BMW Motorrad

The Ultimate Riding Machine

Rider's Manual
R 1200 RT

Vehicle data/dealership details

Vehicle data

Model

Vehicle Identification Number

Colour code

Date of first registration

Registration number

Dealership details

Person to contact in Service department

Ms/Mr

Phone number

Dealership address/phone number (company stamp)

Welcome to BMW

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

About this Rider's Manual

Please read this Rider's Manual carefully before starting to use your new BMW. It contains important information on how to operate the controls and how to make the best possible use of all your BMW's technical features. In addition, it contains information on maintenance and care to help you maintain your vehicle's reliability and safety, as well as its value.

Suggestions and criticism

If you have questions concerning your motorcycle, your authorised BMW Motorrad dealer will gladly provide advice and assistance.

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

BMW Motorrad.

01 41 8 557 801

Table of Contents

General instructions

Overview

An important aspect of this Rider's Manual is that it can be used for quick and easy reference. Consulting the extensive index at the end of this Rider's Manual is the fastest way to find information on a particular topic or item. To first read an overview of your motorcycle, please go to chapter 2. All maintenance and servicing work on the vehicle is documented in Chapter 11. This record of the maintenance work you have had performed on your vehicle is a precondition for generous treatment of goodwill claims. When the time comes to sell your BMW, please remember to hand over this Rider's Manual; it is an important part of the motorcycle.

Abbreviations and symbols


Indicates warnings that you must comply with for reasons of your safety and the safety of others, and to protect your product against damage.


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

◀ Indicates the end of an item of information.

• Instruction.

» Result of an activity.


Reference to a page with more detailed information.

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


Tightening torque.


Technical data.

OE Optional extras.
The vehicles are assembled complete with all the BMW Motorrad optional extras originally ordered.

OA Optional accessories. You can obtain BMW Motorrad optional accessories through your authorised BMW Motorrad dealer; optional accessories have to be retrofitted to the vehicle.

EWS Electronic immobiliser.

DWA Anti-theft alarm (Diebstahlwarnanlage).

ABS Anti-lock brake system.

ASC Automatic Stability Control.

ESA Electronic Suspension Adjustment.

RDC Tyre pressure monitoring.

Equipment

When you purchased your BMW motorcycle, you chose a model with individual equipment. This Rider's Manual describes the optional extras (OE) offered by BMW and selected optional accessories (OA). You may find that it contains descriptions of items of equipment that you did not select. Please note, too, that your motorcycle might not be exactly as illustrated in this manual on account of country-specific differences.
If your motorcycle contains equipment that has not been described, its description can be found in a separate manual.

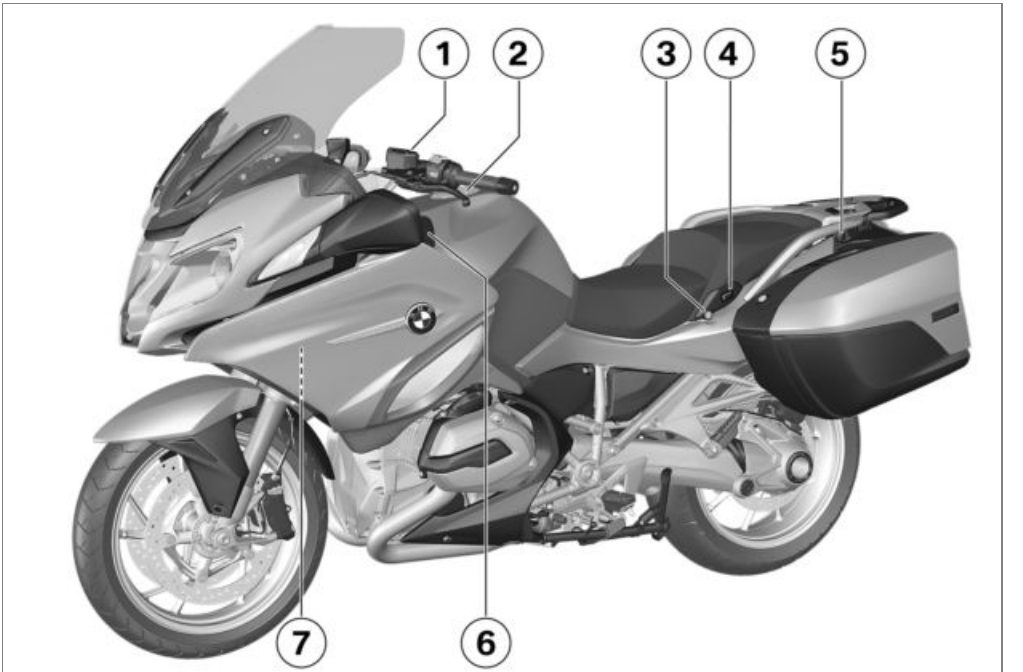
Technical data

All dimensions, weights and power ratings stated in the Rider's Manual are quoted to the standards and comply with the tolerance requirements of the Deutsches Institut für Normung e.V. (DIN). Versions for individual countries may differ.

Actuality

The high safety and quality level of BMW motorcycles is ensured by continuous development work on design, equipment and accessories. Because of this, your motorcycle may differ from the information supplied in the Rider's Manual. Nor can BMW Motorrad entirely rule out errors and omissions. Consequently no claims can be derived from the information, graphics or descriptions.

General views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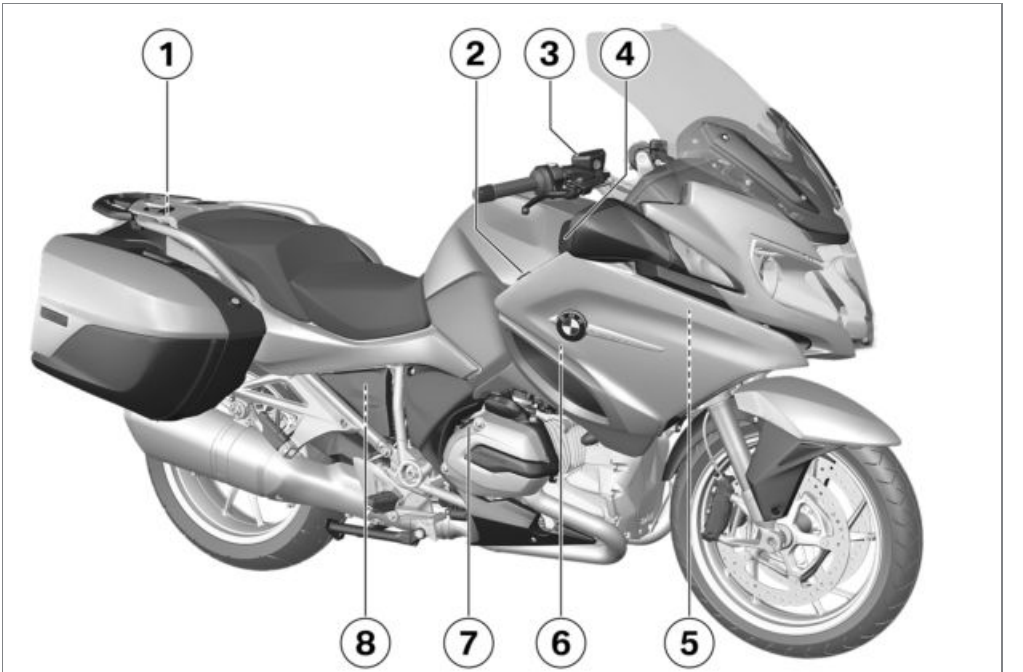
General view, left side

1 Clutch-fluid reservoir (➠ 120)
2 Fuel filler neck (➠ 96)
3 Seat lock (➠ 82)
4 Rear-seat heating (➠ 72)
5 2nd socket
6 Stowage compartment, left (➠ 74)
7 Payload table
Table of tyre pressures


1
2
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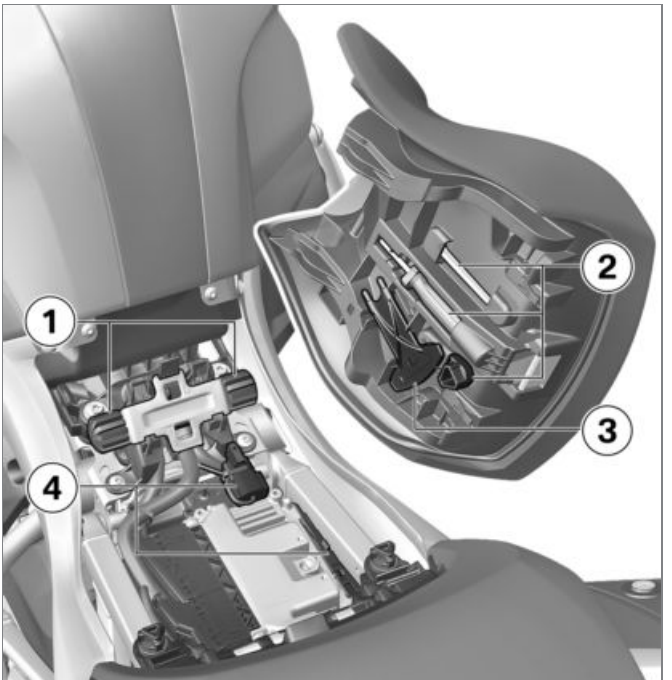
5

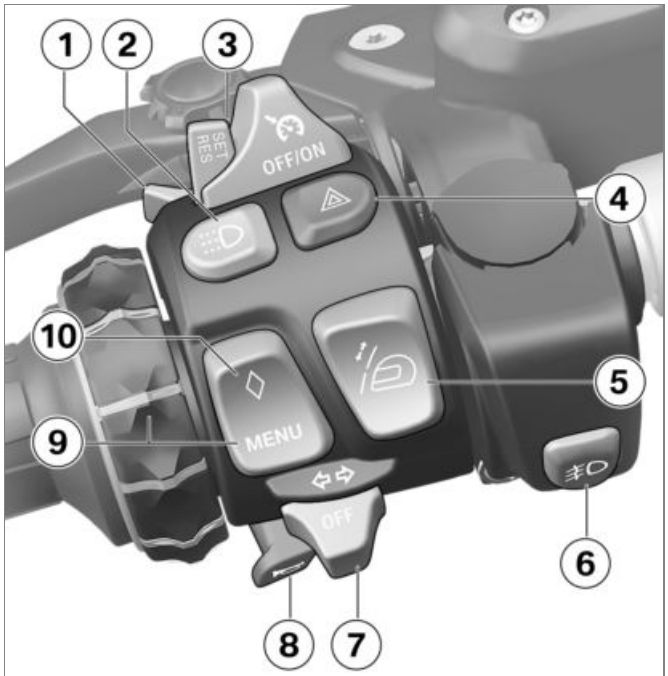
General view, right side

1 Rider's Manual
2 Power socket (➠ 144)
3 Brake-fluid reservoir, front (➠ 116)
4 – with audio system[OE] Stowage compartment, right (➠ 74)
5 VIN (on steering-head bearing)
Type plate (on steering-head bearing)
6 Coolant level indicator (behind side panel) (➠ 118)
7 Engine-oil filler neck (➠ 113)
8 Rear brake-fluid reservoir (behind side panel) (➠ 117)

Underneath the seat

1 Adjusting the driver seat height (➠ 83)
2 Standard toolkit (➠ 112)
3 Tool for adjusting spring preload (➠ 65)
4 Fuses (➠ 140)





Multifunction switch, left

1 High-beam headlight and headlight flasher (➠ 57)

2 – with daytime running light OE

Daytime running light (➠ 58)

3 – with cruise-control system OE

Cruise-control system (➠ 63)

4 Hazard warning flashers (➠ 60)

5 Windscreen adjustment (➠ 73)

6 – with LED auxiliary headlights OA

Auxiliary headlights (➠ 57)

7 Turn indicators (➠ 60)

8 Horn

9 Multi-Controller and MENU key
Multifunction display (➠ 49)
ASC (➠ 61)
– with Dynamic ESA OE
D-ESA (➠ 67)
– with audio system OE
Audio system (see the appropriate operating instructions)

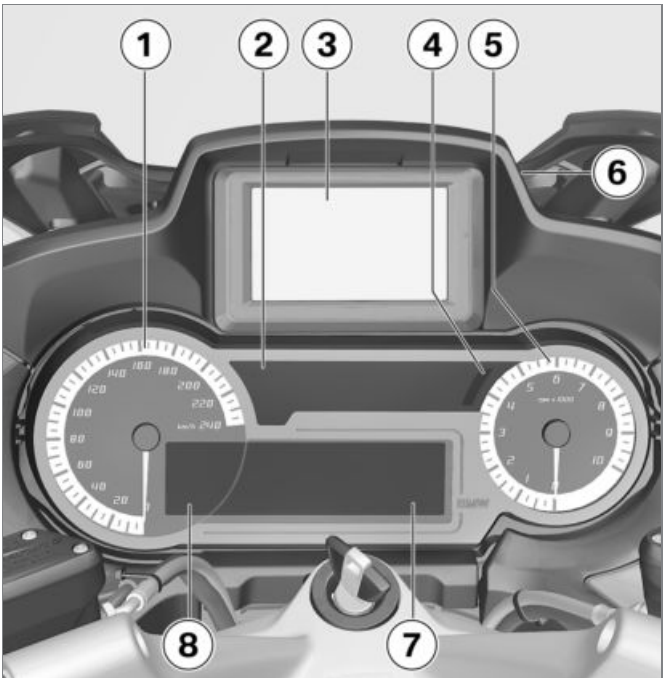
10 Favourite menu (➠ 52)

Multifunction switch, right

1 – with central locking OE Central locking (➠ 75)
2 Riding mode (➠ 61)
3 Emergency off switch (kill switch) (➠ 56)
4 Start engine (➠ 90)

Instrument panel

1 Speedometer
2 Warning and telltale lights (➠ 22)
3 – with navigation system OA
– with preparation for navigation system OE
Navigation system (➠ 145)
4 Ambient-light brightness sensor (for adapting the brightness of the instrument lighting)
5 Rev. counter
6 – with navigation system OA
– with preparation for navigation system OE
Release for navigation slot (➠ 145)
7 Multifunction display (➠ 24)
8 Trip meter (➠ 55)

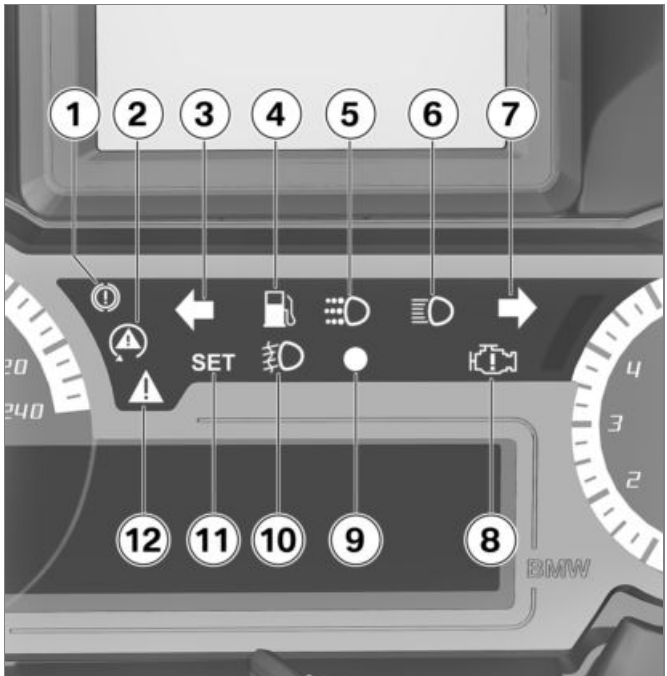


The brightness of the warning lights and telltale lights, the display and the instrument needle and gauge lighting is adapted automatically to suit ambient brightness.◀

Status indicators

Warning and telltale lights

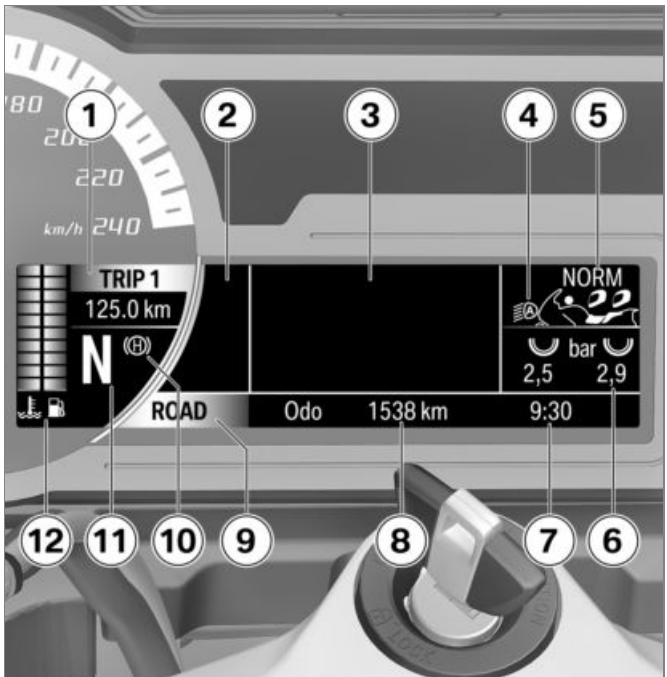
1 ABS (➠ 36)
2 ASC (➠ 37)
3 Turn indicators, left
4 Fuel reserve (➠ 40)
5 – with daytime running light OE
Daytime running light (➠ 58)
6 High-beam headlight
7 Turn indicators, right
8 Engine electronics
9 – with anti-theft alarm (DWA) OE
DWA (➠ 79)
10 – with LED auxiliary headlights OA
Auxiliary headlights (➠ 57)
11 – with cruise-control system OE
Cruise-control system (➠ 63)



12 General warning light, in combination with warning symbols in the display (➠ 26)

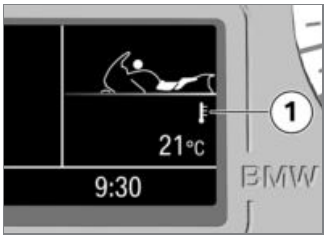
Multifunction display

1 Trip meter (➠ 55)
2 Warning symbols (➠ 26)
3 Menu area (➠ 49)
Audio system
4 – with daytime running light[OE]
Automatic daytime running light (➠ 59)
5 – with seat heating[OE]
Seat heating (➠ 71)
Heated handlebar grips (➠ 70)
– with Dynamic ESA[OE]
D-ESA settings
6 On-board computer (➠ 53)
– with tyre pressure monitoring (RDC)[OE]
Tyre pressure
7 Clock (➠ 53)
8 Odometer
9 Riding mode (➠ 61)
10 – with Hill Start Control[OE]
Hill Start Control (➠ 69)



11 Gear indicator; "N" indicates neutral
12 Coolant temperature
Fuel level

Meaning of symbols



Meanings of the symbols at position **1**:

Average fuel consumption since last reset (➠ 54)

Current consumption

Range with fuel now on board (➠ 40)

Average speed since last reset (➠ 54)

Ambient temperature (➠ 40)

– with tyre pressure monitoring (RDC)[OE]
Tyre pressures (➠ 42)

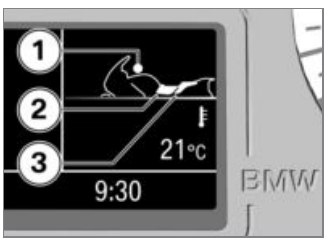
Stopwatch (➠ 54)

Travel times (➠ 54)

Date (display mode depends on the time format selected) (➠ 53)

Oil level (➠ 41)

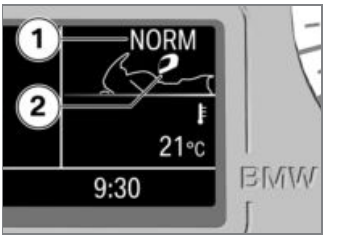
On-board voltage



1 Heated handlebar grips ON

– with seat heating OE
2 Front-seat heating ON
3 Rear-seat heating ON

– with Dynamic ESA OE

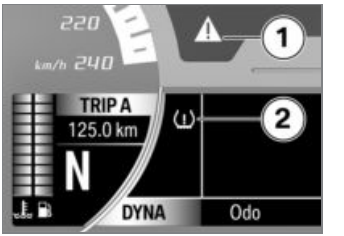


1 Damping
2 Vehicle load

Warnings

Mode of presentation

Warnings are indicated by the corresponding warning lights.



Warnings for which there is no dedicated warning light are indicated by 'General' warning light **1** showing in combination with a warning symbol such as, for example, **2** appearing in the multifunction display. The 'general' warning light shows yellow or red, depending on the urgency of the warning.
Up to four warning symbols can be displayed at any given time. The status of the 'General' warning light matches the most urgent warning.

The possible warnings are listed on the next page.

Warnings, overview

Warning and telltale lights	Warning symbols in the display	Meaning
	 appears on the display	Outside temperature warning (➠ 32)
 lights up yellow	 appears on the display	EWS active (➠ 32)
 lights up red	Temperature reading turns red	Coolant temperature too high (➠ 32)
	 appears on the display	Engine-oil level too low (➠ 32)
 lights up		Engine fault (➠ 33)
 flashes		Severe engine fault (➠ 33)
 lights up yellow	 appears on the display	Front light failure (➠ 33)
 lights up yellow	 appears on the display	Rear light failure (➠ 34)

Warning and telltale lights	Warning symbols in the display	Meaning
 lights up yellow	 appears on the display	Light failure (➠ 34)
	 appears on the display	DWA battery weak (➠ 34)
 lights up yellow	 appears on the display	DWA battery flat (➠ 34)
	 appears on the display	On-board system voltage low (➠ 35)
 lights up yellow	 appears on the display	On-board system voltage critical (➠ 35)
 lights up red	 appears on the display	Battery charge voltage insufficient (➠ 35)
 flashes		ABS self-diagnosis not completed (➠ 36)
 lights up		ABS fault (➠ 36)

Warning and telltale lights	Warning symbols in the display	Meaning
 quick-flashes		ASC intervention (➠ 36)
 slow-flashes		ASC self-diagnosis not completed (➠ 37)
 lights up		ASC switched off (➠ 37)
 lights up		ASC fault (➠ 37)
 lights up yellow	 appears on the display	ESA fault (➠ 37)
 flashes red	 + tyre pressure in red	Tyre pressure outside permitted tolerance (➠ 37)
	 + "−−" or "−− −−" appears on the display	Signal transmission disrupted (➠ 38)
 lights up yellow	 + "−−" or "−− −−" appears on the display	Sensor defective or system error (➠ 39)

Warning and telltale lights	Warning symbols in the display	Meaning
 lights up yellow	 appears on the display	Battery of tyre-pressure sensor weak (➠ 39)
	 appears on the display	Central locking locked (➠ 40)
 briefly shows yellow	 appears on the display	Service overdue (➠ 40)
 lights up	Fuel-level reading turns yellow	Fuel down to reserve (➠ 40)

Outside temperature warning

 appears on the display.

Possible cause:

 The air temperature measured at the vehicle is lower than:
approx. 3 °C

 The ambient temperature warning does not mean that there is no risk of black ice forming at temperatures above the threshold.
Always take extra care when temperatures are low; remember that the danger of black ice forming is particularly high on bridges and where the road is in shade.◀

- Ride carefully and think well ahead.

EWS active

 lights up yellow.

 appears on the display.

Possible cause:

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

- Remove all other vehicle keys from the same ring as the ignition key.
- Have the defective key replaced, preferably by an authorised BMW Motorrad dealer.

Coolant temperature too high

 lights up red.

The temperature reading turns red.

 Riding when the engine is overheated could result in engine damage.
Compliance with the information set out below is essential.◀

Possible cause:

The coolant temperature is too high.

- If possible, ride in the part-load range to cool down the engine.
- If the coolant temperature is frequently too high, have the fault rectified as soon as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Engine-oil level too low

 appears on the display.

Possible cause:

The electronic oil-level sensor has registered an excessively low oil level. The next time you stop for fuel:

- Checking engine oil level (➠ 113).

If the oil level is too low:

- Topping up the engine oil (➠ 114).

Engine fault

 lights up.

Possible cause:

The engine control unit has diagnosed a fault.

 The engine is running in emergency operating mode.
Unusual engine response is a possibility.
Adapt your style of riding accordingly. Avoid accelerating sharply and overtaking.◀

- If you continue to ride be prepared for unusual engine behaviour (low power, poor throttle response, abrupt stalling, etc.).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Severe engine fault

 flashes.

Possible cause:

The engine control unit has diagnosed a severe fault.

 The engine is running in emergency operating mode.
A risk of damaging the engine cannot be precluded.
Adapt your style of riding accordingly: Ride slowly, avoid accelerating and overtaking.
If possible, have the motorcycle brought in and the fault rectified by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

- If you continue to ride be prepared for unusual engine behaviour (low power, poor throttle response, abrupt stalling, etc.).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Front light failure

 lights up yellow.

 appears on the display.

Possible cause:

Low-beam headlight, high-beam headlight, parking light or front flashing turn indicator defective.

The low-beam headlight or one of the LED turn indicators must be replaced.

- Consult a specialist workshop, preferably an authorised BMW Motorrad dealer.
- Replacing bulb for high-beam headlight (➠ 130).

Rear light failure

 lights up yellow.

 appears on the display.

Possible cause:

Rear light, brake light or rear flashing turn indicator defective. The LED rear light must be replaced.

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

Light failure

 lights up yellow.

 Bulb symbol with two arrows appears on the display.

Possible cause:

A combination of light failures has occurred.

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

DWA battery weak

– with anti-theft alarm (DWA)[OE]

 appears on the display.

 This error message shows briefly only after the Pre-Ride-Check completes.◀

Possible cause:

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

- Seek the advice of a specialist workshop, preferably an authorised BMW Motorrad dealer.

DWA battery flat

– with anti-theft alarm (DWA)[OE]

 lights up yellow.

 appears on the display.

 This error message shows briefly only after the Pre-Ride-Check completes.◀

Possible cause:

The integral battery in the anti-theft alarm (DWA) has lost its entire original capacity. There is no assurance that the DWA anti-theft alarm will be operational if the vehicle's battery is disconnected.

- Seek the advice of a specialist workshop, preferably an authorised BMW Motorrad dealer.

On-board system voltage low

 appears on the display. Generator power is only just sufficient to supply all consumers and charge the battery.

Possible cause:

Too many consumers switched on. On-board system voltage tends to drop particularly at low engine rpm and when the engine is idling.

- When riding at low engine rpm switch off all consumers that are not necessary for road safety (e.g. heated body warmer or auxiliary headlights).

On-board system voltage critical

 lights up yellow.

 appears on the display.

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 motorcycle ridden, the on-board electronics switch off the electricity supply to the on-board sockets and the auxiliary headlights. In extreme cases the seat heating and the grip heating might also be shut down.

Possible cause:

Too many consumers switched on. On-board system voltage tends to drop particularly at low engine rpm and when the engine is idling.

- When riding at low engine rpm switch off all consumers that are not necessary for road safety (e.g. heated body warmer or auxiliary headlights).

Battery charge voltage insufficient

 lights up red.

 appears on the display.

 A discharged battery can render various systems unavailable, for example the lights, the engine or the ABS. This can result in dangerous situations. Do not continue your journey.◀

Battery is not being charged. If you continue to ride the vehicle the on-board electronics will drain the battery.

Possible cause:

Alternator or alternator drive faulty or fuse for alternator regulator has blown.

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

ABS self-diagnosis not completed

 flashes.

Possible cause:

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

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

ABS fault

 lights up.

Possible cause:

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

- You can continue to ride the vehicle, but make due provision for the fact that the ABS function is not available. Bear in mind the more detailed information on situations that can lead to an ABS fault (➠ 104).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

ASC intervention

 quick-flashes.

The ASC has detected a degree of instability at the rear wheel and has intervened to reduce torque. The warning light flashes for longer than ASC intervention lasts. This affords the rider visual feedback on control intervention even after the critical situation has been dealt with.

ASC self-diagnosis not completed

 slow-flashes.

Possible cause:

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

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

ASC switched off

 ASC warning light flashes.

Possible cause:

The rider has switched off the ASC system.

- Switch on ASC.

ASC fault

 ASC warning light flashes.

Possible cause:

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

- You can continue to ride. Bear in mind that the ASC function is not available. Bear in mind the more detailed information on situations that can lead to an ASC fault (➠ 106).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

ESA fault

 lights up yellow.

 appears on the display.

Possible cause:

The ESA control unit has detected a fault. In this condition, the motorcycle has too much damping and is uncomfortable to drive, especially on roads in poor condition.

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

Tyre pressure outside permitted tolerance

– with tyre pressure monitoring (RDC)[OE]

 flashes red.

 + The critical tyre pressure shows red.

Possible cause:

Measured tyre pressure is outside permitted tolerance.

- Check the tyre for damage and to ascertain whether the vehicle can be ridden with the tyre in its present condition.

If the vehicle can be ridden with the tyre in its present condition:

- Correct the tyre pressure at the earliest possible opportunity.

Before you adjust tyre pressure, read the information on temperature compensation and adjusting pressure in the section entitled "Engineering details".◀

- Have the tyre checked for damage by a specialist workshop, preferably an authorised BMW Motorrad dealer.

If you are unsure whether the vehicle can be ridden with the tyre in its present condition:

- Do not continue your journey.
- Notify the breakdown service.

Signal transmission disrupted

– with tyre pressure monitoring (RDC)[OE]

 + "−−" or "−− −−" appears on the display.

Possible cause:

The vehicle did not reach the minimum required speed (➠ 107).

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

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

Possible cause:

Wireless communication with the RDC sensors has been disrupted. Possible causes include radio-communication systems operat-

ing in the vicinity and interfering with the link between the RDC control unit and the sensors.

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

Sensor defective or system error

– with tyre pressure monitoring (RDC)[OE]

 lights up yellow.

 + "−−" or "−− −−" appears on the display.

Possible cause:

Motorcycle is fitted with wheels not equipped with RDC sensors.

- Fit wheels and tyres equipped with RDC sensors.

Possible cause:

1 or 2 RDC sensors have failed or a system error has occurred.

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

Possible cause:

A system error has occurred.

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

Battery of tyre-pressure sensor weak

– with tyre pressure monitoring (RDC)[OE]

 lights up yellow.

 appears on the display.

This error message shows briefly only after the Pre-Ride-Check completes.◀

Possible cause:

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

- Seek the advice of a specialist workshop, preferably an authorised BMW Motorrad dealer.

Central locking locked

– with central locking[OE]


The locked symbol appears on the display.
All locks in the central locking system are locked.

Service overdue

appears on the display.


General warning light briefly shows yellow after the Pre-Ride-Check.

Possible cause:

A necessary service has not been carried out.

- Have servicing carried out as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Fuel down to reserve


lights up.

Fuel-level reading turns yellow.


Lack of fuel can cause the engine to run irregularly or die (risk of accident) and result in damage to the catalytic converter.
Do not run the fuel tank dry.◀

Possible cause:

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

 Reserve fuel
approx. 4 l

- Refuelling (➠ 96).

Ambient temperature


When the motorcycle is at a standstill the heat of the engine can falsify the ambient-temperature reading. If the effect of the engine's heat becomes excessive, "– –" temporarily appears on the display.


If ambient temperature drops below the threshold this warning appears, drawing your attention to the risk of black ice forming. The display automatically switches from any other mode to the temperature reading when the temperature drops below this threshold for the first time.

 Threshold for ambient temperature
approx. 3 °C

Range


The range readout indicates how far you can ride with the fuel remaining in the tank. The figure for average consumption used to calculate range

is not shown and might not be the same as the average-consumption reading that appears on the display.
You must put at least five litres of fuel into the fuel tank for the new level to be registered correctly.
If the sensor cannot register the new level the range readout cannot be updated.
When the motorcycle is propped on its side stand the slight angle of inclination means that the sensor cannot register the fuel level correctly. This is the reason why the range is calculated only when the side stand is in the retracted position.

▷ The calculated range is only an approximate figure. Consequently, BMW Motorrad recommends that you should not try to use the full range before refuelling.◀

Oil level

 The oil-level indicator gives you an indication of the engine oil level.

The preconditions for the oil level check are as follows:
– Engine at operating temperature.
– Engine idling for at least ten seconds.
– Side stand retracted.
– Make sure the motorcycle is upright.

The readings mean:

OK: Oil level is correct.

CHECK!: Check the oil level the next time you stop for fuel.

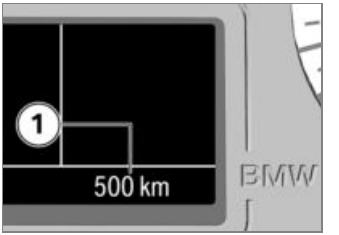
– – –: Oil level cannot be measured (conditions as stated above not satisfied).

Service-due indicator

If a service is due, for a brief period after the Pre-Ride-Check the service symbol appears on the display and the service-due date shows instead of the odometer reading.

If the service is overdue the 'General' warning light briefly shows yellow and the service symbol lights up and remains ON.

If the countdown to the next service is less than one month, service-due date **1** appears on the display.



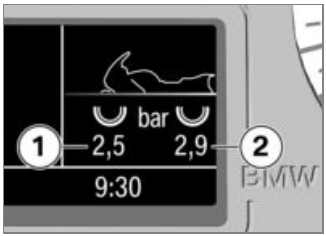
If the vehicle covers long distances in the course of the year, under certain circumstances it might be necessary to have it serviced at a date in advance of the forecast due date. If the countdown distance to the early service is within the defined displayable range, this countdown distance **1** appears on the display.

Maximum countdown distance to next service:
1000 km

If the service-due indicator appears more than a month before the service date, the date saved in the instrument cluster must be adjusted. This situation can occur if the battery was disconnected.◀

Tyre pressures

– with tyre pressure monitoring (RDC)[OE]



The tyre-pressure readings in the multifunction display are temperature-compensated and are always referenced to the following tyre-air temperature:

20 °C

The front tyre pressure is on the left **1**; the reading on the right **2** is the rear tyre pressure. Immediately after the ignition is switched on "–– ––" is displayed.

RDC sensor is not active

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

If the pressure in a tyre drops to a critical level the corresponding status indicator shows red.

The tyre warning symbol also appears on the display.

The "General" warning light flashes red.

The detailed description of BMW Motorrad RDC starts on page (➠ 107).

Operation

Ignition switch/steering lock

Keys

You receive 2 ignition keys. Consult the information on the electronic immobiliser (EWS) (➠ 48) if a key is lost or mislaid.

One-key system

– Ignition switch/steering lock
– Cases locks
– Stowage-compartment lock
– Tank filler cap
– Seat lock
– Stowage compartment

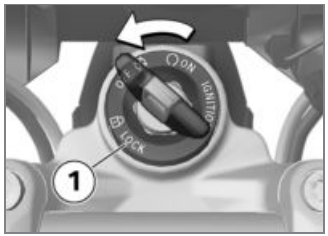
– with topcase OA
– Topcase

– with audio system OE
– Audio compartment

Lock the handlebars

⚠ If the motorcycle is on the side stand, the surface of the ground will determine whether it is better to turn the handlebars to the left or right. However, the motorcycle is more stable on a level surface with the handlebars turned to the left than with the handlebars turned to the right.
On level ground, always turn the handlebars to the left to set the steering lock.◀

- Turn the handlebars to the full left or right lock position.

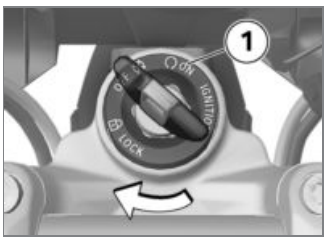


- Turn the key to position **1**, while moving the handlebars slightly.

» Ignition, lights and all function circuits switched off.
» Handlebars are locked.
» Key can be removed.

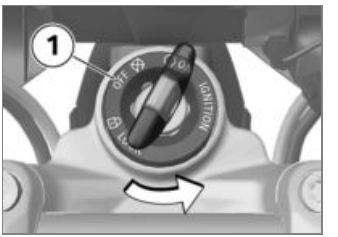
Ignition

Switching on ignition



- Insert the key in the ignition switch and turn to position **1**.
» Side lights and all function circuits are switched on.
» Pre-Ride-Check is performed (➠ 91)
» ABS self-diagnosis is performed (➠ 91)
» ASC self-diagnosis is performed (➠ 92)

Switching off ignition



- Turn the ignition key to position **1**.
» When the ignition is switched off, the instrument cluster remains switched on for a short time and displays any existing fault messages.
» Handlebars not locked.
» Electrically powered accessories remain operational for a limited period of time.
» The battery can be recharged via the socket.
» Key can be removed.

– with daytime running light OE
- The daytime running light goes out soon after the ignition is switched off.◁

– with LED auxiliary headlights OA
- The LED auxiliary headlights go out soon after the ignition is switched off.◁

Electronic immobiliser EWS

The electronic design of the motorcycle allows it to access data stored in the ignition key by means of a ring antenna located in the ignition switch/steering lock. The engine control unit will not permit the engine to be started unless the key is identified as “authorised”.

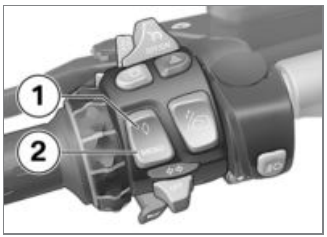
▷ A spare key attached to the same ring as the ignition key used to start the engine could "irritate" the electronics, in which case the enabling

signal for starting is not issued. The EWS warning appears in the multifunction display.
Always keep the spare key separately from the ignition key.◀

If you lose a key, you can have it barred by your authorised BMW Motorrad dealer.
If you wish to do this, you will need to bring all other keys for the motorcycle with you. The engine cannot be started by a barred key, but a key that has been barred can subsequently be reactivated.
You can obtain an extra key only through an authorised BMW Motorrad dealer. The keys are part of an integrated security system, so the dealer is under an obligation to check the legitimacy of all applications for replacement/extra keys.

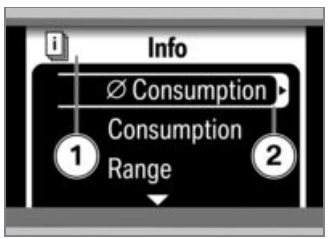
Multifunction display

Selecting menu



Press button **2** to step through the sequence of menus, starting with the Dynamic ESA menu. Each time you press button **2** you call up the next menu in the sequence; the number of menus depends on the options fitted to the motorcycle.
You also have the option of pressing button **1** for direct access to a favourite menu of your choice.

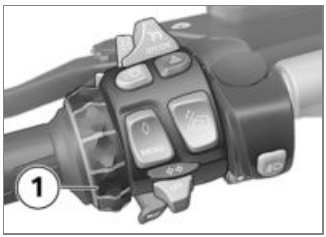
With the exception of the Audio section, you cannot access the Settings menu unless the motorcycle is at a complete standstill.



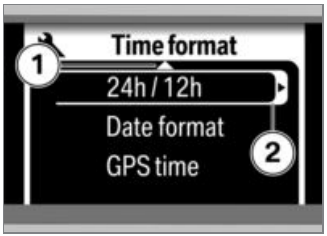
The menu you selected appears at position **1**. The submenu you selected **2** has a border.

See the separate Quick Reference Guide for an overview of all menus.◀

Selecting menu item

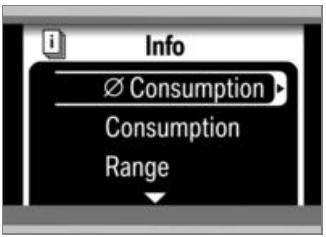


Use Multi-Controller **1** to move the cursor in a menu.



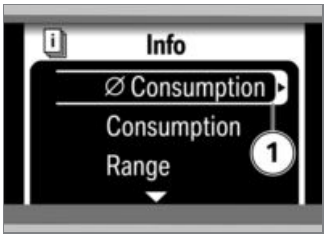
An arrow **1** at the top or bottom of the display indicates that there are other items in this menu that you can view by turning the Multi-Controller in the corresponding direction. If arrow **2** appears in the cursor, you can call up a submenu by pressing the Multi-Controller to the right (for information on the different meaning in relation to average values and list selections, see (➠ 50)).

Setting parameters

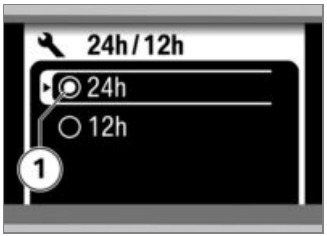


Direct selection

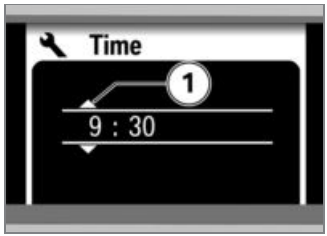
If you move the cursor to a menu item that requires no other settings, your selection goes active right away.



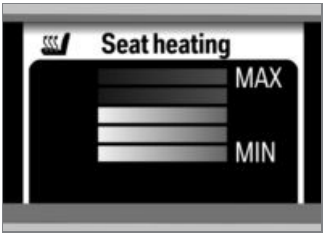
Resetting values
You can reset average values marked with an arrow **1** by long-pressing the Multi-Controller to the right.



Selecting from a list
A circle **1** beside each selectable item means that the items are part of a selection list. A circle with a dot indicates the item that is currently selected.
If you want to change the selection move the cursor to some other item in the list and press the Multi-Controller to the right to either activate or deactivate the parameter you selected.



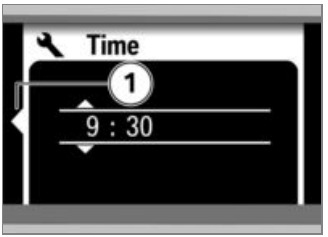
Setting numerical values
If there are one or more numerical values between the arrows **1**, you can increase the values by turning the Multi-Controller up or reduce the values by turning it down. You can toggle between the values by pressing the Multi-Controller to the right or left.



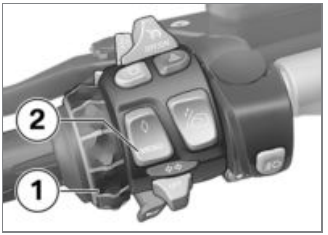
Setting relative values

A bar indicator enables you to set a value in a range between two limits. Turn the Multi-Controller up to increase the setting or down to reduce the setting.

Exiting menu



Arrow **1** appears when you are in a submenu.



Press Multi-Controller **1** to the left to return to the next highest menu; press MENU button **2** to return to the main menu.
If you want to hide the menus, press Multi-Controller **1** to the left in a main menu.

Selecting favourite menu

- Select the main menu of your choice.

- Press and hold down button **1**.

The lozenge appears to the right of the selected menu.

» The menu you have selected will subsequently be called up whenever you press button **1**.

Adapting mode of presentation

- Switch on the ignition.
- Call up the `Settings` menu and select `User`.

The settings you can choose are as follows:

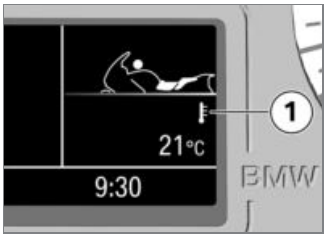
– `Language`: Display language (German, English, Spanish, Italian, French, Dutch, Portuguese)
– `Time format - 12 h / 24 h`: Clock in 12-hour format (`12 h`) or in 24-hour format (`24 h`)
– `Time format - Date format`: Date in day . month . year format (`dd . mm . yy`) or in month / day / year format (`mm / dd / yy`)
– `Time format - GPS time`: Accept GPS time and GPS date from the built-in navigation system (`On`), (`Off`)
– `Brightness`: Brightness of the display and the instruments
– `Start logo`: Show start logo after the ignition is switched on (`On`), (`Off`)
– `Fact. settings`: Restore factory defaults (when `Reset!` appears on the display press the Multi-Controller to the right and hold in this position)
– `Background`: Image on the display when the radio is off: `Empty`: No image, `Logo`: Logo (RT), `Speedo`: Digital speedometer reading.

- Use the Multi-Controller to configure the desired settings.

On-board computer

Select display

- Call up the `Info` menu and select the item of information of your choice.



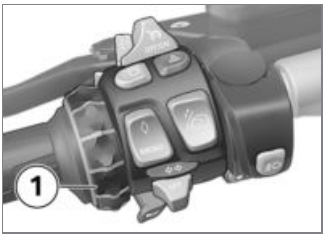
The following items of information can be displayed in panel **1**:
- ØConsump.: Average fuel consumption
- Consump.: Current fuel consumption
- Range: Range with fuel remaining in fuel tank
- ØSpeed: Average speed
- Temperature: Ambient temperature
- Tire pressure: Tyre pressures
- Stopwatch: Stopwatch
- Travel times: Travel times
- Date: Current date
- Oil level: Engine-oil level
- Elec. voltage: On-board voltage
- Off: No reading

Resetting the average values

- Call up the Info menu and select the average value you want to reset.
- Push the Multi-Controller to the right and hold it in this position until the average value is reset.

Operate stopwatch

- Call up the Info menu and select Stopwatch.



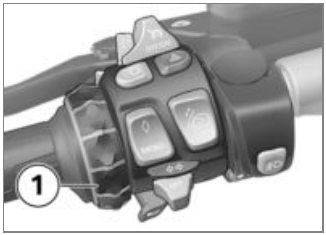
- With the stopwatch stopped, push Multi-Controller **1** to the right to start the stopwatch.

» The stopwatch continues timing even if you select some other reading or switch off the ignition.

- When the stopwatch is running, push Multi-Controller **1** to the right to stop the stopwatch.
- Push Multi-Controller **1** to the right and hold it in this position to reset the stopwatch.

Measuring travel times

- Call up the Info menu and select Travel times.



- Push Multi-Controller **1** to the right and hold it in this position to reset the travel time.

» Timing continues even if you select some other reading or switch off the ignition.

Time during which the motorcycle was on the move since the last reset.

Time during which the motorcycle was at a standstill since the last reset.

Trip meter

Selecting the tripmeter

- Switch on the ignition.

- Press button **2** to select the `Trip` menu and then select tripmeter **2** of your choice.

The following counters can be displayed:

– Tripmeter 1 (`Trip 1`)
– Tripmeter 2 (`Trip 2`)
– Automatic tripmeter (`Trip Auto.`), resets automatically eight hours after ignition OFF.

Resetting tripmeter

- Switch on the ignition.
- Select the desired tripmeter.

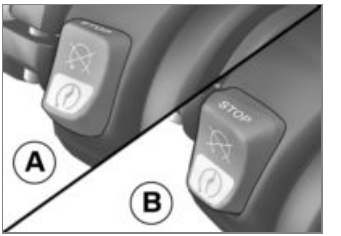
- Press and hold down button **1** until tripmeter reading **2** is reset.

Emergency off switch (kill switch)

1 Emergency off switch (kill switch)

Operating the kill switch when riding can cause the rear wheel to lock and thus cause a fall.
Do not operate the kill switch when riding.◀

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



A Engine switched off
B Normal operating position (run)

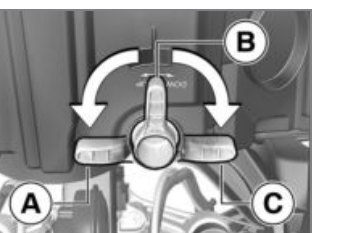
Headlight

Headlight beam throw and spring preload

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

If there are doubts about the correct headlight range, seek the advice of a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

Adjusting headlight beam throw



- The headlight beam-throw is adjusted via an engage pivot lever.

– **A** Setting for light load (one-up)
– **B** One-up with luggage

– **C** Setting for high load (two-up)

Lights

Side light

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

The side lights place a strain on the battery. Do not switch the ignition on for longer than absolutely necessary.◀

Low-beam headlight

The low-beam headlight switches on automatically when you start the engine.

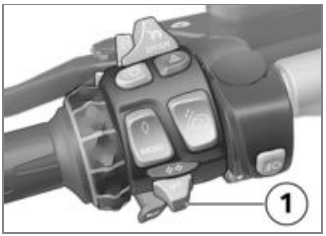
High-beam headlight and headlight flasher

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

The high-beam headlight can also be switched on when the engine is not running.◀

Parking lights

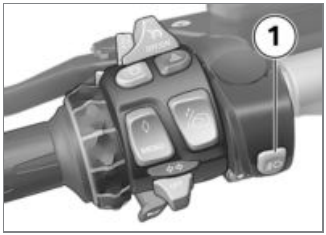
- Switch off the ignition.



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

Operating LED auxiliary headlights

– with LED auxiliary headlights OA



- Press button **1** to switch on the LED auxiliary headlights.

The telltale light shows.

If this warning symbol appears it tells you that the on-board system voltage is low. If applicable, the auxiliary headlights might have been temporarily switched off.

- Press button **1** again to switch off the LED auxiliary headlights.

Daytime riding light

Manual daytime running light

– with daytime running light[OE]

Precondition: automatic daytime running light is switched off.

If the daytime running light is switched on when it is dark, the vision deteriorates and oncoming traffic may be dazzled. Do not use the daytime running light when it is dark.◀

By comparison with the low-beam headlight, the daytime running light makes the vehicle more visible to oncoming traffic. This improves daytime visibility.◀

- Start engine (➠ 90).
- Call up the `Settings` menu and select `Vehicle`.
- Select `Day run lights` from the menu and set `Auto. DRL` to `Off`.

- Press button **1** to switch on the daytime running light.

The indicator light for the daytime running light illuminates.

» The low-beam headlight, the front side lights and the auxiliary headlight are switched off.

- In the dark or in tunnels: Press button **1** again to switch off the daytime running light and switch on the low-beam head-

light. The auxiliary headlight is also switched on again.

If the high beam headlight is switched on whilst the daytime running light is switched on, the daytime running light will be switched off after approx. 2 seconds, and the high beam headlight, low beam headlight, front side lights and, if applicable, the auxiliary headlights will be switched on.
If the high beam headlight is switched off again, the daytime running light is not automatically reactivated, but must be switched on again if required.◀

Automatic daytime running light

– with daytime running light OE

The automatic riding light control system cannot replace your personal assessment of lighting conditions. The sensor cannot detect fog or drizzle, for example.
In such situations the low beam headlight must be switched on manually, as otherwise a safety risk would occur.◀

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

- Call up the `Settings` menu and select `Vehicle`.
- Select `Day run lights` from the menu and set `Auto. DRL` to `On`.


The symbol for the automatic daytime running light shows in the display.

» If the ambient brightness decreases below a certain value, the low beam headlight is automatically switched on (e. B. in a tunnel). If a sufficient ambient brightness is detected, the daytime running light is switched on again. If the daytime running light is active, the daytime running light symbol is displayed in the multifunction display.

Manual operation of the light when the automatic system is switched on

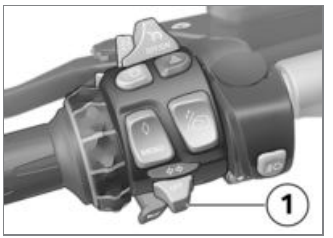
– with daytime running light OE
– If you press the button for the daytime running light the daytime running light is switched off and the low-beam headlight and front side lights are switched on (e. g. when you ride into a tunnel, and the response of the automatic daytime running light to the change in ambient brightness is delayed). The auxiliary headlight switches on again when the daytime running light is switched off.

– If you press the button again the daytime running light is reactivated, in other words the daytime running light is switched on again when ambient light is bright enough.

Turn indicators

Operating the turn indicators

• Switch on the ignition.



• Push button **1** to the left to switch on the left turn indicators.

• Push button **1** to the right to switch on the right turn indicators.

• Operate centre button **1** to cancel the turn indicators.

Turn-indicator cancellation
The turn indicators are cancelled automatically after the defined time and distance.
min 10 s
min 300 m

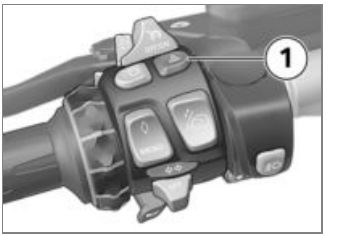
Hazard warning flashers

Operating hazard warning flashers

• Switching on ignition (➠ 48).

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

If you press a turn-indicator button with the ignition switched on, the turn-indicator function is activated instead of the hazard warning flashers, and remains active until you release the button. The hazard warning flashers recommence flashing as soon as the button is released.◀



• Press button **1** to switch on the hazard warning flashers.

» Ignition can be switched off.

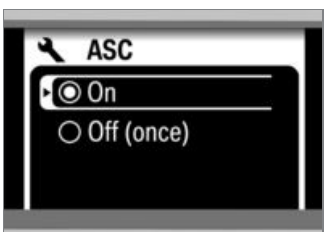
• To switch off the hazard warning flashers, switch on the ignition and press button **1** again.

ASC

Switching ASC function off and on

- Switch on the ignition.
- Call up the Settings menu and select ASC.

▷ This menu cannot be called up while the motorcycle is on the move.◀



- Select Off (once) to switch off ASC once until the next time the ignition is switched on.

The ASC warning light shows if the ASC has been switched off.

- Select On to switch on ASC. Alternatively: Switch the ignition off and then on.

ASC warning light goes out; if self-diagnosis has not completed the ASC warning light starts flashing.

Riding mode

Using the riding modes

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

– Riding on a rain-wet road surface
– Riding on a dry road surface
– with Pro riding modes OE
– Dynamic riding on a dry road surface

The interplay of engine torque, throttle response, ABS control and ASC control is optimised for each of these three scenarios.

– with Dynamic ESA OE

The suspension setting also adapts to the selected scenario.

Setting riding mode

- Switching on ignition (➠ 48).

- Press button **1**.

▷ See the section entitled "Engineering details" for more information on the various ride modes that can be selected.◀

The selection arrow **2** and the active riding mode **1** are displayed.

- Press button **1** as often as necessary until the required riding mode is indicated next to the selection arrow.

The following ride modes can be selected:

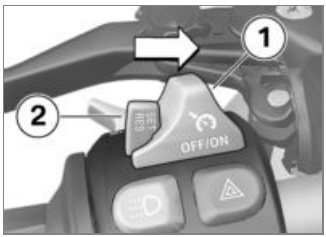
– RAIN: For riding on a rain-wet road surface.
– ROAD: For riding on a dry road surface.

– with Pro riding modes OE
» The following riding mode can also be selected:
– DYNA: For dynamic riding on a dry road surface.◁
» With the motorcycle at a standstill, the selected mode is activated after approximately two seconds.
» The newly selected riding mode is activated as you ride only if the throttle twistgrip is returned to the idle position.
» Following activation of the new riding mode the symbols for coolant temperature and fuel level reappear in the display.
» The mode selected in this way is retained with the engine-characteristic, ABS, ASC and Dynamic ESA adaptation settings even after the ignition has been switched off.

Cruise-control system

– with cruise-control system OE

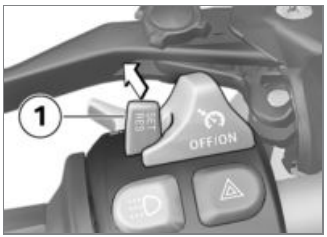
Switching on cruise control



- Slide switch **1** to the right.

» Button **2** is enabled for operation.

Saving road speed



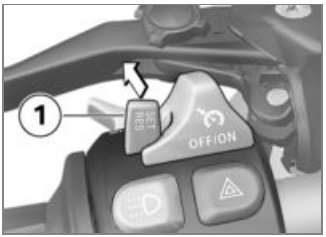
- Briefly push button **1** forward.

Adjustment range for cruise control (gear-dependent)
10...210 km/h

SET Telltale light for cruise control shows.

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

Accelerating



- Briefly push button **1** forward.

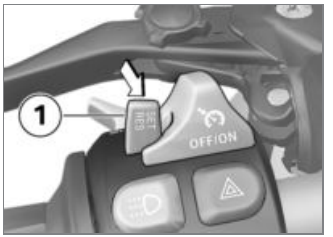
» Speed is increased by approx. 2 km/h each time you push the button.

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

» The motorcycle accelerates steplessly.

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

Decelerating



- Briefly push button **1** back.

	Reducing speed
Speed is reduced each time you push the button.	
2 km/h	

- Push button **1** back and hold it in this position.
- » The motorcycle decelerates steplessly.
- » The current speed is maintained and saved if button **1** is not pushed again.

Deactivate cruise control

- Brake, pull the clutch lever or turn the throttle twistgrip (close the throttle by turning the twistgrip back past the idle position) to deactivate the cruise-control system.
- » Telltale light for cruise control goes out.

Resuming former cruising speed

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

Opening the throttle does not deactivate the cruise-control system. If you release the twistgrip the motorcycle will decelerate only to the cruising speed saved in memory, even though you might have intended slowing to a lower speed.◀

SET Telltale light for cruise control shows.

Switching off cruise control

- Slide switch **1** to the left.
- » The system is deactivated.
- » Button **2** is disabled.

Spring preload

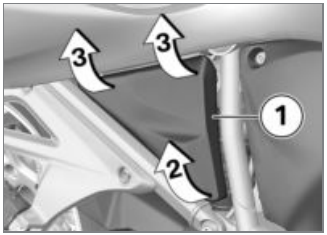
Adjustment

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

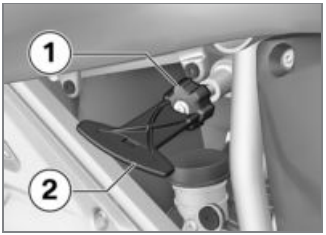
Adjusting spring preload for rear wheel

Adjusting spring preload while the motorcycle is being ridden can lead to accidents. Do not attempt to adjust spring preload unless the motorcycle is at a standstill.◀

- Always check that the ground is level and firm.



- Ease out bottom of cover **1** at position **2**.
- In order not to damage the cover or the mounts, disengage the cover at positions **3**.



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

- If you want to reduce spring preload, use tool **2** to turn knob **1** counter-clockwise.
- If you want to increase spring preload, use tool **2** to turn knob **1** clockwise.

Basic setting of spring preload, rear
– without Dynamic ESA OE

Basic setting of spring preload, rear
Turn the knob as far as it will go counter-clockwise. (One-up riding without luggage)
Turn the knob as far as it will go counter-clockwise, then back it off 10 turns in the clockwise direction. (One-up riding with luggage)
Turn the knob as far as it will go clockwise. (Two-up riding and luggage)◁

- Seat the cover in mount **2** and press it into mounts **1**.

Damping

Adjustment

Damping must be adapted to suit the surface on which the motorcycle is ridden and to suit spring preload.

– An uneven surface requires softer damping than a smooth surface.
– An increase in spring preload requires firmer damping, a reduction in spring preload requires softer damping.

Adjusting the damping characteristic for rear wheel

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Set the damping from the left-hand vehicle side.

- Turn setting screw **1** clockwise to increase the damping.
- Turn setting screw **1** in anti-clockwise direction to decrease damping.

Basic setting of rear-suspension damping characteristic
– without Dynamic ESA OE
Turn the knob as far as it will go in the clockwise direction, then back it off 6 clicks in the counter-clockwise direction (One-up riding without luggage)
Turn the knob as far as it will go in the clockwise direction, then back it off 4 clicks in the counter-clockwise direction (One-up riding with luggage)
Turn the knob as far as it will go in the clockwise direction, then back it off 2 clicks in the counter-clockwise direction (Passenger operation with luggage)◁

Electronic Suspension Adjustment

– with Dynamic ESA OE

Possible settings

Dynamic ESA enables you to adjust your motorcycle's suspension to suit the load and the road conditions.
Via ride height sensors, Dynamic ESA detects the movements in the chassis and suspension and responds to the same by adjusting the damper valves. The chassis and suspension will thus be adapted to the characteristics of the terrain.
You can set the damping to a harder (HARD) or softer (SOFT) setting than the basic setting (NORMAL).

– with Pro riding modes OE

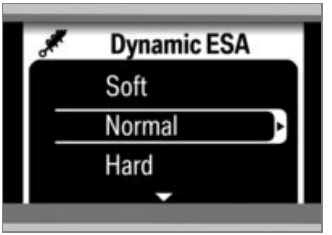
The suspension setting depends on the riding mode selected. The damping defined by the riding mode can be changed by the rider.

Adjusting the chassis and suspension

- Start the engine.

▷ You can adjust the damping characteristic while the motorcycle is on the move.◀

- Call up the ESA menu.

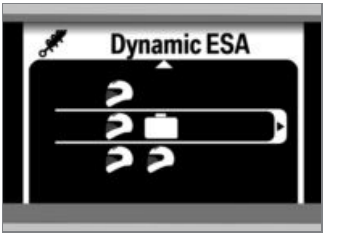


The possible settings for the damping characteristic appear on the display.

- `Soft`: Comfortable damping characteristic
- `Normal`: Normal damping characteristic
- `Hard`: Sporty damping characteristic

• Select the damping characteristic you want or move the cursor down to set the vehicle load.

The load cannot be set while the motorcycle is in motion.◀



The possible settings for vehicle load appear on the display.

One-up

One-up with luggage

Two-up (with luggage)

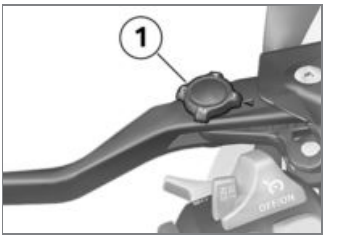
• Select the vehicle load variant you want.

» The suspension adjusts to suit the new setting and the Dynamic ESA reading changes accordingly. The symbols for vehicle load and damping characteristic are greyed while adjustment is in progress.

Clutch

Adjusting the clutch lever

Attempting to adjust the clutch lever while riding the motorcycle can lead to accidents. Do not attempt to adjust the clutch lever unless the motorcycle is at a standstill.◀



• Turn knob **1** to the desired position.

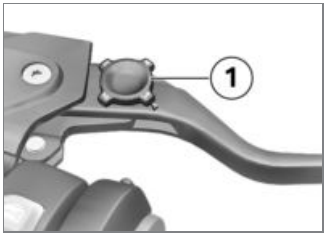
The adjuster is easier to turn if you push the clutch lever forward.◀

» Four settings are possible:
– Position 1: Smallest span between handlebar grip and clutch lever.
– Position 4: Largest span between handlebar grip and clutch lever.

Brakes

Adjusting the front brake lever

Attempting to adjust the handbrake lever while riding the vehicle can lead to accidents. Do not attempt to adjust the handbrake lever unless the motorcycle is at a standstill.◀



• Turn knob **1** to the desired position.

The adjuster is easier to turn if you push the brake lever forward.◀

» Four settings are possible:
– Position 1: Smallest span between handlebar grip and brake lever.
– Position 4: Largest span between handlebar grip and brake lever.

Hill Start Control

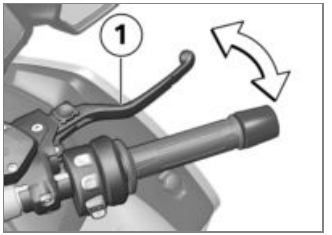
– with Hill Start Control OE

Hill Start Control Operation

Non-application of the brake by the Hill Start Control assistant if engine/ignition is switched off, side stand extended, a time limit exceeded (approx. 20 minutes) or in the event of a fault.
It is essential to apply the brakes manually to hold the vehicle.◀

Hill Start Control is purely a comfort system to facilitate holding the machine and pulling way on uphill gradients and should not be confused with a parking brake.◀

See the section entitled "Engineering details" for more information on Hill Start Control.◀



- Firmly pull and then release handbrake lever **1**.

Telltale light for Hill Start Control appears in the display.

» Hill Start Control is activated.

- Pull handbrake lever **1** again to switch off Hill Start Control.

Hill Start Control is deactivated automatically when the motorcycle pulls away.◀

- The 'General' waning light and the telltale light show briefly in the display and the telltale light for Hill Start Control goes out when the brakes are fully released.

» Hill Start Control is switched off.

Tyres

Checking tyre pressure

Incorrect tyre pressures impair the motorcycle's handling characteristics and increase the rate of tyre wear.
Always check that the tyre pressures are correct.◀

At high road speeds, tyre valves installed perpendicular to the wheel rim have a tendency to open as a result of centrifugal force.
Fit valve caps with rubber seals and screw them on firmly to prevent sudden deflation.◀

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

Tyre pressure, front
2.5 bar (tyre cold)

Tyre pressure, rear
2.9 bar (tyre cold)

If tyre pressure is too low:

- Correct tyre pressure.

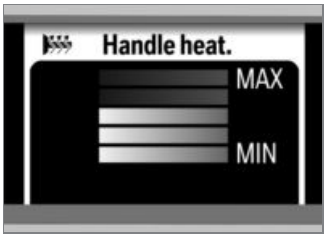
Heating

Operating the heated handlebar grips

- Start the engine.

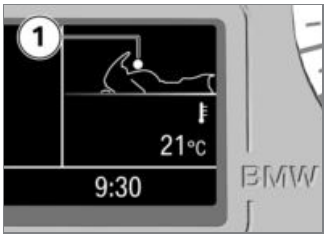
The heating in the heated handlebar grips can be activated only when the engine is running.◀

- Call up the `Handle heat.` menu.



The grips have five-stage heating. Stage five is for heating the grips quickly: it is advisable to switch back to a lower stage as soon as the grips are warm.

- Select the heating stage you want.



Symbol **1** appears on the display, indicating that the handlebar grip heating is ON.

If this warning symbol appears it tells you that the on-board system voltage is low. If applicable, the handlebar grip heating might have been temporarily switched off.

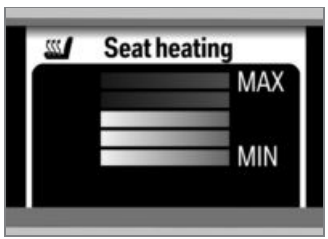
Front-seat heating

– with seat heating OE

- Start the engine.

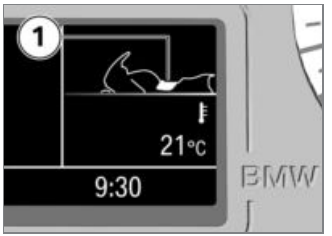
Seat heating can be activated only when the engine is running.◀

- Call up the `Seat heating` menu.



The front seat has five-stage heating. Stage five is for heating the seat quickly: it is advisable to switch back to a lower stage as soon as the seat is warm.

- Select the heating stage you want.



Symbol **1** appears on the display, indicating that the seat heating is ON.

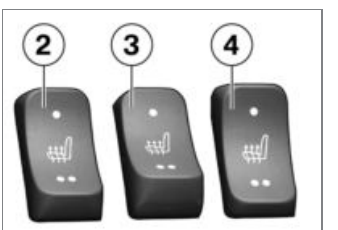
If this warning symbol appears it tells you that the on-board system voltage is low. If applicable, the seat heating might have been temporarily switched off.

Rear-seat heating

- Start the engine.

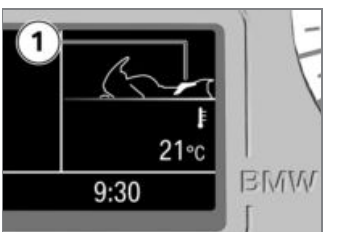
Seat heating can be activated only when the engine is running.◀

- Set switch **1** to the desired heating stage.



The rear seat has two-stage heating. Stage two is for heating the seat quickly: it is advisable to switch back to stage one as soon as the seat is warm.

– **2** Switch centred: Heating off.
– **3** One-dot section of switch pressed: 50 % heating power.
– **4** Two-dot section of switch pressed: 100 % heating power.



Symbol **1** appears on the display, indicating that the rear seat heating is ON.

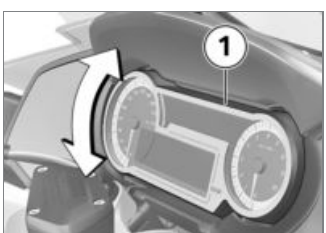
If this warning symbol appears it tells you that the on-board system voltage is low. If applicable, the seat heating

might have been temporarily switched off.

Adjusting instrument panel

Adjusting instrument panel

Do not attempt to adjust the position of the instrument panel unless the vehicle is at a standstill.◀



- Press instrument panel **1** firmly at top or bottom edge, as applicable, to move it to the desired position. Be sure to apply pressure midway along the edge in order to ensure that movement is the same at both sides.

Mirrors

Adjusting mirrors

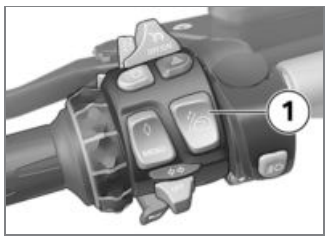
- Pivot the mirror to the correct position by pressing gently at the edge of the glass.

Windscreen

Adjusting windscreen

- Switch on the ignition.

» When you pull away the windscreen automatically returns to the position it was in before the ignition was switched off.



- Press top section of button **1** to raise the windscreen.
- Press bottom section of button **1** to lower the windscreen.
- Switch off the ignition.

» The windscreen automatically moves to the bottom limit position.

» If the windscreen encounters resistance before it reaches its limit position the pressure-sensitive finger guard system goes active. The windscreen is stopped and raised slightly.

After a delay of a few seconds the windscreen again attempts to move to the bottom limit position.

There is no guarantee that the pressure-sensitive finger guard system will function correctly if a windscreen that does not have BMW Motorrad approval is installed.

- Under these circumstances: Before switching off the ignition always check that there is nothing to obstruct movement of the windscreen.

Stowage compartment

Using left stowage compartment

- Use the ignition key to open or close lock **1** of the stowage compartment.
- To open the lid, push the unlocked lock barrel downwards.

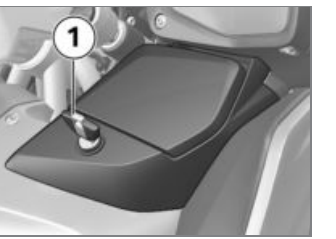
Temperatures inside the stowage compartments can be high, particularly in summer, and it is important to remember that high temperatures might damage objects stowed in the compartments. This applies in particular to electronic devices such as mobile phones and MP3 players.

Refer to the operating instructions of your electronic devices device for possible usage restrictions.◀

- In summer, do not place heat-sensitive objects in the stowage compartments.

Using right stowage compartment

– with audio system OE



- Use the ignition key to open or close lock **1** of the stowage compartment.

- To open the lid, push the unlocked lock barrel downwards.

Temperatures inside the stowage compartments can be high, particularly in summer, and it is important to remember that high temperatures might damage objects stowed in the compartments. This applies in particular to electronic devices such as mobile phones and MP3 players.
Refer to the operating instructions of your electronic devices device for possible usage restrictions.◀

- In summer, do not place heat-sensitive objects in the stowage compartments.

Central locking

– with central locking OE

Lock

- Switch on the ignition and press button **3**.
- Alternatively: Press button **1** on the remote control.

» The stowage compartment in the left side panel and the cases are locked.

– with audio system OE

» The stowage compartment in the right side panel is locked.◁

– with topcase OA

» The topcase is locked.◁

» These locks cannot subsequently be unlocked manually.

The locked symbol appears on the display.

– with anti-theft alarm (DWA) OE

» The functions of the remote control for the anti-theft alarm are described in the corresponding section.◁

Unlocking

- Switch on the ignition and press button **3**.
- Alternatively: Press button **2** on the remote control.

» The stowage compartment in the left side panel and the cases are unlocked.

» The stowage compartment in the right side panel is unlocked.

– with topcase OA

» The topcase is unlocked.◁

» Once a lock has been locked manually it subsequently has to be unlocked manually as well.

– with anti-theft alarm (DWA) OE

» The functions of the remote control for the anti-theft alarm are described in the corresponding section.◁

Emergency unlocking

If the central locking system refuses to unlock, you can open the cases, topcase and stowage compartments manually. The procedure is as follows:

- Removing cases (➠ 149).
- Open cases (➠ 148).

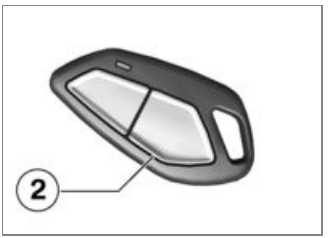
- First turn the key in the topcase lock 45° past the LOCK position, then turn it to the dot position and press in the lock barrel.

» The release lever pops open.

Logon of remote controls

If a remote control has been mislaid and a replacement acquired or if you are going to use an additional remote control, you must invariably log on all the remote controls in the set.

- Enable logon of the remote controls as follows:
- Switch on the ignition.



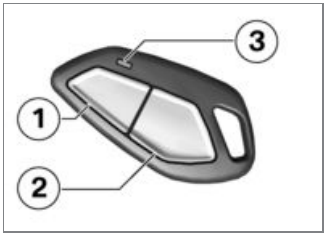
- Press button **2** on the remote control three times.

» One acoustic signal sounds.

- Within ten seconds, switch off the ignition.

You can now proceed to log on all the remote controls.

- Step through the following procedure with each remote control in turn:



- Press and hold down buttons **1** and **2** until LED **3** stops flashing.
» LED **3** flashes for approx. 10 seconds.
- Release buttons **1** and **2**.
» LED **3** lights up.
- Press button **1** or button **2**.
» One acoustic signal sounds, LED **3** goes out.

To complete logon:

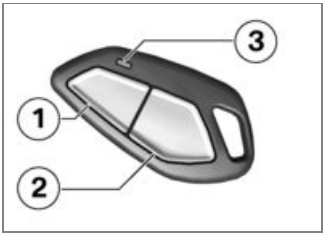
- Switch off the ignition.
» Three acoustic signals sound.
» Logon is also ended in the following situations:
– 4 remote control units have been logged on.
– No button pressed within approximately 30 seconds of logon on the first remote control.

Synchronise the remote controls

If the central locking system stops responding to the signals from a remote control, the unit in question has to be synchronised. This can happen, for example, if the buttons on the remote control were pressed too frequently while the remote control was out of range of the anti-theft alarm.

- The procedure for synchronising the remote controls is as follows:

- Switch on the ignition.

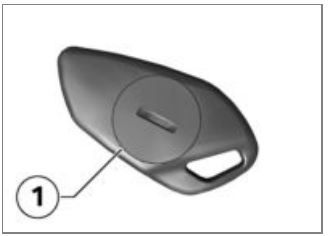


- Press and hold down buttons **1** and **2** until LED **3** stops flashing.
» LED **3** flashes for about ten seconds.
- Release buttons **1** and **2**.
» LED **3** lights up.
- Press button **1** or button **2**.
» LED **3** goes out.

Replacing battery of remote control

If you press a button on the remote control and the LED does not show or lights up only briefly:

- Replace the battery of remote control.



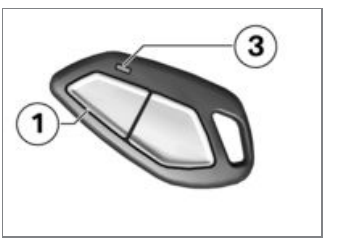
- Open lid of battery compartment **1**.
- Dispose of the old battery in accordance with all applicable laws and regulations; do not attempt to dispose of batteries as domestic waste.

Irreparable damage can be caused to the device if the wrong batteries are used or if polarity is reversed.
Use a battery compliant with the manufacturer's specifications. When inserting the battery, always make sure polarity is correct.◀

- Insert the new battery with the positive terminal up.

Battery type
CR 123 A

» The LED on the remote control lights up; the remote control has to be synchronised.



- Press button **1** twice.
» LED **3** flashes for a few seconds.
» The remote control is again ready for use.

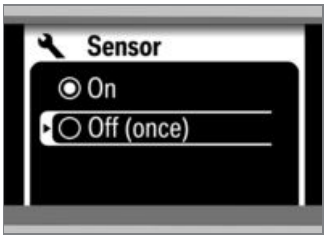
DWA

Deactivation without remote control

– with anti-theft alarm (DWA)[OE]

- Kill switch in operating position (run).
- Switch on the ignition.
» Turn indicators flash once.
» Confirmation tone sounds once (if programmed).
» Anti-theft alarm (DWA) is deactivated.
- To deactivate the motion sensor (for example if you are about to transport the motorcycle on a train and the swaying movement of the moving train could trip the alarm), call up the `Settings` menu before switching off the ignition.

- Select `Vehicle - Alarm syst. - Sensor`.



- Select `Off (once)` to switch off the motion sensor this once.
- Switch off the ignition.

» Activation takes 30 seconds to complete.
» Turn indicators flash three times.
» Confirmation tone sounds three times (if programmed).
» The anti-theft alarm (DWA) is active, the motion sensor is deactivated.

Activation without remote control

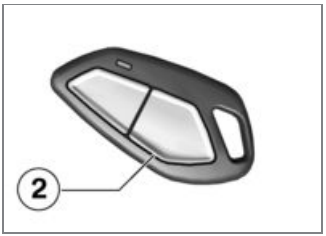
– with anti-theft alarm (DWA)[OE]

- If applicable, switch on automatic activation of the DWA anti-theft alarm after ignition OFF.
- DWA Adapting (➠ 81).
- Switch off the ignition.

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

Deactivation with remote control

– with anti-theft alarm (DWA)[OE]
– with central locking[OE]



- Press button **2** on the remote control once.

▷ See also the other functions of the remote control for the central locking system.◀

▷ If the alarm function is deactivated by the remote control and the ignition is not subsequently switched on, the alarm function automatically goes active again after 30 seconds if "Activation after ignition OFF" is programmed.◀

» Turn indicators flash once.
» Confirmation tone sounds once (if programmed).

» Anti-theft alarm (DWA) is deactivated.

Activation with remote control

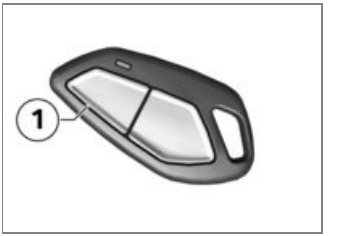
– with anti-theft alarm (DWA) OE
– with central locking OE

• Switch off the ignition.

• Press button **1** on the remote control twice.

▷ See also the other functions of the remote control for the central locking system.◀

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



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

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

Alarm

– with anti-theft alarm (DWA) OE

An alarm can be triggered by
– the motion sensor
– an attempt to use an unauthorised key to switch on the ignition
– disconnection of the DWA anti-theft alarm from the motorcycle's battery (DWA internal battery in the anti-theft alarm provides power - alarm tone only, the turn indicators do not flash)

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

is disconnected from the motorcycle's battery.

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

If an alarm was triggered while the motorcycle was unattended, the rider is notified accordingly by an alarm tone sounding once when the ignition is switched on. The anti-theft alarm telltale light then signals the reason for the alarm for one minute.
The meanings of the flash codes are as follows:
– Flashes 1x: Motion sensor 1
– Flashes 2x: Motion sensor 2
– Flashes 3x: Ignition switched on with unauthorised key
– Flashes 4x: Disconnection of the DWA anti-theft alarm from the motorcycle's battery
– Flashes 5x: Motion sensor 3

DWA Adapting

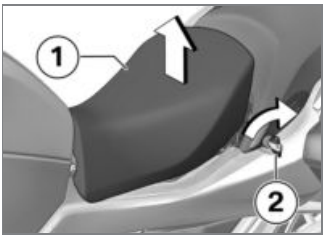
– with anti-theft alarm (DWA) OE

• Call up the `Settings` menu and select `Vehicle` - `Alarm syst.`.

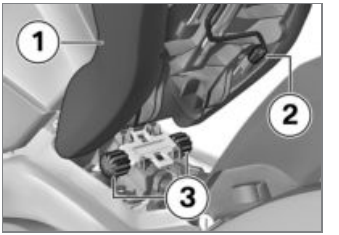
The following settings are available:
– `Automatic` - `On`: Anti-theft alarm is activated automatically when the ignition is switched off.
– `Automatic` - `Off`: Anti-theft alarm has to be activated with the remote control when the ignition is switched off.
– `Alarm tone`: Type of alarm tone.
– `Operat. tone` - `On`: Turn indicators flash and one tone sounds as confirmation when the alarm is switched on or off.
– `Operat. tone` - `Off`: Turn indicators flash as only confirmation when anti-theft alarm is switched on or off.
• Configure the desired settings using the Multi-Controller.

Front seat

Removing front seat



- Turn ignition key **2** clockwise.
- Slightly raise front seat **1** at the back.



- Work front seat **1** to the rear to disengage it from seat retainer bridge **3** and remove.

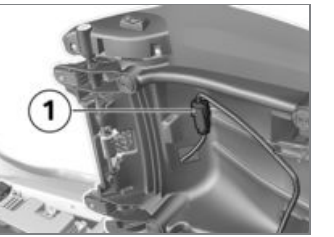
– with seat heating OE

- Disconnect plug **2** for the seat heating.◁

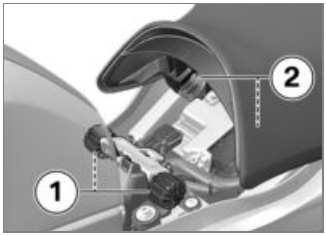
- Remove the front seat and place it, upholstered side down, on a clean, dry surface.

Installing front seat

– with seat heating OE



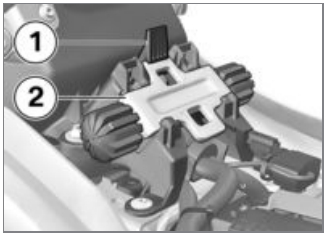
- Connect plug **1** of the seat heating.◁



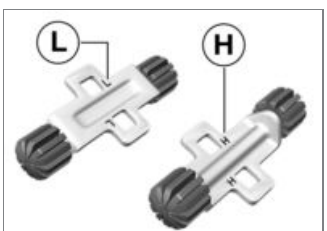
- Position the front seat with mounts **2** in rubber buffers **1** on left and right.
- Lower the rear of the front seat and engage the seat in the latching mechanism.

Adjusting front-seat height

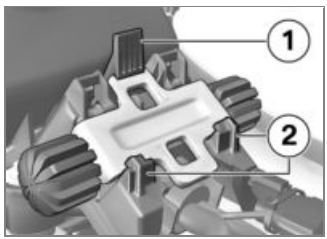
- Removing front seat (➠ 82).



- Push latch **1** forward and remove adjusting plate **2**.



- Turn the adjusting plate to position **L** for the lower seat height.
- Turn the adjusting plate to position **H** for the higher seat height.

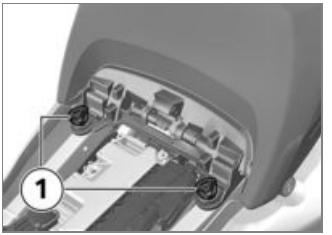


- Insert the adjusting plate in the desired position into mounts **2** and then push it into latch **1**.
- Installing front seat (➠ 82).

Rear seat

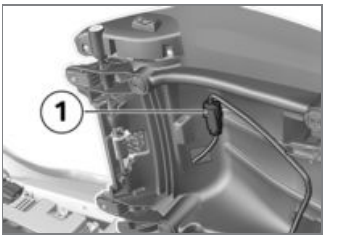
Removing rear seat

- Switch off the ignition.
- Removing front seat (➠ 82).



- Remove screws **1**.
- Pull the rear seat slightly forward and lift the seat slightly.

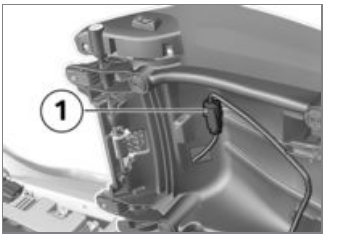
– with seat heating[OE]



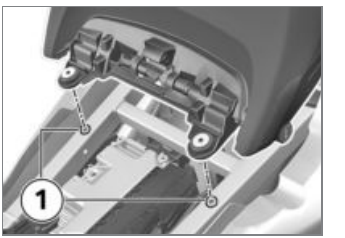
- Disconnect plug **1** of the seat heating and remove the rear seat.◁
- Place the seat, upholstered side down, on a clean surface.

Install the rear seat

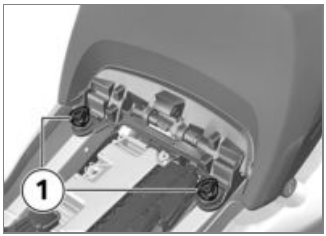
– with seat heating[OE]



- Connect plug **1** of the seat heating.◁



- Lay the rear seat on mounts **1**.



• Install screws **1**.

Riding

Safety instructions

Rider's equipment

Do not ride without the correct clothing! Always wear:
– Helmet
– Motorcycling jacket and trousers
– Gloves
– Boots

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

Loading

Overloading and imbalanced loads can adversely affect the motorcycle's handling. Do not exceed the permissible gross weight and be sure to comply with the instructions on loading.◀

- Adjusting spring preload setting and damping to the total weight.
- Ensure that the case volumes on the left and right are equal.
- Make sure that the weight is uniformly distributed between right and left.
- Pack heavy items at the bottom and toward the inboard side.
- Note the maximum permissible payload and the speed limit for riding with cases fitted, as stated on the label inside the case.
- Note the maximum permissible payload and the speed limit for riding with topcase fitted, as stated on the label inside the topcase.

– with tank rucksack OA

- Note the maximum permissible payload of the tank rucksack and the speed limit for riding with a tank rucksack on the motorcycle.

 Payload of tank rucksack
max 5 kg◁

Speed

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

Risk of poisoning

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

Inhaling the exhaust fumes therefore represents a health hazard and can even cause loss of consciousness with fatal consequences.
Do not inhale exhaust fumes.
Do not run the engine in an enclosed space.◀

Risk of burn injury

Engine and exhaust system become very hot when the vehicle is in use. There is a risk of burn injuries by contact with hot surfaces.
When you park the motorcycle make sure that no-one comes into contact with the engine and exhaust system.◀

Catalytic converter

If misfiring causes unburned fuel to enter the catalytic converter, there is a danger of overheating and damage.
For this reason, observe the following points:
– Do not run the fuel tank dry
– Do not attempt to start or run the engine with a spark-plug cap disconnected
– Stop the engine immediately if it misfires
– Use only unleaded fuel
– Comply with all specified maintenance intervals.

Unburned fuel will destroy the catalytic converter.
Note the points listed for protection of the catalytic converter.◀

Risk of overheating

Cooling would be inadequate if the engine were allowed to idle for a lengthy period with the motorcycle at a standstill: overheating would result. In extreme cases, the motorcycle could catch fire.
Do not allow the engine to idle unnecessarily. Ride away immediately after starting the engine.◀

Tampering

Tampering with motorcycle settings (e.g. electronic engine management unit, throttle valves, clutch) can cause damages to the components in question and lead to failure of safety-relevant functions. Damage caused in this way is not covered by the warranty.
Do not tamper with the vehicle in any way that could result in tuned performance.◀

Checklist

Use the following checklist to check important functions, settings and wear limits before you ride off:

Before each journey

– Brakes
– Brake-fluid levels, front and rear
– Coolant level
– Clutch function
– Damping characteristic setting and spring preload
– Tyre tread depth and tyre pressures
– Cases correctly installed and luggage secured.

At regular intervals

– Engine oil level (every refuelling stop)
– Brake-pad wear (every third refuelling stop).

Starting

Start engine

- Switch on the ignition.

» Pre-Ride-Check is performed (➠ 91)
» ABS self-diagnosis is performed (➠ 91)
» ASC self-diagnosis is performed (➠ 92)

- Select neutral or, if a gear is engaged, pull the clutch lever.

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

- When starting a cold engine at low ambient temperatures: disengage the clutch and turn the twistgrip slightly to open the throttle.

- Press starter button **1**.

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

» The engine starts.
» If the engine refuses to start, consult the troubleshooting chart in the section entitled "Technical data". (➠ 158)

Pre-Ride-Check

The instrument panel runs a test of the 'General' warning light when the ignition is switched on: this is the Pre-Ride-Check.

Phase 1

 lights up yellow.

» Needles of the instruments move once from their start-of-scale to end-of-scale positions.

Phase 2

 lights up red.

Phase 3

» 'General' warning light goes out and display switches to operational information.

If the 'General' warning light does not show:

 Some malfunctions cannot be indicated if the 'General' warning light cannot be displayed.
Check that the 'General' warning light comes on, and that it shows red and yellow.◀

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

ABS self-diagnosis

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

Phase 1

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

 flashes.

Phase 2

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

 flashes.

ABS self-diagnosis completed

» The ABS warning light goes out.

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

If an indicator showing an ABS fault appears when ABS self-diagnosis completes:

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

ASC self-diagnosis

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

Phase 1

» Test of the diagnosable system components with the vehicle at a standstill.

 slow-flashes.

Phase 2

» Test of the diagnosis-compatible system components while the motorcycle is on the move.

 slow-flashes.

ASC self-diagnosis completed

» The ASC warning light goes out.

- Check all the warning and telltale lights.

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

If an indicator showing an ASC fault appears when ASC self-diagnosis completes:

- You can continue to ride. Bear in mind that the ASC function is not available.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Running in

Engine

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

 Running-in speeds
<5000 min^{-1}

 First running-in check
500...1200 km

Brake pads

New brake pads have to bed down before they can achieve their optimum friction levels. You can compensate for this initial reduction in braking efficiency by exerting greater pressure on the levers.

 New brake pads can extend stopping distance by a significant margin.
Apply the brakes in good time.◀

Tyres

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

 New tyres do not provide full grip straight away. Wet roads and extremely sharp inclines pose a risk of accident.
Ride carefully and avoid extremely sharp inclines.◀

Shifting gear

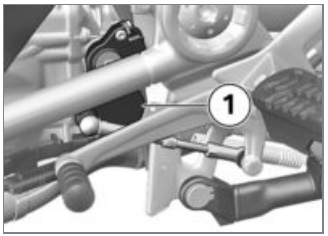
– with Pro shift assistant OE

Shift assistant Pro

The shift assistant assists upshifts and downshifts without the rider having to pull the clutch or close the throttle. This is not an automatic-shift system. The rider is the most important part of the system and decides when to shift gears.

 See the section entitled "Engineering details" for more information on the Pro shift assistant.◀

 Whenever the Pro shift assistant shifts gears, cruise control is automatically disengaged for safety reasons.◀



- You select the gear in the usual way by means of the foot-operated shift lever.

» Sensor **1** on the selector shaft registers the shift request and triggers shift assistance.

» When riding at a steady speed in a low gear at high engine rpm, an attempt to shift gear without pulling the clutch can cause a severe load-change reaction. BMW Motorrad recommends disengaging the clutch for shifts in these circumstances. It is advisable to avoid using the shift assistant at engine speeds close to the limits at which the governor cuts in to limit engine rpm.

» Shift assistance is not available in the following situations:

– with the clutch lever pulled
– shift lever not in its initial position
– upshifts with the throttle valve closed (coasting) and when slowing.

- After a gearshift, the shift lever has to be fully released before another gearshift with the shift assistant can take place.

Brakes

How can stopping distance be minimised?

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

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

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

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

Descending mountain passes

There is a danger of the brakes fading if you use only the rear brakes when descending mountain passes. Under extreme conditions, the brakes could overheat and suffer severe damage.
Use both front and rear brakes, and make use of the engine's braking effect as well.◀

Wet and dirty brakes

Wetness and dirt on the brake discs and the brake pads diminish braking efficiency.
Delayed braking action or poor braking efficiency must be reckoned with in the following situations:
– Riding in the rain or through puddles of water.
– After the vehicle has been washed.
– Riding on salted or gritted roads.
– After work has been carried on the brakes, due to traces of oil or grease.
– Riding on dirt-covered surfaces or off-road.

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

Parking your motorcycle

Side stand

• Switch off the engine.

If the ground is soft or uneven, there is no guarantee that the motorcycle will rest firmly on the stand.
Always check that the ground under the stand is level and firm.◀

The side stand is designed to support only the weight of the vehicle.
Do not lean or sit on the vehicle with the side stand extended.◀

• Extend the side stand and prop the motorcycle on the stand.
• If the camber of the roadway permits, turn the handlebars all the way to the left.
• On a gradient, the motorcycle should always face uphill; select 1st gear.

Centre stand

• Switch off the engine.

If the ground is soft or uneven, there is no guarantee that the motorcycle will rest firmly on the stand.

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

Excessive movements could cause the centre stand to retract, and the vehicle would topple in consequence.
Do not lean or sit on the vehicle with the centre stand extended.◀

- Extend the centre stand and lift the motorcycle onto the stand.
- On a gradient, the motorcycle should always face uphill; select 1st gear.

Refuelling

Fuel grade

For optimum fuel consumption, fuel should be sulphur-free or with the lowest sulphur content possible.

Leaded fuel will destroy the catalytic converter.
Do not attempt to run the vehicle on leaded fuel or fuel with metallic additives, e.g. manganese or iron.◀

Ethanol E85 can cause damage to the engine and the fuel-management system.
Do not attempt to run the engine on ethanol E85, i.e. a fuel with an ethanol content of 85 %, or flex fuel.◀

- You can run the engine on fuel with a maximum ethanol content of 10 %, i.e. E10.

Recommended fuel grade
Super unleaded (max. 10 % ethanol, E10) 95 ROZ/RON 89 AKI

Refuelling

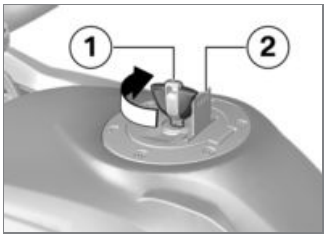
Fuel is highly flammable. A naked flame close to the fuel tank can cause a fire or explosion.
Do not smoke. Never bring a naked flame near the fuel tank.◀

Fuel expands when hot. Fuel escaping from an overfilled tank could make its way onto the road surface. This could cause a fall.
Do not overfill the fuel tank.◀

Fuel attacks plastics, which become dull or unsightly.
Wipe plastic parts immediately after contact with fuel.◀

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

The volume of the tank can be utilised to the full only when the motorcycle is propped on its side stand.◀



- Open the protective cap **2**.
- Use ignition key **1** to unlock fuel filler cap by turning it clockwise, and flip the cap open.

- Refuel with fuel of the grade stated above; do not fill the tank past the bottom edge of the filler neck.

▷ If filling occurs after the fuel level has gone below the reserve limit, the amount filled must be greater than the reserve amount for the new fuel level to be recognised and the warning light to switch off.◀

▷ The "usable fuel capacity" specified in the technical data is the quantity that the fuel tank could hold if it had been run dry and the engine had cut out due to a lack of fuel.◀

Usable fuel capacity
approx. 25 l

Reserve fuel
approx. 4 l

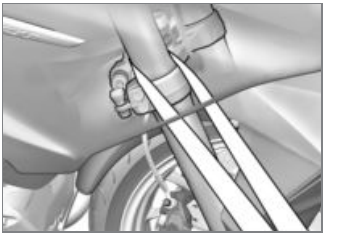
- Press the fuel tank cap down firmly to close.
- Remove the ignition key and close the protective cap.

Securing motorcycle for transportation

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

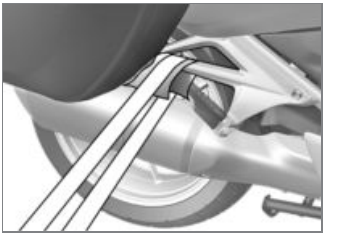
⚠ The motorcycle can topple and fall on its side.
Secure motorcycle against toppling; this is best done with the support of a 2nd person.◀

- Push the motorcycle onto the transportation flat and hold it in position: do not place it on the side stand or centre stand.



⚠ Risk of damaging components.
Take care not to trap components such as brake lines or wires.◀

- Pass the straps on left and right through the fork bridge and strap the motorcycle down.



- At the rear, secure the straps to the rear footrests on both sides and tighten the straps.
- Tension all the straps uniformly to hold the vehicle securely.

Engineering details

Riding mode

Riding mode selection

Three riding modes enable the motorcycle's characteristics to adapt to the prevailing weather conditions, the road and traffic, and the rider's style of riding:
– RAIN
– ROAD

– with Pro riding modes OE
– DYNAMIC

Each of these modes produces perceptible differences in the way the motorcycle behaves. ASC can be switched off in each mode; the explanations below invariably refer to conditions with the system switched ON. The mode last selected is automatically reactivated after the ignition has been switched off and then on again.

Broadly speaking: The more dynamic the selected mode, the more ASC assistance is reduced. Consequently, you must always bear the following in mind with regard to your selection of a ride mode: the more dynamic the setting, the greater the challenge to your riding skill.

Throttle response:
– in the RAIN mode: Restrained
– in the ROAD mode: Direct

– with Pro riding modes OE
– in the DYNAMIC mode: Dynamic

RAIN mode

The ASC system intervenes early enough to prevent the rear wheel from spinning. On road surfaces with high to medium grip (dry and wet asphalt to dry cobblestones) the motorcycle remains very stable; movements of the tail are clearly perceptible only on slippery road surfaces (wet bitumen or wet cobblestones).

ROAD mode

ASC system intervention is later than in RAIN mode. On road surfaces with high to medium grip (dry and wet asphalt to dry cobblestones) the motorcycle remains stable. Slight rear-wheel drift is perceptible. Movements of the tail are clearly perceptible on slippery road surfaces (wet bitumen or wet cobblestones).

– with Pro riding modes OE

DYNAMIC mode

The DYNAMIC mode is the sportiest mode.
ASC system intervention is even later, which means that even on dry asphalt drifting is possible under sharp acceleration when cornering.

– with Dynamic ESA[OE]

Dynamic ESA

– In the RAIN, ROAD and DYNAMIC modes, the damping variants HARD, NORMAL and SOFT can be selected.

Basic setting for:
– RAIN: SOFT
– ROAD: NORMAL

– with Pro riding modes[OE]
– DYNAMIC: HARD

Changing the riding modes

A mode change involving functions in the engine management system and the ASC system is possible only when drive torque is not applied to the rear wheel. In order to achieve this state,
– the motorcycle must be at a standstill with the ignition switched on,

or

– the throttle twistgrip must be in the fully closed position.

Shift assistant Pro

– with Pro shift assistant[OE]

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

Advantages

– 70 – 80% of all gearshifts on a trip can be done without using the clutch.
– Less relative movement between rider and passenger because the shift pauses are shorter.
– It is not necessary to close the throttle valve when shifting under acceleration.
– When braking and downshifting (throttle valve closed), engine speed is adjusted by blipping the throttle.
– Shift time is shorter than a gearshift with clutch actuation.

In order for the system to identify a request for a gearshift, the rider has to move the shift lever from its idle position in the desired direction against the force of the spring through a certain "overtravel" at ordinary speed or rapidly and keep the shift lever in this position until the gearshift is completed. It is not necessary to increase the force applied to the gearshift lever while shifting is in progress. Once the gearshift has completed the shift lever has to be fully released before another gearshift with the Pro shift assistant can take place. When shifting gears with the shift assistant, the rider has to keep load state

(throttle twistgrip position) constant before and during the gearshift. A change in the position of the throttle twistgrip during a gearshift can cause the function to abort and/or lead to a missed shift. The shift assistant provides no assistance for the gearshift if the rider declutches.

Downshifting

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

 Maximum engine speed
max 9000 min^{-1}

Upshifting

– The shift assistant provides no assistance if engine speed drops below idle during an upshift.

 Idle speed
1150 min^{-1} (Engine at regular operating temperature)

Hill Start Control

– with Hill Start Control[OE]

Hill Start Control is a pullaway assistant that operates on the partially integrated ABS system to prevent the vehicle from rolling back on a gradient without the rider having to keep pressure applied to the brake lever. When Hill Start Control is activated pressure is built up in the rear brake system to keep the machine at a standstill on a gradient. The holding pressure built up in the brake system depends on the steepness of the gradient.

BMW Motorrad Integral ABS

Partially integral brakes

Your motorcycle is equipped with partially integral brakes. Both front and rear brakes are applied when you pull the handbrake lever. The footbrake lever acts only on the rear brake.
When actively intervening in the braking process, BMW Motorrad Integral ABS adapts braking-force distribution between front and rear brakes to suit the load on the motorcycle ABS.

The integral function means that it is not possible to make the rear wheel spin with the front brake applied (Burn Out). Attempted burn-outs can result in damage to the rear brake and the clutch.
Do not attempt Burn Out.◀

How does Integral ABS work?

The amount of braking force that can be transferred to the road depends on factors that include the coefficient of friction of the road surface. Loose stones, ice and snow or a wet road all have much lower coefficients of friction than a clean and dry asphalt surface. The lower the coefficient of friction, the longer the braking distance.
If the rider increases braking pressure to the extent that braking force exceeds the maximum transferable limit, the wheels start to lock and the vehicle loses its directional stability; a fall is imminent. Before this situation can occur, ABS intervenes and adapts braking pressure to the maximum transferable braking force. The wheels continue to turn and the driving stability is retained irrespective of the road condition.

What are the effects of surface irregularities?

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

What feedback does the rider receive from the Integral ABS?

If the ABS has to reduce braking force on account of the circumstances described above, vibration is perceptible through the handbrake lever.
When the handbrake lever is pulled, brake pressure is also built up at the rear wheel by the integral function. If the brake pedal is depressed after the handbrake lever is pulled, the brake pressure built up beforehand is perceptible as counter-pressure sooner than is the case when the brake pedal is depressed either before or at the same time as the brake lever is pulled.

Rear wheel lift

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

⚠ Severe braking can cause the rear wheel to lift off the ground.
When you brake, bear in mind that ABS control cannot always be relied on to prevent the rear wheel from lifting clear of the ground.◀

What is the design baseline for Integral ABS ?

Within the limits imposed by physics, the BMW Motorrad Integral ABS ensures directional stability on any surface. The system is not optimised for special requirements that apply under extreme competitive situations off-road or on the track. The driving behaviour should be adapted to actual driving skills and the road conditions.

Special situations

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

- Heating up with the motorcycle on the centre stand or an auxiliary stand, engine idling or with a gear engaged.
- Rear wheel locked by the engine brake for a lengthy period, for example while descending on a loose or slippery surface.

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

What significance devolves on regular maintenance?

Invariably, a technical system cannot perform beyond the abilities dictated by its level of maintenance.
In order to ensure that the BMW Motorrad Integral ABS is always maintained in optimum condition, it is essential for you to comply strictly with the specified inspection intervals.◀

Reserves for safety

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

Take care when cornering. When you apply the brakes on a corner, the motorcycle's weight and momentum take over and even BMW Motorrad ABS is unable to counteract their effects. Invariably, the rider bears responsibility for assessing road and traffic conditions and adopting his or her style of riding accordingly.
Do not take risks that would negate the additional safety offered by this system.◀

BMW Motorrad ASC

How does ASC work?

The BMW Motorrad ASC system compares the speed of rotation of the front wheel and the rear wheel. The differential is used to compute slip as a measure of the reserves of stability available at the rear wheel. If slip exceeds a certain limit, the engine control intervenes and adapts the engine torque accordingly.

What is the design baseline for ASC?

BMW Motorrad ASC is designed as an assistant system for the rider and for use on public roads. The extent to which the rider affects ASC control can be considerable (weight shifts when cornering, items of luggage loose on the motorcycle), especially when style of riding takes rider and machine close to the limits imposed by physics.
The system is not optimised for special requirements that apply under extreme competitive situations off-road or on the track. The BMW Motorrad ASC system can be deactivated in these cases.

Even ASC is constrained by the laws of physics. Invariably, the rider bears responsibility for assessing road and traffic

conditions and adopting his or her style of riding accordingly. Do not take risks that would negate the additional safety offered by this system.◀

Special situations

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

The speeds of the front and rear wheels are compared as one means of detecting the rear wheel's incipient tendency to spin or slip sideways. If the system registers implausible values for a lengthy period the ASC function is deactivated for safety reasons and an ASC fault message is issued. Self-diagnosis has to complete before fault messages can be issued.
The following exceptional riding conditions can lead to an automatic shutdown of the BMW Motorrad ASC:

- Riding for a lengthy period with the front wheel lifted off the ground (Wheelie) with ASC deactivated.
- Rear wheel rotating with the vehicle held stationary by applying the front brake (Burn Out).
- Heating up with the motorcycle on the centre stand or an auxiliary stand, engine idling or with a gear engaged.

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

 Minimum speed for activation of ASC
min 10 km/h

Slip can be increased by very-heavy-duty massive-bar tyres, with the result that ASC intervention occurs before optimum forward acceleration is achieved. Under these circumstances, BMW Motorrad ASC should be deactivated.

If the front wheel lifts clear of the ground under severe acceleration, ASC reduces engine torque until the front wheel regains contact with the ground.
Under these circumstances, BMW Motorrad recommends rolling the throttle slightly closed so as to restore stability with the least possible delay.

When riding on a slippery surface, never snap the throttle twistgrip fully closed without pulling the clutch at the same time. Engine braking torque can cause the rear wheel to lock, with a corresponding loss of stability. The BMW Motorrad ASC is unable to control a situation of this nature.

RDC

– with tyre pressure monitoring (RDC)[OE]

Function

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

Minimum speed for transmission of the RDC measured values:

min 10 km/h

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

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

min 15 min

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

Tyre-pressure ranges

The RDC control unit differentiates between three tyre-pressure ranges, all of which are parameterised for the motorcycle:

– Tyre pressure within permitted tolerance.
– Tyre pressure close to limit of permitted tolerance.
– Tyre pressure outside permitted tolerance.

Temperature compensation

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

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

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

Pressure adaptation

Compare the RDC value on the multifunction display with the value in the table on the inside cover of the Rider's Manual.

Then use the air line at a service station to compensate for the difference between the RDC reading and the value in the table.

 Example
According to the Rider's Manual, the tyre pressure should be:
2.5 bar
The multifunction display shows the following reading:
2.3 bar
So pressure is low by:
0.2 bar
The gauge on the air line shows:
2.4 bar
You must now increase tyre pressure until the value is:

 Example
2.6 bar

ESA

– with Dynamic ESA OE

Possible settings

Dynamic ESA enables you to adjust your motorcycle's suspension to suit the load and the road conditions.
Via ride height sensors, Dynamic ESA detects the movements in the chassis and suspension and responds to the same by adjusting the damper valves. The chassis and suspension will thus be adapted to the characteristics of the terrain.
You can set the damping to a harder (HARD) or softer (SOFT) setting than the basic setting (NORMAL).

– with Pro riding modes [OE]
The suspension setting depends on the riding mode selected. The damping defined by the riding mode can be changed by the rider.

Maintenance

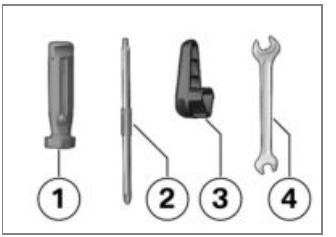
General instructions

The "Maintenance" chapter describes straightforward procedures for checking and replacing certain wear parts.
Special tightening torques are listed as applicable. The tightening torques for the threaded fasteners on your vehicle are listed in the section entitled "Technical data".
Further information on maintenance and repair work is available from your BMW Motorrad authorised dealer in the form of a DVD.

Some of the work requires special tools and a thorough knowledge of the technology involved. If you are in doubt, consult a specialist workshop, preferably your authorised BMW Motorrad dealer.

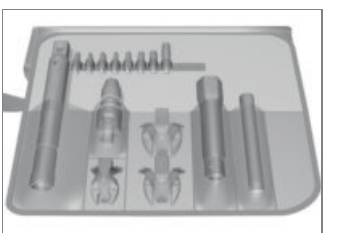
Toolkit

Standard toolkit



1 Screwdriver handle
2 Reversible screwdriver blade
Phillips PH1 and Torx T25
– Removing front seat (➠ 82).
– Removing and installing body panels.
3 Tool for oil cap
– Topping up the engine oil (➠ 114).
– Removing rear seat (➠ 83).
– Install the rear seat (➠ 84).
4 Open-ended spanner
Width across flats 8/10

Service toolkit



BMW Motorrad has assembled a service toolkit that is ideal for carrying out extended service work (e.g. removing and installing wheels) on this motorcycle. You

can obtain the tools set from your authorised BMW Motorrad dealer.

Engine oil

Checking engine oil level

The oil level varies with the temperature of the oil. The higher the temperature, the higher the level of oil in the sump. Checking the oil level with the engine cold or after no more than a short ride will lead to misinterpretation of oil level.
In order to ensure that the engine oil level is read correctly, check the oil level only after at engine operating temperature.◀

- Switch off the engine when it is at operating temperature.
- Make sure the ground is level and firm and place the motorcycle on its centre stand.
- Wait five minutes for the oil to drain into the oil pan.

- Check the oil level in oil-level indicator **1**.

Engine oil, specified level
Between MIN and MAX marks

If the oil level is below the MIN mark:

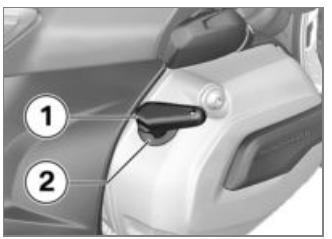
- Topping up the engine oil (➠ 114).

If the oil level is above the MAX mark:

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

Topping up the engine oil

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



- Wipe the area around the filler neck clean.
- Use oil filler cap tool **1** to remove cap **2** from the engine-oil filler neck.
- Engage oil filler cap tool **1** in cap **2** of the engine-oil filler neck and turn the tool counterclockwise to remove the cap.
- Checking engine oil level (➠ 113).

Damage to the engine can result if it is operated without enough oil, but the same also applies if the oil level is too high.
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 0.95 l (Difference between MIN and MAX)

- Checking engine oil level (➠ 113).
- Install cap **2** of the oil filler neck.

Brake system

Checking function of brakes

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

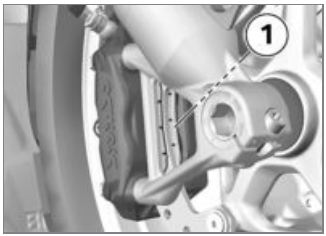
If pressure points are not clearly perceptible:

Incorrect working practices endanger the reliability of the brakes.
Have all work on the brake system undertaken by trained and qualified specialists.◀

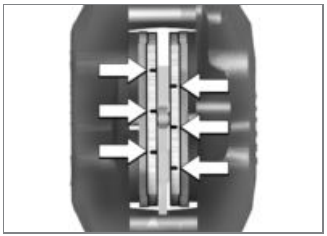
- Have the brakes checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Checking front brake pad thickness

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



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



Brake-pad wear limit, front
1.0 mm (Friction pad only, without backing plate. The wear indicators (grooves) must be clearly visible.)

If the wear indicating marks are no longer clearly visible:

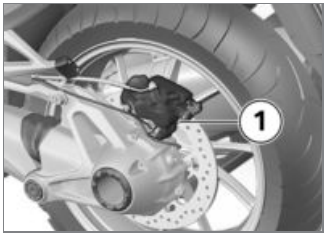
Brake pads worn past the minimum permissible thickness can cause a reduction in braking efficiency and under certain circumstances they can cause damage to the brake system.

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

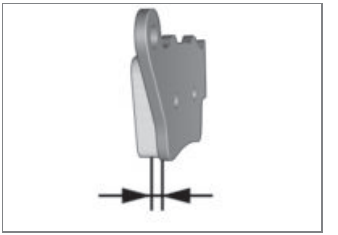
- Have the brake pads replaced by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Checking rear brake pad thickness

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



- Visually inspect the brake pads to ascertain their thickness. Viewing direction: between spray guard and rear wheel toward brake pads **1**.



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

If the wear limit has been reached:

Brake pads worn past the minimum permissible thickness can cause a reduction in braking efficiency and under certain circumstances they can cause damage to the brake system.

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

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

Checking brake-fluid level, front brakes

A low fluid level in the brake reservoir can allow air to penetrate the brake system. This significantly reduces braking efficiency.

Check the brake-fluid level at regular intervals.◀

- Make sure the ground is level and firm and place the motorcycle on its centre stand.
- Move the handlebars to the straight-ahead position.

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

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

Brake fluid level, front
Brake fluid, DOT4
It is impermissible for the brake fluid level to drop below the MIN mark. (Brake-fluid reservoir horizontal, motorcycle upright)

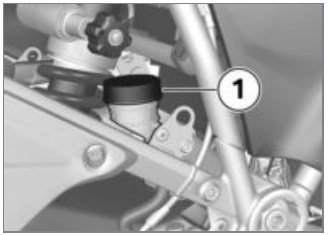
If the brake fluid level drops below the permitted level:

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

Checking the brake-fluid level, rear brakes

⚠ A low fluid level in the brake reservoir can allow air to penetrate the brake system. This significantly reduces braking efficiency.
Check the brake-fluid level at regular intervals.◀

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



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

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

Brake fluid level, rear
Brake fluid, DOT4
It is impermissible for the brake fluid level to drop below the MIN mark. (Brake-fluid reservoir horizontal, motorcycle upright)

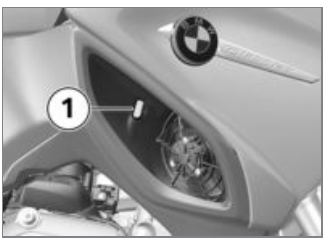
If the brake fluid level drops below the permitted level:

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

Coolant

Check coolant level

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Allow the engine to cool down.



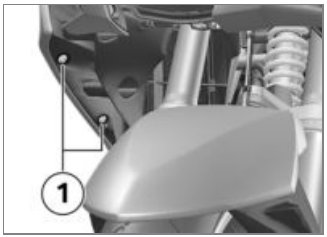
- Check the coolant level in expansion tank **1**.

	Specified coolant level
Between MIN and MAX marks on the expansion tank (engine cold)	

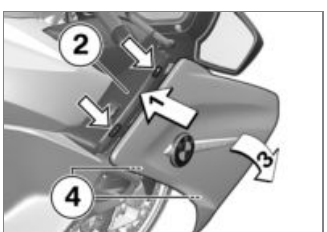
If the coolant drops below the permitted level:

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

Top up coolant



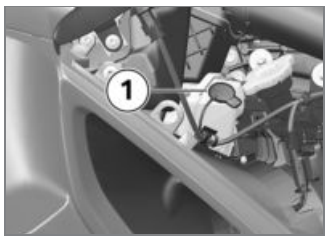
- Remove screws **1**.



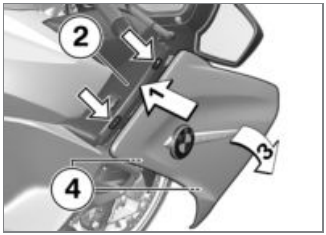
- Ease side panel **3** out at the front.

» Lugs **4** are disengaged from the grommets.

- Work side panel **1** up and clear of side trim **2** and remove, noting the lugs **arrows**.

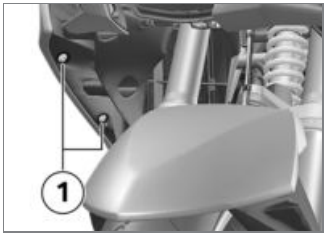


- Open cap **1** of the coolant expansion tank and top up the coolant to the specified level.
- Check coolant level (➠ 118).
- Close the cap of the coolant expansion tank.



- Hold side panel **1** ready with the lugs in position at side trim **2**.
- Pivot side panel **3** inward.

» Lugs **4** are pressed into the grommets.



- Install screws **1**.

Clutch

Checking clutch function

- Pull the clutch lever.

» The pressure point must be clearly perceptible.

If the pressure point is not clearly perceptible:

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

Rims and tyres

Checking rims

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Visually inspect the rims for defects.
- Have any damaged rims inspected by a specialist workshop and replaced if necessary, preferably by an authorised BMW Motorrad dealer.

Checking tyre tread depth

Your motorcycle's handling and grip can be impaired even before the tyres wear to the minimum tyre tread depth permitted by law.

Have the tyres changed in good time before they wear to the minimum permissible tread depth.◀

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

▷ Wear indicators are built into the main profile grooves on each tyre. The tyre is worn out when the tyre tread has worn down to the level of the marks. The locations of the marks are indicated on the edge of the tyre, e.g. by the letters TI, TWI or by an arrow.◀

If the tyre tread is worn to minimum:

- Replace tyre or tyres, as applicable.

Wheels

Tyre recommendation

For each size of tyre, BMW Motorrad tests and classifies as roadworthy certain makes. BMW Motorrad cannot assess the suitability or provide any guarantee of road safety for other tyres.
BMW Motorrad recommends using only tyres tested by BMW Motorrad.
Detailed information is available from your authorised BMW Motorrad dealer or in the internet at **www.bmw-motorrad.com**.

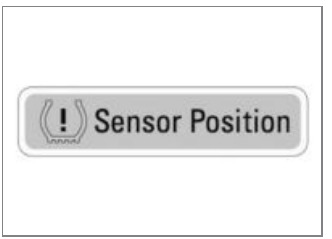
Effect of wheel size on frame and suspension control systems

Wheel size is very important as a parameter for the frame and suspension control systems ABS and ASC. In particular, the diameter and the width of a vehicle's wheels are programmed into the control unit and are fundamental to all calculations. Any change in these influencing variables, caused for example by a switch to wheels other than those installed ex-works, can have serious effects on the performance of the control systems.
The sensor rings are essential for correct wheel-speed calculation, and they too must match the motorcycle's control systems and consequently cannot be changed.
If you decide that you would like to fit non-standard wheels to your motorcycle, it is very important to consult a specialist workshop beforehand, preferably an authorised BMW Motorrad dealer. In some cases, the data programmed into the control

units can be changed to suit the new wheel sizes.

RDC adhesive label

– with tyre pressure monitoring (RDC) OE

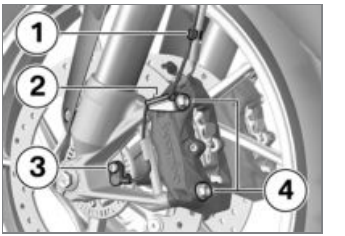


Incorrect tyre fitting can damage the RDC sensors. Be sure to explain to the authorised BMW Motorrad dealer or the specialist workshop that the wheel is fitted with an RDC sensor.◀

If the motorcycle is equipped with RDC, each wheel rim bears an adhesive label indicating the position of the RDC sensor. When a tyre is being changed, special care must be taken not to damage the RDC sensor. Be sure to draw the attention of the authorised BMW Motorrad dealer or specialist workshop to the fact that the wheel is fitted with an RDC sensor.

Removing front wheel

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

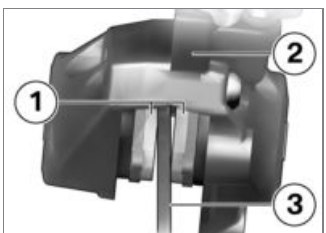


- Disengage the ABS sensor cable from retaining clips **1** and **2**.
- Remove screw **3** and remove the ABS sensor from its bore.
- Mask off the parts of the wheel rim that could be scratched in the process of removing the brake callipers.

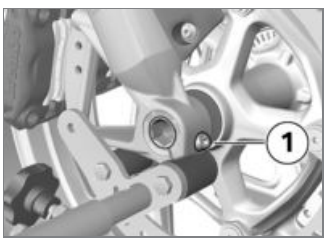
Once the calipers have been removed, there is a risk of the brake pads being pressed together to the extent that they cannot be slipped back over the brake disc on reassembly.

Do not operate the handbrake lever when the brake calipers have been removed.◀

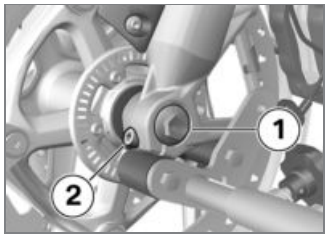
- Remove securing screws **4** of the left and right brake calipers.



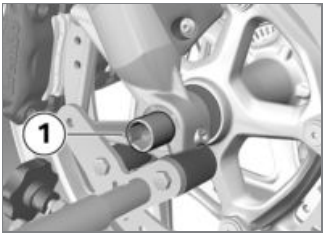
- Force the brake pads **1** slightly apart by rotational movement of the brake calliper **2** against brake disc **3**.
- Carefully pull the brake callipers back and out until clear of the brake discs.
- Lift the front of the motorcycle until the front wheel is clear of the ground, preferably using a BMW Motorrad front-wheel stand.
- Installing the front-wheel stand (➠ 127).



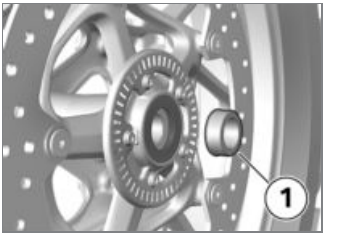
- Remove right-hand axle clamping screw **1**.



- Remove screw **1**.
- Remove left-hand axle clamping screw **2**.
- Press quick-release axle slightly toward the inside, so as to be better able to grip it on the right-hand side.



- Withdraw quick-release axle **1**, support the front wheel when doing this.
- Set down front wheel and roll forwards out of the front suspension.

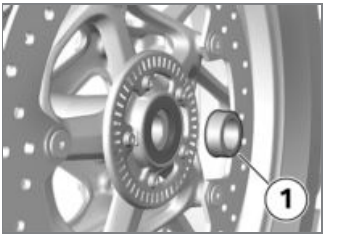


- Remove spacer bush **1** from the wheel hub.

Installing front wheel

Possible malfunctions when ABS and ASC intervene, if any other wheel but the series standard wheel is installed.
See the information on the effect of wheel size on the ABS and ASC systems at the start of this chapter.◀

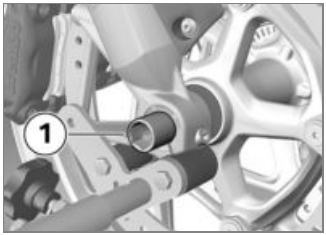
Threaded fasteners not tightened to the specified torque can work loose or their threads can suffer damage.
Always have the security of the fasteners checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀



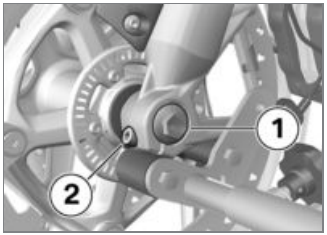
- Slip spacing bushing **1** into the wheel hub on the left-hand side.

The front wheel must be installed right way round to rotate in the correct direction.
Note the direction-of-rotation arrows on the tyre or the wheel rim.◀

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



- Lift front wheel and fit quick-release axle **1**.
- Remove front-wheel stand and firmly compress front forks several times. Do not operate front break lever.
- Installing the front-wheel stand (➠ 127).

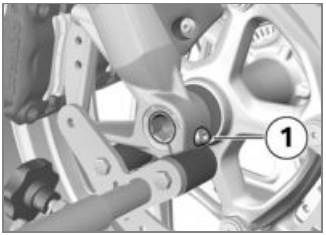


- Install screw **1** and tighten to specified torque. Counter-hold quick-release axle on the right-hand side.

Quick-release axle in telescopic forks
30 Nm

- Tighten left-hand axle clamping screw **2** to the specified torque.

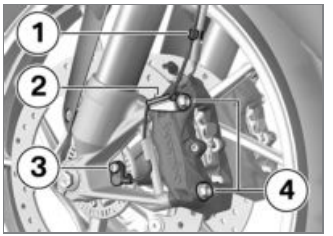
Clamping screw for quick-release axle in telescopic fork
19 Nm



- Tighten right axle clamping screw **1** to the specified torque.

Clamping screw for quick-release axle in telescopic fork
19 Nm

- Removing the front-wheel stand.
- Place brake calipers left and right onto the brake discs.



- Install securing screws **4** on left and right and tighten to specified tightening torque.

	Brake caliper on telescopic fork
38 Nm	

- Remove the adhesive tape from the wheel rim.

Braking efficiency is impaired if the brake pads are not correctly bedded against the discs.
Before riding off, always check that the brakes bite as soon as the brake lever is pulled or the brake pedal depressed.◀

- Operate the brake several times until the brake pads are bedded.
- Seat the ABS sensor line in retaining clips **1** and **2**.
- Insert the ABS sensor into its bore and install screw **3**.

Removing rear wheel

- Make sure the ground is level and firm and place the motorcycle on its centre stand.
- Engage first gear.

Risk of burns from hot exhaust system.
Do not touch hot parts of the exhaust system.◀

- Allow rear silencer to cool down.

- Remove studs **1** from the rear wheel, while supporting the wheel.
- Roll the rear wheel out toward the rear.

Installing the rear wheel

Possible malfunctions when ABS and ASC intervene, if any other wheel but the series standard wheel is installed.
See the information on the effect of wheel size on the ABS and ASC systems at the start of this chapter.◀

Threaded fasteners not tightened to the specified torque can work loose or their threads can suffer damage. Always have the security of the fasteners checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

- Seat the rear wheel on the rear-wheel adapter.

The wheel studs for the spoked wheel and the cast wheel are of different lengths. Mixing up sets of studs or using the wrong studs would mean that the rear wheel would not be correctly secured and this, in turn, could result in an accident. Use only wheel studs with the same, approved length code. Do not lubricate the wheel studs.◀

- Install wheel studs **1** and tighten to specified torque.

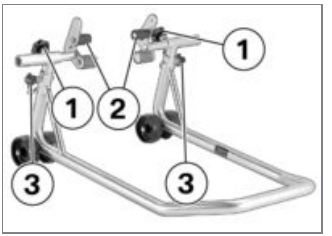
Rear wheel to wheel flange
Tightening sequence: Tighten in diagonally opposite sequence
60 Nm

Front-wheel stand

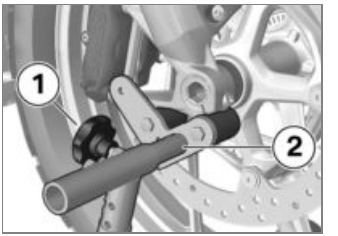
Installing the front-wheel stand

The BMW Motorrad front wheel stand is not designed to support motorcycles not fitted with a centre stand or without other auxiliary stands. A motorcycle resting only on the front wheel stand and the rear wheel can topple. Place the motorcycle on its centre stand or another auxiliary stand before lifting the front wheel with the BMW Motorrad front-wheel stand.◀

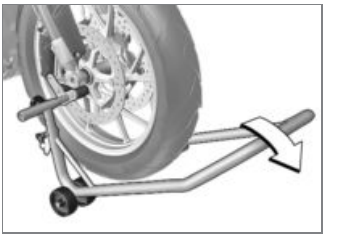
- Make sure the ground is level and firm and place the motorcycle on its centre stand.
- Use basic stand with front-wheel adapter. The basic stand and its accessory parts are available from your BMW Motorrad dealer.



- Slacken securing screw **1**.
- Push the two adapters **2** apart until the front forks fit between them.
- Use locating pins **3** to set the front-wheel stand to the desired height.
- Centre the front-wheel stand relative to the front wheel and push it against the front axle.



- Align the two adapters **2** so that the front forks are securely seated.
- Tighten securing screw **1**.



If the motorcycle is on the centre stand and is raised too far, the centre stand will lift clear of the ground and the motorcycle could topple to one side. When raising the vehicle, make sure that the centre stand remains on the ground.◀

- Apply uniform pressure to push the front-wheel stand down and raise the motorcycle.

Lighting

Replacing bulb for low-beam headlight

▷ The positions of the plug, the spring wire retainer and the bulb might not be as illustrated below.◀

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

- Remove cover **1** by turning it counter-clockwise to replace the bulb for the low-beam headlight.

- Disconnect plug **1**.

- Disengage spring clip **1** and swing it aside.
- Remove bulb **2**.
- Replace the defective bulb.

Bulbs for the low-beam headlight
H7 / 12 V / 55 W

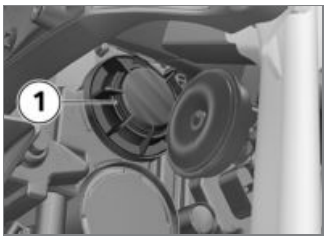
- Hold the bulb by the base only, in order to keep the glass free of foreign matter.

- Insert bulb **2**, making sure that the tab is correctly positioned.

▷ The bulb might face in a direction other than that shown here.◀

- Engage spring clip **1** in the catch.

• Install plug **1**.

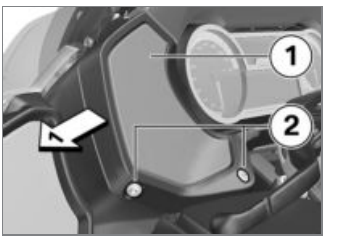


• Insert cover **1** and turn it clockwise to install.

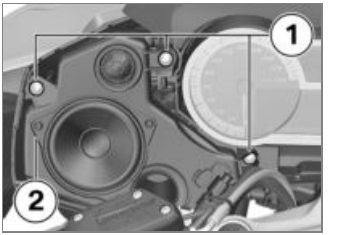
Replacing bulb for high-beam headlight

The description below steps you through the procedure for replacing the left bulb. The procedure for working on the right side is the same.◀

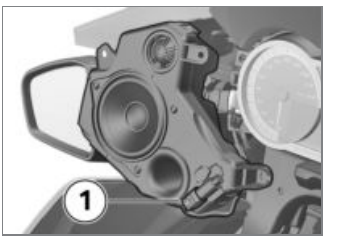
• Make sure the ground is level and firm and place the motorcycle on its stand.
• Switch off the ignition.



• Remove screws **2**.
• Ease speaker cover **1** to the left to remove.



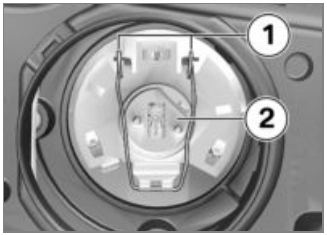
• Remove screws **1**.
• Carefully remove speaker unit **2**, noting the plug.



• Disconnect plug **1**.

- Pull the tab to remove cover **1**.

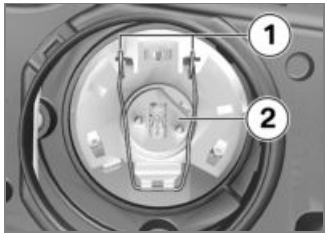
- Disconnect plug **1**.



- Release spring clip **1** at left and right and swing it open.
- Remove bulb **2**.
- Replace the defective bulb.

Bulb for high-beam headlight
H1 / 12 V / 55 W

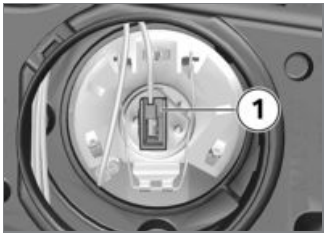
- Hold the bulb by the base only, in order to keep the glass free of foreign matter.



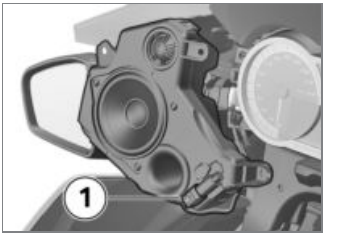
- Install bulb **2**, making sure that the tab is correctly positioned.

▷ The bulb might face in a direction other than that shown here.◀

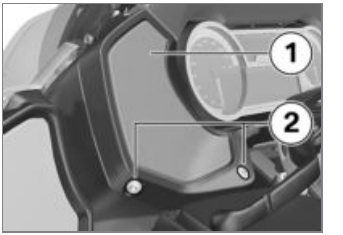
- Insert spring clip **1**.



• Connect plug **1**.

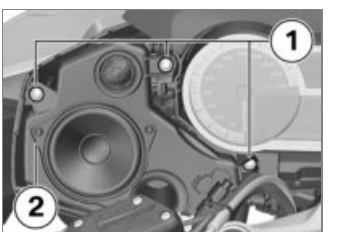


• Connect plug **1**.



• Hold speaker cover **1** in position and install screws **2**.

• Install cover **1**.

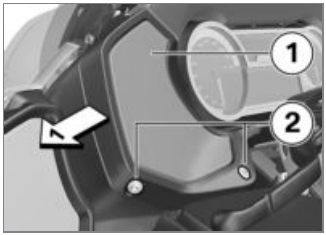


• Seat speaker unit **2** in the mount.
• Install screws **1**.

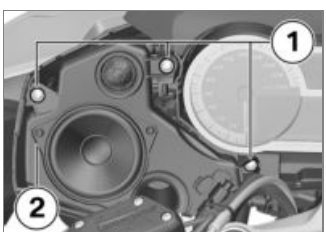
Replacing bulb for parking light

The description below steps you through the procedure for replacing the left bulb. The procedure for working on the right side is the same.◀

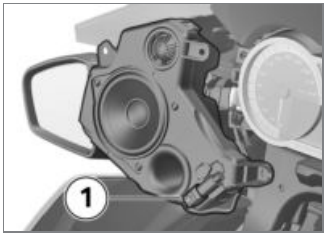
• Make sure the ground is level and firm and place the motorcycle on its stand.
• Switch off the ignition.



- Remove screws **2**.
- Ease speaker cover **1** to the left to remove.

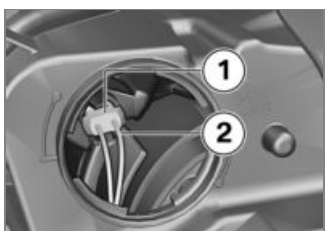


- Remove screws **1**.
- Carefully remove speaker unit **2**, noting the plug.

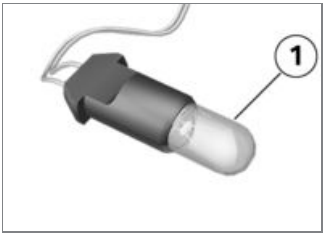


- Disconnect plug **1**.
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Switch off the ignition.

- Remove cover **1** by turning it counter-clockwise.



- Pull cable **2** gently to disengage bulb socket **1** from the light housing.

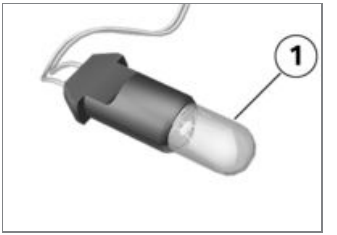


- Remove bulb **1** from the socket.

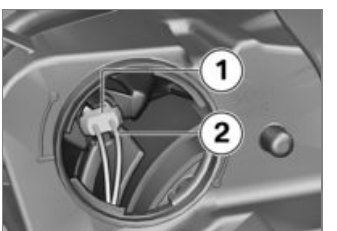
- Replace the defective bulb.

Bulb for parking light
W5W / 12 V / 5 W
– with daytime running light OE or – with Pro headlight OE
Lighting rings, integrated into headlight◁

- Use a clean, dry cloth to hold the bulb in order to keep the glass free of foreign matter.

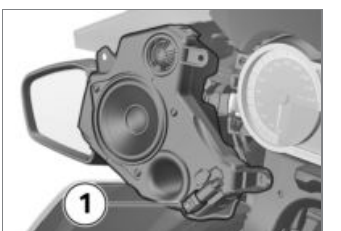


- Insert bulb **1** into the bulb socket.

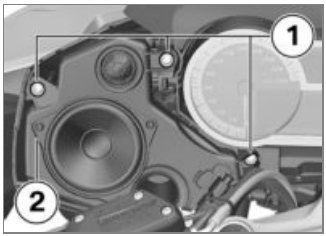


- Insert bulb socket **1** into the light housing, using cable **2** for assistance.

- Turn cover **1** clockwise to install.



- Connect plug **1**.



- Seat speaker unit **2** in the mount.
- Install screws **1**.

- Hold speaker cover **1** in position and install screws **2**.

Replacing LED rear light

The LED rear light can be replaced only as a complete unit.

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

Replacing LED turn indicators

- LED turn indicators can be replaced only as a complete unit. Consult a specialist workshop, preferably an authorised BMW Motorrad dealer.

Replacing waveguide rings

– with daytime running light OE
– with Pro headlight OE

- Waveguide rings are integrated into the headlight and can be replaced only together with the headlight. Consult a specialist workshop, preferably an authorised BMW Motorrad dealer.

Replacing LED auxiliary headlights

– with LED auxiliary headlights OA

The LED auxiliary headlights can only be replaced as a unit; it is not possible to replace individual LEDs.
Consult a specialist workshop, preferably an authorised BMW Motorrad dealer.

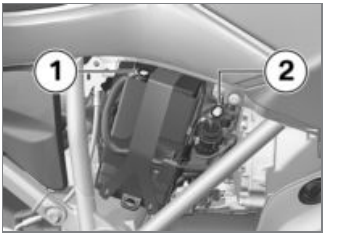
Jump-starting

The wires leading to the power socket do not have a load-capacity rating adequate for jump-starting the engine. Excessively high current can lead to a cable fire or damage to the vehicle electronics.
Do not use the on-board socket to jump-start the engine of the motorcycle.◀

A short-circuit can result if the crocodile clips of the jump leads are accidentally brought into contact with the motorcycle.
Use only jump leads fitted with fully insulated crocodile clips at both ends.◀

Jump-starting with a donor-battery voltage higher than 12 V can damage the vehicle electronics.
Make sure that the battery of the donor vehicle has a voltage rating of 12 V.◀

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Removing battery cover (➠ 138).
- When jump-starting the engine, do not disconnect the battery from the on-board electrical system.



- Use the red jumper cable to connect the positive terminal **2** of the discharged battery to the positive terminal of the donor battery.
- Then connect one end of the black jump lead to the negative terminal of the donor battery and the other end to negative terminal **1** of the discharged battery.
- Run the engine of the donor vehicle during jump-starting.
- Start the engine of the vehicle with the discharged battery in the usual way; if the engine does not start, wait a few minutes before repeating the attempt in order to protect the starter motor and the donor battery.
- Allow both engines to idle for a few minutes before disconnecting the jump leads.
- Disconnect the jump lead from the negative terminals first, then disconnect the second lead from the positive terminals.

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

- Installing front seat (➠ 82).

Battery

Maintenance instructions

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

Compliance with the points below is important in order to maximise battery life:
- Keep the surface of the battery clean and dry
- Do not open the battery
- Do not top up with water
- Be sure to read and comply with the instructions for charging the battery on the following pages
- Do not turn the battery upside down.

If the battery is not disconnected, the on-board electronics (e.g. clock, etc.) gradually drain the battery. This can cause the battery to run flat. If this happens, warranty claims will not be accepted.
Connect a float charger to the battery if the motorcycle is to remain out of use for more than four weeks.◀

BMW Motorrad has developed a float charger specially designed for compatibility with the electronics of your motorcycle. Using this charger, you can keep the battery charged during long periods of disuse, without having to disconnect the battery from the motorcycle's on-board systems. You can obtain additional information from your authorised BMW Motorrad dealer.◀

Charge battery when connected

Charging the connected battery directly at the battery terminals can damage the vehicle electronics.
Always disconnect the battery from the on-board circuits before recharging it with a charger connected directly to the battery posts.◀

If you switch on the ignition and the multifunction display and indicator lights fail to light up, the battery is completely flat (battery voltage is less than 9 V). Attempting to charge a completely flat battery via the extra socket can cause damage to the motorcycle's electronics.
If a battery has discharged to the extent that it is completely flat, it has to be disconnected from the on-board circuits and charged with the charger connected directly to the battery posts.◀

Only chargers suitable for this mode of charging can be used to recharge the battery via the on-board socket. Unsuitable chargers could cause damage to the motorcycle's on-board electrics.
Use suitable BMW chargers. The suitable charger is available from your authorised BMW Motorrad dealer.◀

- Charge via the charging socket, with the battery connected to the motorcycle's on-board electrical system.

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

- Comply with the operating instructions of the charger.

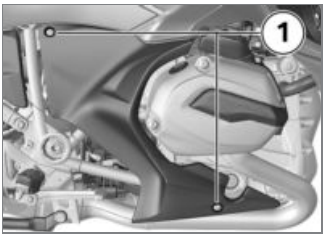
▷ If you are unable to charge the battery through the on-board socket, you may be using a charger that is not compatible with your motorcycle's electronics. If this happens, disconnect the battery from the on-board systems and connect the charger directly to the battery.◀

Charging battery when disconnected

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

▷ The battery has to be recharged at regular intervals in the course of a lengthy period of disuse. See the instructions for caring for your battery. Always fully recharge the battery before restoring it to use.◀

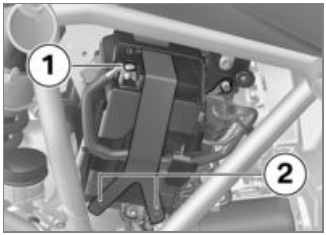
Removing and installing battery



- Switch off the ignition.
- Remove screws **1**.
- Remove the battery cover.

– with anti-theft alarm (DWA)[OE]

- If applicable, switch off the anti-theft alarm (DWA).◁



- Disconnect battery negative lead **1** and disengage rubber strap **2**.

- Pull retaining plate in position **1** outwards and remove in an upward direction.

- Slightly lift the battery and ease it clear of the holder until the battery positive terminal is accessible.

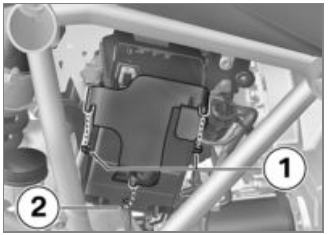
- Disconnect battery negative lead **1** and remove the battery.

» The battery is removed.

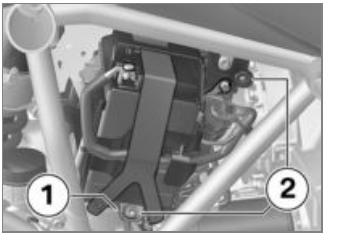
- Secure battery positive lead **1**.

If the 12V battery is not correctly installed or if the polarity of the terminals is reversed (e.g. in an attempt to jump-start the vehicle), this can cause the fuse for the alternator regulator to blow.◀

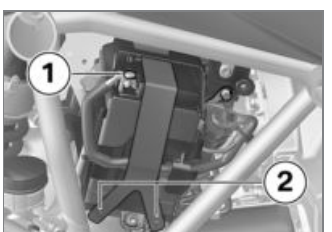
- Push battery into the mounting.



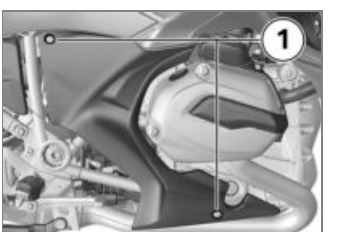
- First push the retaining plate under the battery at position **1** and then seat it in mounts **2**.



- Place battery cover into the mounting **1** and press into the mountings **2**.



- Secure battery negative lead **1**.
- Secure the battery with rubber strap **2**.

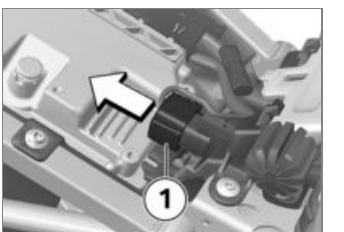


- Install screws **1**.

- Switch on the ignition.
- Set the time in `Settings - Time` and set the date in `Settings - Date`.

Fuses

Replace fuses



- Switch off the ignition.
- Removing front seat (➠ 82).
- Disconnect plug **1**.

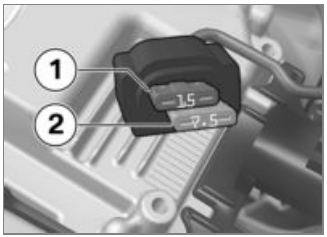
⚠ Any attempt to jumper a defective fuse gives rise to the risk of a short-circuit and fire. Always replace a defective fuse with a new fuse of the same amperage.◀

- Consult the fuse assignment diagram and replace the defective fuse.

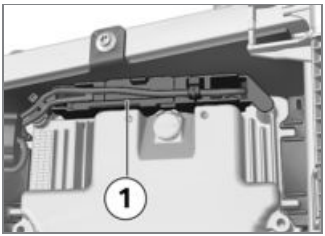
If fuse defects recur frequently have the electric circuits checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

- Installing front seat (➠ 82).

Fuse assignment



Fuse box
15 A (Slot 1: Instrument cluster, alarm system (DWA), ignition lock, diagnostic socket, topcase light)
7.5 A (Slot 2: Multifunction switch left, tyre pressure control (RDC), audio system)



Fuse holder
50 A (Fuse 1: Alternator regulator)

Accessories

General instructions

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. Country-specific official authorisation does not suffice as assurance. 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.◀

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

Whenever you are planning modifications, comply with all the legal requirements. Make sure that the vehicle does not infringe the national road-vehicle construction and use regulations applicable in your country.

Your BMW Motorrad dealer can offer expert advice on the choice of genuine BMW parts, accessories and other products.

You can examine all the optional accessories from BMW Motorrad by visiting our website: **"www.bmw-motorrad.com"**.

Power sockets

Connection of electrical devices

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

Cable routing

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

Automatic shutdown

– The sockets will be automatically switched off during the start procedure.
– The power supply to the sockets is switched off a certain time after the ignition is switched off, in order to prevent overloading of the on-board electrics. Low-wattage electrical accessories might not

be recognised by the vehicle's electronics. In such cases, power sockets are switched off very shortly after the ignition is turned off.

Automatic shutdown of the sockets after ignition OFF
max 15 min

– If the battery charge state is too low to maintain the motorcycle's start capability, the power sockets are switched off.
– The power sockets are also switched off when the maximum load capability as stated in the technical data is exceeded.

Navigation system

Securing navigation device

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

Dust and dirt can damage the contacts of the Mount Cradle.
Always reinstall the cover as soon as you finish your ride.◀

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

• Operate latch **1** and remove cover **2**.

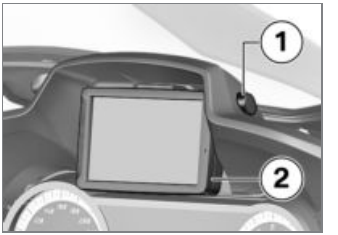
• First seat navigation device **1** in the mount and then pivot it to the rear **2**.

- Press down on the top edge of the navigation device until it engages.

- Check that the navigation device is secure in the cradle. Latch **1** must be fully engaged. The latching mechanism must lie flat and be out of sight.

Removing navigation device

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



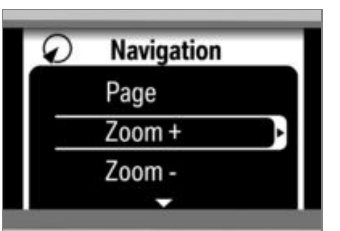
- Operate latch **1** and remove navigation device **2**.

- Install cover **2**.
- Check that the cover is secure in the cradle. Top retaining cap **1** must be fully engaged.

Operating navigation system

– with preparation for navigation system OE

- If applicable, switch on the ignition.
- Call up the `Navigation` menu.



The options for using the navigation system appear on the display.

– `Page`: You can page from view to view; the choices are main menu, map and on-board computer.

– Zoom +: Performs functions marked with a plus sign (+) in the navigation system. In the map view, for instance, the view zooms in on the map detail.
– Zoom –: Performs functions marked with a plus sign (-) in the navigation system. In the map view, for instance, the view zooms out from the map detail.
– Speak: The last navigation announcement is spoken again. The announcement is spoken again even if automatic spoken announcement have been switched off in the settings of the navigation system.
– Mute: Automatic spoken announcements are toggled off and on.
– Display Off: The display of the navigation system is toggled off and on.

• Select the function you want and implement the function by pushing the Multi-Controller to the right.

Special functions

– with preparation for navigation system OE

Integration of the BMW Motorrad Navigator V can result in deviations from the descriptions in the operating instructions for the Navigator.

Reserve fuel level warning

The settings for the fuel gauge enable you to define a distance that is covered per full tank of fuel. The motorcycle sends the figure for residual range possible with the fuel remaining in the fuel tank to the Navigator, so it is no longer necessary to enter this value.

Time and date

The Navigator sends time and date to the motorcycle. The transfer of these data into the instrument cluster must be activated in the SETUP menu of the instrument cluster.

Security settings

The BMW Motorrad Navigator V can be secured against unauthorised use with a four-digit PIN (Garmin Lock). If this function is activated, while the Navigator is cradled on the motorcycle and the ignition is switched on you are prompted to add the motorcycle to the list of secured vehicles. If you answer "Yes" at this prompt the Navigator saves the VIN of this vehicle in its internal memory.
A maximum of five VINs can be saved in this way.
Subsequently, the PIN does not have to be entered when the

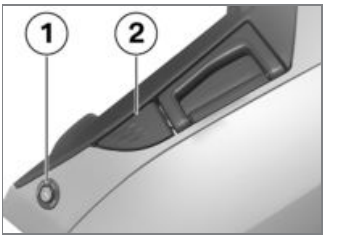
Navigator is switched on by ignition ON while cradled in any of these vehicles.
If the Navigator is removed from the vehicle while switched on, a security prompt asking for the PIN to be entered is issued.

Cases

Open cases

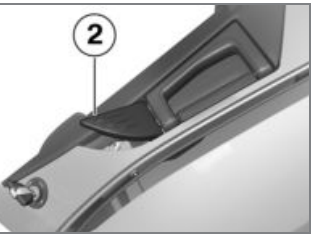
– with central locking OE
- If applicable, open the central locking.◁

- Turn the key to the in the case lock to the position indicated by the dot.



- Push lock barrel **1** down.
» Lever **2** pops up.
- Pull the release lever all the way up and open the lid of the case.

Closing cases



- Pull release lever **2** all the way up.
- Close the lid of the case and press it down. Check that nothing is trapped between the lid and the case.

The cases can also be locked by turning the lock to the LOCK position. In this case, ensure that the vehicle key is not left in the cases.◀

- Push release lever **2** down until it engages.
- Turn the key in the case lock to the LOCK position and remove the key from the lock.

Removing cases

- Turn the key to the RELEASE position in the case lock.

» The handle pops out.

- Pull carry handle **3** up as far as it will go.

» The case is released and can be removed.

Install cases

- Pull the handle up as far as it will go.

- Seat the case in holders **4**.

- Push handle **3** down until it engages.
- Turn the key in the case lock to the LOCK position and remove the key from the lock.

Topcase

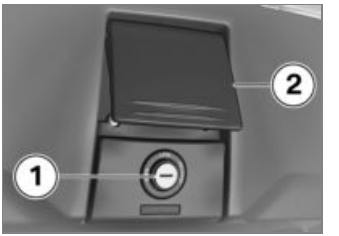
Opening topcase

– with topcase[OA]

– with central locking[OE]

- If applicable, open the central locking.◁

- Turn the key to the in the topcase lock to the position indicated by the dot.



- Push lock barrel **1** forward.

» Lever **2** pops up.

- Pull the release lever all the way up and open the lid of the topcase.

Closing topcase

– with topcase[OA]

- Pull release lever **2** all the way up.
- Close the lid of the topcase and hold it down. Check that nothing is trapped between the lid and the case.

▷ The topcase can also be locked by turning the lock to the LOCK position. In this case, ensure that the vehicle key is not left in the topcase.◀

- Push release lever **2** down until it engages.
- Turn the key in the topcase lock to the LOCK position and remove the key from the lock.

Removing the topcase

- Removing front seat (➠ 82).
- Removing rear seat (➠ 83).

– with topcase OA

- Disconnect plug **1**.
- Work the plug of the topcase through to the rear.
- Open the topcase.
- If applicable, empty the topcase and lift out the bottom mat.

- Push slide latch **2** toward the outside and hold it in this position.
- Turn rotary latch **3** in the direction indicated by the RELEASE arrow.

» Release warning **4** is visible.

- Close the topcase.

- Lift the topcase at the rear and remove it from the luggage carrier.◁
- Install the rear seat (➠ 84).
- Installing front seat (➠ 82).

Installing topcase

- Removing front seat (➠ 82).
- Removing rear seat (➠ 83).

– with topcase OA

- If applicable, empty the topcase and lift out the bottom mat.

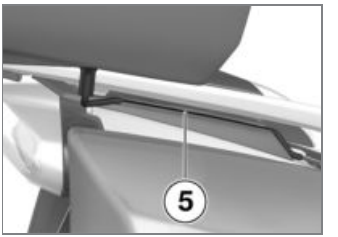
- Set the topcase on the luggage carrier.
- Opening topcase (➠ 150).

- Turn rotary latch **3** as far as it will go in the direction indicated by the LOCK arrow while pressing down on the back edge of the topcase.

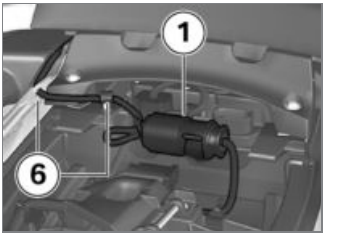
» Release warning **4** is no longer visible.

If the release warning is still visible the topcase is not correctly secured.

- Make sure that the topcase is correctly seated on the luggage carrier.



- Route the connecting cable forward in cable guide **5**.



- Work the cable into position at positions **6**.
- Connect plug **1**.◁
- Install the rear seat (➠ 84).
- Installing front seat (➠ 82).

Care

Care products

BMW Motorrad recommends that you use the cleaning and care products you can obtain from your authorised BMW Motorrad dealer.
The substances in BMW CareProducts have been tested in laboratories and in practice; they provide optimised care and protection for the materials used in your vehicle.

The use of unsuitable cleaning and care products can damage vehicle components. Do not use solvents such as cellulose thinners, cold cleaners, fuel or the like, and do not use cleaning products that contain alcohol.◀

Washing the vehicle

BMW Motorrad recommends that you use BMW insect remover to soften and wash off insects and stubborn dirt on painted parts prior to washing the vehicle.
To prevent stains, do not wash the vehicle immediately after it has been exposed to strong sunlight and do not wash it in the sun.
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 the motorcycle has been washed, ridden through water or ridden in the rain, the brake discs and pads might be wet and the brakes might not take effect immediately. Apply the brakes in good time until the brake discs and brake pads have dried out.◀

Warm water intensifies the effect of salt.
Use only cold water to wash off road salt.◀

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

Aluminium cases and top-cases do not have a surface coating. Care in accordance with the instructions set out below will help ensure the best possible appearance:
Remove road salt and corrosive deposits by cleaning with cold water immediately after every trip.◀

Cleaning easily damaged components

Plastics

The use of unsuitable products to clean plastic parts can damage the surface. Do not use cleaning agents that contain alcohol, solvents or abrasives to clean plastic parts. Even insect-remover pads or cleaning pads with hard surfaces can produce scratches.◀

Body panels

Clean the trim panels with water and BMW plastic care emulsion.

Windscreens and lenses made of plastic

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

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

Clean with water and sponge only.

Do not use any chemical cleaning agents.

Chrome

Use plenty of water and BMW shampoo to clean chrome, particularly if it has been exposed to road salt. Use chrome polish for additional treatment.

Radiator

Clean the radiator regularly to prevent overheating of the engine due to inadequate cooling. For example, use a garden hose with low water pressure.

Cooling fins can be bent easily.

Take care not to bend the fins when cleaning the radiator.◀

Rubber components

Treat rubber components with water or BMW rubber-care products.

Using silicone sprays for the care of rubber seals can cause damage.

Do not use silicone sprays or care products that contain silicon.◀

Paint care

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

However, particularly aggressive substances (e.g. spilt fuel, oil, grease, brake fluid and bird droppings) must be removed immediately, as the paint could

otherwise be affected or become discoloured. BMW Motorrad recommends using BMW vehicle polish or BMW paint cleaner for this purpose.
Marks on the paintwork are particularly easy to see after the vehicle has been washed. Remove stains of this kind immediately, using cleaning-grade benzene or petroleum spirit on a clean cloth or ball of cotton wool. BMW Motorrad recommends using BMW tar remover for removing specks of tar. Remember to wax the parts treated in this way.

Laying up the motorcycle

- Clean the motorcycle.
- Removing battery (➠ 138).
- Spray the brake and clutch lever pivots and the main and side stand pivots with a suitable lubricant.
- Coat bright metal and chrome-plated parts with an acid-free grease (e.g. Vaseline).
- Stand the motorcycle in a dry room in such a way that there is no load on either wheel (preferably using front-wheel and rear-wheel stands from BMW).

Protective wax coating

If water is no longer forming beads on the paint surface, it must be waxed.
BMW Motorrad recommends applying only BMW car wax or products containing carnauba wax or synthetic wax.

Restoring motorcycle to use

- Remove the protective wax coating.
- Clean the motorcycle.
- Install a charged battery.
- Before starting: work through the checklist.

Technical data

Troubleshooting chart

Engine does not start or is difficult to start.

Possible cause	Rectification
Kill switch activated	Set emergency-off switch (kill switch) to operating position.
Side stand extended and gear engaged	Retract the side stand.
Gear engaged and clutch not disengaged	Select neutral or pull the clutch lever.
No fuel in tank	Refuelling (➠ 96).
Battery flat	Charge battery when connected (➠ 137).

Threaded fasteners

Front wheel	Value	Valid
Brake caliper on telescopic fork		
M10 x 65	38 Nm	
Clamping screw for quick-release axle in telescopic fork		
M8 x 35	19 Nm	

Rear wheel	Value	Valid
Rear wheel to wheel flange		
M10 x 1.25 x 40	**Tighten in diagonally opposite sequence**	
	60 Nm	

Mirror arm	Value	Valid
Mirror to holder		
M6 x 50	8 Nm	

Engine

Location of engine number	Crankcase, bottom right
Engine type	122EN
Engine design	Air- / fluid-cooled two-cylinder four-stroke opposed-twin engine with two upper spur-gear-driven camshafts and a counterbalance shaft.
Displacement	1170 cm^3
Cylinder bore	101 mm
Piston stroke	73 mm
Compression ratio	12.5:1
Nominal output	92 kW, at engine speed: 7750 min^{-1}
Torque	125 Nm, at engine speed: 6500 min^{-1}
Maximum engine speed	max 9000 min^{-1}
Idle speed	1150 min^{-1}, engine at regular operating temperature

Fuel

Recommended fuel grade	Super unleaded (max. 10 % ethanol, E10) 95 ROZ/RON 89 AKI
Usable fuel capacity	approx. 25 l
Reserve fuel	approx. 4 l
Exhaust emissions standard	EU 3

BMW recommends BP fuels

Engine oil

Engine oil, capacity	max 4 l, with filter change
Specification	SAE 5W-40, API SL / JASO MA2, additives (e.g. molybdenum-based) are not permissible because they can attack coated components of the engine, BMW Motorrad recommends Castrol Power 1 Racing 4T SAE 5W-40, API SL / JASO MA2
Engine oil, quantity for topping up	max 0.95 l, difference between MIN and MAX

BMW recommends Castrol

Clutch

Clutch type	Multiplate clutch running in oil bath

Transmission

Gearbox type	6-speed gearbox with bevel gearing, integrated into engine block
Gearbox transmission ratios	1.000 (60:60 teeth), Primary transmission ratio 1.650 (32:20 teeth), Transmission input ratio 2.438 (39:16 teeth), 1st gear 1.714 (36:21 teeth), 2nd gear 1.296 (35:27 teeth), 3rd gear 1.059 (36:34 teeth), 4th gear 0.943 (33:35 teeth), 5th gear 0.848 (28:33 teeth), 6th gear 1.061 (35:33 teeth), Transmission output ratio

Rear-wheel drive

Type of final drive	Shaft drive with bevel gears
Type of rear suspension	Cast-aluminium single swinging arm with BMW Motorrad Paralever
Gear ratio of final drive	2.75 (33/12 teeth)

Running gear

Front wheel	
Type of front suspension	BMW Telelever, with anti-dive top fork bridge, leading link mounted on engine and telescopic forks, central spring strut supported by leading link and frame
Design of front wheel suspension	Central shock absorber with helical spring
– with Dynamic ESA[OE]	Central shock absorber complete with torsion spring and header tank, electrically adjustable de-compression and compression-stage damping
Spring travel, front	120 mm, at wheel

Rear wheel	
Type of rear suspension	Cast-aluminium single swinging arm with BMW Motorrad Paralever
Type of rear suspension	Central shock absorber complete with torsion spring, adjustable rebound-stage damping and spring preload
– with Dynamic ESA[OE]	Central shock absorber complete with torsion spring and header tank, electrically adjustable de-compression and compression-stage damping, electrically adjustable spring preload
Spring travel at rear wheel	135 mm

Brakes

Type of front brake	Hydraulically actuated twin-disc brake with 4-piston radial monobloc calipers and floating brake discs
Brake-pad material, front	Sintered metal
Brake disc thickness, front	min 4 mm, wear limit
Play of brake controls (Front brake)	approx. 1.85 mm, at piston
Type of rear brake	Hydraulically actuated disc brake with 2-piston floating caliper and fixed disc

Brake-pad material, rear	Organic material
Brake disc thickness, rear	min 4.5 mm, wear limit
Play of brake controls (Rear brake)	approx. 1 mm, at piston

Wheels and tyres

Recommended tyre sets	You can obtain an up-to-date list of approved tyres from your authorised BMW Motorrad dealer or on the Internet at "www.bmw-motorrad.com".
Front wheel	
Front wheel type	Aluminium cast wheel
Front wheel rim size	3.5" x 17"
Tyre designation, front	120/70 - 17
Wheel load, front, at unladen weight	139 kg
Permissible wheel load, front	max 177 kg
Permissible front-wheel imbalance	max 5 g
Rear wheel	
Rear-wheel type	Aluminium cast wheel
Rear wheel rim size	5.5" x 17"
Tyre designation, rear	180/55 - 17
Wheel load, rear, at unladen weight	135 kg

Permissible wheel load, rear	max 318 kg
Tyre pressures	
Tyre pressure, front	2.5 bar, tyre cold
Tyre pressure, rear	2.9 bar, tyre cold

Electrics

Electrical rating of on-board sockets	max 10 A, total for all sockets
Fuse box	15 A, Slot 1: Instrument cluster, alarm system (DWA), ignition lock, diagnostic socket, topcase light 7.5 A, Slot 2: Multifunction switch left, tyre pressure control (RDC), audio system
Fuse holder	50 A, Fuse 1: Alternator regulator
Battery	
Battery type	AGM (Absorbent Glass Mat) battery
Battery rated voltage	12 V
Battery rated capacity	16 Ah
Spark plugs	
Spark plugs, manufacturer and designation	NGK LMAR8D-J
Electrode gap of spark plug	$0.8^{\pm 0.1}$ mm

Lighting	
Bulb for high-beam headlight	H1 / 12 V / 55 W
Bulbs for the low-beam headlight	H7 / 12 V / 55 W
Bulb for parking light	W5W / 12 V / 5 W
– with daytime running light[OE] or – with Pro headlight[OE]	Lighting rings, integrated into headlight
Bulb for tail light/brake light	LED
Bulbs for flashing turn indicators, front	LED
Bulbs for flashing turn indicators, rear	LED

Frame

Frame type	Tubular steel frame with load-bearing drive unit, aluminium rear frame
Type plate location	Frame, front right (beside spring strut)
Position of the Vehicle Identification Number	Frame, front right, on steering head

Anti-theft alarm

– with anti-theft alarm (DWA) OE

Activation time on arming	approx. 30 s
Alarm duration	approx. 26 s
Battery type	CR 123 A

Dimensions

Length of motorcycle	2185 mm
Height of motorcycle	1405 mm, at DIN unladen weight
Width of motorcycle	980 mm, across mirrors
Front-seat height	805...825 mm, without rider at unladen weight
– with front seat, low OE	760...780 mm, without rider at unladen weight
– with front seat, high OE	830...850 mm, without rider at unladen weight
Rider's inside-leg arc, heel to heel	1810...1850 mm, without rider at unladen weight
– with front seat, low OE	1740...1780 mm, without rider at unladen weight
– with front seat, high OE	1875...1915 mm, without rider at unladen weight

Weights

Unladen weight	274 kg, DIN unladen weight, ready for road 90 % load of fuel, including cases
Permissible gross weight	495 kg
Maximum payload	221 kg

Riding specifications

Starting capability on uphill gradients (at permissible gross weight)	20 %
Top speed	>200 km/h

Service

BMW Motorrad Service

BMW Motorrad has an extensive network of dealerships in place to look after you and your motorcycle in more than 100 countries. Authorised BMW Motorrad dealerships have the technical information and the technical know-how to reliably carry out all maintenance and repair work on your BMW.
Visit our website **www.bmw-motorrad.com** to find out where the nearest authorised BMW Motorrad dealership is located.

If maintenance and repair work is performed inexpertly, it could result in consequential damage and thus constitute a safety risk.
BMW Motorrad recommends you to have all the associated work on your motorcycle carried out by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

In order to help ensure that your BMW is always in optimum condition, BMW Motorrad recommends compliance with the maintenance intervals specified for your motorcycle. Have all maintenance and repair work that is carried out confirmed in the "Service" chapter in this manual. For generous treatment of claims submitted after the warranty period has expired, evidence of regular maintenance is essential.

Your authorised BMW Motorrad dealer can provide information on BMW services and the work undertaken as part of each service.

BMW Motorrad Mobility services

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

Maintenance work

BMW Pre-delivery Check

Your authorised BMW Motorrad dealer conducts the BMW pre-delivery check before handing over the vehicle to you.

BMW Running-in Check

The BMW running-in check has to be performed when the vehicle has covered between 500 km and 1200 km.

BMW Service

The BMW Service is carried out once a year; the extent of servicing can vary, depending on the age of the vehicle and the distance it has covered. Your authorised BMW Motorrad dealer confirms that the service work has been carried out and enters the date when the next service will be due.

Riders who cover long distances in a year might have to bring in their vehicles for service before the next scheduled date. It is to allow for these cases that a maximum odometer reading is entered as well in the confirmation of service. Servicing has to be brought forward if this odometer reading is reached before the next scheduled date for the service.

The service-due indicator in the multifunction display reminds you about one month or 1000 km in advance when the time for a service is approaching, on the basis of the programmed values.

Confirmation of maintenance work

BMW Pre-delivery Check

Completed

on_____

Stamp, signature

BMW Running-in Check

Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

on_____
or, if logged beforehand,

Odometer reading_____

Stamp, signature

Confirmation of service

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

Item	Odometer reading	Date

Item	Odometer reading	Date

Appendix

Certifications

Remote Control for central locking system

Česky
Meta System S.p.A. tímto prohlašuje, že tento PF240009 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

Dansk
Undertegnede Meta System S.p.A. erklærer herved, at følgende udstyr PF240009 overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

Deutsch
Hiermit erklärt Meta System S.p.A., dass sich das Gerät PF240009 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.

Eesti
Käesolevaga kinnitab Meta System S.p.A. seadme PF240009 vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

English
Hereby, Meta System S.p.A., declares that this PF240009 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Español
Por medio de la presente Meta System S.p.A. declara que el PF240009 cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

Certifications

Ελληνική
ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Meta System S.p.A. ΔΗΛΩΝΕΙ ΟΤΙ PF240009 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.

Français
Par la présente Meta System S.p.A. déclare que l'appareil PF240009 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Italiano
Con la presente Meta System S.p.A. dichiara che questo PF240009 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Latviski
Ar šo Meta System S.p.A. deklarē, ka PF240009 atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

Lietuvių
Šiuo Meta System S.p.A. deklaruoja, kad šis PF240009 atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

Nederlands
Hierbij verklaart Meta System S.p.A. dat het toestel PF240009 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Malti
Hawnhekk, Meta System S.p.A., jiddikjara li dan PF240009 jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

Magyar
Alulírott, Meta System S.p.A. nyilatkozom, hogy a PF240009 megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.

Polski
Niniejszym Meta System S.p.A. oświadcza, że PF240009 jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.

Português
Meta System S.p.A. declara que este PF240009 está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

Certifications

Slovensko
Meta System S.p.A. izjavlja, da je ta PF240009 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.

Slovensky
Meta System S.p.A. týmto vyhlasuje, že PF240009 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

Suomi
Meta System S.p.A. vakuuttaa täten että PF240009 tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svenska
Härmed intygar Meta System S.p.A. att denna PF240009 står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Íslenska
Hér með lýsir Meta System S.p.A. yfir því að PF240009 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.

Norsk
Meta System S.p.A. erklærer herved at utstyret PF240009 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

USA, Canada

Product name: TX BMW MR
FCC ID: P3O98400
IC:4429A - TXBMWMR

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

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

Declaration Of Conformity

R&TTE Declaration Of Conformity (DoC)

CE 0470

We: **Meta System S.p.A.**

with the address: Via Majakovskij 10 b/c/d/e
42124 Reggio Emilia –Italy

Declare

Under own responsibility that the product:

TX BMW MR

To which this declaration relates is in conformity with the essential requirements and other relevant requirements of the R&TTE Directive (1999/5/EC).
This product is in conformity with the following standards:

Health & Safety (art.3.1)	EN 60950-1
EMC (art.3.2)	ETSI EN 301 489-1/-3
Spectrum	ETSI EN 300 220 - 2
Human exposure	EN 62311

According to Directive 1999/5/CE

Reggio Emilia , 14/07/2010

Technical Director
Lasagni Cesare

Certification Tire Pressure Control (TPC)

FCC ID: MRXBC54MA4 IC: 2546A-BC54MA4	FCC ID: MRXBC5A4 IC: 2546A-BC5A4

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

(1) This device may not cause harmful 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.

WARNING: Changes or modifications not expressively approved by the party responsible for compliance could void the user's authority to operate the equipment. The term “IC:” before the radio certification number only signifies that Industry Canada technical specifications were met.

Details described or illustrated in this booklet may differ from the vehicle's actual specification as purchased, the accessories fitted or the national-market specification. No claims will be entertained as a result of such discrepancies.
Dimensions, weights, fuel consumption and performance data are quoted to the customary tolerances.
The right to modify designs, equipment and accessories is reserved.
Errors and omissions excepted.

Original rider's manual, printed in Germany.

Important data for refuelling:

Fuel	
Recommended fuel grade	Super unleaded (max. 10 % ethanol, E10) 95 ROZ/RON 89 AKI
Usable fuel capacity	approx. 25 l
Reserve fuel	approx. 4 l
Tyre pressures	
Tyre pressure, front	2.5 bar, tyre cold
Tyre pressure, rear	2.9 bar, tyre cold

BMW recommends Castrol

Order No.: 01 41 8 557 801
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