to your front door after the vehicle is parked.

Parking lights

- Turning off the ignition (➡ 39).



- Immediately after switching off the ignition, push button **1**

42 OPERATION

to the left and hold it until the parking lights turn on.

- Turn ignition on and then off again to turn off the parking lights.

Hazard warning system

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

 If a turn indicator button is pressed when hazard warning lights are on, the turn indicator function replaces the hazard warning light function for the duration of turn indicator operation. Once the turn indicator button is no longer being pressed, the hazard warning light function will resume.

- Turning on the ignition ( 38).



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

» Ignition can be turned off.

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

Turn signals

- Turning on the ignition ( 38).



- Press button **1** to the left or right to turn on the turn signals.
- » The turn signals automatically switch off when the distance covered has been reached.
- Alternative: Press button **1** to turn off the turn signals.

DISPLAY

SELECTING DISPLAYS IN THE SPEEDOMETER



WARNING

Distraction from traffic conditions and loss of control

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

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

- Turning on the ignition (III 38).

» The instrument cluster is displayed.

- Repeatedly short-press button 1 until desired value is displayed.

Possible displays:

- Odometer: MI
- Trip odometer 1: MI 1
- Automatic trip odometer:
MI A, is automatically reset if at least 6 hours have passed since the ignition was turned off and the date has changed.

44 OPERATION

- Distance covered after reaching the fuel reserve: **MI R**, can only be selected for the fuel reserve.
- Outside temperature: **°F**
- Clock: **AM/PM**
- Service date: **SERV** can only be selected if service is due within one month, or if service is overdue.
- Remaining distance covered until service: **SERV** can only be selected if service is due within 600 mi (1000 km) or if service is overdue.
- Call up the settings menu: **SETUP ENTER**, can only be selected when the vehicle is at a standstill.

SELECTING DISPLAYS IN THE ROTATIONAL-SPEED SENSOR



- Turning on the ignition (III 38).
- » The instrument cluster is displayed.
- Repeatedly short-press button **1** until desired value is displayed.

Possible displays:

- Engine temperature: bar display
- Average speed: ØMPH
- Vehicle voltage: V
- Average fuel consumption: ØMPG
- Current consumption: MPG,
during vehicle standstill: G/H

46 OPERATION

Resetting the trip odometer

- Turning on the ignition (III 38).
- Press and hold button **1** until the desired average value **2** is reset.



- Briefly press button **1** repeatedly until the trip odometer to be reset **2** is displayed.
- Press and hold button **1** until the trip odometer **2** is reset.

Resetting average values

- Turning on the ignition (III 38).



- Press button **1** repeatedly until the desired average value **2** is displayed.

SETTINGS IN THE INSTRUMENT CLUSTER

Selecting SETUP

Requirement

The vehicle is stationary.



- Briefly press button **1** repeatedly until **SETUP ENTER** is displayed.
- Press and hold button **1** to start **SETUP**.
- Briefly press button **1** in each case to select the following parameters in **SETUP**:
 - Adjust the brightness of the backlighting for the instrument cluster **BRIGHT**.
 - with anti-theft alarm system (DWA)^{OE}
 - Activate alarm function of anti-theft alarm system automatically after switching off the ignition **DWA ON** or leave switched off **DWA OFF**.◀
 - Set time display **CLOCK**.
 - Set date **DATE**.
 - Set units **UNIT**.

- Reset displays **RESET**.
- Exit the **SETUP** menu **SETUP EXIT**.

Adjusting the display brightness

- Turning on the ignition (▶▶▶ 38).
- Selecting **SETUP** (▶▶▶ 47).



- Briefly press button **1** repeatedly until **SET BRIGHT** is displayed.
- Briefly press button **2** repeatedly until the desired value for display brightness **3** is set.
 - » A value from 1 to 5 (dark to light) is set for display brightness.
- Press and hold button **1** to exit **SET BRIGHT**.
 - » **SETUP ENTER** is displayed.

Setting the clock

- Turning on the ignition (▶▶▶ 38).
- Selecting **SETUP** (▶▶▶ 47).

48 OPERATION



- Briefly press button **1** repeatedly until **SET CLOCK** is displayed.
- Press and hold button **2** until hours **3** flash.
- Briefly press button **1** to increment hours.
- Briefly press button **2** to decrement hours.
 - » The hours are set.
- Press and hold button **2** until minutes **4** flash.
- Briefly press button **1** to increment minutes.
- Briefly press button **2** to decrement minutes.
 - » The minutes are set.
- Press and hold button **2** until minutes no longer flash.
 - » The clock is set.
- Press and hold button **1** to exit **SET CLOCK**.
 - » **SETUP ENTER** is displayed.

Setting the date

- Turning on the ignition (» 38).
- Selecting **SETUP** (» 47).



- Briefly press button **1** repeatedly until **SET DATE** is displayed.
- Press and hold button **2** until day **4** flashes.
- Briefly press button **1** to increment day.
- Briefly press button **2** to decrement day.
 - » The day is set.
- Press and hold button **2** until month **3** flashes.
- Briefly press button **1** to increment month.
- Briefly press button **2** to decrement month.
 - » The month is set.
- Press and hold button **2** until **SET YEAR** is displayed.



- Briefly press button **1** to increment year **5**.
- Briefly press button **2** to decrement year **5**.
- Press and hold button **2** until year no longer flashes.
 - » The year is set.
- Press and hold button **1** to exit SET YEAR.
 - » The date is set.
- » SETUP ENTER is displayed.

Setting units

Requirement

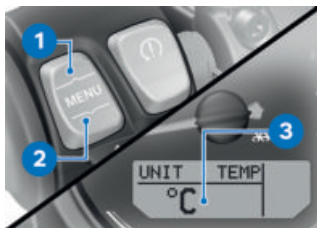
The vehicle is stationary.

- Turning on the ignition (➡ 38).
- Selecting SETUP (➡ 47).



- Briefly press button **1** repeatedly until SET UNIT ENTER is displayed.
- Press and hold button **2** to activate SET UNIT.
 - » UNIT SPEED is displayed.
- Briefly press button **1** in each case to select the parameters in SET UNIT:
 - Change fuel consumption display indicator to L/100, MPG or KM/L
 - Change temperature display unit to °C or °F
 - Change the time display to 24H or 12H
 - Change date format to DMY or MDY

50 OPERATION



- Briefly press button **2** until each desired unit **3** is set.
 - If you want to complete the configuration, press button **1** repeatedly until SET UNIT EXIT is displayed.
 - Press and hold button **2** to exit SET UNIT.
- » SETUP RESET is displayed.



- If you want to reset the units to the factory setting, press button **1** repeatedly until SET UNIT RESET is shown.
 - Press and hold button **2** until the RESET display **3** flashes.
- » The units have been reset to the factory settings.

» The SET UNIT EXIT display is shown.

- Press and hold button **2** to exit SET UNIT.

» SETUP RESET is displayed.

Resetting SETUP

- Turn on the ignition.
- Selecting SETUP (➡ 47).



- Briefly press button **1** repeatedly until SETUP RESET is displayed.
- Press and hold button **2** until the RESET display **3** flashes.

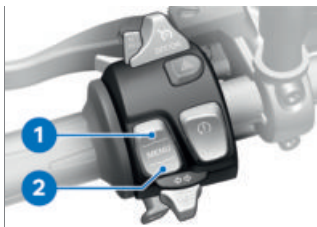
 The SETUP RESET function also resets the date and time to their standard values.

» SETUP EXIT is displayed.

- Exiting SETUP (➡ 50).

Exiting SETUP Requirement

There are four ways to end SETUP.



- Press and hold button **1**.
 - » **SETUP ENTER** is displayed.
 - » Settings have been saved.
- Alternative: Briefly press button **1** repeatedly until **SETUP EXIT** is displayed.
- Press and hold button **2**.
 - » **SETUP ENTER** is displayed.
 - » Settings have been saved.
- Alternative: Turn the ignition off and on again.
 - » **SETUP** ends without saving the settings.
- Alternative: Ride off.



Speed for using **SETUP**

max 6 mph (max 10 km/h)

- » When the permissible speed for operation is exceeded, **SETUP** ends without saving the settings.
- » **MI** is displayed.

ANTI-THEFT ALARM SYSTEM (DWA)

—with anti-theft alarm system (DWA)^{OE}

Activating the DWA

- Turning on the ignition (III → 38).
- Setting the DWA (III → 52).
- Switch off the ignition.
 - » If the DWA is activated, the DWA will automatically be activated after the ignition is switched off.
 - » Activation takes approximately 30 seconds to complete.
- Turn signals are illuminated twice.
- » DWA is armed.

Alarm signal

The DWA alarm can be set off by:

- Motion sensor
- Switching on ignition with an unauthorized ignition key.
- Disconnecting the DWA from the motorcycle battery (DWA battery takes over the power supply – alarm sound only, hazard warning lights do not flash).

52 OPERATION

If the DWA battery is discharged all functions remain operational; the only difference is that the alarm cannot be set off if the system is disconnected from the motorcycle battery.

The duration of the alarm signal is approx. 26 seconds. During the DWA alarm, an alarm tone sounds and the indicators flash. The type of alarm sound can be set by an authorized BMW Motorrad retailer.

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

Light signals on DWA LED:

- 1 flash: Motion sensor 1
- 2 flashes: Motion sensor 2
- 3 flashes: ignition turned on with unauthorized ignition key
- 4 flashes: DWA disconnected from motorcycle battery
- 5 flashes: motion sensor 3

Deactivating the DWA

- Turning on the ignition (➡ 38).
 - » Turn indicators are illuminated once.
 - » DWA is switched off.

Setting the DWA

- Turning on the ignition (➡ 38).
- Selecting SETUP (➡ 47).



- Briefly press button **1** repeatedly until SET DWA is displayed.
 - Briefly press button **2** to change the adjusted value.
- The following settings are available:
- DWA ON: DWA is activated or is activated automatically when the ignition is switched off.
 - DWA OFF: DWA is deactivated.
 - Press and hold button **1** to exit SET DWA.
 - » SETUP ENTER is displayed.

TRACTION CONTROL (ASC/DTC)

Turning off the ASC/DTC function

- Turning on the ignition (see 38).

 The ASC/DTC function can also be deactivated while you are riding.



- Press and hold button **1** until the ASC/DTC indicator and warning light **2** changes its display behavior.



starts to light up.

» The ASC/DTC function is switched off.

Turning on the ASC/DTC function



- Press and hold button **1** until the ASC/DTC indicator and warning light **2** changes its display behavior.



goes out, and if self-diagnosis has not been completed, it begins to flash.

» The ASC/DTC function is switched on.

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



If the ASC/DTC indicator and warning light do not go dark after the ignition has been switched off and then on again and riding has continued after this at the following minimum speed, an ASC/DTC fault has occurred.

min 3 mph (min 5 km/h)

- For more information on ASC/DTC traction control, see the

54 OPERATION

"Technology in detail" chapter
( 97).

RIDING MODE

Use of the riding modes

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

Standard

- RAIN: Riding on roads that are slick from rain.
- ROAD: Riding on dry roads.

-with riding modes Pro^{OE}

Also with Pro riding modes

- DYNA: Dynamic riding on dry roads.

The optimum interaction between engine characteristics, ABS control, and ASC/DTC control is provided for each of these scenarios.

More detailed information about the riding modes can be found in the "Technology in detail" Chapter ( 99).

Select riding mode

- Turning on the ignition
( 38).



- Press button **1**.
 - » The current riding mode **2** is displayed.



- Press button **1** repeatedly until the desired riding mode **2** is displayed.
 - » When the vehicle is at a standstill, the selected riding mode is activated after approx. 2 seconds.
 - » The new riding mode is activated while the vehicle is in motion under the following conditions:
 - The throttle grip is in Neutral.
 - Brake is not engaged.

- with cruise control^{OE}
- » Additionally, for vehicles with adaptive cruise control:
- Adaptive cruise control is deactivated.◁
- » The riding mode that is set and its corresponding adjustments of engine characteristics and ABS control and ASC/DTC control are retained even after the ignition is switched off.

CRUISE CONTROL

- with cruise control^{OE}

Turning on the cruise control



- Slide switch **1** to the right.
- » Button **2** is unlocked.

Saving the speed



- Briefly push button **1** forward.

 Adjustment range of cruise control (gear-dependent)

12...130 mph (20...210 km/h)

 is displayed.

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

Accelerating



- Briefly push button **1** forward.
- » The speed is increased by 1 mph (1.6 km/h) each time the button is pressed.

56 OPERATION

- Press button **1** forward and hold.
 - » The speed increases continuously.
 - » If button **1** is no longer pressed, the speed reached is maintained and saved.

Decelerating



- Briefly press button **1** backward.
 - » The speed is decreased by 1 mph (1.6 km/h) each time the button is pressed.
- Press button **1** back and hold.
 - » The speed is reduced continuously.
 - » If button **1** is no longer pressed, the speed reached is maintained and saved.

Deactivating the adaptive cruise control

- Actuate the brakes, coupling or throttle grip (ease the throttle beyond the default setting) to deactivate the adaptive cruise control.

 During ASC/DTC interventions, the adaptive cruise control is automatically deactivated for safety reasons.

» Icon for adaptive cruise control disappears.

Resuming previous cruising speed



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

 Cruise control is not deactivated by accelerating. If you release the throttle grip, the motorcycle will decelerate only to the cruising speed saved in memory, even though you might have wanted to slow down to a lower speed.

 is displayed.

Turning off cruise control



- Push switch **1** to the left.
 - » The system is switched off.
 - » Button **2** is locked.

HEATED GRIPS

—with heated grips^{OE}

Operating heated grips

 The heated grips option can only be activated when the engine is running.

 The increase in power consumption caused by the heated grips can drain the battery if you are riding at low engine speeds. If the battery is inadequately charged, the heated grips are switched off to ensure starting capability.

- Starting the engine ( 81).



- Press button **1** repeatedly until desired heating level **2** is displayed.

The following settings are available:



Heating off



Low heater output



High heater output

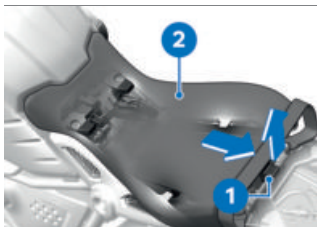
- » High heater output is used for fast heating of the grips; the switch should then be switched back to a lower heater output.
- » If no further changes are made, the selected heating level is set and the heated grip icon is hidden.

58 OPERATION

RIDER'S SEAT AND PASSENGER SEAT

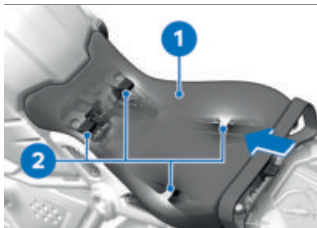
Removing the rider's seat

- Removing the passenger seat (→ 58).



- Pull locking mechanism **1** upwards.
- Pull rider's seat **2** toward rear and remove.

Installing the rider's seat



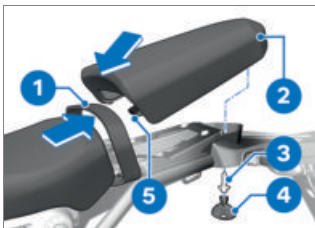
- Insert rider's seat **1** in the tabs **2**.
- Press down firmly on rear region of rider's seat **1**.
» Rider's seat engages audibly.
- Installing the passenger seat (→ 58).

Removing the passenger seat



- Remove the screw **1** with the motorcycle seat key **2**.
- Pull grab strap **3** in direction of rider's seat and remove passenger seat **4** toward rear.

Installing the passenger seat



- Insert passenger seat **2** in rear frame – make sure that lug **5** of passenger seat is seated in rear frame.
- Hand-tighten the screw **3** with the motorcycle seat key **4**.
- Pull grab strap **1** over passenger seat.

SETTING

05

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62 SETTING

MIRRORS

Adjusting the mirrors



- Move mirror into desired position by twisting.

—with Option 719 Billet pack Classic II^{OE}

or

—with Option 719 Billet pack Shadow II^{OE}



DANGER

Function impaired by incorrect installation position

Risk of a fall or accident

- Do not change the installation position of the mirror.

- Move mirror body into desired position by twisting it.◁

Adjusting the mirror arm



- Slide the protective cap up over the bolted connection on the mirror arm.
- Loosen nut **1** with tool from on-board toolkit.
- Turn the mirror arm into the desired position.
- Tighten nut **1** while holding mirror arm firmly.



Mirror (locknut) on adapter

M10 x 1.25

16 lb/ft (22 Nm) (Left-hand thread)

- Slide the protective cap over the bolted connection.

HEADLIGHTS

Headlight adjustment, right-hand/left-hand traffic

This motorcycle's headlight features a symmetrical low beam. No special measures are required prior to operating the motorcycle in a country where traffic travels on the side of the road opposite to that of your home country (left-hand drive to right-hand drive or vice versa).

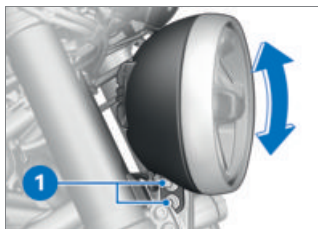
Headlight beam throw and spring preload

The headlight beam throw generally remains constant due to the adjustment of the spring preload to the load status. However, in the case of very high payloads, the available spring preload adjustment might not be adequate. If that is the case, the headlight beam throw must be adapted to the weight.

 If there are doubts as to the correct headlight range, have the adjustment checked by a specialized workshop, preferably by an authorized BMW Motorrad retailer.

Adjusting the headlight range Requirement

Despite adjustment of the spring preload, oncoming traffic is still blinded when the vehicle has a high payload.



- Slacken screws **1**.
- Swivel the headlight to adjust the headlight range.
- Tighten screw **1** while holding the headlight.



Headlight on bracket

M8 x 40

14 lb/ft (19 Nm)

If the motorcycle is ridden again with lower payload:

- Have the headlight base setting readjusted by a specialist workshop, preferably an authorized BMW Motorrad retailer.

64 SETTING

CLUTCH

Adjusting the clutch lever



WARNING

Modified position of the clutch fluid reservoir

Air in the clutch system

- Do not twist the handlebar fitting or the handlebars.

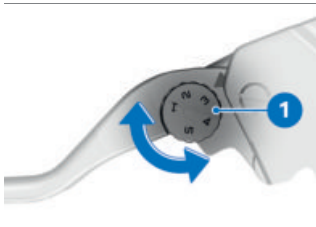


WARNING

Adjusting the clutch lever while driving

Accident hazard

- Adjust the clutch lever when the motorcycle is stationary.



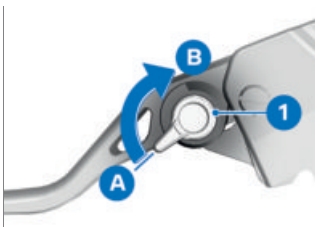
- Turn the adjustment screw **1** into the desired position by applying gentle pressure from the rear.



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

» Adjustment options:

- From position **1**: Smallest distance between handlebar grip and clutch lever
- To position **5**: Largest distance between handlebar grip and clutch lever
- with Option 719 Billet pack Classic II ^{OE}
- or
- with Option 719 Billet pack Shadow II ^{OE}



- Turn the adjustment lever **1** to the desired position.
- » Adjustment options:
- From position **A**: smallest distance between handlebar grip and clutch lever.
- Five steps toward position **B** to increase the distance between the handlebar grip and the clutch lever.◁

BRAKES

Adjusting the brake lever



WARNING

Modified position of the brake fluid reservoir

Air in the brake system

- Do not twist the handlebar fitting or the handlebars.



WARNING

Adjusting the brake lever while driving

Risk of accident

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



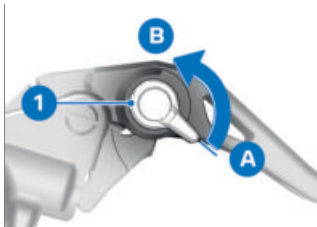
- Turn the adjustment screw **1** into the desired position by applying gentle pressure from the rear.



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

» Adjustment options:

- From position **1**: Smallest distance between handlebar grip and brake lever
- To position **5**: Greatest distance between handlebar grip and brake lever
- with Option 719 Billet pack Classic II^{OE}
- or
- with Option 719 Billet pack Shadow II^{OE}



- Turn the adjustment lever **1** to the desired position.
- » Adjustment options:
- From position **A**: smallest distance between handlebar grip and handbrake lever.
- Five steps toward position **B** to increase the distance between the handlebar grip and the handbrake lever.◁

66 SETTING

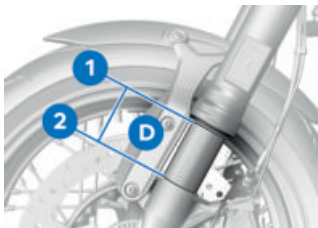
SPRING PRELOAD

Setting adjustment to front wheel

The spring preload on the front wheel must be adapted to the weight of the rider. Higher weight requires a higher spring preload, lower weight requires a lower spring preload.

Adjusting the spring preload on the front wheel

- Park the motorcycle, making sure the ground is level and firm.
- Make sure there is no load on the motorcycle; remove any luggage items.



- Hold the motorcycle vertically and measure the spacing **D** between the lower edge **1** of the slider tube and the point **2**.
- Load motorcycle with rider.
- With the assistance of a helper, measure the distance **D** between points **1**

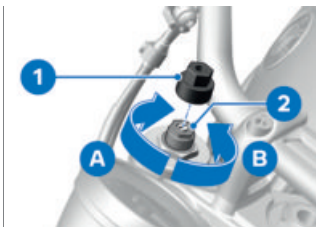
and **2** again and calculate the difference (compression) between the measured values.



Adjustment of spring preload dependent on loading

Compressing front wheel

0.24...0.39 in (6...10 mm)
(With rider 187 lbs (85 kg))



- Fit the plastic top part **1** from the onboard vehicle tool kit on the adjustment screws **2**.



WARNING

Uncoordinated settings of spring preload and spring strut damping.

Poorer handling.

- Adjust damping characteristic to changed spring preload.

- To lower the compression (increase the spring preload), turn the adjustment screws **2**

in direction **A** using the on-board vehicle tool kit.

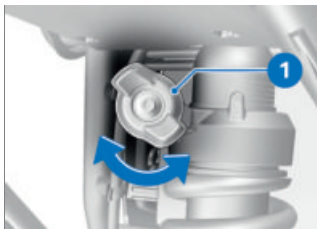
- To increase the compression (reduce the spring preload), turn the adjustment screws **2** in direction **B** using a tool from the onboard vehicle tool kit.
- Make sure that the same values are set on the left and right.

Adjustment on rear wheel

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

Adjusting the spring preload at the rear wheel

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



WARNING

Uncoordinated settings of spring preload and spring strut damping.

Poorer handling.

- Adjust damping characteristic to changed spring preload.
 - To increase spring preload, turn adjustment wheel **1** clockwise.
 - To decrease spring preload, turn adjustment wheel **1** counterclockwise.
 - Adjust the damping to the changed spring preload.
-  A recommendation on the chassis calibration is provided in the "Technical Data" chapter under "Chassis".
- Adjusting damping at the rear wheel (➡ 69).

68 SETTING

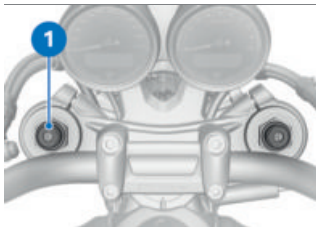
DAMPING

Setting

Damping must be adjusted to the road condition and the spring preload.

- A rough road requires softer damping than a smooth road.
- An increase in spring preload requires firmer damping, a reduction in spring preload requires softer damping.

Adjusting the compression damping on the front wheel



- Adjust compression damping with adjusting screw **1** on the left-side fork leg.



- To increase damping: Turn adjustment screw with tool from onboard vehicle tool kit so that the mark **1** points to a higher scale value.
- To decrease damping: Turn adjustment screw with tool from onboard vehicle tool kit so that the mark **1** points to a lower scale value.



Compression stage, basic setting, front

Position 1 (comfortable setting with rider 187 lbs (85 kg))

Position 3 (standard setting with rider 187 lbs (85 kg))

Position 7 (sport-oriented setting with rider 187 lbs (85 kg))

Adjusting the rebound-stage damping on the front wheel



- Adjust rebound-stage damping by means of the adjustment screw **1** on the right-side fork leg.



- To increase damping: Turn adjustment screw with tool from onboard vehicle tool kit so that the mark **1** points to a higher scale value.
- To decrease damping: Turn adjustment screw with tool from onboard vehicle tool kit so that the mark **1** points to a lower scale value.



Rebound stage, basic setting, front

Position 1 (comfortable setting with rider 187 lbs (85 kg))

Position 3 (standard setting with rider 187 lbs (85 kg))

Position 7 (sport-oriented setting with rider 187 lbs (85 kg))

Factory settings at front wheel

- Use following specification data to adjust to factory settings.



Factory settings for jounce/rebound at front

Position 3

Adjusting damping at the rear wheel

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

70 SETTING



CAUTION

Adjusting the spring strut damping when the silencer is hot

Burn hazard

- Allow the muffler to cool down.



CAUTION

Working with hot components

Burn hazard

- Wear protective gloves.
- Use on-board toolkit to adjust damping via adjustment screw **1**.



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



Recommendation on chassis and suspension adjustment for one-up operation

Turn adjustment wheel counterclockwise up to stop (Spring preload)

Turn adjustment screw clockwise up to stop, then turn back by 2 turns (Damping)



Recommendation on chassis and suspension adjustment for two-up mode

Turn adjustment wheel clockwise up to stop (Spring preload)

Turn adjustment screw up to stop, then turn back 1 turn (Damping)

FOOTREST SYSTEM

–with Option 719 Billet pack
Classic II^{OE}

or

–with Option 719 Billet pack
Shadow II^{OE}

Adjusting the rotor



WARNING

**Greater inclinations can lead
ground contact of hard com-
ponents when cornering.**

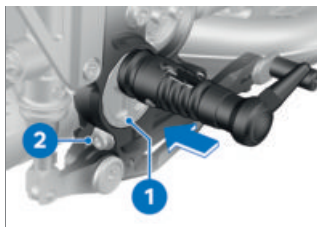
Accident hazard

- Do not use the footrest as an indicator for critical inclinations.

- The setting of the rotor is adjusted in the same way on the left and right.
- The position of the rotor must have the same setting on the right and left.



- The foot distance and a higher foot position can be adjusted on the rotor **2**.
- Loosen the bolt **1** far enough that the rotor **2** can be pulled out.
- The rotor **2** is adjustable in 12 positions. To set the highest position, turn the rotor **2** to the left or right by 180°.



- Install the rotor **1** in the desired position and tighten the screw **2**.



Rotor on base plate

M6 x 25

15 lb/ft (20 Nm)

72 SETTING



WARNING

Incorrectly adjusted footrest due to the rotor being moved.

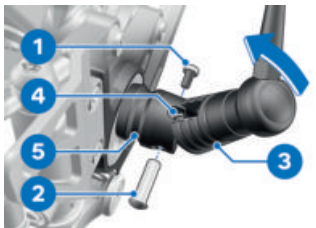
Accident hazard

- If the rotor is moved, the footrest adjustment must be adapted accordingly.

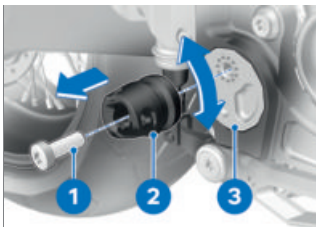
- The footrest can only fold upward and slightly backward.

Adjusting the footrest joint

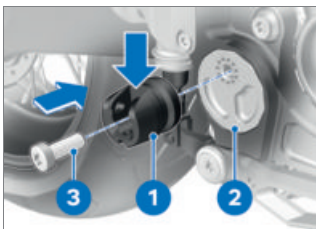
- The setting of the footrest joint is adjusted in the same way on the left and right.



- Remove screw **1** and bolt **2**.
- Fold the footrest body **3** in direction of arrow.
 - » The spring is relaxed.
- Disengage spring **4** from footrest joint **5**.



- Remove the screw **1**.
- Pull the footrest joint **2** from the rotor **3**.
- To change the position of the footrest joint **2**, turn it clockwise or counterclockwise.



- When ultimately installed on the rotor **2**, the opening **arrow** of the footrest joint **1** **must** point upward or slightly to the rear and upward.
- Install screw **3**.
- Remove and install the footrest joint on the side of the switch unit in the same way.



Footrest joint on rotor

M8 x 20

15 lb/ft (20 Nm)

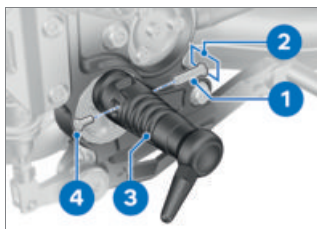
Footrest body on
footrest joint

M4 x 8

2 lb/ft (3 Nm)

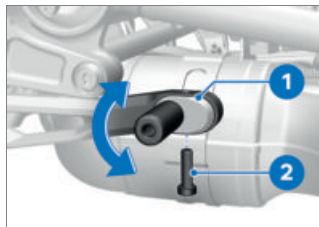


- Attach the spring **1** to the eye on the footrest joint **3**.
- Fold the footrest body **2** up-ward in the footrest joint **3**.

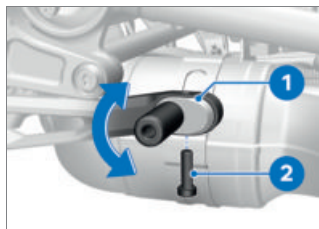


- Install bolt **1** with flattened head **2** flush to the footrest joint and footrest body **3**.
- Install screw **4**.
- Remove and install the footrest body on the side of the switch unit in the same way.

Adjusting the footbrake lever foot plate



- The horizontal and vertical distance of the foot relative to the foot plate **1** can be adjusted by turning it to different positions.
- Remove the screw **2**.



- Clean the thread.
- Turn the foot plate **1** to the desired position.
- Install the **new** screw **2**.

74 SETTING



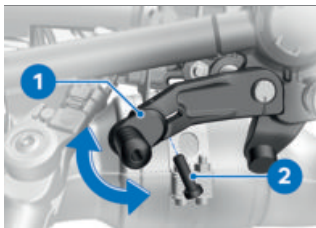
Foot piece on footbrake lever

M6 x 20

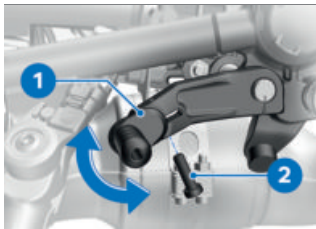
Thread-locking compound:
micro-encapsulated

7 lb/ft (10 Nm)

Adjusting the gearshift lever foot plate



- The horizontal and vertical distance of the foot relative to the foot plate **1** can be adjusted by turning it to different positions.
- Remove the screw **2**.



- Clean the thread.

- Turn the foot plate **1** to the desired position.
- Install the **new** screw **2**.



Foot piece on gearshift lever

M6 x 20

Thread-locking compound:
micro-encapsulated

7 lb/ft (10 Nm)

RIDING

06

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78 RIDING

SAFETY INSTRUCTIONS

Rider's equipment

Do not ride without the correct clothing! Always wear

- Helmet
- Rider's suit
- Gloves
- Boots

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



WARNING

Seizure of loose textile fabrics, luggage items or straps in open running rotating vehicle parts (wheels, prop shaft)

Risk of accident

- Make sure that no loosely worn textile fabrics can get caught in open, running and rotating vehicle parts.
- Keep luggage items as well as tension belts and lashing straps away from open, running and rotating vehicle parts.

Correct loading



WARNING

Reduced riding stability caused by overloading and uneven loading

Accident hazard

- Do not exceed the gross weight limit and observe the loading information.

- Adjust spring preload, suspension damping rate settings and tire inflation pressures for the current gross vehicle weight.
- Pack heavy pieces of luggage and cargo as low and as close to the center of the motorcycle as possible.
- with tank bag^{OA}
- Observe maximum payload of tank rucksack.



Payload of tank bag

≤11 lbs (≤5 kg)◁

- with rear bag^{OA}
- Observe maximum payload of the rear bag.



Payload of rear bag

max 22 lbs (max 10 kg)◁

Speed

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

- Incorrect adjustment of the spring strut
- Unevenly distributed load
- Loose clothing
- Insufficient tire pressure
- Tire tread in poor condition
- Attached luggage systems, such as a tank bag or rear bag.

Risk of poisoning

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



WARNING

Harmful exhaust gas

Danger of suffocation

- Do not inhale exhaust fumes.
- Do not run the engine in closed rooms.



WARNING

Inhalation of vapors that are harmful to health

Damage to health

- Do not inhale vapors from operating fluids and plastics.
- Only use the vehicle out-doors.

Burn hazard



CAUTION

Intense heating up of engine and exhaust system while riding

Burn hazard

- After parking the motorcycle, make sure that no persons or objects come into contact with the engine and exhaust system.

Catalytic converter

There is a danger of overheating and damage if misfiring causes unburned fuel to enter the catalytic converter.

For this reason, observe the following points:

- Do not run the fuel tank dry.
- Do not run the engine with the spark-plug socket removed.

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- Stop the engine immediately if it misfires.
- Use unleaded fuel only.
- Comply with all specified maintenance intervals.



ATTENTION

Unburned fuel in the catalytic converter

Damage to catalytic converter

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

Danger of overheating



ATTENTION

Engine idling for a lengthy period while at a standstill

Overheating due to insufficient cooling; in extreme cases vehicle fire

- Do not allow the engine to idle unnecessarily.
- After starting, ride off immediately.

Modifications



ATTENTION

Modifications to the motorcycle (e.g. engine control unit, throttle valves, clutch)

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

- Do not make any modifications.

REGULAR CHECK

Observe checklist

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

Always before riding off

- Check operation of the brake system (➡ 110).
- Check operation of the lighting and signal system.
- Check the clutch function (➡ 114).
- Check tire tread depth (➡ 115).
- Check tire pressure (➡ 114).
- Check that luggage is securely held in place.

At every third refueling stop

- Check engine oil level (➡ 108).
- Check the front brake pad thickness (➡ 110).
- Check the rear brake pad thickness (➡ 111).
- Check the front brake fluid level (➡ 112).
- Check the rear brake fluid level (➡ 113).

STARTING**Starting the engine**

- Turning on the ignition (➡ 38).
 - » ABS self-diagnosis is performed. (➡ 82)
 - Engage Neutral, or pull back the clutch lever if a gear is engaged.
-  You cannot start the motorcycle with the side stand extended and a gear engaged. The engine will switch itself off if it is started with the transmission in neutral and then a gear is engaged before retracting the side stand.
- For cold start and at low temperatures:
 - » Pull clutch.



- Press starter button **1**.

 The starting procedure is automatically canceled if the battery voltage is too low. Recharge the battery before you attempt to start the engine again, or use jump-starting. More detailed information can be found in the Maintenance chapter under Jump-starting.

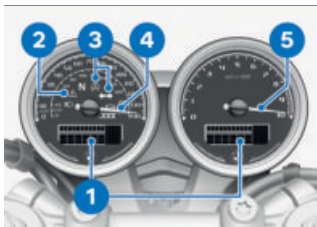
- » Engine starts.
- » Consult the troubleshooting chart if the engine refuses to start. (➡ 152)

Pre-Ride-Check

After the ignition is switched on, the instrument cluster performs a test on the instrument dials, the warning and indicator lights, and the display. This is known as the Pre-Ride-Check. This test is canceled if the engine is started before it is completed.

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Phase 1



All segments are displayed in the displays **1**.

At the same time, all indicator and warning lights **3** are switched on.

Phase 2

The general warning light **2** changes from being continuously lit to blinking.

The needle **4** for the speedometer moves to maximum speed.

The needle **5** for the RPM moves to maximum RPM.

Phase 3

The needle **4** for the speedometer drops to zero.

The needle **5** for the RPM drops to zero.

The indicator and warning lights go out or adopt their functions for operation.

The display reverts to the standard format. The instrument cluster is displayed.

If the needles did not move, an indicator and warning light was not turned on, or segments are missing in the display:

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

ABS self-diagnosis

The self-diagnosis routine is determining whether BMW Motorrad ABS is ready for operation. The self-diagnosis starts automatically when you start the ignition.

Phase 1

- » Check system components capable of diagnosis while vehicle is at a standstill.



flashes.

Phase 2

- » Check wheel speed sensors while riding off.



flashes.

ABS self-diagnosis completed

- » The ABS indicator and warning light goes out.



ABS self-diagnosis routine not completed

ABS is not available, as the self-diagnosis routine was not completed. (The motorcycle must reach a specified minimum speed before the system can check operation of the wheel speed sensors: 3 mph (5 km/h))

If an ABS error is displayed after the ABS self-diagnosis is completed:

- You may continue riding. It must be noted that the ABS function is not available.
- Have the malfunction corrected as soon as possible at a specialist workshop, preferably an authorized BMW Motorrad retailer.

ASC/DTC self-diagnosis

The self-diagnosis routine is determining whether BMW Motorrad ASC/DTC is ready for operation. The self-diagnosis runs automatically when you turn on the ignition.

Phase 1

- » Check the system components capable of diagnosis while the vehicle is at a standstill.



flashes.

Phase 2

- » Check the system components capable of diagnosis while the vehicle is in motion.



flashes.

ASC/DTC self-diagnosis completed

- » The ASC/DTC indicator and warning light goes out.
- Check the display of all indicator and warning lights.



ASC/DTC self-diagnosis not completed

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

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If an ASC/DTC error is displayed after the ASC/DTC self-diagnosis is completed:

- You may continue riding. It must be noted that the ASC/DTC function is not available.
- Have the malfunction corrected as soon as possible at a specialist workshop, preferably an authorized BMW Motorrad retailer.

BREAKING IN

Engine

- While running in the motorcycle, vary the throttle opening and engine-speed range frequently; avoid driving for long periods at a constant speed.
- Choose curvy, slightly hilly sections of road if possible.
- Observe the engine run-in speeds.



Engine run-in speed

<5000 min⁻¹ (Mileage
0...621 miles (0...1000 km))

- Observe mileage, after which the running-in check should be performed.



Mileage until first run-
in check

311...746 miles
(500...1200 km)

Brake pads

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



WARNING

New brake pads

Extension of the braking distance, accident hazard

- Brake early.

Tires

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



WARNING

Loss of adhesion of new tires on wet roads and at extreme angles

Accident hazard

- Always think well ahead and avoid extreme angles.

BRAKES

How do you achieve the shortest braking distance?

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

To achieve the shortest possible braking distance, the front wheel brake must be applied quickly and with progressively greater levels of force. This procedure provides ideal utilization of the dynamic load increase to the front wheel. The clutch should also be engaged at the same time. When the rider uses the (frequently practiced) extreme emergency braking in which the brake pressure is generated as quickly as possible and with great force, dynamic load distribution lags behind the progressive increase in deceleration rate and the brake force cannot be completely transferred to the road.

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



WARNING

Lifting off of the rear wheel due to heavy braking

Accident hazard

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

Descending mountain passes



WARNING

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

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

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

Wet, soiled brakes

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

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

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



WARNING

Poorer braking action due to moisture and dirt

Accident hazard

- Brake until brakes are dry or clean; clean if necessary.
- Brake early until the full braking action is available again.

ABS Pro

Physical riding limits



WARNING

Braking in curves

Danger of falling despite ABS Pro

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

Falling cannot be excluded

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

Use on public roads

On public roads, ABS Pro and Dynamic Brake Control help make riding your motorcycle even safer. When braking due to unexpected hazards in curves, ABS Pro prevents blocking and slipping of the wheels

within the scope of the physical riding limits. In the event of emergency braking, Dynamic Brake Control enhances the braking effect and intervenes if the throttle grip is accidentally actuated during braking.

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

PARKING THE MOTORCYCLE

Side stand

- Switch off engine.



ATTENTION

Poor ground conditions in area of stand

Component damage cause by tipping over

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



ATTENTION

Loading of the side stand with additional weight

Component damage cause by tipping over

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

- Fold out side stand and park motorcycle.
- If the slope of the road permits, turn the handlebars to the left.
- On slopes point the motorcycle uphill and engage 1st gear.

REFUELING

Fuel quality Requirement

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



ATTENTION

Refueling with leaded fuel

Damage to catalytic converter

- Do not refuel with leaded gasoline or gasoline with metallic additives, e.g. manganese or iron.



ATTENTION

Use of Ethanol E85 as fuel

Damage to the engine and fuel supply

- Do not refuel with E85, i.e. fuel with an ethanol content of 85 %, or with Flex Fuel.

- Observe the maximum ethanol content of the fuel.

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



Recommended fuel quality

Super unleaded (max. 15% ethanol, E15)
89 AKI (95 ROZ/RON)
90 AKI



Alternative fuel quality

Regular unleaded (max. 15% ethanol, E15)
87 AKI (91 ROZ/RON)
87 AKI

Refueling procedure



WARNING

Fuel is highly flammable

Fire and explosion hazard

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



ATTENTION

Component damage

Component damage due to overfilled fuel tank

- If the fuel tank is overfilled, the excess fuel will flow into the carbon canister and lead to component damage there.
- Only fill the fuel tank to the lower edge of the fuel filler neck.



ATTENTION

Contact of fuel and plastic surfaces

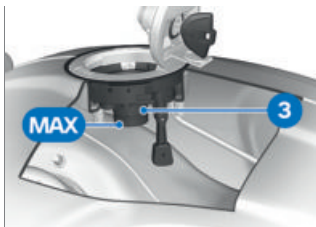
Damage to surfaces (become unattractive or cloudy)

- Immediately clean plastic surfaces after contact with fuel.

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



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



- Refuel with a fuel quality as specified below, but no higher than the lower edge of the fuel filler neck.

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

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



Usable fuel quantity

Approx. 4.8 gal (Approx. 18 l)



Reserve fuel quantity

Approx. 3.7 quarts (Approx. 3.5 l)

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

FASTENING MOTORCYCLE IN PLACE FOR TRANSPORTATION

- Provide scratch protection for all components along which tensioning straps are routed. For example, use adhesive tape or soft cloths.

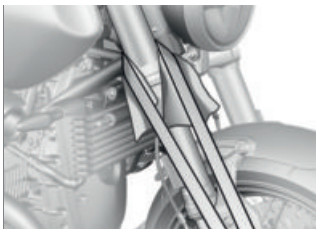


ATTENTION

Motorcycle tips to the side when raising

Component damage cause by tipping over

- Secure the motorcycle against tipping to the side, preferably with the assistance of a second person.
- Push the motorcycle onto the transport surface, and do not prop it on its side stand.

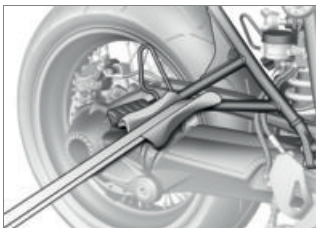


ATTENTION

Pinching of components

Component damage

- Do not pinch components, e.g. brake lines or wiring harnesses.
- Fasten the front tensioning straps on both sides of the fork bridge at the bottom.



- Fasten rear straps on both sides to the brackets of the passenger footrests and then tighten them.
- Tighten all tensioning straps evenly.

- » The vehicle is lashed down securely (suspension is compressed).

TECHNOLOGY IN DETAIL

07

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GENERAL NOTES

More information on the topic of technology is available at:

bmw-motorrad.com/technik

ANTILOCK BRAKING SYSTEM (ABS)

How does ABS work?

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

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

What happens when rough roads are encountered?

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

Lifting off rear wheel

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

**WARNING****Lifting off of the rear wheel due to heavy braking**

Accident hazard

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

What are the design features of the BMW Motorrad ABS?

The BMW Motorrad ABS ensures riding stability on any surface within the limits of riding physics.

At speeds greater than min 2 mph (min 4 km/h), the BMW Motorrad ABS can ensure riding stability on any surface within the limits of riding physics. At lower speeds, the BMW Motorrad ABS cannot provide optimal support on all surfaces due to system limitations.

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

Special situations

To detect the tendency of the wheels to lock up, the speeds of the front and rear wheel are compared. If implausible values are detected over a longer period of time, the ABS function is deactivated for safety reasons and an ABS error is indicated. A self-diagnosis routine must be completed before the error will be displayed.

Apart from problems with the BMW Motorrad ABS, unusual riding conditions can also cause a fault message to be generated:

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

Should a fault code occur due to an unusual driving condition, the ABS function can be reactivated by switching the ignition off and then on again.

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How important is regular maintenance?



WARNING

Brake system not regularly serviced

Accident hazard

- To ensure that the BMW Motorrad ABS is in a properly maintained condition, it is vital that the specified service intervals are kept to.

Reserves for safety

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



WARNING

Braking in curves

Risk of accident despite ABS

- The rider is always responsible for adapting his/her driving style.
- Do not reduce the additional safety function with careless riding or unnecessary risks.

ABS Pro

ABS Pro increases safety, in particular when braking in corners. ABS Pro stops the wheels from locking up, even if the brakes are actuated quickly. ABS Pro reduces abrupt changes in steering forces, especially during shock braking, and therefore decreases the risk of an undesirable "rearing up" of the vehicle.

ABS control

From a technical standpoint, ABS Pro adjusts the ABS control to the angle of inclination of the motorcycle in dependence on the respective riding situation. Signals for the roll and yaw rate and the lateral acceleration are used to determine the inclination of the motorcycle. The signals come from the angular rate sensor, which is already used for Dynamic Traction Control DTC.

With an increasing inclination, the brake pressure gradient is increasingly limited at the start of braking. This results in a slower pressure buildup. In addition, the pressure modulation in the range of the ABS control is more uniform.

Advantages for the rider

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

DYNAMIC BRAKE CONTROL

—with riding modes Pro^{OE}

Dynamic Brake Control function

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

Detection of emergency braking

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

Behavior during emergency braking

—If hazard braking is applied at a speed of more than min 6 mph (min 10 km/h), in addition to the ABS function, the Dynamic Brake Control function will also be activated.

Behavior in the event of accidental activation of the throttle grip

—If the throttle grip is accidentally actuated during emergency braking (throttle posi-

tion >5%), the intended braking effect is ensured by the Dynamic Brake Control ignoring the opening process of the throttle grip. This ensures the effectiveness of emergency braking.

- If the gas is shut off (throttle position <5%) during the intervention of the Dynamic Brake Control, the engine torque required by the ABS brake system will be restored.
- If hazard braking is stopped and the throttle grip is still under actuation, the Dynamic Brake Control adjusts the engine torque back to the rider's choice.

TRACTION CONTROL (ASC/DTC)

How does traction control work?

Traction Control is available in two versions

- Without** taking the angle into account: Automatic Stability Control ASC
- ASC is a rudimentary function intended to prevent falls.
- With** taking the angle into account: Dynamic Traction Control DTC
- The additional inclined position and acceleration informa-

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tion enables the DTC to make more precise and comfortable adjustments.

The traction control compares the wheel circumferential velocities of the front and rear wheel. The slip, and with it the stability reserves at the rear wheel, are determined from the speed difference. The engine control adapts the engine torque when the slip limit is exceeded.

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

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



WARNING

Risky riding style

Accident hazard despite ASC/DTC

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

Special situations

As lean angles increase, acceleration capability is also progressively restricted by the laws of physics. This can result in delayed acceleration when exiting very tight curves

The system compares the rotational speeds of the front and rear wheels to detect any tendency for the rear wheel to spin or lose traction. If the system registers implausible data for an extended period of time, it will deactivate the ASC/DTC functionality as a safety precaution and an ASC/DTC error will be displayed. A self-diagnosis must be completed before the fault memory entry will be displayed.

For the following unusual riding statuses, this can lead to a BMW Motorrad ASC/DTC error message:

Unusual riding conditions:

- Riding on the rear wheel (performing Wheelies) for an extended period with the ASC/DTC deactivated.
- Rear wheel spinning in place with front wheel brake engaged (Burn Out).
- Heating up on auxiliary stand in neutral or with gear engaged.

By switching the ignition off, then on again, and subsequently riding at a minimum speed, the ASC/DTC is activated again.



Minimum speed for
ASC/DTC activation

min 3 mph (min 5 km/h)

- without riding modes Pro^{OE}

On a slippery surface, the throttle grip should never be suddenly throttled back completely unless the clutch is disengaged at the same time. The engine's braking torque could cause the rear wheel to block, resulting in unstable motorcycle conditions. BMW Motorrad ASC is unable

to intervene effectively under these conditions.

RIDING MODE

Selection

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

- RAIN
- ROAD

- with riding modes Pro^{OE}
- DYNA

For each of these riding modes, there is a coordinated setting for the ABS and ASC/DTC systems as well as for the throttle response.

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

Throttle response

- In riding mode RAIN:
Reserved
- In riding mode ROAD: Optimal

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- with riding modes Pro^{OE}
- In riding mode DYNA: Direct

ABS

- Rear wheel lift-off detection is active in all riding modes.
- ABS Pro is available in all riding modes to the full extent. The stand-up tendency the motorcycle has when braking while traveling around curves is reduced to a minimum.
- In the RAIN and ROAD riding modes, the ABS is set for road use.
- with riding modes Pro^{OE}
- In the DYNA riding mode, the ABS is set for road use.

ASC

- ASC is set for road use.
- In the ROAD riding mode, ASC provides high riding stability, and in the RAIN riding mode it provides maximum riding stability.

- with riding modes Pro^{OE}

DTC

Tires

- In the DTC settings RAIN, ROAD and DYNA, the DTC is set for road use with road tires.

Riding stability

- In the DTC setting RAIN, DTC intervenes early enough to ensure that maximum riding stability is achieved.
- In the DTC setting ROAD, the DTC intervenes later than in RAIN riding mode. Rear wheel spinning without traction is avoided wherever possible.
- In the DTC settings RAIN and ROAD, the front wheel is prevented from lifting off.
- In the DTC setting DYNA, the DTC intervenes later than in the DTC setting ROAD, which enables minor drifts at the end of curves and brief wheelies.

Switchover

Riding modes can be changed when the vehicle is at a stand-still with the ignition switched on. A changeover while riding is possible under the following conditions:

- No drive torque at rear wheel.
- No brake pressure in the braking system.

For a changeover while riding, the following steps must be carried out:

- Turn back throttle grip.
- Do not actuate brake lever.
- with cruise control^{OE}
- Deactivate the adaptive cruise control.

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

The selection menu does not disappear from the display until the riding mode has been switched over.

ENGINE DRAG TORQUE CONTROL

- with riding modes Pro^{OE}

How does dynamic engine brake control work?

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

setpoint slip that is dependent on the mode.

Causes of excess slip at the rear wheel:

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

Like the BMW Motorrad ASC, the dynamic engine brake control compares the wheel circumferential velocities of the front and rear wheel. The dynamic engine brake control can determine the slip, and therefore the stability reserve, on the rear wheel using the speed difference.

If the slip exceeds the respective limit value, the engine torque is increased by slightly opening the throttle valves. The slip is reduced, and the vehicle is stabilized.

Effect of the dynamic engine brake control

- In the RAIN and ROAD riding modes: Maximum stability
- In the DYNA riding mode: Reduced intervention when compared to the RAIN and ROAD riding modes

ADAPTIVE HEADLIGHT

—with Adaptive Lights^{OE}

Function

In addition to the low beams, high beams and daytime running lights or parking lights, the headlight is equipped with separate LED elements with their own reflectors. Depending on the angle, the LED elements are also switched on for the low beams in order to improve the illumination of the interior range of the curve. The adaptive front lighting is optimized for an angle of up to 25°.

The adaptive headlights are activated under the following conditions:

- The angle is greater than 7°.
- The speed is min 6 mph (min 10 km/h).
- The low beams are switched on.

MAINTENANCE

08

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GENERAL NOTES

The "Preventive maintenance" chapter describes work involving the checking and replacement of wearing parts that can be performed with a minimum of effort.

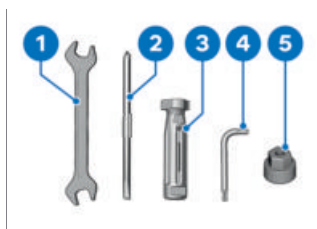
If specific tightening torques are to be taken into account for installation, these are listed. An overview of all required tightening torques is contained in the chapter "Technical data".

Microencapsulated screws

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

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

ONBOARD VEHICLE TOOL KIT



- 1** Open-ended wrench
AF 14/17
 -Adjusting the mirror arm (➡ 62).
 -Adjusting the spring preload on the front wheel (➡ 66).
- 2** Reversible screwdriver insert
with Phillips and slotted blade
 -Adjusting the rebound-stage damping on the front wheel (➡ 69).

- 2 -Adjusting the compression damping on the front wheel (➡ 68).
-Adjusting damping at the rear wheel (➡ 69).
 - 3 Screwdriver handle
-Topping up the engine oil (➡ 109).
-Use with screwdriver insert
 - 4 Torx wrench T20
 - 5 Plastic top part
-Adjusting the spring preload on the front wheel (➡ 66).
- Place motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad auxiliary stand.
 - Attaching the rear-wheel stand (➡ 108).



FRONT-WHEEL STAND

Attaching the front wheel stand



ATTENTION

Use of the BMW Motorrad front wheel stand without an auxiliary stand

Component damage caused by tipping over

- Place the motorcycle on an auxiliary stand before lifting the front wheel with the BMW Motorrad front-wheel stand.
- For a description of the correct installation, please refer to the instructions for the front wheel stand.
- BMW Motorrad offers a suitable auxiliary stand for each motorcycle. Your authorized BMW Motorrad retailer will be very happy to assist you in choosing the suitable auxiliary stand.
- Ensure that the motorcycle is standing securely.

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REAR-WHEEL STAND

Attaching the rear-wheel stand



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

ENGINE OIL

Checking the engine oil level

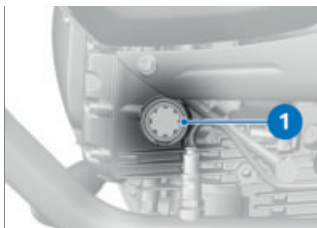


ATTENTION

Misinterpretation of the oil filling quantity, as the oil level is temperature-dependent (the higher the temperature, the higher the oil level)

Engine damage

- Only check the oil level after a longer journey or when the engine is warm.
 - Turn off engine at operating temperature.
 - Hold the motorcycle upright, making sure that the ground is firm and level.
 - Wait five minutes to allow oil to drain into the oil pan.
-  BMW Motorrad recommends occasionally checking the engine oil after a journey of min 31 miles (min 50 km) in order to reduce the environmental impact.



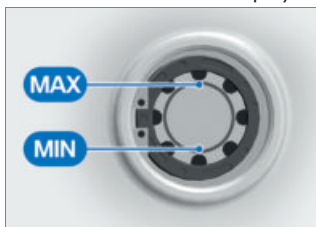
ATTENTION

Lateral tipping of the vehicle

Component damage caused by tipping over

- Secure the vehicle from tipping over laterally, preferably with the support of a second person.

- Read oil level on the display **1**.



Specified level of engine oil

Between **MIN** and **MAX** mark

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

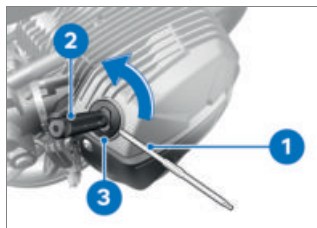
- Topping up the engine oil (→ 109).

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

- Have the oil level corrected at a specialist workshop, preferably an authorized BMW Motorrad retailer.

Topping up the engine oil

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



- Clean the area around the oil filler opening.
- To be able to apply force more easily, insert the interchangeable screwdriver bit **1** Phillips-end first, into the screwdriver handle **2** (on-board vehicle tool kit).
- Place the onboard vehicle tool kit on the oil filler plug **3** and turn counterclockwise.

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- Remove the oil filler plug **3**.



ATTENTION

Use of too little or too much engine oil

Engine damage

- Always make sure that the oil level is correct.

- Top up the engine oil to the specified level.



Engine oil, quantity for topping up

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

- Checking the engine oil level (108).
- Install the oil filler plug **3**.

BRAKE SYSTEM

Check brake operation

- Actuate the handbrake lever.
 - » Pressure point must be clearly perceptible.
- Actuate the footbrake lever.
 - » Pressure point must be clearly perceptible.

If no clear pressure points are perceptible:



ATTENTION

Improper working on the brake system

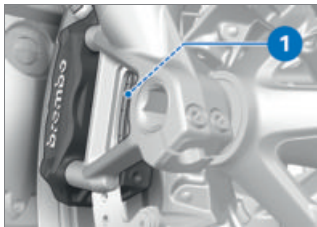
Endangering of the operating safety of the brake system

- Have all work on the brake system carried out by experts.

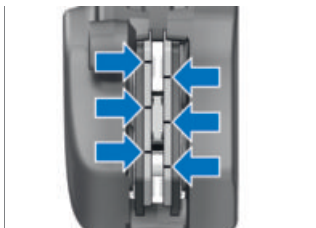
- Have the brakes checked at an authorized workshop, preferably an authorized BMW Motorrad retailer.

Checking the front brake pad thickness

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



- Visually inspect the brake pad thickness on the left and right. Viewing direction: Between wheel and front suspension toward brake pads **1**.



Front brake-pad wear limit

0.04 in (1.0 mm) (Only friction material without carrier plate. The wear marks (grooves) must be clearly visible.)

If the wear marks are no longer clearly visible:



WARNING

Dropping below the minimum pad thickness

Reduced braking action, damage to the brake

- In order to ensure the operating reliability of the brake system, make sure that the brake pads are not worn beyond their minimum thickness.
- Have brake pads renewed at a specialist workshop, preferably an authorized BMW Motorrad retailer.

Checking the rear brake pad thickness

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



- Visually inspect the brake pad thickness. Viewing direction: From left onto brake caliper.



Rear brake-pad wear limit

0.04 in (1.0 mm) (Only friction material without carrier plate. Brake pad must not be visible through the drilled hole in the inner brake pad.)

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If the brake disc is visible:



WARNING

Dropping below the minimum pad thickness

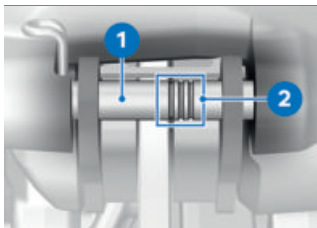
Reduced braking action, damage to the brake

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

- Have brake pads renewed at a specialist workshop, preferably an authorized BMW Motorrad retailer.

Brake pad wear

The rear wheel brake has a brake-pad wear indicator.



The axle **1** with the three ring marks **2** is located between the brake pads.

How to interpret the marks:

- 3 rings visible: at least 75% brake pad thickness
- 2 rings visible: brake pad thickness is at least 50%
- 1 ring visible: brake pad thickness is at least 25%
- No ring visible: wear limit has been reached, check as described earlier

Checking the front brake fluid level



WARNING

Insufficient or contaminated brake fluid in the brake fluid reservoir

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

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

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



- Align the handlebars so that the brake fluid reservoir is positioned horizontally.
- Check the brake fluid level in the sight glass **1**.

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



Front brake fluid level

Brake fluid, DOT4

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

If the brake fluid level falls below the approved level:

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

Checking the rear brake fluid level



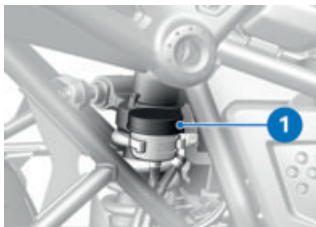
WARNING

Insufficient or contaminated brake fluid in the brake fluid reservoir

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

- Stop riding immediately until fault is rectified.
 - Check brake fluid level regularly.
 - Make sure that the lid of the brake fluid reservoir is cleaned before opening.
 - Make sure that brake fluid is used from a sealed container only.
- Park the motorcycle, making sure the ground is level and firm. Hold vehicle straight.

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

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



Rear brake fluid level

Brake fluid, DOT4

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

If the brake fluid level falls below the approved level:

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

CLUTCH

Checking clutch function

- Pull back the clutch lever.
 - » Pressure point must be clearly perceptible.

If no clear pressure point can be felt:

- Have the clutch checked by an authorized workshop, preferably an authorized BMW Motorrad retailer.

TIRES

Checking tire pressure



WARNING

Incorrect tire inflation pressure

Poorer handling characteristic of motorcycle, reduction of tire service life

- Ensure proper tire inflation pressure.

**WARNING**
Automatic opening of vertically installed valve inserts at high speeds

Sudden loss of tire inflation pressure

- Use valve caps with rubber sealing ring and screw on firmly.

- Park motorcycle, ensuring that support surface is firm and level.
- Check tire pressures against data below.



Front tire pressure

36.3 psi (2.5 bar) (with tire cold)



Rear tire pressure

39.2 psi (2.7 bar) (One-up, with cold tires)

42.1 psi (2.9 bar) (Two-up and cargo, with cold tires)

If tire pressure incorrect:

- Correct tire pressure.

Check tire tread depth
**WARNING**
Riding with heavily worn tyres

Risk of accident due to poorer rideability

- If necessary, replace the tyres before the legally specified minimum tread depth is reached.

- Park motorcycle, ensuring that support surface is firm and level.
- Measure tire tread depth in main tread grooves with wear indicators.



Tread wear marks are integrated into the main grooves on every tire. If the tire tread has worn down to the level of the marks, the tire is completely worn. The locations of the marks are indicated on the edge of the tire, e.g. by the letters TI, TWI or by an arrow.

When the minimum tread depth is reached:

- Replace the worn tires.

RIMS

Checking wheel rims

- Park motorcycle, ensuring that support surface is firm and level.
- Subject wheel rims to visual inspection for defects.
- Have damaged rims checked and, if necessary, replaced by a specialist service facility, preferably an authorized BMW Motorrad retailer.

Checking spokes

- Park motorcycle, ensuring that support surface is firm and level.
- Using the handle of a screwdriver or similar object, run it over the spokes and listen to the sound pattern.

If the sound pattern is uneven:

- Have spokes checked by a specialist workshop, preferably by an authorized BMW Motorrad Retailer.

WHEELS

Effect of wheel sizes on suspension control systems

The wheel sizes play an important role with suspension control systems such as ABS. The diameter and width of the wheels stored in the control unit have particular significance

as the basis for all necessary calculations. A change in these sizes resulting from conversion to wheels not installed as standard equipment can seriously affect the control efficiency of these systems.

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

If you want to convert your motorcycle to different wheels, please contact a specialist workshop, preferably a BMW Motorrad retailer. In some cases the data stored in the control units must be adapted to the new wheel sizes.

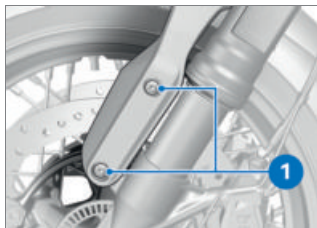
Removing the front wheel

 To simplify wheel removal/installation, the front wheel cover must be released on one side.

- Place the motorcycle on an auxiliary stand. BMW Motorrad recommends you use the BMW Motorrad rear-wheel stand.
- Attaching the rear-wheel stand (➡ 108).
- Raise the front of motorcycle, preferably using a

BMW Motorrad front wheel stand, until the front wheel rotates freely.

- Attaching the front wheel stand (➡ 107).



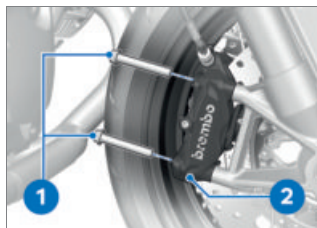
- Slacken screws 1.



- Detach the sensor cable from the brackets 2.
- Remove the screw 1 and remove the wheel speed sensor 3 from the hole.

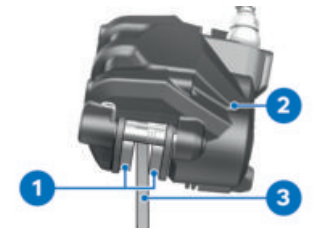


- Remove the screws 1 on the left.
- Loosen the bracket 2 for the sensor cable and brake caliper 3.



- Remove the screws 1 on the right and loosen the brake caliper 2.

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- Push the brake pads **1** apart slightly by turning the brake caliper **2** against the brake disc **3**.



ATTENTION

Unintentional pressing together of brake pads

Component damage when mounting the brake caliper or when pressing the brake pads apart

- Do not actuate the brakes with the brake caliper removed.



ATTENTION

Using hard or sharp-edged objects near the component

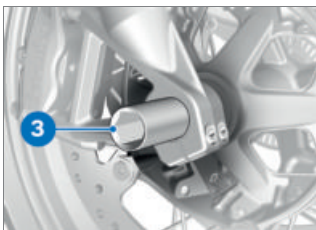
Component damage

- Do not scratch components, if necessary tape off or cover.
- Carefully pull the brake calipers back and outward to

remove them from the brake disks.



- Slacken the screw **2** but **do not remove it**.
- Slacken the clamping bolts **1** on the left and right.
- Slightly press the quick-release axle inward for a better grip on the right side.
- Remove screw **2**.



- Pull out the quick-release axle **3** while supporting the front wheel.
- Place front wheel down and roll it forward out of the front suspension.



- Remove spacer bushing **4** from front wheel hub.

Installing the front wheel



WARNING

Use of a wheel which does not comply with series specifications

Malfunctions during control interventions by ABS and ASC/DTC

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

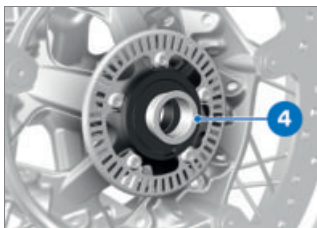


ATTENTION

Tightening of screwed connections with incorrect tightening torque

Damage or loosening of screwed connections

- Always have the tightening torques checked by a specialized workshop, preferably an authorized BMW Motorrad retailer.



- Lubricate the contact surface on the spacer bushing **4**.



Lubricant

Optimoly TA

- Insert the spacer bushing **4** into the wheel hub on the left side with the collar facing outwards.

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ATTENTION

Front wheel installation opposite the running direction

Accident hazard

- Observe running direction arrows on tire or rim.

- Roll the front wheel into the front suspension.



- Lubricate the quick-release axle **3**.



Lubricant

Optimoly TA



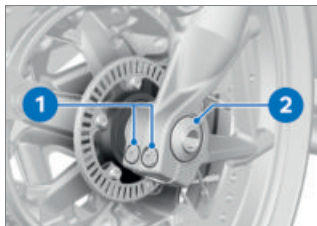
WARNING

Improper installation of quick-release axle

Loosening of the front wheel

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

- Lift the front wheel and install the quick-release axle **3**.
- Remove front wheel stand and firmly compress front forks. Do not actuate hand-brake lever at the same time.
- Attaching the front wheel stand (→ 107).



- Install screw **2**. Brace quick-release axle on the right side at the same time.



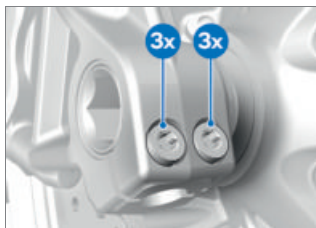
Screw on quick-release axle

M20 x 1.5

 Screw on quick-release axle

37 lb/ft (50 Nm)

- Tighten the clamping bolts **1** on left and right to the appropriate torque.

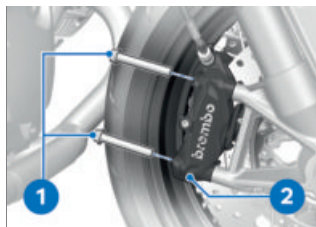


 Clamping bolts in the axle adapter

Tightening sequence: Tighten the screws 6 times, alternating between one and the other each time

M8 x 35

14 lb/ft (19 Nm)



- Position brake caliper **2** on right and install screws **1**.

 Brake caliper on telescopic forks

M10 x 65

28 lb/ft (38 Nm)



- Position left brake caliper **3** and bracket for sensor cable **2**.
- Install screws **1**.

 Brake caliper on telescopic forks

M10 x 65

28 lb/ft (38 Nm)

122 MAINTENANCE



- Insert the wheel speed sensor **3** into the drilled hole and install screw **1**.



Wheel speed sensor on fork

M6 x 20

6 lb/ft (8 Nm)

- Insert the sensor cable into the brackets **2**.

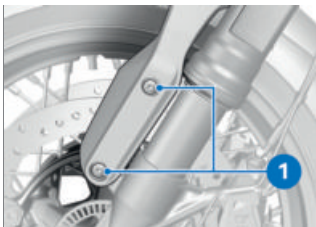


WARNING

Brake pads do not contact the brake disc

Risk of accident due to delayed braking effect.

- Before driving off, check that the braking effect kicks in without any delay.
- Engage the brakes repeatedly until the brake pads make contact with the discs.



- Tighten screws **1**.



Front wheel cover on fork

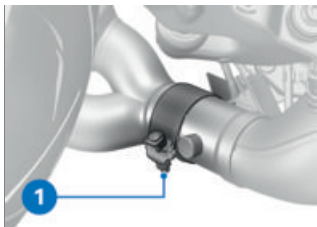
M5 x 20

4 lb/ft (5 Nm)

- Remove the front wheel stand.
- Fold out the side stand.
- Remove the rear-wheel stand.
- Put the motorcycle on its side stand.

Removing the rear wheel

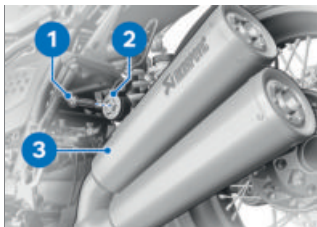
- Raise motorcycle, preferably with a BMW Motorrad rear-wheel stand.
- Shift into first gear.
- Attaching the rear-wheel stand (108).

**CAUTION****Hot exhaust system**

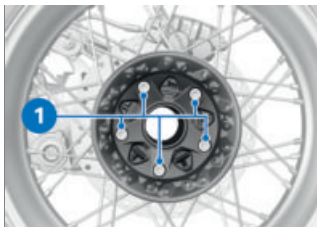
Burn hazard

- Do not touch hot exhaust system.

- Loosen screw **1** of the clip and slide the clip toward rear.
- Do not remove sealing grease from clip.



- Remove screw **1** and lock washer **2** of the silencer bracket from the passenger footrest.
- Pull off the silencer **3** toward rear and place it on a soft surface.



- Remove screws **1** while supporting wheel.
- Roll rear wheel out toward rear.

Installing the rear wheel**WARNING****Use of a wheel which does not comply with series specifications**

Malfunctions during control interventions by ABS and ASC/DTC

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

124 MAINTENANCE

ATTENTION

Tightening of screwed connections with incorrect tightening torque

Damage or loosening of screwed connections

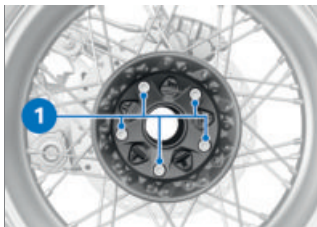
- Always have the tightening torques checked by a specialized workshop, preferably an authorized BMW Motorrad retailer.
- Clean wheel centering device and contact surfaces of wheel hub.

ATTENTION

Using hard or sharp-edged objects near the component

Component damage

- Do not scratch components, if necessary tape off or cover.
- Place rear wheel on rear wheel support.



- Install screws **1**.



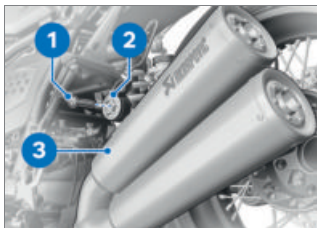
Rear wheel on wheel carrier

Tightening sequence: Tighten crosswise

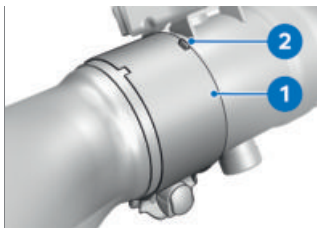
M10 x 53 x 1.25

44 lb/ft (60 Nm)

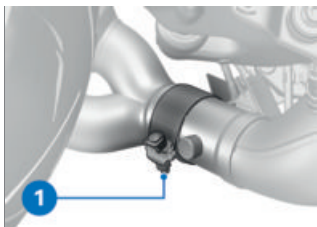
- Attach the silencer to the pipe on the exhaust flap.



- Align silencer **3**, fit lock washer **2** and install screw **1**, but do not tighten yet.



- Align the circlip with recess **1** to the snap-in lug **2**.
- » Snap-in lug engages in the recess of the circlip.



- Tighten screw **1**.

 Clamp on silencer and exhaust manifold

M8 x 45

16 lb/ft (22 Nm)



- Tighten screw **1**.

 Silencer on passenger frame

M8 x 40

14 lb/ft (19 Nm)

- Fold out the side stand.
- Remove the rear-wheel stand.
- Put the motorcycle on its side stand.

LIGHT SOURCE

Replacing the LED light source



WARNING

Overlooking the vehicle in traffic due to a defective light source on the vehicle

Safety risk

- Replace defective light sources as quickly as possible. For details please contact a specialist service facility, preferably an authorized BMW Motorrad Retailer.

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

JUMP-STARTING



CAUTION

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

Electrocution

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



ATTENTION

Contact between crocodile clips of jump leads and motorcycle

Danger of short circuit

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



ATTENTION

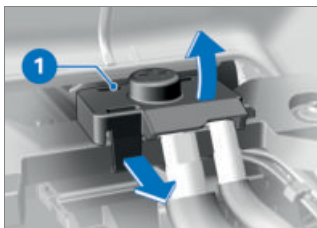
Jump-starting with a voltage higher than 12 V

Damage to the motorcycle's electronics

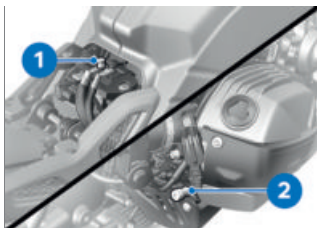
- The battery of the donor motorcycle must have a voltage of 12 V.

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

- Removing the passenger seat (▮▮▮ 58).
- Removing the rider's seat (▮▮▮ 58).



- Unclip cover panel **1** at bottom (**arrow**) and lift off.

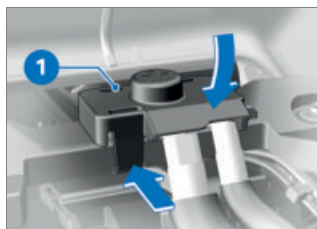


- Begin by connecting one end of the red jumper cable to the jump-start terminal **1** on the discharged battery and the other end to the positive terminal of the donor battery.
- Use the black jumper cable to connect the ground jump-start terminal **2** on your vehicle to the negative terminal of the second battery.

- Run engine of donor vehicle during jump-starting procedure.
- Start the engine of the vehicle with the empty battery in the usual way; if the engine does not start, wait a few minutes before repeating the attempt to protect the starter motor and the donor battery.

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

- Allow both engines to idle for a few minutes before disconnecting jumper cables.
- First, disconnect the jumper cable from the ground jump-start terminal **2** and then from the jump-start terminal **1**.



- Install cover **1**.
- Installing the rider's seat (▮▮▮ 58).
- Installing the passenger seat (▮▮▮ 58).

BATTERY

Maintenance instructions

Correct battery maintenance combined with proper charging and storage procedures extends the battery's service life, and is also required for warranty claims.

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

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



ATTENTION

Discharging of the connected battery by the vehicle electronics (e.g. clock)

Total discharge of battery leading to a rejection of warranty claims

- During riding breaks of more than 4 weeks, connect a trickle-charger to the battery.



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

Charging a connected battery



ATTENTION

Charging the battery connected to the vehicle using the battery terminals

Damage to the motorcycle's electronics

- Disconnect the battery before charging on the battery terminals.

- Charge a disconnected battery directly on the terminals.

Charging a disconnected battery

- Charge battery using a suitable charger.
- Comply with operating instructions of charger.

- Once battery is fully charged, disconnect charger's terminal clips from battery terminals.

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

Replacing the battery

In the event that the battery is faulty, contact a specialist workshop, preferably an authorized BMW Motorrad retailer.

FUSES

Replacing fuses



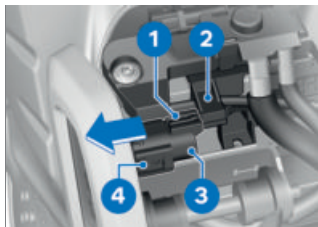
ATTENTION

Bypassing defective fuses

Risk of short circuit and fire

- Do not bypass defective fuses.
- Replace defective fuses with new fuses.
- Turn off the ignition.
- Park the motorcycle, making sure the ground is level and firm.
- Removing the passenger seat (➔ 58).

- Removing the rider's seat (➔ 58).



- Press hook **1**.
» The fuse box is unlocked and can be pulled to the left and detached from holder **2**.
- Pull the fuse box out of holder **2**.
- Press lock **4** on both sides and remove cap **3**.



If the fuses blow frequently, have the electrical system checked by an authorized specialized workshop, preferably an authorized BMW Motorrad retailer.

- Replace defective fuse in accordance with following fuse assignment diagram.
» Fuse assignments (➔ 130)
- Install cap **3** again. Make sure that the lock **4** engages.
- Slide the fuse box into holder **2** until hook **1** engages.

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- Installing the rider's seat (➡ 58).
- Installing the passenger seat (➡ 58).

Fuse assignments



Fuse 1

10 A (Instrument cluster, anti-theft alarm system DWA, ignition switch, OBD diagnostic socket, coil for cut-off relay)



Fuse 2

4 A (Sensor box, multifunction switch on left)

DIAGNOSTIC SOCKET

Detaching the diagnostic socket



CAUTION

Incorrect procedure when disconnecting the diagnostic socket for onboard diagnosis

Vehicle experiences malfunctions

- Do not have the diagnostic socket disconnected except during BMW Motorrad service by a specialist workshop or other authorized persons.
 - Have work carried out by appropriately trained personnel.
 - Observe the specifications of the vehicle manufacturer.
- Removing the passenger seat (➡ 58).
 - Removing the rider's seat (➡ 58).

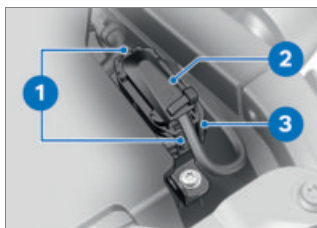


- Installing the passenger seat (→ 58).

- Press locking mechanisms **1**.
- Detach the diagnostic socket **2** from the holder **3**.
- » The interface for the diagnostic and information system can be connected to the diagnostic socket **2**.

Fastening the diagnostic socket

- Disconnect the interface for the diagnostic and information system.



- Insert the diagnostic socket **2** into the holder **3**.
- » The locks **1** engage.
- Installing the rider's seat (→ 58).

ACCESSORIES

09

GENERAL NOTES	134
USB CHARGING SOCKET	134
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HUMP COVER	141
OPTIONAL ACCESSORIES	143

GENERAL NOTES



CAUTION

Use of products from other manufacturers

Safety risk

- BMW Motorrad cannot examine or test each product of outside origin to ensure that it can be used on or in connection with BMW motorcycles without constituting a safety hazard. Nor is this guarantee provided when the official approval of a specific country has been granted. Tests conducted by these instances cannot make provision for all operating conditions experienced by BMW motorcycles and, consequently, they are not sufficient in some circumstances.
- Use only parts and accessories approved by BMW for your motorcycle.

The safety, function and suitability of the parts and accessory products have been thoroughly tested by BMW. Therefore, BMW assumes responsibility for these products. BMW shall not be held liable for un-

approved parts and accessory products of any kind.

Comply with the legal requirements for any modifications.

Consult the road traffic licensing regulations of your country.

Your authorized

BMW Motorrad retailer

offers you qualified advice for choosing genuine BMW parts, accessories and other products.

More information on the topic of accessories is available at:

bmw-motorrad.com/equipment

USB CHARGING SOCKET

Notes about use:

Charge current

This is a 5 V USB charging socket providing a maximum charge current of 2.4 A (maximum charge power of 12 W).

Automatic shutoff

The USB charging sockets are automatically switched off under the following conditions:

- If the battery voltage is too low to retain the starting capability of the vehicle.
- If the maximum load capacity specified in the technical data is exceeded.
- During the starting procedure.

Connecting electrical devices

The ignition must be switched on before electrical devices connected to USB charging sockets can be operated. To relieve the electrical system, the USB high-voltage charging sockets are switched off 60 seconds after ignition has been turned off.

To protect the connected device, the device should be unplugged when riding in rain. When no device is connected, the cover should be closed to prevent soiling.

Cable layout

Observe the following when routing cables from USB charging sockets to additional devices:

- Cables must not impede the rider.
- Cables must not restrict the steering angle and handling characteristics.
- Cables must not become trapped.

LUGGAGE

Securing luggage on the motorcycle



WARNING

Reduced riding stability caused by overloading and uneven loading

Accident hazard

- Do not exceed the gross weight limit and observe the loading information.



- Secure luggage (e.g. rear bag) on lashing eyes **1**.
- Observe maximum payload.



Payload of rear bag

-with rear bag^{OA}

max 22 lbs (max 10 kg)◁

» Additional information on the luggage systems and their attachment is available from your authorized BMW Motorrad retailer.

PASSENGER FRAME

Removing passenger frame



ATTENTION

Hard or sharp-edged components

Scratching or damage to the paint

- Use pads or tape off the areas at risk of scratching or damage.

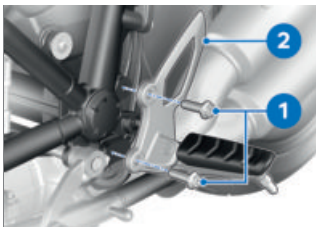


The installation of an additional OA (silencer bracket) is essential for removing the passenger frame.

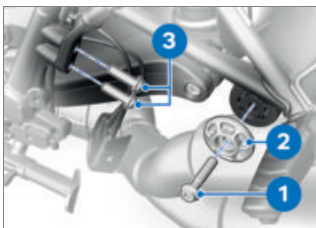
Detailed information can be obtained from your authorized BMW Motorrad retailer or online at **bmw-motorrad.com**.

Please observe the general information at the beginning of this chapter.

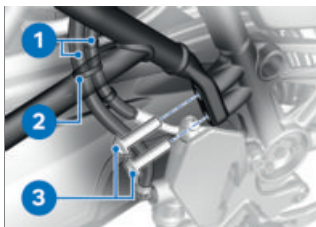
- Park motorcycle, ensuring that support surface is firm and level.
- Attaching the rear-wheel stand (108).
- Removing the passenger seat (58).
- Removing the rider's seat (58).



- Remove screws **1** and take off left footrest system **2**.



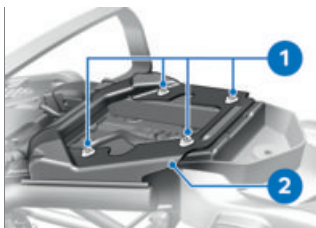
- Remove screw **1** and washer **2**.
- Remove screws **3**.

**ATTENTION****Pinching of components**

Component damage

- Do not pinch components, e.g. brake lines or wiring harnesses.

- Detach cable ties **2** from the wires **1**.
- Remove screws **3**.

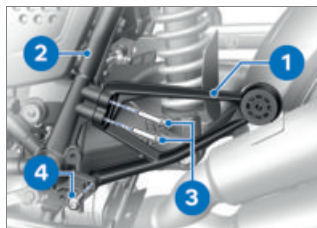


- Remove screws **1** and take off passenger frame **2** backwards.

—with carrier for silencer^{OA}



- Remove the rubber decoupler **1** and shouldered bushing **3** from the removed passenger frame.
- Secure rubber decoupler **1** in bracket **2** for silencer and install shouldered bushing **3** from the right.



- Position bracket **1** for silencer on rear frame **2**.
- Install screws **3** and **4**.



Bracket for silencer on rear frame

—with carrier for silencer^{OA}

M8 x 30

14 lb/ft (19 Nm)

138 ACCESSORIES

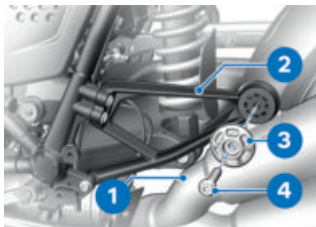


Bracket for silencer on rear frame

M8 x 25

14 lb/ft (19 Nm) <<

—with carrier for silencer^{OA}



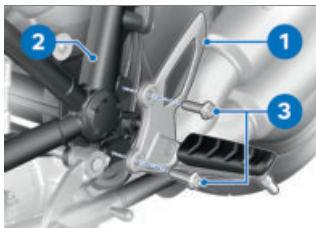
- Align silencer **1** on bracket **2**, position lock washer **3** and install screw **4**.



Silencer on bracket

M8 x 40

7 lb/ft (10 Nm) <



- Position footrest system **1** at rear frame **2** on left and install screws **3**.

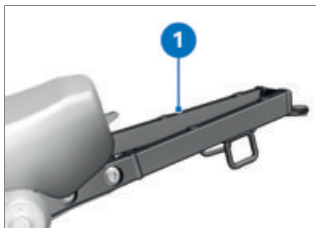


Footrest system on rear frame

M8 x 25

14 lb/ft (19 Nm)

Loading correctly without passenger frame



WARNING

Reduced riding stability caused by overloading and uneven loading

Accident hazard

- Do not exceed the gross weight limit and observe the loading information.

- After the passenger frame is removed, the maximum load in the area of the luggage rack **1** (see figure) must be complied with.



Load capacity of the luggage frame

max 18 lbs (max 8 kg)

Installing passenger frame



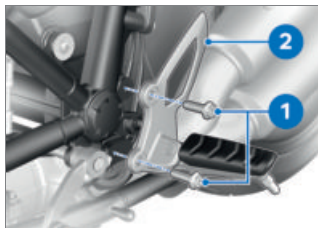
ATTENTION

Hard or sharp-edged components

Scratching or damage to the paint

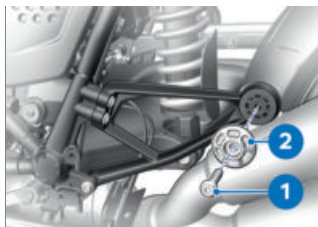
- Use pads or tape off the areas at risk of scratching or damage.

- Parking your motorcycle (➡ 136).
- Attaching the rear-wheel stand (➡ 108).
- Removing the rider's seat (➡ 58).

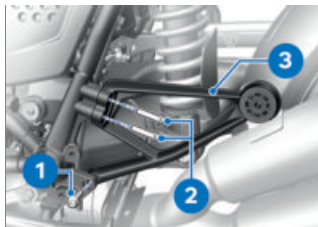


- Remove screws **1** and take off left footrest system **2**.

—with carrier for silencer^{OA}

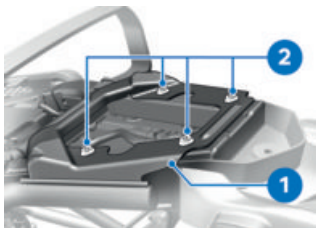


- Remove screw **1** and washer **2**.

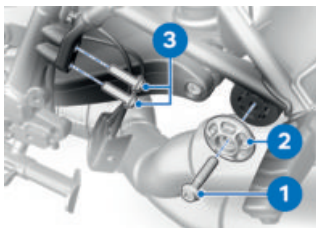


- Remove the screws **1** and **2**.
- Take off bracket **3** for silencer.◁

140 ACCESSORIES



- Insert passenger frame **1** from rear and install screws **2** loosely.



- Install screw **1** and lock washer **2** loosely.
- Install screws **3**.



Passenger seat frame on rear frame

M8 x 30

14 lb/ft (19 Nm)

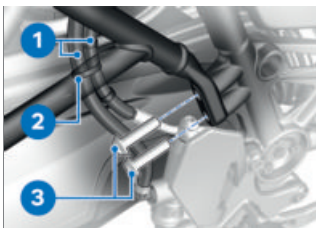
- Tighten screw **1**.



Silencer on passenger frame

M8 x 40

14 lb/ft (19 Nm)



ATTENTION

Pinching of components

Component damage

- Do not pinch components, e.g. brake lines or wiring harnesses.

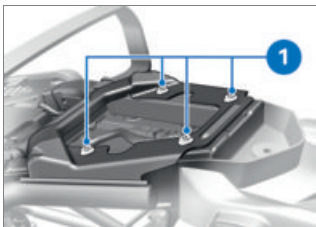
- Secure wires **1** using a cable tie **2**.
- Install screws **3**.



Passenger seat frame on rear frame

M8 x 30

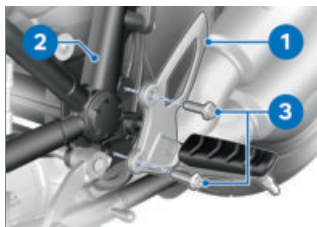
14 lb/ft (19 Nm)



- Tighten screws **1**.

 Passenger seat from on luggage frame
M6 x 20
6 lb/ft (8 Nm)

- Remove adhesive tape.



- Position footrest system **1** at rear frame **2** on left and install screws **3**.

 Footrest system on rear frame
M8 x 25
14 lb/ft (19 Nm)

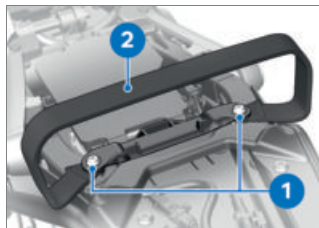
- Installing the rider's seat (→ 58).
- Installing the passenger seat (→ 58).
- Remove rear-wheel stand.

HUMP COVER

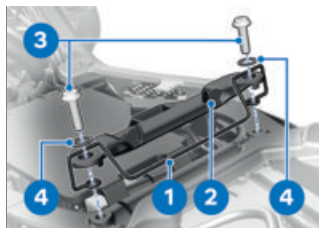
—with hump cover^{OA}

Installing the hump cover

- Removing the passenger seat (→ 58).
- Removing the rider's seat (→ 58).



- Remove the screws **1** and save them for reuse.
- Remove the retaining belt **2**.



- Insert the retaining bracket **1** below the retaining bridge for the rider's seat **2**.
- Install screws **3** with washers **4**.

 Retaining bridge on rear frame
M6 x 14.5

142 ACCESSORIES



Retaining bridge on rear frame

6 lb/ft (8 Nm)

- Installing the rider's seat (→ 58).



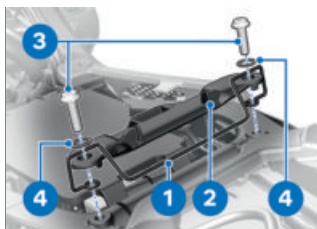
- Insert the hump cover **1** in the retainer, making sure that the rubber pads **4** of the hump cover are positioned in the retainer.
- Hand-tighten the screw **2** with the motorcycle seat key **3**.

Removing the hump cover

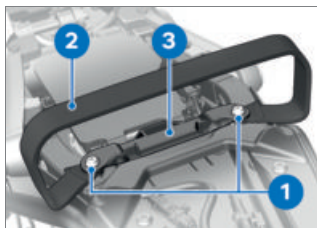


- Remove the screw **2** with the motorcycle seat key **3**.

- Pull the hump cover **1** back and remove it.



- Remove the screws **3** with washers **4**.
- Remove the retaining bracket **1** below the retaining bridge for the rider's seat **2**.



- Insert the retaining belt **2** below the retaining bridge for the rider's seat **3**.
- Install screws **1**.



Retaining bridge on rear frame

M6 x 14.5

6 lb/ft (8 Nm)

- Installing the rider's seat (▶▶▶ 58).
- Installing the passenger seat (▶▶▶ 58).

OPTIONAL ACCESSORIES

Available optional accessories



Your authorized BMW Motorrad retailer offers you qualified advice in choosing genuine BMW parts, accessories and other products such as aluminum humps or covers for the rear frame.

You can find all optional accessories from BMW Motorrad on our website:

bmw-motorrad.com.

CARE

10

CARE PRODUCTS	146
WASHING THE VEHICLE	146
CLEANING SENSITIVE MOTORCYCLE PARTS	147
PAINT CARE	148
PAINT PRESERVATION	149
STORING THE MOTORCYCLE	149
PUTTING THE MOTORCYCLE INTO OPERATION	149

CARE PRODUCTS

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



ATTENTION

Use of unsuitable cleaning and care agents

Damage to motorcycle parts

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



ATTENTION

Use of highly acidic or alkaline cleaning agents

Damage to motorcycle parts

- Observe the dilution ratio on the packaging of the cleaning agents.
- Do not use highly acidic or alkaline cleaning agents.

WASHING THE VEHICLE

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

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

Make sure that the vehicle is washed frequently, especially during the winter months. To remove road salt, clean the motorcycle with cold water immediately after every trip.



After rides in the rain, in high humidity and after the vehicle is washed, condensation can form inside the headlight. During this process, the headlight can become foggy for a while. If moisture accumulates in the headlight on an ongoing basis, contact a specialist workshop, preferably an authorized BMW Motorrad retailer.

**WARNING**

Damp brake disks and brake pads after washing the motorcycle, after riding through water or in the rain

Poorer braking action, accident hazard

- Brake early until the brake rotors and brake pads are dry.

**ATTENTION**

Increased effect of salt caused by warm water

Corrosion

- Only use cold water to remove road salt.

**ATTENTION**

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

Corrosion or short circuit, damage to labels, to seals, to hydraulic brake system, to the electrical system and the seat

- Exercise caution when using high-pressure or steam-jet devices.

CLEANING SENSITIVE MOTORCYCLE PARTS

Plastics

**ATTENTION**

Use of unsuitable cleaning agents

Damage to plastic surfaces

- Do not use abrasive cleaners or cleaners containing alcohol or solvents.
- Do not use insect sponges or sponges with a hard surface.

Trim panel components

Clean trim panel components with water and BMW Motorrad cleaning agent.

Headlight diffuser and turn indicator glass made of plastic

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



Soften stubborn dirt and dead insects by covering the affected areas with a wet cloth.



Clean with water and sponge only.

148 CARE



Do not use chemical cleaning agents.

Chrome

Carefully clean chrome parts with plenty of water and BMW Motorrad Care Products motorcycle cleaner. This is particularly important in the case of road salt.

Use BMW Motorrad metal 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

- When cleaning, ensure that the cooler fins are not bent.

Rubber

Treat rubber parts with water or BMW rubber care product.



ATTENTION

Use of silicone sprays for care of rubber seals

Damage to rubber seals

- Do not use silicone sprays or care products that contain silicone.

PAINT CARE

Washing the motorcycle regularly will help counteract the long-term effects of substances that damage the paint, especially if your motorcycle is ridden in areas with high air pollution or natural sources of dirt, such as tree resin or pollen.

However, remove particularly aggressive materials immediately; otherwise changes in the paint or discoloration can occur. These include spilled fuel, oil, grease and brake fluid as well as bird droppings.

BMW Motorrad recommends using a solvent cleaner and then applying a BMW Motorrad high gloss polish to preserve the paint.

Contamination on the paint finish is particularly easy to see after the motorcycle has been washed. Remove this type of soiling with cleaning naphtha

or spirit on a clean cloth or cotton ball. BMW Motorrad recommends removing tar stains with BMW tar remover. Then add a protective wax coating to the paint at these locations.

PAINT PRESERVATION

Apply a preservative when water fails to bead up on the painted surface.

BMW Motorrad recommends BMW Motorrad high gloss polish or agents that contain carnauba or synthetic wax for paint preservation.



Chrome lacquer must not be preserved with chrome polish.

Only use the agents recommended by BMW Motorrad.

STORING THE MOTORCYCLE

- Completely fill the motorcycle's fuel tank.



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

- Clean the motorcycle.
- Remove battery.
- Spray brake lever and clutch lever as well as side stand pivots with a suitable lubricant.
- Coat bare metal and chrome plated parts with an acid-free grease (petroleum jelly).
- Park motorcycle in a dry room, raising it to relieve weight from both wheels (preferably using the front-wheel and rear-wheel stands offered by BMW Motorrad).

PUTTING THE MOTORCYCLE INTO OPERATION

- Remove the protective wax coating.
- Clean the motorcycle.
- Install the battery.
- Observe checklist (▶▶▶ 80).

TECHNICAL DATA

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TROUBLESHOOTING CHART

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

Possible cause	Remedy
Emergency on/off switch (kill switch)	Emergency off switch in normal operating position
Side stand is extended and gear is engaged.	Fold in side stand.
Gear is engaged and clutch is not operated.	Shift transmission to neutral or disengage clutch.
Fuel tank is empty.	Refueling procedure (▮▮▮▮▶ 88).
Battery is drained.	Charging a connected battery (▮▮▮▮▶ 128).
Overheating protection for starter motor has activated. Starter motor can only be actuated for a limited period.	Leave the starter motor to cool down for around 1 minute until it becomes available again.

SCREW CONNECTIONS

Front wheel	Value	Valid
Brake caliper on telescopic forks		
M10 x 65	28 lb/ft (38 Nm)	
Clamping bolts in the axle adapter		
M8 x 35	Tightening sequence: Tighten the screws 6 times, alternating between one and the other each time 14 lb/ft (19 Nm)	
Screw in quick-release axle		
M20 x 1.5 18	37 lb/ft (50 Nm)	
Rear wheel	Value	Valid
Rear wheel on wheel carrier		
M10 x 53 x 1.25	Tightening sequence: Tighten crosswise 44 lb/ft (60 Nm)	
Mirror arm	Value	Valid
Mirror (locknut) on adapter		
M10 x 1.25	Left-hand thread, 16 lb/ft (22 Nm)	

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Mirror arm	Value	Valid
Adapter to clamping block		
M10 x 14 - 4.8	18 lb/ft (25 Nm)	
Mirror on spacer sleeve		
M5 x 20	2 lb/ft (3 Nm)	–with Op- tion 719 Billet pack Classic II ^{OE} or –with Op- tion 719 Billet pack Shadow II ^{OE}

Headlight	Value	Valid
Headlight on bracket		
M8 x 40	14 lb/ft (19 Nm)	

Front wheel cover	Value	Valid
Front wheel cover on fork		
M5 x 20	4 lb/ft (5 Nm)	

Frame	Value	Valid
Footrest system on rear frame		
M8 x 25	14 lb/ft (19 Nm)	
Passenger seat frame on rear frame		
M8 x 30	14 lb/ft (19 Nm)	

Frame	Value	Valid
Passenger seat from on luggage frame		
M6 x 20	6 lb/ft (8 Nm)	
Retaining bridge on rear frame		
M6 x 14.5	6 lb/ft (8 Nm)	

Exhaust system	Value	Valid
Clamp on silencer and exhaust manifold		
M8 x 45	16 lb/ft (22 Nm)	
Silencer on passenger frame		
M8 x 40	14 lb/ft (19 Nm)	
Bracket for silencer on rear frame		
M8 x 30	14 lb/ft (19 Nm)	—with carrier for silencer ^{OA}
M8 x 25	14 lb/ft (19 Nm)	
Silencer on bracket		
M8 x 40	7 lb/ft (10 Nm)	—with carrier for silencer ^{OA}

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FUEL

Recommended fuel quality	Super unleaded (max. 15% ethanol, E15) 89 AKI (95 ROZ/RON) 90 AKI
Alternative fuel quality	Regular unleaded (max. 15% ethanol, E15) 87 AKI (91 ROZ/RON) 87 AKI
Usable fuel quantity	Approx. 4.8 gal (Approx. 18 l)
Reserve fuel quantity	Approx. 3.7 quarts (Approx. 3.5 l)
Fuel consumption	46 mpg (5.1 l/100 km), In accordance with WMTC
CO2 emissions	119 g/km, In accordance with WMTC
Emission standard	TIER 2, measured in accordance with FTP75

ENGINE OIL

Engine oil, capacity	max 1 gal (max 3.95 l), with filter replacement
Specification	SAE 15W-50, API SJ/ JASO MA2, Additives (for instance, molybdenum-based substances) are prohibited, because they would attack the coatings on engine components, BMW Motorrad recommends BMW Motorrad ADVANTEC Pro Oil

Engine oil, quantity for topping up	max 0.5 quarts (max 0.5 l), Difference between MIN and MAX
-------------------------------------	---

BMW recommends **ADVANTEC**
ORIGINAL BMW ENGINE OIL

ENGINE

Engine number location	On crankcase at lower right, below cylinder
Engine type	A72B12A
Engine design	Air-/oil-cooled two-cylinder four-stroke opposed-twin engine with double overhead camshafts and a counterbalance shaft.
Displacement	1170 cc (1170 cm ³)
Cylinder bore	4 in (101 mm)
Piston stroke	2.9 in (73 mm)
Compression ratio	12:1
Nominal capacity	107 hp (80 kW), at RPM: 7250 min ⁻¹
Torque	86 lb/ft (116 Nm), at engine speed: 6000 min ⁻¹
Maximum engine speed	max 8500 min ⁻¹
Idle speed	1150±50 min ⁻¹ , Engine at operating temperature

158 TECHNICAL DATA

CLUTCH

Clutch design	Single-plate dry clutch
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TRANSMISSION

Transmission design	Dog-engagement 6-speed manual transmission with helical gearing
Transmission gear ratios	1.737, Primary gear ratio 2.375 (38:16 teeth), 1st gear 1.696 (39:23 teeth), 2nd gear 1.296 (35:27 teeth), 3rd gear 1.065 (33:31 teeth), 4th gear 0.939 (31:33 teeth), 5th gear 0.848 (28:33 teeth), 6th gear

REAR-WHEEL DRIVE

Type of final drive	Cardan shaft drive with bevel gears
Type of rear-wheel guide	Cast aluminum single-sided swinging arm with BMW Motorrad Paralever
Gear ratio of rear-wheel drive	2.909
Rear axle differential oil	SAE 70W-80 / hypoid axle G3

FRAME

Frame design	Lattice-tube frame with supporting drive unit
Location of type plate	Frame at front left on steering head
Location of the vehicle identification number	Main frame front bottom right

CHASSIS

Front wheel

Type of front suspension	Upside down telescopic forks, diameter 46 mm, adjustable rebound and compression stage
Spring travel, front	4.7 in (120 mm), on wheel

Rear wheel

Design of rear-wheel suspension	Central spring strut with coil spring, adjustable rebound-stage damping and spring preload
Spring travel on the rear wheel	4.7 in (120 mm), on wheel
Recommendation on chassis and suspension adjustment for one-up operation	Turn adjustment wheel counterclockwise up to stop, spring preload Turn adjustment screw clockwise up to stop, then turn back by 2 turns, damping
Recommendation on chassis and suspension adjustment for two-up mode	Turn adjustment wheel clockwise up to stop, spring preload Turn adjustment screw up to stop, then turn back 1 turn, damping

BRAKES

Front wheel

Type of front wheel brake	Twin disc brake with 4-piston fixed caliper
Front brake pad material	Sintered metal
Front brake disc thickness	min 0.16 in (min 4 mm), wear limit

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Rear wheel	
Type of rear wheel brake	Single-disc brake with 2-piston floating caliper
Rear brake pad material	Organic
Rear brake disc thickness	min 0.18 in (min 4.5 mm), wear limit

WHEELS AND TIRES

Recommended tire combinations	An overview of the current tire approvals is available from your authorized BMW Motorrad retailer.
Speed category of front/rear tires	V, minimum requirement: 149 mph (240 km/h)

Front wheel	
Front wheel design	Spoked wheel
Front-wheel rim size	3.50" x 17"
Front tire designation	120 / 70 ZR 17
Load index for front tire	At least 58
Permitted front wheel imbalance	max 0.2 oz (max 5 g)

Rear wheel	
Rear wheel design	Spoked wheel
Rear-wheel rim size	5.50" x 17"
Rear tire designation	180 / 55 ZR 17
Load index for rear tire	At least 73
Permitted rear wheel imbalance	max 0.2 oz (max 5 g)

Tire pressures

Front tire pressure	36.3 psi (2.5 bar), with tire cold
Rear tire pressure	39.2 psi (2.7 bar), one-up, with cold tires 42.1 psi (2.9 bar), two-up and cargo, with cold tires

ELECTRICAL SYSTEM**Fuses**

Fuse 1	10 A, Instrument cluster, anti-theft alarm system DWA, ignition switch, OBD diagnostic socket, coil for cut-off relay
Fuse 2	4 A, Sensor box, multifunction switch on left

Battery

Battery design	AGM battery (Absorbent Glass Mat)
Battery voltage	12 V
Battery capacity	14 Ah

Spark plugs

Spark plugs, manufacturer and designation	NGK MAR8AI-10DS
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Light sources

All light sources	LED
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162 TECHNICAL DATA

DIMENSIONS

Motorcycle length	82.9 in (2105 mm), measured over rear wheel
Motorcycle height	48.8 in (1240 mm), with mirror, at DIN unloaded vehicle weight
Motorcycle width	34.1 in (865 mm), using handlebar levers
Front-seat height	31.7 in (805 mm), without rider, at DIN unloaded vehicle weight
Rider's inside-leg arc, heel to heel	70.3 in (1785 mm), without rider, at DIN unloaded vehicle weight

WEIGHTS

Unloaded vehicle weight	487 lbs (221 kg), DIN unloaded vehicle weight, ready for road, fuel tank 90% full, without OE
Gross vehicle weight	948 lbs (430 kg)
Maximum payload	459 lbs (208 kg)

PERFORMANCE DATA

Maximum speed	>124 mph (>200 km/h)
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SERVICE

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REPORTING SAFETY DEFECTS

If you think that your motorcycle has a fault which may cause an accident, injury or death, you must inform the NHTSA (National Highway Traffic Safety Administration) immediately and BMW of North America, LLC.

If the NHTSA receives other similar complaints, it may open an investigation. If it finds that a safety defect exists in a group of vehicles, the NHTSA may order the manufacturer to perform a recall and remedy campaign. However, the NHTSA cannot become involved in individual problems between you, your authorized BMW Motorrad 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) for free, by visiting the website at [http:// www.safercar.gov](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 safetyrelated defect to Transport Canada, Defect Investigations and Recalls, may call the toll-free hotline 1-800-333-0510. You can also obtain other information about motor vehicle safety from <http:// www.tc.gc.ca/roadsafety>.

BMW MOTORRAD SERVICE

With its worldwide retailer network, BMW Motorrad can attend to you and your motorcycle in over 100 countries around the globe. Authorized BMW Motorrad retailers have the technical information and expertise needed to reliably conduct all preventive maintenance and repair procedures on your BMW.

You will find the nearest authorized BMW Motorrad retailer to you at our website:

bmw-motorrad.com



WARNING

Improperly performed maintenance and repair work

Accident hazard caused by subsequent damage

- BMW Motorrad recommends having corresponding work on the motorcycle carried out by a specialized workshop, preferably by an authorized BMW Motorrad retailer.

To ensure that your BMW is always in optimum condition, BMW Motorrad recommends that you comply with the maintenance intervals specified for your motorcycle.

Have all preventive maintenance and repair procedures that have been carried out confirmed in the Service chapter in this manual. Documented proof of scheduled preventive maintenance is essential for generous treatment of claims submitted after the warranty period has expired (goodwill).

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

BMW MOTORRAD SERVICE HISTORY

Entries

Maintenance work that has been performed is recorded in the diagnostics and information system. Like a Service Booklet, these entries provide proof of regular maintenance.

If an entry is made in the vehicle's electronic Service History (eSH), service-related data is stored on the central IT sys-

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tems of BMW AG in Munich, Germany.

When there is a change in vehicle owner, the data entered in the electronic Service History can also be viewed by the new vehicle owner. A BMW Motorrad retailer or specialist workshop can view the data entered in the electronic Service History.

Objection

At the BMW Motorrad retailer or specialist workshop, the vehicle owner can object to the entry of data in the electronic Service History with the related storage of data in the vehicle and the transfer of data to the vehicle manufacturer during his time as the vehicle owner. In this case, no entry is made in the vehicle's electronic Service History.

BMW MOTORRAD MOBILITY SERVICES

As the owner of a new BMW motorcycle, you can benefit from the protection afforded by the various BMW Motorrad mobility services in the event of a breakdown (e.g., BMW Road-side Assistance, breakdown

service, vehicle recovery service).

Contact your authorized BMW Motorrad retailer for additional information on available mobility services.

MAINTENANCE WORK

BMW pre-delivery check

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

BMW running-in check

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

BMW Motorrad Service

BMW Motorrad service is carried out once a year. The scope of the services performed may be dependent on the age of the vehicle and the distance covered. Your BMW Motorrad retailer confirms that the service has been performed and enters the date for the next service. For riders with a high annual distance traveled, it may be necessary to come in for service before the entered date.

In these cases, a corresponding maximum distance covered will also be entered in the confirmation of service. If this distance covered is reached before the next service appointment, service must be performed sooner.

The service display in the multi-function display reminds you of the next service date approximately one month or 621 miles (1000 km) before the entered values.

More information on the topic of service is available at:

bmw-motorrad.com/service

The required scope of maintenance work for your vehicle can be found in the following maintenance schedule:

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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	
3		X	X	X	X	X	X	X	X	X	X	X ^a	
4			X		X		X		X		X		X ^b
5		X	X	X	X	X	X	X	X	X	X		
6					X				X			X ^c	X ^c
7			X		X		X		X		X		
8			X		X		X		X		X		
9					X ^d				X ^d				
10				X			X			X			
11												X ^e	X ^e

- 1 BMW Motorrad break-in inspection (including oil and oil filter change)
- 2 Standard scope of BMW Motorrad service
- 3 Engine oil change with filter
- 4 Oil change in the bevel gears
- 5 Check valve clearance
- 6 Change transmission oil
- 7 Replace all spark plugs
- 8 Replace the air filter insert
- 9 Replace the alternator belt
- 10 Oil change in the telescopic forks

- 11 Change brake fluid in the entire system
 - a Annually or every 6000 mi (10000 km) (whichever comes first)
 - b annually or every 12,000 mi (20000 km) (whichever comes first)
 - c For the first time after one year, then every two years or 24000 mi (40000 km) (whichever comes first)
 - d Every six years or every 24000 mi (40000 km) (whichever comes first)

- e At first after one year,
then every two years

BMW RUNNING-IN CHECK

BMW Motorrad break-in service

The BMW Motorrad break-in service repair procedures are listed below. The actual scope of maintenance required for your vehicle may differ.

- Setting the service date and remaining distance
- Performing the vehicle test using the BMW Motorrad diagnosis system
- Engine oil change with filter
- Change oil in the angular gearbox
- Adjusting the steering-head bearing
- Checking brake fluid level of the front wheel brake
- Checking brake fluid level in rear wheel brake
- Check the tire tread depth and tire pressure
- Check the tension of the spokes and tighten as needed
- Checking the lighting and signal system
- Functional check for engine starting suppression
- Final inspection and check for road safety
- Run the vehicle test using the BMW Motorrad diagnostic system
- Confirm the BMW service in the vehicle literature

MAINTENANCE CONFIRMATIONS

BMW Motorrad Service standard scope

The repair procedures belonging to the BMW Motorrad Service standard package are listed below. The actual maintenance work applicable for your vehicle may differ.

- Performing the vehicle test using the BMW Motorrad diagnostic system
- Visual inspection of the clutch system
- Checking steering-head bearing
- Visual inspection of the brake lines, brake hoses, and connections
- Checking the front brake pads and brake discs for wear
- Checking the front wheel brake fluid level
- Checking the rear brake pads and brake disc for wear
- Checking the rear wheel brake fluid level
- Checking the tire pressure and tread depth
- Check side stand for ease of movement
- Check the tension of the spokes and tighten as needed
- Checking the lighting and signal system
- Functional check for engine starting suppression
- Final inspection and road safety check
- Set the service date and remaining distance using the BMW Motorrad diagnostic system
- Checking charging state of battery
- Confirming the BMW Motorrad service in the vehicle literature

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BMW pre-delivery check
performed

on _____

Stamp, signature

BMW running-in check
performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

	Yes	No
BMW Motorrad Service	☐	☐
Oil change in engine with filter	☐	☐
Oil change in bevel gears	☐	☐
Checking valve clearance	☐	☐
Changing gear oil	☐	☐
Replacing all spark plugs	☐	☐
Replacing air filter insert	☐	☐
Replacing alternator drive belt	☐	☐
Oil change in telescopic fork	☐	☐
Changing front brake fluid	☐	☐
Changing brake fluid, rear	☐	☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

BMW Motorrad Service

Oil change in engine with filter

Oil change in bevel gears

Checking valve clearance

Changing gear oil

Replacing all spark plugs

Replacing air filter insert

Replacing alternator drive belt

Oil change in telescopic fork

Changing front brake fluid

Changing brake fluid, rear

Yes No

☐
☐
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☐
☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

BMW Motorrad Service

Yes No

☐ ☐

Oil change in engine with filter

☐ ☐

Oil change in bevel gears

☐ ☐

Checking valve clearance

☐ ☐

Changing gear oil

☐ ☐

Replacing all spark plugs

☐ ☐

Replacing air filter insert

☐ ☐

Replacing alternator drive belt

☐ ☐

Oil change in telescopic fork

☐ ☐

Changing front brake fluid

☐ ☐

Changing brake fluid, rear

☐ ☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

BMW Motorrad Service

Yes No

Oil change in engine with filter

☐ ☐

Oil change in bevel gears

☐ ☐

Checking valve clearance

☐ ☐

Changing gear oil

☐ ☐

Replacing all spark plugs

☐ ☐

Replacing air filter insert

☐ ☐

Replacing alternator drive belt

☐ ☐

Oil change in telescopic fork

☐ ☐

Changing front brake fluid

☐ ☐

Changing brake fluid, rear

☐ ☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

	Yes	No
BMW Motorrad Service	☐	☐
Oil change in engine with filter	☐	☐
Oil change in bevel gears	☐	☐
Checking valve clearance	☐	☐
Changing gear oil	☐	☐
Replacing all spark plugs	☐	☐
Replacing air filter insert	☐	☐
Replacing alternator drive belt	☐	☐
Oil change in telescopic fork	☐	☐
Changing front brake fluid	☐	☐
Changing brake fluid, rear	☐	☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

BMW Motorrad Service

Oil change in engine with filter

Oil change in bevel gears

Checking valve clearance

Changing gear oil

Replacing all spark plugs

Replacing air filter insert

Replacing alternator drive belt

Oil change in telescopic fork

Changing front brake fluid

Changing brake fluid, rear

Yes No

☐ ☐

☐ ☐

☐ ☐

☐ ☐

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☐ ☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

	Yes	No
BMW Motorrad Service	☐	☐
Oil change in engine with filter	☐	☐
Oil change in bevel gears	☐	☐
Checking valve clearance	☐	☐
Changing gear oil	☐	☐
Replacing all spark plugs	☐	☐
Replacing air filter insert	☐	☐
Replacing alternator drive belt	☐	☐
Oil change in telescopic fork	☐	☐
Changing front brake fluid	☐	☐
Changing brake fluid, rear	☐	☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

BMW Motorrad Service

Yes No

Oil change in engine with filter

☐ ☐

Oil change in bevel gears

☐ ☐

Checking valve clearance

☐ ☐

Changing gear oil

☐ ☐

Replacing all spark plugs

☐ ☐

Replacing air filter insert

☐ ☐

Replacing alternator drive belt

☐ ☐

Oil change in telescopic fork

☐ ☐

Changing front brake fluid

☐ ☐

Changing brake fluid, rear

☐ ☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

	Yes	No
BMW Motorrad Service	☐	☐
Oil change in engine with filter	☐	☐
Oil change in bevel gears	☐	☐
Checking valve clearance	☐	☐
Changing gear oil	☐	☐
Replacing all spark plugs	☐	☐
Replacing air filter insert	☐	☐
Replacing alternator drive belt	☐	☐
Oil change in telescopic fork	☐	☐
Changing front brake fluid	☐	☐
Changing brake fluid, rear	☐	☐

Notes

Stamp, signature

BMW Motorrad Service

performed

on _____

at km _____

Next service

latest

on _____

or, if reached earlier

at km _____

Work performed

BMW Motorrad Service

Yes No

☐ ☐

Oil change in engine with filter

☐ ☐

Oil change in bevel gears

☐ ☐

Checking valve clearance

☐ ☐

Changing gear oil

☐ ☐

Replacing all spark plugs

☐ ☐

Replacing air filter insert

☐ ☐

Replacing alternator drive belt

☐ ☐

Oil change in telescopic fork

☐ ☐

Changing front brake fluid

☐ ☐

Changing brake fluid, rear

☐ ☐

Notes

Stamp, signature

[illegible]

Declaration of Conformity

Radio equipment electronic immobiliser (EWS4)

For all countries without EU

Technical information

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

Manufacturer and Address

Manufacturer:
BECOM Electronics GmbH
Address: Technikerstraße 1,
A-7442 Hochstraß

Argentina

 **RAMATEL**
H-25246

Australia/New Zealand



R-NZ

Brunei



TA No: DTA-007061

United Arab Emirates

TRA
REGISTERED No:
ER89926/20

DEALER No:
DA96133I20

Philippiens



NTC

Type Approved
No.: ESD-RCE-2023298

South Africa



TA-2020/6131

APPROVED

India

ETA-SD-20200905860

Belarus



Indonesia

72790/SDPPI/2021
13349



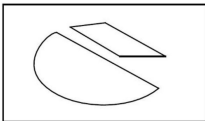
Dilarang melakukan perubahan
Spesifikasi yang dapat
Menimbulkan gangguan fisik
dan/atau elektromagnetik
terhadap lingkungan sekitarnya

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。

Paraguay



CONATEL

NR: 2020-11-I-0834

Malaysia



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

Singapore

Complies with
IMDA Standards
N3504-20

Israel

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

United States (USA)

Contains FCC ID:

ODE-MREWS5012

FCC § 15.19 Labelling requirements

This device complies with part 15 of the FCC Rules and Industry Canada's licence-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.

FCC § 15.21 Information to user

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure Requirements

To comply with FCC RF exposure compliance requirements, the device must be installed to provide a separation distance of at least 20 cm from all persons.

Serbia



P1620118300

Canada

Contains IC:

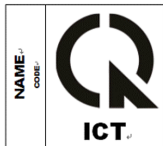
10430A-MREWS5012

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.

Vietnam



A1109091120AF04A3

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The descriptions and illustrations in this manual may vary from your own motorcycle's actual equipment, depending upon its equipment level and accessories as well as your specific national version. No claims will be entertained as a result of such discrepancies. Dimensions, weights, fuel consumption and performance data are quoted to the customary tolerances.

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

Errors and omissions excepted.

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WARNING

Harmful substances

Operating and preventive maintenance of a passenger vehicle or off-road vehicle can expose you to substances such as exhaust gases, carbon monoxide, phthalates and lead, which are known to the State of California to be carcinogenic as well as detrimental to childbirth and reproduction.

- To minimize exposure, avoid breathing exhaust gases, do not put the engine in Neutral except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.
- Further information is available at:

www.P65Warnings.ca.gov/passenger_vehicle

Important data for refueling stop:

Fuel

Recommended fuel quality	Super unleaded (max. 15% ethanol, E15) 89 AKI (95 ROZ/RON) 90 AKI
Alternative fuel quality	Regular unleaded (max. 15% ethanol, E15) 87 AKI (91 ROZ/RON) 87 AKI
Usable fuel quantity	Approx. 4.8 gal (Approx. 18 l)
Reserve fuel quantity	Approx. 3.7 quarts (Approx. 3.5 l)

Tire pressures

Front tire pressure	36.3 psi (2.5 bar), with tire cold
Rear tire pressure	39.2 psi (2.7 bar), One-up, with cold tires 42.1 psi (2.9 bar), Two-up and cargo, with cold tires

You can find further information on all aspects of your vehicle at:
bmw-motorrad.com

