Rider's Manual

S 1000 RR

BMW Motorrad

The Ultimate Riding Machine

Motorcycle data/dealership details

Motorcycle 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 motorcycle from BMW and welcome you to the community of BMW riders.
Familiarise yourself with your new motorcycle so that you can ride it safely and confidently in all traffic situations.
Please read this Rider's Manual carefully before starting to use your new BMW motorcycle. 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 motorcycle's reliability and safety, as well as its value.
If you have questions concerning your motorcycle, your authorised BMW Motorrad dealer will gladly provide advice and assistance.

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

BMW Motorrad.

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General instructions

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Overview

Chapter 2 of this Rider's Manual will provide you with an initial overview of your motorcycle. All maintenance and repair work on the motorcycle is documented in Chapter 12. This record of the maintenance work you have had performed on your motorcycle 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 motorcycle 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.

Item of technical data.

OE Optional extra
The motorcycles are assembled complete with all the BMW optional extras originally ordered.

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

EWS Electronic immobiliser.

DWA Anti-theft alarm (Diebstahlwarnanlage)

ABS Anti-lock brake system

DTC Dynamic Traction Control.

Equipment

When you ordered your BMW motorcycle, you chose various items of custom equipment. This Rider's Manual describes optional extras (OE) offered by BMW and selected optional accessories (OA). This explains why the manual may also contain descriptions of equipment which you have not ordered. Please note, too, that your motorcycle might not be exactly as illustrated in this manual on account of country-specific differences. If your BMW was supplied with equipment not described in this Rider's Manual, you will find these features described in separate manuals.

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.

Currency

The high safety and quality standards of BMW motorcycles are maintained by constant development work on designs, equipment and accessories. Because of this, your motorcycle may differ from the information supplied in the Rider's Manual. Nor can BMW Motorrad entirely rule out errors and omissions. We hope you will appreciate that no claims can be entertained on the basis of the data, illustrations or descriptions in this manual.

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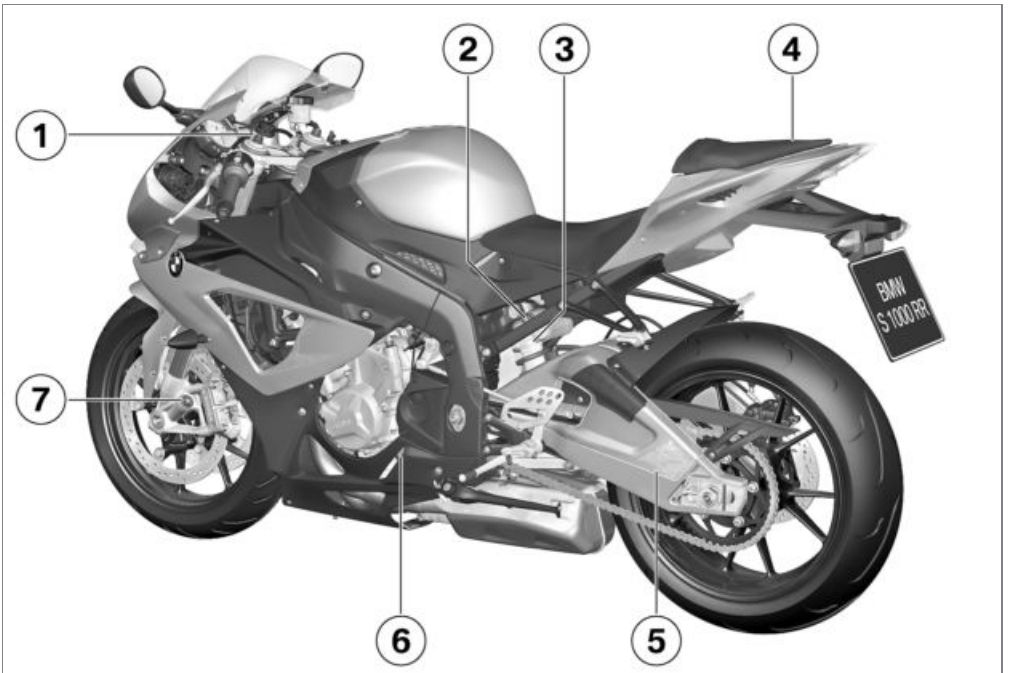
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BMW
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General view, left side

1 Adjuster, spring preload, front (➠ 48)
Adjuster for front rebound-stage damping (➠ 51)

2 Adjuster for rear compression-stage damping (➠ 52)

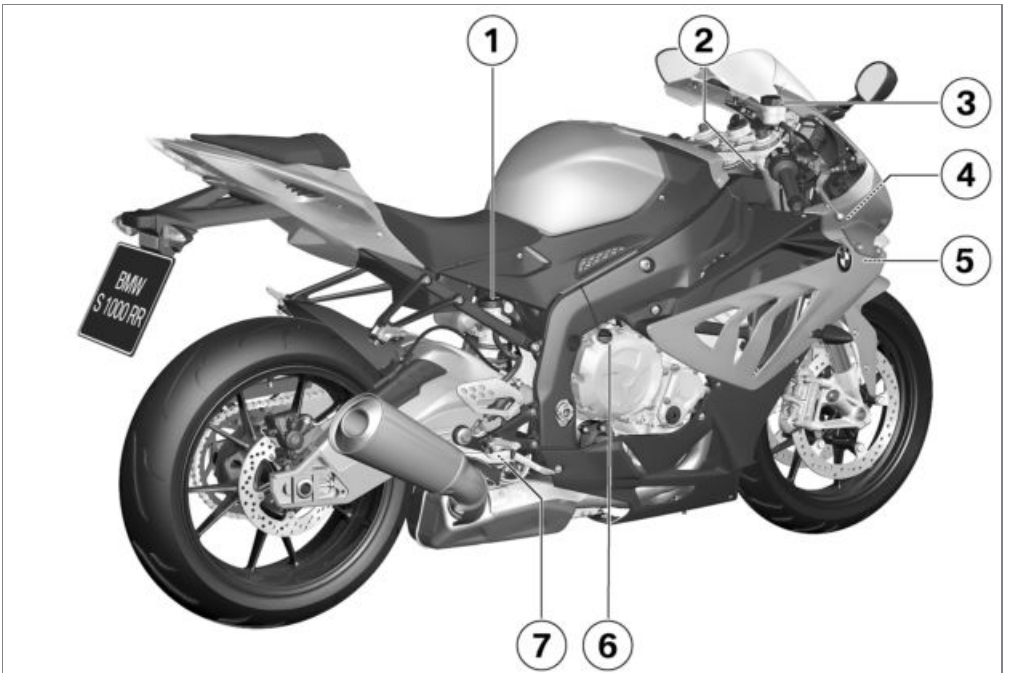
3 Adjuster for spring preload, rear (➠ 49)

4 Seat lock (➠ 55)

5 Table of tyre pressures
Payload table
Chain settings

6 Engine oil level indicator (➠ 113)

7 Adjuster for front compression-stage damping (➠ 50)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General view, right side

1 Brake-fluid reservoir, rear (➠ 117)
2 VIN and type plate (on steering-head bearing, right)
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4 Steering damper (behind right side panel) (➠ 67)
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1 High-beam headlight and headlight flasher (➠ 38)
Control for the laptimer (➠ 78)

2 – with BMW Motorrad Race ABS [OE]
Operating the ABS (➠ 41)
– with BMW Motorrad Race ABS and DTC [OE]
Control for DTC (➠ 42)

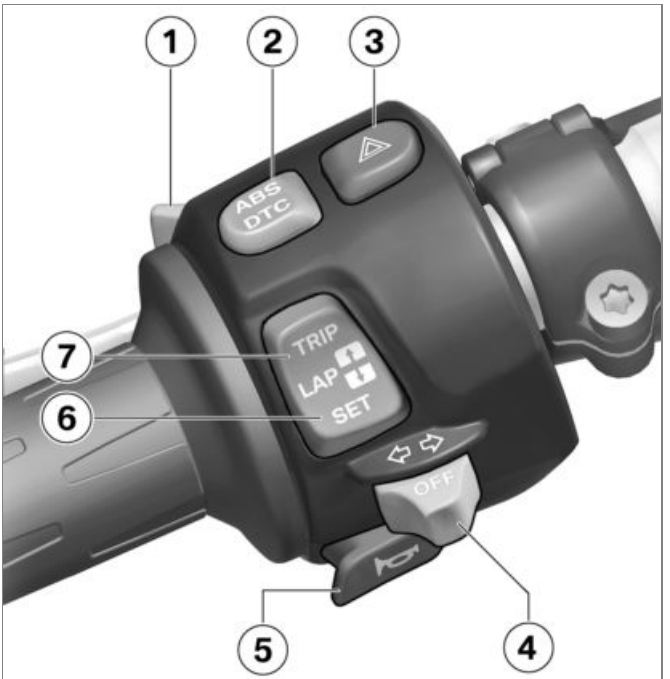
3 Control for hazard warning flashers (➠ 39)

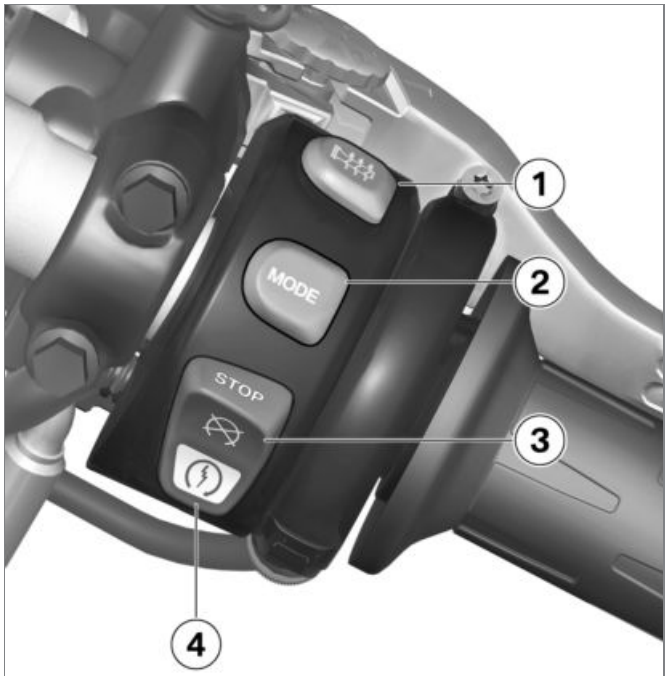
4 Operation of the flashing turn indicators (➠ 39)

5 Horn

6 Setting clock (➠ 35)
Control for race functions (➠ 74)

7 Control for the odometer (➠ 36)





Multifunction switch, right

1 – with heated handlebar grips[OE]
Grip heating control (➠ 40)

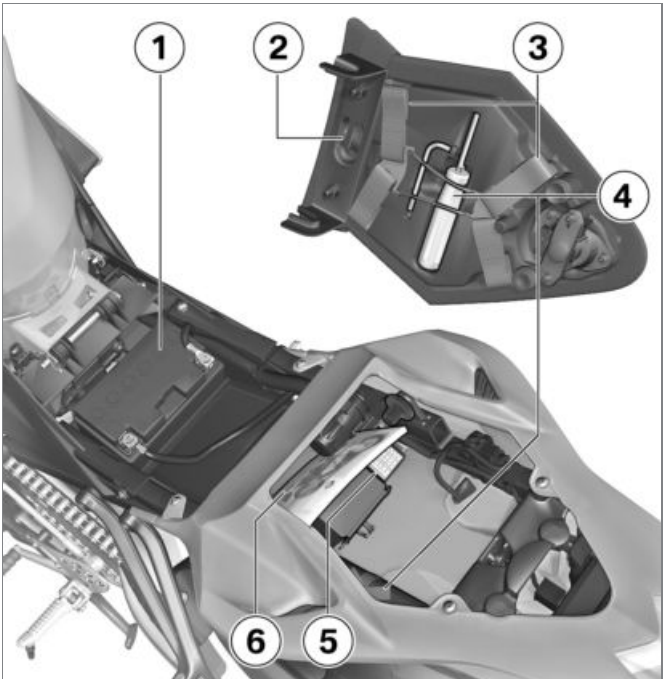
2 Control for selecting the ride mode (➠ 43)

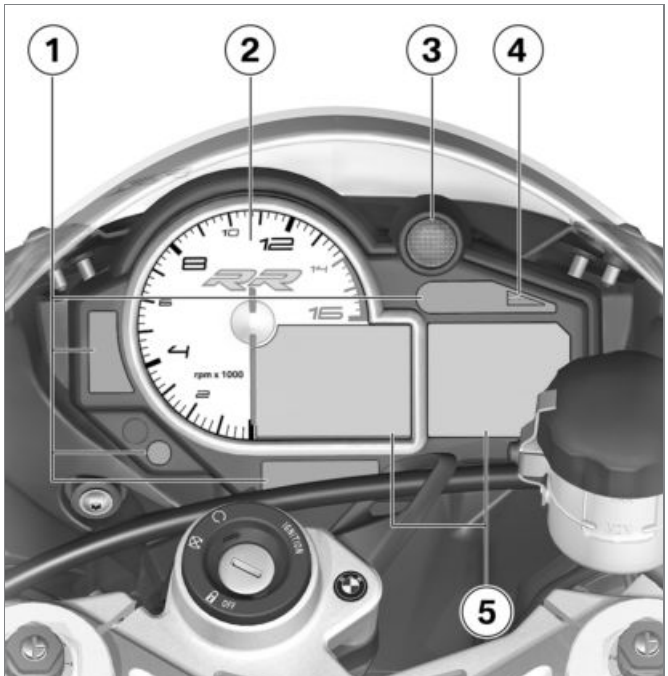
3 Emergency off switch (kill switch) (➠ 40)

4 Starting engine (➠ 61)

Underneath the seat

1 Battery
– with BMW Motorrad Race ABS [OE]
different battery position: set further back and turned 180°
2 Helmet holder (➠ 56)
3 Luggage loops (➠ 57)
4 Toolkit (➠ 112)
5 Fuse box (➠ 141)
6 Rider's Manual





Instrument panel

1 Panels for warning and telltale lights (➠ 21)

2 Rev. counter

3 Shift light (➠ 65)

4 Ambient-light brightness sensor (for adapting the brightness of the instrument lighting)
– with anti-theft alarm (DWA)[OE]
Anti-theft alarm telltale light (see the instructions for use for the anti-theft alarm)

5 Multifunction display (➠ 20)

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1 Speedometer
2 Coolant temperature
3 – with heated handlebar grips OE
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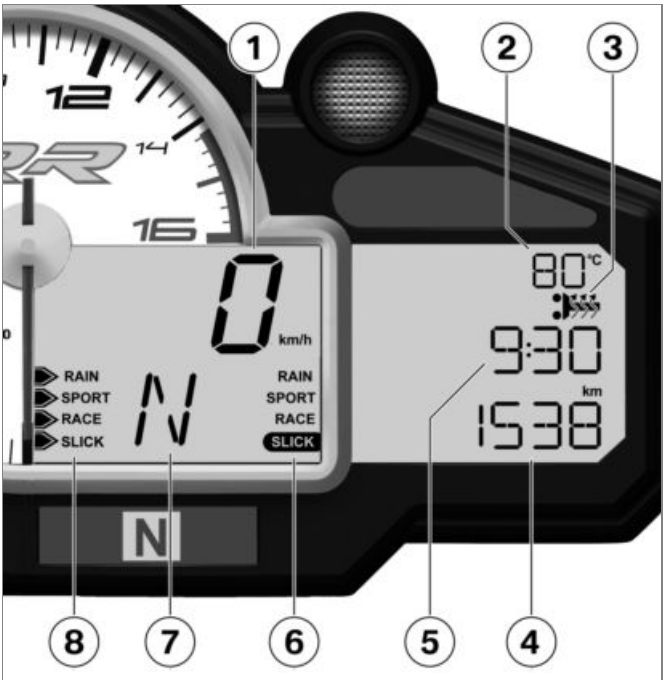
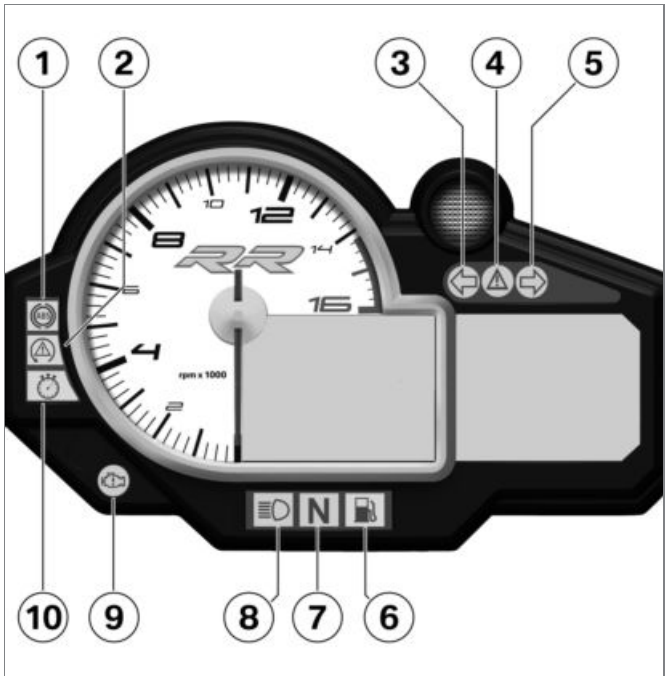
4 Odometer and tripmeters (➠ 36)
5 Clock (➠ 35)
6 Ride mode selected by the rider (➠ 43)
7 Gear indicator; "N" indicates neutral.
8 Selection of the ride mode (➠ 43)

See Section 5 for information on the display modes for the race track.◀





Warning and telltale lights

1 – with BMW Motorrad Race ABS[OE]
ABS warning light (➠ 29)

2 – with BMW Motorrad Race ABS and DTC[OE]
DTC warning light (➠ 30)

3 Telltale light for left turn indicators

4 General warning light, in combination with warnings in the display (➠ 23)

5 Telltale light for right turn indicators

6 Warning light for fuel down to reserve (➠ 27)

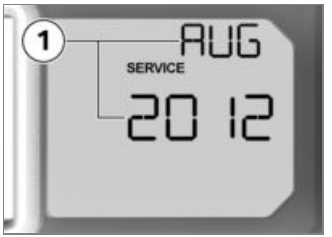
7 Telltale light for neutral

8 High-beam headlight telltale light

9 Warning light for engine electronics (➠ 27)

10 "Fastest lap" light (➠ 79)

Service-due indicator



If the next service is due in less than one month, the date for the next service **1** is shown briefly after the Pre-Ride Check completes. In this example the reading means "August 2012".

If the motorcycle 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 odometer reading at which a service will be due is less than 1000 km, the distance is counted down in steps of 100 km **2** and is shown briefly after the Pre-Ride Check completes.

If service is overdue, the due date or the odometer reading at which service was due is accompanied by the 'General' warning light showing yellow. The word "Service" remains permanently visible.

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 for a prolonged period of time.

If you want to have the date set consult a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

Range

The range readout **1** indicates how far you can ride with the fuel remaining in the tank. This reading is not displayed until fuel level has dropped to reserve. This distance is calculated on the basis of fuel level and average consumption.

When refuelling after running on reserve, make sure that you top up the tank to a level above reserve, as otherwise the sensor will not be able to register the new level. 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 reading. Consequently, BMW Motorrad recommends that you should not try to use the full range before refuelling.◀

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 such as, for example, **2** appearing on the multifunction display. The 'General' warning light shows red or yellow, depending on the urgency of the warning.

If two or more warnings occur at the same time, all the appropriate warning lights and warning symbols appear, alternating with warning words as applicable.

The possible warnings are listed on the next page.

Warnings, overview

Warning light	Status indicators	Meaning
Lights up yellow	! EWS appears on the display	Electronic immobiliser active (➠ 27)
Lights up		Fuel down to reserve (➠ 27)
Lights up red	Temperature reading flashes	Coolant temperature too high (➠ 27)
Lights up		Engine in emergency-operation mode (➠ 27)
Lights up yellow	! LAMPR appears on the display	Rear light bulb defective (➠ 28)
	! LAMPF appears on the display	Parking-light bulb defective (➠ 28)
	! LAMP appears on the display	Turn-indicator bulb defective (➠ 28)
	! VDS appears on the blank display	Motorcycle dropped (➠ 29)

Warning light	Status indicators	Meaning
	! VDS appears on the display	Drop sensor defective (➠ 29)
Flashes		ABS self-diagnosis not completed (➠ 29)
Lights up		ABS deactivated (➠ 29)
Lights up		ABS fault (➠ 29)
Quick-flashes		DTC intervention (➠ 30)
Slow-flashes		DTC self-diagnosis not completed (➠ 30)
Lights up		DTC switched off (➠ 30)
Lights up		DTC fault (➠ 30)
	! DWALO appears on the display	Anti-theft alarm battery weak (➠ 31)

Warning light	Status indicators	Meaning
Lights up yellow	! DWA appears on the display	Anti-theft alarm battery flat (➠ 31)
Shift indicator lights up or flashes	! SPEED appears on the display	Speed warning (➠ 31)

Electronic immobiliser active

General warning light shows yellow.

! EWS 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.
- Use the reserve key.
- Have the defective key replaced, preferably by an authorised BMW Motorrad dealer.

Fuel down to reserve

Warning light for fuel down to reserve shows.

Lack of fuel can result in the engine misfiring and cutting out unexpectedly. Misfiring can damage the catalytic converter; a hazardous situation can result if the engine cuts out unexpectedly.
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

- Refuel (➠ 69).

Coolant temperature too high

General warning light shows red.

The coolant-temperature reading flashes.

Continuing to ride 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 in emergency-operation mode

Warning light for engine fault shows.

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.◀

Possible cause:

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

- You can continue to ride, but bear in mind that the usual engine power or the full range of engine rpm might not be available.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Rear light bulb defective

General warning light shows yellow.

! LAMPR appears on the display.

Possible cause:

Rear light or brake light bulb defective.

- The LED rear light must be replaced. Consult a specialist workshop, preferably an authorised BMW Motorrad dealer.

Parking-light bulb defective

! LAMPF appears on the display.

A defective bulb places your safety at risk because it is easier for other users to oversee the motorcycle.
Replace defective bulbs as soon as possible; always carry a complete set of spare bulbs if possible.◀

Possible cause:

Parking-light bulb defective.

- Replacing parking-light bulb, left (➠ 136).
- Replacing parking-light bulb, right (➠ 138).

Turn-indicator bulb defective

! LAMP appears on the display.

A defective bulb places your safety at risk because it is easier for other users to oversee the motorcycle.
Replace defective bulbs as soon as possible; always carry a complete set of spare bulbs if possible.◀

Possible cause:

Turn-indicator bulb defective

- Replacing turn indicator bulbs, front and rear (➠ 139).

Possible cause:

The number-plate carrier has been removed; the motorcycle's on-board electronics know that the flashing turn indicators are not installed on the motorcycle.

- Installing number-plate carrier (➠ 96).
- In SETUP mode, switch on suppression of the error message.

Motorcycle dropped

! VDS (Vertical Down Sensor) appears on the blank display.
Possible cause:

The drop sensor has detected a drop and has cut out the engine.

- Bring the motorcycle to the upright position
- Switch the ignition off and then on again or switch the kill switch on and then off again.

Drop sensor defective

! VDS (Vertical Down Sensor) appears on the display.
Possible cause:

A defect in the drop sensor has been detected.

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

ABS self-diagnosis not completed

– with BMW Motorrad Race ABS OE

ABS warning light flashes.

Possible cause:

The ABS function is not available, because self-diagnosis did not complete. The motorcycle has to move forward a few metres for the wheel sensors to be tested.

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

ABS deactivated

– with BMW Motorrad Race ABS OE

ABS warning light shows.

Possible cause:

The rider has switched off the ABS system.

- Activate the ABS function (➠ 42).

ABS fault

– with BMW Motorrad Race ABS OE

ABS warning light shows.

Possible cause:

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

- You can continue to ride the motorcycle, 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 (➠ 106).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

DTC intervention

– with BMW Motorrad Race ABS and DTC[OE]

DTC warning light quick-flashes.

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

DTC self-diagnosis not completed

– with BMW Motorrad Race ABS and DTC[OE]

DTC warning light slow-flashes.

Possible cause:

Self-diagnosis did not complete, so the DTC function is not available. The engine must be running and the motorcycle must reach a speed of at least 5 km/h in order for DTC self-diagnosis to complete.
- Pull away slowly. Bear in mind that the DTC function is not available until self-diagnosis has completed.

DTC switched off

– with BMW Motorrad Race ABS and DTC[OE]

DTC warning light shows.

Possible cause:

The rider has switched off the DTC system.
- Activate the DTC function (➠ 43).

DTC fault

– with BMW Motorrad Race ABS and DTC[OE]

DTC warning light shows.

Possible cause:

The DTC control unit has detected a fault.
- You can continue to ride. Bear in mind that the DTC function is not available or the functionality might be subject to certain restrictions. Bear in mind the more detailed information on situations that can lead to a DTC fault (➠ 107).

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

Anti-theft alarm battery weak

– with anti-theft alarm (DWA)[OE]

! DWALO appears on the display.

This error message appears only briefly after the pre-ride check completes.◀

Possible cause:

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

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

Anti-theft alarm battery flat

– with anti-theft alarm (DWA)[OE]

General warning light shows yellow.

! DWA appears on the display.

This error message appears only briefly after the pre-ride check completes.◀

Possible cause:

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

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

Speed warning

Shift indicator lights up or flashes, depending on your preferred setting.

! SPEED appears on the display.

Possible cause:

The preset top speed was exceeded.

- Reduce speed.
- Set a new top speed.

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Ignition switch/steering lock

Keys

You receive two master keys and one emergency key. The emergency key is small and light so that it can always be kept in a wallet or purse, for example. It is designed for occasional use, for example when no master key is available; it is not intended for constant use.

Please consult the information on the electronic immobiliser (EWS) if a key is lost or mislaid (➠ 35).

Ignition switch/steering lock, fuel filler cap lock and seat lock are all operated with the same key.

Switching on ignition

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

» Parking lights and all function circuits switched on.

» Engine can be started.

» Pre-ride check is performed. (➠ 62)

– with BMW Motorrad Race ABS[OE]

» ABS self-diagnosis is performed. (➠ 63)

– with BMW Motorrad Race ABS and DTC[OE]

» DTC self-diagnosis is performed. (➠ 63)

Switch off the ignition

- Turn the key to position **2**.

» Lights switched off.

» Handlebars not locked.

» Key can be removed.

Locking handlebars

- Turn the handlebars all the way to left

- Turn the key to position **3**, while moving the handlebars slightly.

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

Electronic immobiliser EWS

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

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 mislay a key you can have the key in question barred by your authorised BMW Motorrad dealer. In order to have a key barred you must bring along all the other keys belonging to the motorcycle.
The engine cannot be started by a barred key, but a key that has been barred can subsequently be reactivated.
You can obtain replacement/extra keys 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.

Clock

Setting clock

Attempting to set the clock while riding the motorcycle can lead to accidents.
Set the clock only when the motorcycle is stationary.◀

- Switch on the ignition.

- Press and hold down button **2** until the hours number **3** flashes.
- Press button **1** to step the hours reading up.
- Press button **2** to step the hours reading down.
- When the hours reading is correct, hold down button **2** until minutes reading **4** flashes.
- Press button **1** to step the minutes reading up.
- Press button **2** to step the minutes reading down.
- When the minutes reading is correct, press and hold down button **2** until the number stops flashing.

» This completes the process.

Odometer and tripmeters

Selecting readings

- Switch on the ignition.

- Repeatedly press button **1** until the value you want appears in panel **3**.

The following values can be displayed:

– Total distance covered
– Tripmeter 1 (`Trip I`)
– Tripmeter 2 (`Trip II`)
– Range (once fuel level is down to reserve)

Resetting tripmeter

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

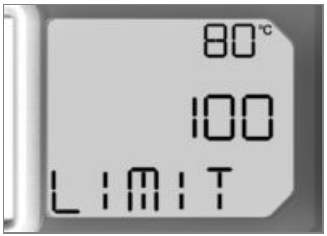
- Press and hold down button **1** until the tripmeter reading is reset.

Speed warning

Adjusting speed warning

- If applicable, activate the speed warning in the SETUP menu (see "On the race track").

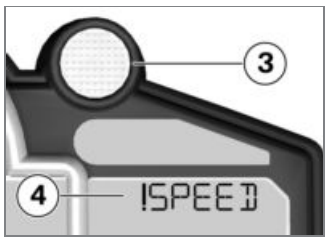
- Repeatedly press button **2** until LIMIT appears on the display.



The current speed setting or OFF appears on the display.

- To set the current speed as the new limit: Hold down button **2** until this speed appears on the display.
- To increase the speed setting: Briefly press button **1**.

» Speed is increased by approx. 10 km/h each time you press the button.



If you exceed the limit set beforehand, shift indicator **3** lights up or flashes at the preset frequency and warning **4** appears on the display.

- To switch off the speed warning: Hold down button **1** until OFF appears on the display.

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

- Start the engine.

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

Parking light

- 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.

Turn indicators

Operating flashing turn indicators

- Switch on the ignition.

The turn indicators are cancelled automatically after you have ridden for approximately 10 seconds and covered a distance of about 300 m.◀

- Push button **1** to the left to switch on the left flashing turn indicators.
- Push button **1** to the right to switch on the right flashing turn indicators.
- Centre button **1** to cancel the flashing turn indicators.

Hazard warning flashers

Switching on hazard warning flashers

- Switch on the ignition.

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.

- Press button **1** again to switch off the hazard warning flashers.

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)

Grip heating

– with heated handlebar grips OE

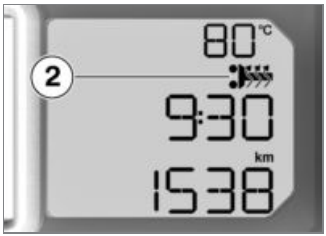
Operating grip heating

• Start the engine.

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

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

• Repeatedly press button **1** until the desired heating stage appears on the display.



The handlebar grips have two-stage heating. Stage two **2** is for heating the grips quickly: it is advisable to switch to stage one as soon as the grips are warm.

100 % heating power

50 % heating power

» The selected heating stage will be saved if you allow a certain length of time to pass without making further changes.

BMW Motorrad Race ABS

– with BMW Motorrad Race ABS OE

Deactivating ABS function

• Switch on the ignition.

You have the option of deactivating the ABS function while the motorcycle is on the move.◀

• Press and hold down button **1** until ABS warning light **2** changes status.

ABS warning light shows.

– with BMW Motorrad Race ABS and DTC OE

• Press and hold down button **1** until first DTC warning light **3** and then ABS warning light **2** change their status.

» The DTC setting remains unchanged.

ABS warning light shows.◁

• Release button **1** within two seconds.

ABS warning light remains ON.

» The ABS function is deactivated.

Activating ABS function

- Press and hold down button **1** until ABS warning light **2** changes status.

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

- Release button **1** within two seconds.

The ABS warning light remains off or continues to flash.

» The ABS function is activated.

- If the coding plug for the SLICK function is not inserted, you have the option of switching the ignition off and then on again.

If you switch the ignition off then on again and the ABS light comes back on, there is a fault in the ABS.◀

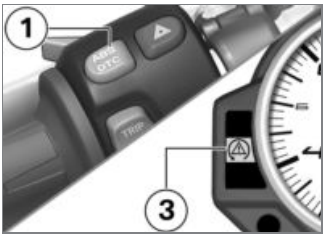
Dynamic Traction Control DTC

– with BMW Motorrad Race ABS and DTC[OE]

Deactivating DTC function

- Switch on the ignition.

You have the option of deactivating the DTC function while the motorcycle is on the move.◀



- Press and hold down button **1** until DTC warning light **3** changes status.

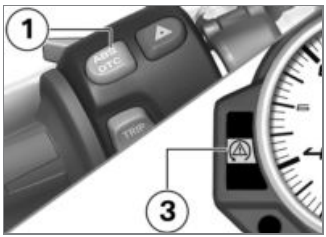
DTC warning light starts to show.

- Release button **1** within two seconds.

DTC warning light remains ON.

» The DTC function is deactivated.

Activating DTC function



- Press and hold down button **1** until DTC warning light **3** changes status.

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

- Release button **1** within two seconds.

DTC warning light remains off or continues to flash.

» The DTC function is activated.

- If the coding plug for the SLICK function is not inserted, you have the option of switching the ignition off and then on again.

A DTC fault has occurred if the DTC warning light shows when the motorcycle accelerates to a speed in excess of 5 km/h after the ignition was switched off and then on again.◀◁

Ride mode

Setting riding mode

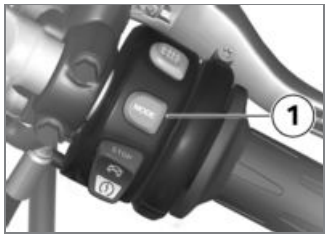
– without reduced power output, 79 kW OE

or

– with reduced power output, 79 kW OE

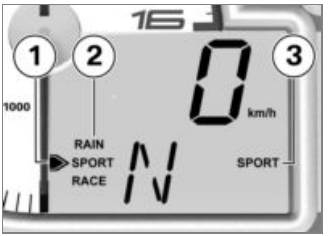
– with BMW Motorrad Race ABS OE

- Switch on the ignition.



- Press button **1**.

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



Arrow **1** and selection menu **2** show. The current setting is shown at position **3**.

With the coding plug inserted, the menu includes SLICK **4** as an additional selectable riding mode.

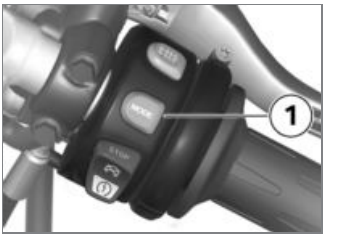
- Install the coding plug. (➠ 46).◁

– with reduced power output, 79 kW OE
– without BMW Motorrad Race ABS OE

- Install the coding plug. (➠ 46).

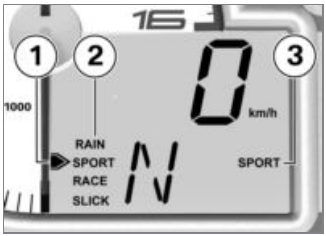
▷ On a motorcycle with power reduction and without ABS you can select the riding mode only with the coding plug connected.◀

- Switch on the ignition.

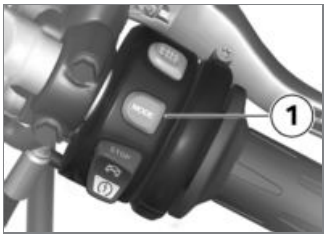


- Press button **1**.

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



Selection arrow **1** and selection menu **2** with the four possible riding modes appear on the display. The current setting is shown at position **3**.◁



- Repeatedly press button **1** until the arrow is to the left of the setting you want.

The SLICK mode is set up for racing slicks and the assumption on which the parameter settings are based is that tyre-to-surface grip is of the very high level generally encountered only on race tracks. This calls for a correspondingly high level of skill and experience on the part of the rider.
Activate SLICK mode only on race tracks and only when running the motorcycle on racing slicks.◀

- When SLICK mode is selected: Note that ABS control for the rear wheel is restricted (see the section entitled "Engineering details").

» With the motorcycle at a standstill, the mode you select is activated after approximately ten seconds.

» The newly selected riding mode is activated as you ride only when the following preconditions are satisfied:

– Brake not applied
– Throttle twistgrip in fully closed position
– Clutch pulled

» Once the new ride mode has been activated, the selection menu disappears from the display.

» The mode selected in this way is retained with the engine-characteristic, ABS and DTC

adaptation settings even after the ignition has been switched off.

Installing coding plug

- Switch off the ignition.

– with reduced power output, 79 kW OE

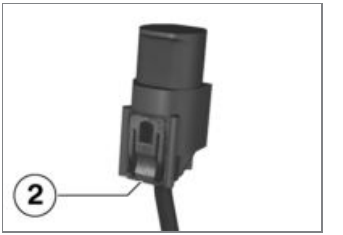
The following applies to motorcycles with power reduction: Once the coding plug has been inserted, the choice of modes includes SPORT and RACE with increased engine power. The significantly more sporty response in these modes can lead to hazardous situations. It is important for the rider intending to use these more sporty ride modes to familiarise himself/herself with their characteristics.◀

The following applies to motorcycles with power reduction: Inserting the coding plug voids homologation for riding the motorcycle on public roads.
In these cases, do not insert the coding plug for riding on public roads.◀

- Switch off the ignition.◁
- Remove the front seat (➠ 56).

Dirt and moisture can penetrate the open plug and lead to malfunctions.
Reinstall the cap after removing the coding plug.◀

- Remove cap of plug **1**.



- To do so, press retainer **2** and pull the cap up.
- Insert the coding plug.
- Switch on the ignition.

Once the coding plug is inserted RAIN mode **1** is the mode ac-

tivated automatically, for safety reasons.
- Set the riding mode (➠ 43).
- Install the front seat (➠ 56).

Brakes

Adjust the handbrake lever

⚠ Changing the position of the brake-fluid reservoir can allow air to penetrate the brake system.
Do not twist the handlebar fitting or the handlebars.◀

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

- Applying light pressure from behind, turn adjusting screw **1** to the desired position.

▷ The adjusting screw is easier to turn if you push the handbrake lever forward.◀

» Adjustment options:
– From position 1: widest span between handlebar grip and clutch lever
– to position 6: narrowest span between handlebar grip and handlebar lever

Mirrors

Adjusting mirrors

- Turn the mirror to the correct position.

Spring preload

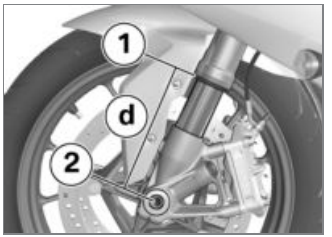
Setting

It is essential to set spring preload of the front suspension to suit the terrain. Increase spring preload for riding in rough terrain and reduce if the terrain is level.
It is essential to set spring preload of the rear suspension to suit the load carried by the mo-

torcycle. Increase spring preload when the motorcycle is heavily loaded and reduce spring preload accordingly when the motorcycle is lightly loaded.

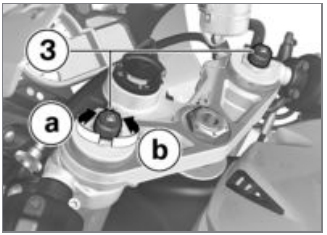
Adjusting spring preload for front wheel

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Make sure there is no load on the motorcycle; remove all items of luggage, if carried.



- Hold the motorcycle upright and measure distance **d** from bottom edge **1** of the outer tube to front axle **2**.
- Apply the rider's weight to the motorcycle.
- With the assistance of a second person, measure distance **d** between points **1** and **2** again and calculate the difference (negative spring displacement) between the two readings.

	Load-dependent adjustment of spring preload
–	Negative spring displacement of front wheel
–	10...15 mm (With rider 85 kg)



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

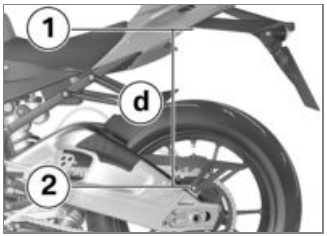
- To reduce negative spring displacement (increase spring preload, in other words), use the tool from the on-board toolkit to turn adjusting screws **3** in direction **a**.
- To increase negative spring displacement (reduce spring preload, in other words), use the tool from the on-

board toolkit to turn adjusting screws **3** in direction **b**.
- Make sure that the settings are identical on left and right.

Adjusting spring preload for rear wheel

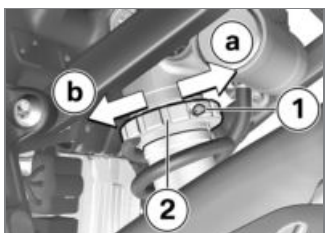
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Make sure there is no load on the motorcycle; remove all items of luggage, if carried.

- Use the tool from the on-board toolkit to slacken screw **1**.



- Hold the motorcycle upright and measure distance **d** from bottom edge **1** of the number-plate carrier to screw **2** of the chain guard.
- Apply the rider's weight to the motorcycle.
- With the assistance of a second person, measure distance **d** between points **1** and **2** again and calculate the difference (negative spring displacement) between the two readings.

Load-dependent adjustment of spring preload
– Negative spring displacement of rear wheel
– 20...25 mm (With rider 85 kg)



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

- To reduce negative spring displacement (increase spring pre-

load, in other words), use the tool from the on-board toolkit to turn adjusting ring **2** in direction **b**.

- To increase negative spring displacement (reduce spring preload, in other words), use the tool from the on-board toolkit to turn adjusting ring **2** in direction **a**.
- Tighten screw **1** to the specified tightening torque.

	Clamping bolt to upper spring cup
– 3 Nm	

Damping

Setting

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 compression-stage damping for front wheel

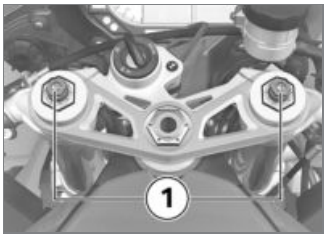
- Use adjusting screws **1** on left and right to adjust the compression-stage damping.

- To increase damping: Use the tool from the on-board kit to turn the adjusting screw in the appropriate direction so that mark **2** points to a higher reading on the scale.
- To reduce damping: Use the tool from the on-board kit to turn the adjusting screw in the appropriate direction so that mark **2** points to a lower reading on the scale.

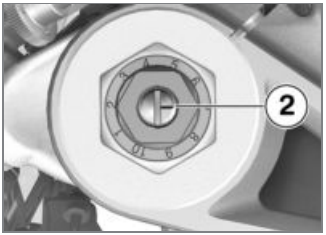
Compression stage, basic setting, front
– Position 2 (comfortable setting with rider 85 kg)
– Position 4 (normal setting with rider 85 kg)
– Position 8 (sports setting with rider 85 kg)

- Make sure that the settings are identical on left and right.

Adjusting rebound-stage damping for front wheel



- Adjust rebound-stage damping by turning adjusting screws **1** on the left and right fork legs.



- To increase damping: Use the tool from the on-board kit to turn the adjusting screw in the appropriate direction so that mark **2** points to a higher reading on the scale.
- To reduce damping: Use the tool from the on-board kit to turn the adjusting screw in the appropriate direction so that mark **2** points to a lower reading on the scale.

Rebound stage, basic setting, front
– Position 2 (comfortable setting with rider 85 kg)
– Position 4 (normal setting with rider 85 kg)
– Position 7 (sports setting with rider 85 kg)

- Make sure that the settings are identical on left and right.

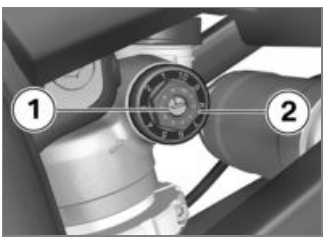
Factory default settings, front wheel

- Reset the factory defaults as stated below.

Factory default settings for compression/rebound stages, front
– Position 4

Adjusting compression-stage damping for rear wheel

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



- Adjust compression-stage damping for long bump travel (low speed) by turning adjusting screw **1** and adjust compression-stage damping for short bump travel (high speed) by turning adjusting ring **2**.

- To increase damping: Use the tool from the on-board toolkit to turn the adjusting screw or the adjusting ring, as applicable, in the appropriate direction so that mark **3** or, respectively, **4** points to a higher reading on the scale.
- To reduce damping: Use the tool from the on-board toolkit to turn the adjusting screw or the adjusting ring, as applicable, in the appropriate direction so that mark **3** or, respectively, **4** points to a lower reading on the scale.

Compression stage, basic setting, rear, high speed
– Position 2 (comfortable setting with rider 85 kg)
– Position 4 (normal setting with rider 85 kg)
– Position 9 (sports setting with rider 85 kg)

Compression stage, basic setting, rear, low speed
– Position 2 (comfortable setting with rider 85 kg)
– Position 4 (normal setting with rider 85 kg)
– Position 8 (sports setting with rider 85 kg)

Adjusting rebound-stage damping for rear wheel

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

- Adjust compression-stage damping by turning adjusting screw **1**.

- To increase damping: Use the tool from the on-board kit to turn the adjusting screw in the appropriate direction so that mark **2** points to a higher reading on the scale.
- To reduce damping: Use the tool from the on-board kit to turn the adjusting screw in the appropriate direction so that mark **2** points to a lower reading on the scale.

Rebound stage, basic setting, rear
– Position 2 (comfortable setting with rider 85 kg)
– Position 4 (normal setting with rider 85 kg)
– Position 7 (sports setting with rider 85 kg)

Factory default settings, rear wheel

- Reset the factory defaults as stated below.

Factory default settings for compression/rebound stages, rear
– Position 4

Tyres

Check the 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 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.

Headlight

Adjusting headlight for driving on left/driving on right

This motorcycle has a symmetric-beam low-beam headlight. If the motorcycle is ridden in a country where the opposite rule of the road applies, its symmetric low-beam headlight means that no measures are necessary to prevent the headlight beam from dazzling oncoming traffic.

Headlight beam throw and spring preload

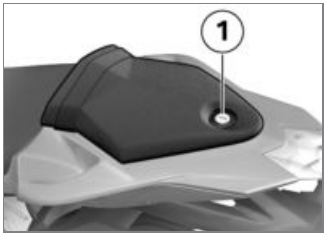
Headlight beam throw is generally kept constant when spring preload is adjusted to suit load.

Consult a specialist workshop, preferably an authorised BMW Motorrad dealer, if you are unsure whether the headlight beam-throw setting is correct.◀

Front and rear seats

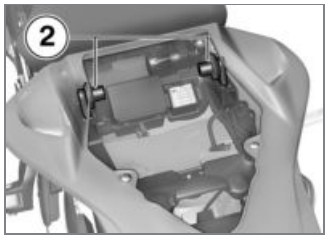
Removing rear seat

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



- Open seat lock **1** with the ignition key.
- Lift the rear seat at the rear and then work it back and up to remove.
- Remove the ignition key from the lock and place the rear seat, upholstered side down, on a clean surface.

Installing rear seat



- Engage the rear seat in mounts **2** on left and right.

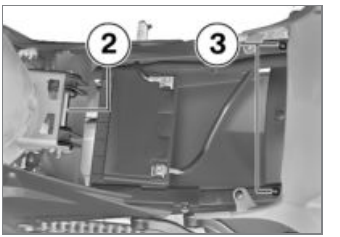
- Swing the rear seat down, pushing it lightly forward.

- Lock the seat lock with the ignition key.

Removing front seat

- Push the upholstery of the front seat forward slightly above screws **1** and hold it in this position.
- Remove the screws.
- Push the seat forward and lift it at the rear to remove. Take care not to let the screws scratch the trim panels.
- Place the seat, upholstered side down, on a clean surface.

Installing front seat



- Engage the front seat in mount **2**, then lower the rear of the seat to bring the holes into alignment with screw holes **3**. Take care not to let the screws scratch the trim panels.

- Push the upholstery of the front seat forward slightly above the screw holes and hold it in this position.
- Install screws **1**.

Helmet holder

Securing helmet to motorcycle

- Remove the rear seat (➠ 55).
- Turn the rear seat upside down.

⚠ The helmet catch can scratch the panelling. Make sure the lock is out of the way when you hook the helmet into position.◀

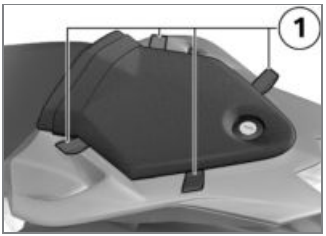
- Use a plastic-sheathed steel cable to secure the helmet to helmet holder **1**.
- Install the rear seat (➠ 55).
- Place the helmet on the front seat.

Luggage loops

Securing luggage to motorcycle

- Remove the rear seat (➠ 55).
- Turn the rear seat upside down.

- Pull loops **1** out of the holders and to the outside and down.
- Install the rear seat (➠ 55).



- Use the loops **1** and the rear footrests, for example, to secure luggage to the rear seat. In this process, take care not to damage the rear trim panels.

Riding

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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.◀

• Set spring preload, damping characteristic and tyre pressures to suit total weight.

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 motorcycle is in use. There is a risk of burn injuries by contact with hot surfaces, particularly at the silencer.
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 motorcycle 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.
– Brakes
– Brake-fluid levels, front and rear
– Clutch
– Shock absorber setting and spring preload
– Tyre-tread depth and tyre pressures
– Security of the luggage
– Tension and lubrication of the drive chain

At regular intervals:
– Engine oil level (every refuelling stop)
– Brake-pad wear (every third refuelling stop)

Starting

Starting engine

• Switch on the ignition.
» Pre-ride check is performed. (⇒ 62)
– with BMW Motorrad Race ABS OE
» ABS self-diagnosis is performed. (⇒ 63)
– with BMW Motorrad Race ABS and DTC OE
» DTC self-diagnosis is performed. (⇒ 63)

- 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.◀

» The engine starts.
» Consult the troubleshooting chart below if the engine refuses to start. (➠ 152)

Pre-ride check

The instrument panel runs a test of the warning lights and the revolution counter when the ignition is switched on: this is the Pre-Ride-Check. The test is aborted if you start the engine before it completes.

Phase 1

Telltale and warning lights **1** light up, 'General' warning light **2** shows yellow.
The needle of the revolution counter moves all the way to the position for maximum engine revolutions.
All the segments in the display light up.

Phase 2

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

Phase 3

The needle of the revolution counter moves to the position for zero engine revolutions.
The telltale and warning lights go out.
The display switches to its ordinary display mode.

If a warning light does not show:

Some malfunctions cannot be indicated if one of the warning lights fails to show.
Make sure that all the warning and telltale lights come on in the pre-ride check.◀

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

ABS self-diagnosis

– with BMW Motorrad Race ABS OE

BMW Motorrad Race ABS performs self-diagnosis to ensure its operability. Self-diagnosis is performed automatically when you switch on the ignition. The motorcycle has to move forward a few metres for the wheel sensors to be tested.

Phase 1

» Test of the diagnosis-compatible system components with the motorcycle at a standstill.
ABS warning light flashes.

Phase 2

» Test of the wheel sensors as the motorcycle pulls away from rest.
ABS warning light flashes.

ABS self-diagnosis completed

» The ABS warning light goes out.

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.

DTC self-diagnosis

– with BMW Motorrad Race ABS and DTC OE

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

Phase 1

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

DTC warning light slow-flashes.

Phase 2

» Test of the diagnosis-compatible system components while the motorcycle is on the move. The motorcycle must reach a speed of at least 5 km/h in order for DTC self-diagnosis to complete.

DTC warning light slow-flashes.

Phase 2

DTC warning light slow-flashes.

DTC self-diagnosis completed

» The DTC symbol no longer shows.

If an indicator showing a DTC fault appears after DTC self-diagnosis completes:

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

Running in

The first 1000 km

- While running in the motorcycle, vary the throttle opening and engine-speed range frequently; avoid riding at constant engine rpm for prolonged periods.
- Try to do most of your riding during this initial period on twisting, fairly hilly roads.
- Comply with the rpm limits for running in.

The electronic engine management system prevents the engine from revving past the preset rpm limit for running in. The authorised BMW Motorrad dealer deactivates this monitoring function when the motorcycle is brought in for its initial inspection.◀

Running-in speed
– <7000 min^{-1} (Odometer reading 0...300 km)
– <9000 min^{-1} (Odometer reading 300...1000 km)

Running-in speed
– no full load (Odometer reading 0...1000 km)

- Do not omit the first inspection after 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.◀

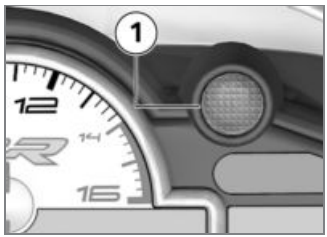
Tyres

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.

Tyres do not have their full grip when new and there is a risk of accidents at extreme angles of heel.
Avoid extreme angles of heel.◀

Shifting gear

Shift light



Shift light **1** shows the rider two engine-speed thresholds:

Pullaway engine speed
When the motorcycle is at a standstill with the engine running, the shift light indicates the ideal engine speed for a racing start.
– Shift light off: engine speed too low
– Shift light on: ideal engine speed for pulling away

– Shift light flashing: engine speed too high

Shift speed

When the motorcycle is on the move, the shift light indicates the engine speed at which the rider should upshift.

– Shift light flashes at preset frequency: Approaching upshift rpm
– Shift light goes out: the engine has reached the ideal speed for an upshift

The engine-speed thresholds and the way in which the shift light indicates the various states can be customised in the SETUP menu.

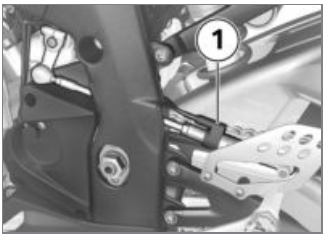
Speed limit

If the shift light flashes or comes on while the motorcycle is being ridden and ! SPEED appears on the display, you have exceeded the preset top speed.

Shift assistant

– with shift assistant OE

Your motorcycle is equipped with a shift assistant evolved from motorcycle-racing technology; the shift assistant enables you to upshift in virtually all load and engine-rpm ranges without pulling the clutch or changing the throttle-valve angle. The throttle valve remains open to accelerate the motorcycle and upshift time is reduced to a minimum. You select the gear in the usual way by means of the foot-operated shift lever.



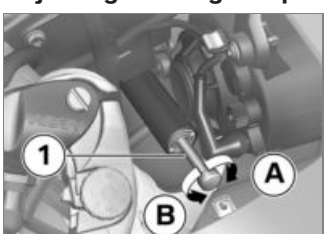
Sensor **1** in the shift linkage registers the shift request and triggers shift assistance.

When you are riding at constant speed with the engine revving high in a low gear, upshifting without disengaging the clutch can cause a severe reaction to the load change. BMW Motorrad recommends disengaging the clutch for upshifts 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:
– Gearshifts with the clutch pressed
– Gearshifts with the throttle valve closed (engine overrun)
– Downshifts

Steering

Adjusting steering damper



Attempting to adjust the steering damper while the motorcycle is being ridden can lead to accidents.
Do not attempt to adjust the steering damper unless the motorcycle is at a standstill.◀

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

Steering damper basic setting
– Open 5 clicks (from fully closed) (Public roads)
– Open 2 clicks (from fully closed) (Race track)

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 "panic 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. Under these circumstances the front wheel can lock up.

– with BMW Motorrad Race ABS OE

BMW Motorrad Race 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 motorcycle 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.◀

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

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

• 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.

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 attacks plastics, which become dull or unsightly.
Wipe off plastic parts immediately if they come into contact with fuel.◀

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

- Use the ignition key to unlock cap **1** of the fuel tank and pop the cap open.

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.◀

Leaded fuel will destroy the catalytic converter.
Use only unleaded fuel.◀

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

When refuelling after running on reserve, make sure that you top up the tank to a level above reserve, as otherwise the sensor will not be able to register the new level. If the sensor cannot register the new level neither the fuel-level reading nor the range readout can be updated.◀

Recommended fuel grade
– Super unleaded – 95 ROZ/RON – 89 AKI
Usable fuel capacity
– approx. 17.5 l
Reserve fuel
– approx. 4 l

- Press the fuel tank cap down firmly to close.
- Remove the 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.

- Remove screws **1** and remove the cover panel of the bottom fork bridge.

The motorcycle can topple and fall on its side.
Make sure that the motorcycle cannot topple sideways.◀

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

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

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

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

On the race track

Multifunction display 74
LAPTIMER mode 76
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Removing/installing mirrors 94
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Removing and installing front turn indicators 98

Multifunction display

Selecting display mode

- Repeatedly press button **2** until the reading shows the mode you want.

ROAD mode: The ROAD mode provides you with all the information necessary for riding on public roads. All the descriptions not included in this section apply to this mode.

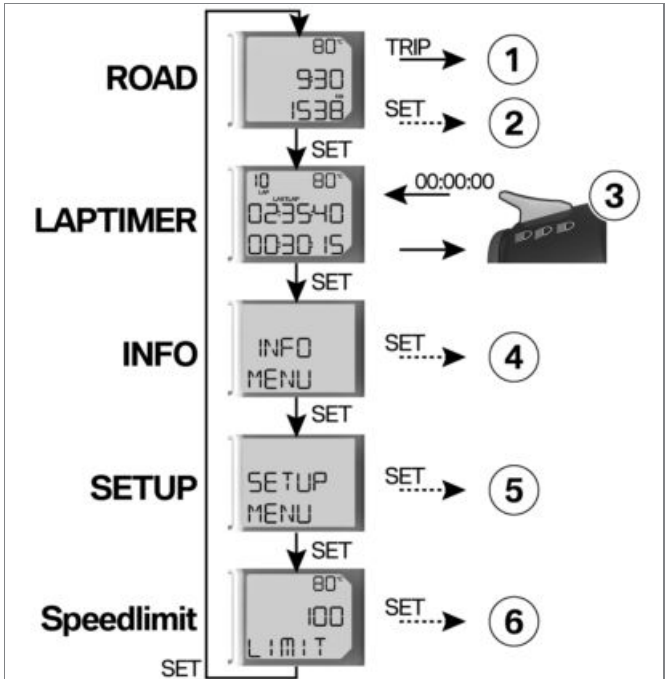
LAPTIMER mode: In LAPTIMER mode you can save lap times and other data for subsequent viewing in the INFO mode.

INFO mode: The data saved beforehand in LAPTIMER mode can be viewed in INFO mode. Note that this mode can be activated only when the motorcycle is at a standstill.

SETUP mode: SETUP mode is for customising the way in which the instrument panel works in line with individual preferences. Note that this mode can be activated only when the motorcycle is at a standstill.

Speed warning: You can set a speed above which a warning is issued. This function has to be switched on in SETUP mode.

- When the display shows INFO–MENU or SETUP–MENU, as applicable, press and hold down button **2** to activate the mode.



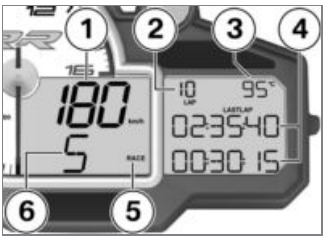
Overview of mode selection

solid line: short press
broken line: press and hold down

1 Operating odometer (➠ 36)
2 Setting clock (➠ 35).
3 Starting timing (➠ 78).
4 Starting INFO menu (➠ 81)
5 Starting SETUP menu (➠ 86)
6 Speed warning (➠ 37)

LAPTIMER mode

Mode of presentation



1 Speedometer
2 Current lap
3 Engine temperature
4 The readings in these lines can be changed by the rider (➠ 76)
Shown here: Time for the last completed lap (LASTLAP) and the current lap time
5 Ride mode selected by the rider
6 Gear indicator

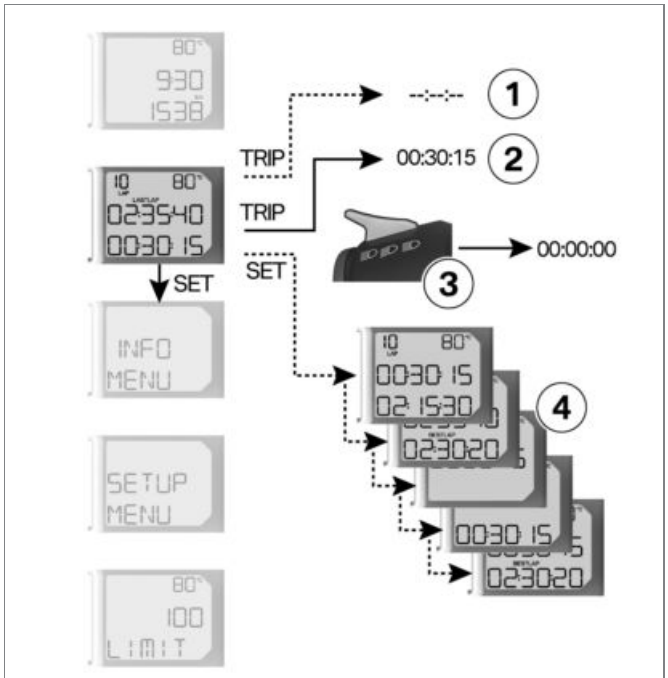
Labels for the values shown on the display

The following times can be displayed in the second line:
– The time for the preceding lap, labelled "LASTLAP".
– The running time for the current lap.

The following times can be displayed in the third line:
– The fastest lap saved, labelled "BESTLAP"
– The all-time best lap, no label
– The running time for the current lap.

The possible combinations are described on page (➠ 89).

At the start of each new lap the time for the preceding lap is shown briefly before the display switches to the running time of the current lap. The length of this freeze period can be set as described on page (➠ 92).



Overview of LAPTIMER mode

solid line: short press
broken line: press and hold down

1 Ending timing (➠ 79).
2 Interrupting timing (➠ 79).
3 Starting timing (➠ 78).
4 Customising display layout (➠ 78).

Customising display layout

- To change the layout of the display in LAPTIMER mode, repeatedly press button **2** until the layout of the display suits your preferences.

Starting timing

- Press button **1** to start timing.

The engine has to be running in order for the headlight-flasher signal to be detected.◀

- Every time you cross the start/finish line, press button **1** again to start timing for the next lap.
  - » The data of the preceding lap are written into memory.
  - » Timing continues even if you exit the display mode. In the other modes, however, timing of another lap can be started only by an external signal.

Infrared receiver

– with infrared receiver[OA]

An infrared signal provides a convenient way of operating the instrument panel in LAPTIMER mode. The instrument panel can be operated in this way only when the infrared receiver available as an optional accessory is connected. The headlight flasher button can be used to operate the instrument panel even when the infrared receiver is installed. A lap timeout can be defined to stop the receiver from registering completion of a lap prematurely in response to spurious signals (➠ 92). Signals received before this time elapses are ignored.

Interrupting timing

- Press button **1** to interrupt timing.
- Press button **1** again to resume timing.

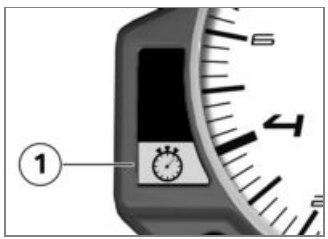
Ending timing

- Begin by pressing button **1** to interrupt timing.
- To save the reading as the last lap time, press and hold down button **1** until −− : −− : −− appears. Then press button **2** to switch to display mode.
- If you do not want to save the reading, press button **2** to switch to the display mode.

If more laps are subsequently timed, lap numbering resumes. Numbering is not restarted at lap 1 unless you delete the current timing session in the INFO mode.◀

Fastest lap anticipated

This function has to be activated in the SETUP menu (➠ 93).



When you start a new lap your intermediate times are taken every 100 metres and compared with the corresponding intermediate times of the best lap stored in memory. If your intermediate times show that you are faster than on your previous best lap the processor anticipates that this lap will be your new best

time. "Fastest lap" indicator **1** lights up.

INFO mode

Selecting saved lap

- Repeatedly press button **1** or button **2** to view each lap stored in memory one after the other.

If you pull away from rest in this mode the electronics switch automatically to ROAD mode.◀

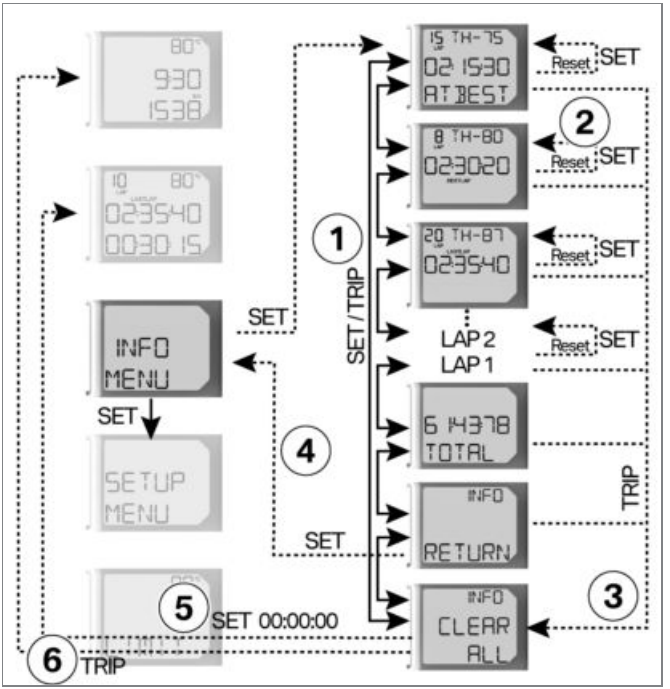
Each time button **1** is pressed the laps saved in memory are shown in the sequence described below; each time button **2** is pressed the laps are shown in reverse sequence:

- All-time best lap (ATBEST)
- Best lap saved (BEST)
- Last lap saved (LAST)
- All other laps saved in memory
- Aggregate time for all laps saved in memory (TOTAL)
- Exiting INFO mode (INFO RETURN)
- Option for deleting the data from memory (INFO CLEAR ALL) (except all-time best lap)

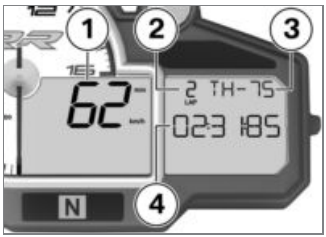
Overview of INFO mode

solid line: short press
broken line: press and hold down

1 Selecting saved lap (➠ 81).
2 Delete the lap times (➠ 85).
3 Direct jump to the CLEAR ALL menu
4 Exiting INFO mode (➠ 83).
5 Clearing all saved data (➠ 84).
6 Activate the ROAD mode (➠ 84).



Information per lap



1 Alternately: Top speed (max) and lowest speed (min) on the lap currently displayed

2 Lap for which the data on the display apply

3 Alternately: Average throttle-twistgrip position (TH) in percent, percentage of lap ridden with brakes applied (BR) and number of gearshifts (G) on the lap currently displayed

4 Lap time for the lap currently displayed

Exiting INFO mode

- Repeatedly press button **1** or button **2** until INFO RETURN appears on the display.

- Press and hold down button **2** to exit the INFO menu.

» The readings already recorded remain saved in memory.

Clearing all saved data

- Hold down button **1** until INFO CLEAR ALL appears.
- Hold down button **2** to clear all the saved data and return to the LAPTIMER mode.

Activating ROAD mode

- Hold down button **1** until INFO CLEAR ALL appears.
- Press and hold down button **1** to return to the ROAD mode.

» The readings already recorded remain saved in memory.

All-time best lap

The all-time best lap (ATBEST) is the fastest of all timed laps and is updated as soon as a faster lap is timed.
The all-time best lap remains stored in memory even if the timed laps are deleted. This means that other races can subsequently be timed and the lap times of those races compared with the best lap from earlier races.
The all-time best lap can also be deleted from memory.
If the all-time best lap is from a race timed in the past, it is accompanied on the display by the appropriate lap number. If the all-time best lap shows without a lap number, this lack of a lap number indicates that the time is from a race timed in the past but subsequently deleted from memory.

Deleting lap times

- Repeatedly press button **1** or button **2** until the lap you want to delete appears on the display.
- Press and hold down button **2** to delete the lap from memory.

» If the lap you select for deletion was

– the all-time best lap ATBEST, the next best lap time in memory becomes the new all-time best lap.
– the best lap in memory BEST, the lap in question is deleted. The lap that was the second-best time until the best time was deleted becomes the new best lap.
– the last lap in memory LAST, the lap in question is deleted. The lap that was the second-last time until the last time was deleted becomes the new last lap.
– a lap stored in memory, the lap in question is deleted. The numbering of the remaining laps remains unchanged.

» Total time is reduced by the time for the laps you delete.

SETUP mode

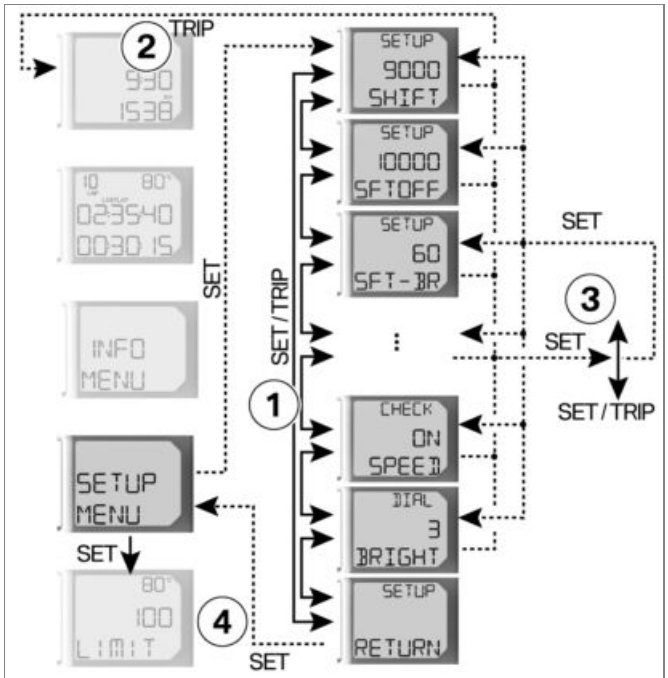
Selecting a parameter

- Repeatedly press button **1** or button **2** until the parameter you want appears on the display.

If you pull away from rest in this mode the electronics switch automatically to ROAD mode.◀

Each time button **1** is pressed the possible parameters are shown in the sequence described below; each time button **2** is pressed the parameters are shown in reverse sequence:

– Engine speed for shift light ON (SFT–ON)
– Engine speed for shift light OFF (SFTOFF)
– Shift-light brightness (SFT–BR)
– Shift-light flash frequency (SFT–FL)
– Display setup in laptimer mode (SETUP LAPTIMER)
– Display hold time for the most recent time (HOLD)
– Minimum lap time (LAP–TM)
– Activate or deactivate indicator for bulb defect (LAMP)
– Compare current lap with best lap (FSTLAP)
– Activate or deactivate speed warning (SPEED) in ROAD mode
– Display dimmer (NIGHT)
– Exit SETUP (SETUP RETURN)



Overview of SETUP mode

solid line: short press
broken line: press and hold down

1 Selecting a parameter (➠ 86).

2 Direct jump to ROAD mode

3 Setting parameter (➠ 88).

4 Exiting setup mode (➠ 88).

Setting parameter

- Press and hold down button **2** until the parameter starts to flash.
- Repeatedly press button **1** or button **2** until the value you want appears on the display.

When the value you want is shown:

- Press and hold down button **2** until the value stops flashing.

» The value is saved.

Exiting setup mode

- Press and hold down button **1** until the multifunction display switches to ROAD mode.

» A value that is still flashing will not be saved.

- Alternatively: Repeatedly press button **1** or button **2** until SETUP RETURN appears on the display.

When "SETUP RETURN" is shown:

- Press and hold down button **2** to exit the SETUP menu.

» SETUP MENU appears on the display.

Engine speed for shift light ON

Engine speed for shift light ON in rpm.◁

Engine speed for shift light OFF

Engine speed for shift light OFF in rpm.
You can select only engine speeds that are higher than the shift light ON speed.◁

Shift-light brightness

Shift-light brightness expressed as a percentage of maximum brightness.
The shift light remains on while brightness is being adjusted and immediately adjusts to the selected brightness setting.

Shift-light flash frequency

Frequency at which the shift light and the speed warning flash, in Hz (1/s).
If you select ON, the shift light and the speed warning show continuously.

Display layout in laptimer mode

You can choose between six display layout versions for the laptimer mode.

Version 1
The second line shows the running time for the current lap, the best lap saved in memory is shown in the third line.

Version 2
The second line shows the time recorded for the preceding lap, the running time for the current lap is shown in the third line.

Version 3
The second line shows the running time for the current lap, the all-time best lap is shown in the third line (➠ 84).

Version 4
The second line shows the time recorded for the preceding lap, the best lap saved in memory is shown in the third line.

Version 5
The second line shows the running time for the current lap, the third line is blank.

Version 6
The second line is blank, the third line shows the running time for the current lap.

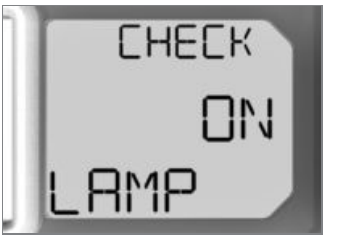
Display-freeze period for the most recent time

Freeze time in seconds.
After the start of a new lap the time for the preceding lap remains visible for the selected period. When this freeze period expires the readout switches back to the running time for the current lap.

Minimum lap time

If an infrared receiver is used for timing laps, you can set the minimum time that must elapse from when the first signal is received until a second signal will be accepted. This prevents the signals from two or more transmitters in close proximity from being accepted for processing.
Note too that within this time, pressing the headlight flasher button will not start timing for a new lap.

Indicator for bulb failure



If a bulb or the number-plate carrier is removed in preparation for a race-track session, the electronics detect a bulb failure and the appropriate warning appears on the display.
This function suppresses this warning.

Fastest lap indicator

The "Fastest lap anticipated" (➠ 79) function is switched on.

Speed warning

Activating this function activates another main menu in which you can set a top speed. A warning is issued if the motorcycle exceeds this limit.

Display brightness

You can set display brightness to any of five levels.

In the gravel trap

– with BMW Motorrad Race ABS and DTC OE

DTC deactivation

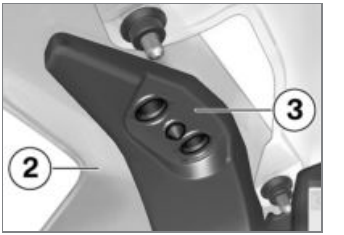
On very loose surfaces (for example in a gravel trap of a race track), DTC's attempts to control propulsive power might reduce drive to the extent that the rear wheel no longer turns. Under these circumstances, BMW Motorrad recommends temporarily deactivating DTC.
Bear in mind that the rear wheel will spin on the loose surface and close the throttle in good time before you reach a firm surface. Then reactivate DTC.

Removing/installing mirrors

Removing mirror

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

- On each side, remove nuts **1** and remove the mirrors.



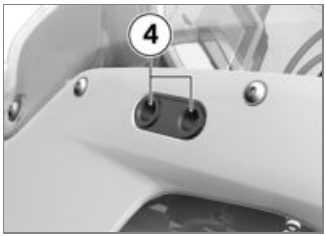
- Secure fairing **2** to fairing bracket **3** on left and right. If cable ties are used, affix adhesive tape as protection at the points where chafing might occur.

▷ Use the HP Race Cover Kit from BMW Motorrad to cover the screw holes and restore the security of the mounting.◀

Installing mirrors

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

- Remove the fairing-panel fasteners.



- Engage the left and right mirrors in mounts **4**.
- Install the nuts at the rear of the fairing panel and tighten to specified torque.

Mirror to front panel carrier
– Thread-locking compound: Mechanical thread lock
– 8 Nm

Removing and installing number-plate carrier

Removing number-plate carrier

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

– with anti-theft alarm (DWA) OE

- If applicable, deactivate the anti-theft alarm.◁
- Remove the rear seat (➠ 55).

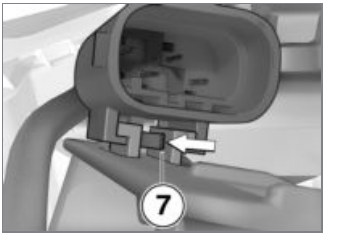
- Open cable tie **1** (can be reused).
- Open retainer **2** and disconnect the plug.

– with anti-theft alarm (DWA) OE

- Open retainers **3** and disconnect the plug.
- Remove screw **4**.
- Work the anti-theft alarm forward out of the holder.

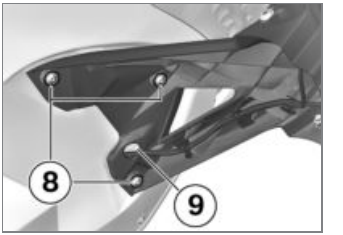
- Carefully disengage anti-theft alarm bracket **5** from the rear frame and turn it up.

- Open retainer **6** and disconnect the plug.



- Use a small screwdriver to push retainer **7** to the left and at the same time push the plug to the rear and off the anti-theft alarm bracket.
- Remove the anti-theft alarm bracket.◁

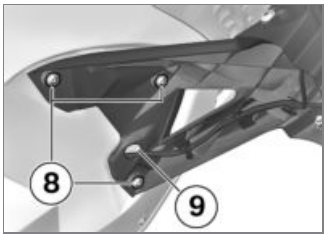
- Protect the plug on the motorcycle to prevent the ingress of foreign matter.



- Remove screws **8** with washers and remove the number-plate carrier. Work the cable through opening **9**.
- Install the rear seat (➠ 55).

Installing number-plate carrier

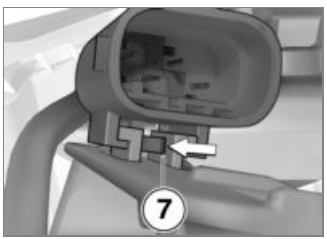
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Remove the rear seat (➠ 55).



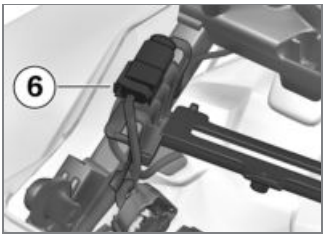
- Hold the number-plate carrier in position and work the cable through opening **9**.
- Install screws **8** with the washers.

- Close the plug, making sure that retainer **2** engages, and secure it to the rear frame with cable tie **1**.

– with anti-theft alarm (DWA)[OE]

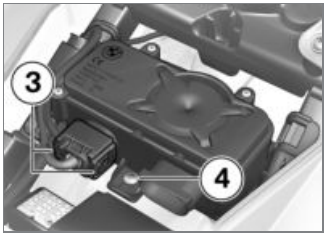


- Push the plug of the number-plate carrier onto the anti-theft alarm bracket, making sure that retainer **7** engages.



- Connect the plug, making sure that retainer **6** engages.

- Position anti-theft alarm bracket **5** in the rear frame.



- From the front, work the anti-theft alarm into position in the holder.
- Install screw **4**.
- Connect the plug, making sure that retainers **3** engage.◁
- Install the rear seat (➠ 55).

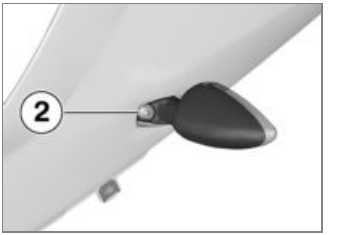
Removing and installing front turn indicators

Removing front flashing turn indicator

The procedure described here for the right side apply applies by analogy to the left side panel.◀

- Removing side panel (➠ 119).

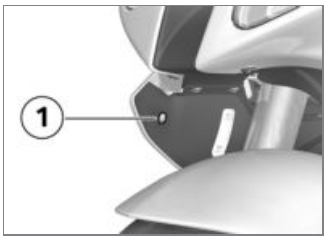
- Unclip the turn-signal cable at position **1**.



- Remove screw **2** and remove the turn indicator. Work the cable through the fairing side panel.
- Protect the plug on the motorcycle to prevent the ingress of foreign matter.

- Engage the fairing side panel in mount **6** on the engine spoiler.

- Seat the side panel in the rubber buffer at position **4**.
- Install screws **3** with the washers.
- Install screws **2**.



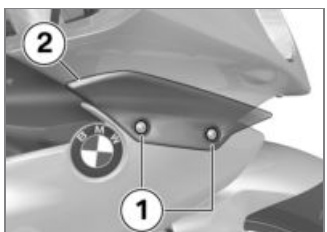
- Install screw **1**.

- Hold slipstream deflector **2** in position, making sure that it is the correct part for the side of the motorcycle on which you are working.

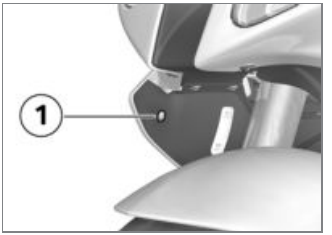
» The letter "R" for right or "L" for left is stamped on the back of the slipstream deflector.

- Install screws **1**.

Installing front flashing turn indicator

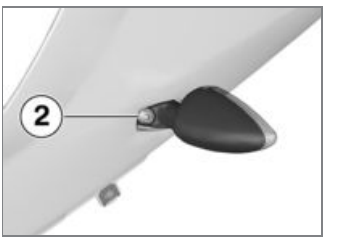


- Remove screws **1** and remove slipstream deflector **2**.



- Remove screw **1** on the inboard side of the right side panel.

- Remove screws **2**.
- Remove screws **3** with the washers.
- Pull the fairing side panel at position **4** to disengage it from the rubber buffer and remove.
- Work the cable through the fairing side panel.



- Hold the flashing turn indicator in position and install screw **2**.

- Clip in the turn-signal cable at position **1**.
- Installing side panel (➠ 120).

Engineering details

Ride mode 102

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Ride mode

Selection

Four ride 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
– SPORT (standard mode)
– RACE
– SLICK (only with coding plug inserted)

– with reduced power output, 79 kW OE

The following applies to motorcycles with power reduction: Once the coding plug has been inserted, the choice of modes includes SPORT and RACE with increased engine power. The significantly more sporty response in these modes can lead to hazardous situations. It is important for the rider intending to use these more sporty ride modes to familiarise himself/herself with their characteristics.◀

The following applies to motorcycles with power reduction: Inserting the coding plug voids homologation for riding the motorcycle on public roads.
In these cases, do not insert the coding plug for riding on public roads.◀◁

– with reduced power output, 79 kW OE
– without BMW Motorrad Race ABS OE

Mode selection is not available on motorcycles with power reduction and without ABS◁

Each of these modes produces perceptible differences in the way the motorcycle behaves. ABS and/or DTC can be switched off in each mode: the explanations below invariably apply to the behaviour of the motorcycle with these systems active. The mode last selected is automatically reactivated after the ignition has been switched off and then on again.
The basic rule is: the sportier the mode you select, the more directly can you tap into the engine's reserves of power. At the same time, the level of rider assistance that the ABS and DTC systems offer decreases accordingly.
The RAIN, SPORT and RACE modes are set up for riding with standard tyres recommended by BMW Motorrad. The SLICK mode is for racing slicks and surfaces with a very high level of grip.
Consequently, you must always bear the following in mind with regard to your selection of a ride mode: the sportier the setting,

the greater the challenge to your riding skill.

RAIN

The engine's full power is not made available. Power increase when you open the throttle is virtually linear, engine response is soft.

The ABS always intervenes early enough to prevent as effectively as possible the wheels from locking and the rear wheel from lifting off the ground.

The DTC system intervenes early enough to prevent the rear wheel from spinning whenever possible.

SPORT

The engine's full power is available in this mode. Power increase when you open the throttle remains reserved, but engine response is more direct.

The behaviour of the ABS is the same as in RAIN mode.

The DTC system intervenes later than in RAIN mode, so it is possible to induce slight drift when exiting corners.

RACE

RACE is the sportiest mode available without the coding plug inserted.

Engine power and power increase are even higher than in SPORT mode.

In this mode the ABS intervenes later. It still prevents the wheels from locking, but the function that detects the tendency of the rear wheel to lift clear of the ground is deactivated. Under these circumstances the rear wheel can lift off the ground.

The DTC system intervenes even later than in the other modes, so lengthy drifts and wheelies are possible when exiting corners.

SLICK

The SLICK mode cannot be activated unless the coding plug is inserted.

The SLICK mode was developed for situations in which the rider has an open view of the road ahead and the surroundings and is riding on surfaces with the high level of grip generally encountered only on race tracks.

Similarly, the assumption on which the parameters settings for this mode are based is that the motorcycle is fitted with racing slicks with a very high level of dry-surface grip.

Engine power, power increase and throttle response are all set up for maximum sportiness.

Overrun cut-off is deactivated.

The behaviour of the ABS is the same as in RACE mode, with one exception: ABS control is not active at the rear wheel when the footbrake lever is pressed.

Under these circumstances the rear wheel can lock up. The function for detecting the rear wheel's tendency to lift clear of the ground is also deactivated. When this mode is selected the controller of the DTC system assumes that the motorcycle is running on racing tyres with maximum grip (slicks). Long wheelies are possible and the same applies to wheelies at slight angles of heel, and it is important to bear in mind that under these circumstances it is also possible that the motorcycle might flip over backwards!

Mode changes

A mode change involves functions in the engine management system, the ABS and the DTC and is possible only in certain operating states:

– No drive torque at the rear wheel
– No brake pressure in the brake system

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,
– the brake levers must be in the released positions,
– the clutch lever must be pulled and the clutch disengaged.

The desired ride mode is initially preselected. The mode change does not take place until the systems in question are all in the appropriate state.
The selection menu does not disappear from the display until the mode change has taken place.

Brake system with BMW Motorrad Race ABS

– with BMW Motorrad Race ABS OE

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.

The integral braking function makes it very difficult to spin the rear wheel by opening the throttle with the front brake applied to keep the motorcycle stationary (burn-out). Attempted burn-outs can result in damage to the rear brake and the clutch. Deactivate the ABS function if you are going to attempt a burn-out.◀

How does ABS work?

The amount of braking force that can be transferred to the road depends on factors hat 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, 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 transferrable limit, the wheels start to lock and the motorcycle loses its directional stability; a fall is imminent. Before this situation can occur, ABS intervenes and adapts braking pressure to the maximum transferrable braking force, so the wheels continue to turn and directional stability is maintained irrespective of the condition of the road surface.

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 BMW Motorrad Race ABS?

If the ABS system 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

Even under severe braking, a high level of tyre grip can mean that the front wheel does not lock up until very late, if at all. Consequently, ABS does not intervene until very late, if at all. Under these circumstances the rear wheel can lift off the ground, and the outcome can be a high-siding 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 be relied on in all circumstances to prevent the rear wheel from lifting clear of the ground.◀

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 Race ABS, exceptional riding conditions can lead to a fault message being issued.

Exceptional riding conditions:

- Heating up with the motorcycle on an auxiliary stand, in neutral or with a gear engaged.
- Rear wheel locked by the engine brake for a lengthy period, for example while descending steep gradients.

If a fault message is issued on account of exceptional riding conditions as outlined above, 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 Race 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 Race 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 Race ABS is unable to counteract their effects.

Electronic engine management with BMW Motorrad DTC

– with BMW Motorrad Race ABS and DTC[OE]

How does DTC work?

The BMW Motorrad DTC 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 electronic engine management system intervenes, adapting engine torque accordingly.

Even DTC 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 reduction in acceleration out of very tight bends.

The speeds of the front and rear wheels are compared and the angle of heel taken into account as one means of detecting the rear wheel's incipient tendency to spin or slip sideways. If the electronic processor receives values that it considers implausible over a lengthy period, a dummy value is used for the angle of heel or the DTC function is switched off. Under these circumstances the indicator for a DTC fault shows. Self-diagnosis has to complete before fault messages can be issued.

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

Exceptional riding conditions:

– Riding for a lengthy period with the front wheel lifted off the ground (wheelie) and DTC deactivated.
– Rear wheel rotating with the motorcycle held stationary by applying the front brake (burnout).
– Heating up with the motorcycle on an auxiliary stand, in neutral or with a gear engaged.

If the coding plug for the SLICK mode is not inserted, you can reactivate DTC by switching the ignition off and then on again and accelerating to a speed in excess of 5 km/h.◁

If the front wheel lifts clear of the ground under severe acceleration, the DTC 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 skid, with a corresponding loss of stability. The BMW Motorrad DTC is unable to control a situation of this nature.

Accessories

General instructions..... 110

General instructions

BMW Motorrad recommends the use of parts and accessories for your motorcycle that are approved by BMW for this purpose. Genuine BMW parts and accessories and other products which BMW has approved can be obtained from your authorised BMW Motorrad dealer, together with expert advice on their installation and use.

These parts and products have been tested by BMW for safety, function and suitability. BMW accepts product liability for them. Conversely, BMW is unable to accept any liability whatsoever for parts and accessories which it has not approved.

Also bear in mind the information on the effect of wheel size on suspension-control systems (➠ 125).

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.◀

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

Maintenance

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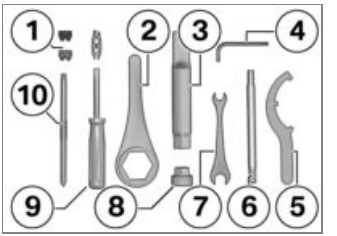
General instructions

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 motorcycle are listed in the section entitled "Technical data".
You will find information on more extensive maintenance and repair work in the Repair Manual on DVD for your motorcycle, which is available from your authorised BMW Motorrad dealer.

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

Toolkit



1 Spare fuses with puller tool
Miniature fuses, 4 A and 7.5 A

2 Ring spanner
Width across flats 34
– Adjust the chain tension (➠ 124).

3 Socket wrench
Width across flats 17
– Adjust the spring preload for front wheel (➠ 48).
– Adjust the compression-stage damping for rear wheel (➠ 52).
– use plastic adapter for adjusting damping characteristic and spring preload
– Extension for hook wrench

4 Torx bit, T25
– Removing and installing body panels

5 Hook wrench
– Adjust the spring preload for rear wheel (➠ 49).

6 Extension for screwdriver blade
– Adjusting rear suspension (in combination with plain screwdriver blade)

7 Open-ended spanner
Width across flats 10/13
– Adjust the chain tension (➠ 124).

8 plastic adapter for socket wrench
– Adjust the spring preload for front wheel (➠ 48).
– Adjust the compression-stage damping for rear wheel (➠ 52).

9 Reversible-blade screwdriver with star-head and plain tips
– Remove the battery (➠ 145).
– Adjusting front and rear suspension

10 Reversible screwdriver blade
With star-head and Torx T25
– Remove the front seat (➠ 56).
– Removing and installing body panels
– Replacing turn indicator bulbs, front and rear (➠ 139).

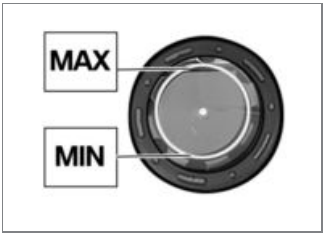
Engine oil

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; this in turn, means that the engine will be operated with the incorrect quantity of oil. In order to ensure that the engine oil level is read correctly, check the oil level only after a lengthy trip.◀

- Make sure the engine is at operating temperature and hold the motorcycle upright.
- Allow the engine to idle for one minute.
- Switch off the ignition.

- 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 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 engine oil

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

- Remove cap **1** from the oil filler neck.

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.
- Check the engine oil level (➠ 113).
- Install cap **1** of the oil filler neck.

Brake system

Check operation of the brakes

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

If pressure points are not clearly perceptible:

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.

Check the front brake pad thickness

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Turn the handlebars to the full-lock position.

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

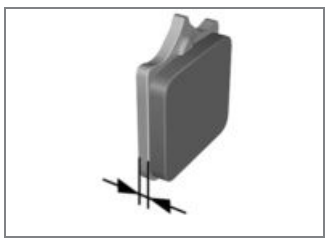
Brake-pad wear limit, front
– min 0.8 mm (Friction pad only, without backing plate)

If the brake pads are worn:

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.

- If genuine BMW Motorrad brake pads are not installed, it is absolutely essential to measure the thickness of the brake-pad carrier plates.



Thickness of brake-pad carrier plate
– ≥4.5 mm

If the thickness of the carrier plates is insufficient:

Failure of the brake system due to possible loss of the brake pads.

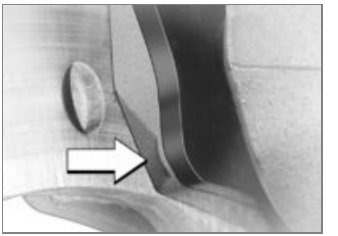
Use only brake pads with carrier plates at least 4.5 mm thick.◀

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

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: from the rear toward brake pads **1**.



Brake-pad wear limit, rear

– min 1.0 mm (Friction pad only, without backing plate. The wear indicators must be clearly visible.)

If the wear indicating mark is no longer 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.

Check the brake-fluid level, front brakes

- Make sure the ground is level and firm and hold the motorcycle upright.
- Move the handlebars to the straight-ahead position.

- Check the brake fluid level in brake fluid 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)

If the brake fluid level drops below the permitted level:

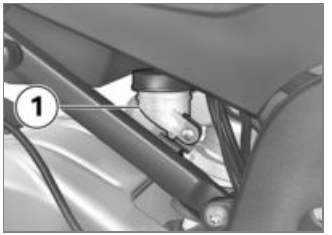
A low fluid level in the brake reservoir can allow air to penetrate the brake system. This significantly reduces braking efficiency.

Check the brake-fluid level at regular intervals.◀

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

Checking brake-fluid level, rear brakes

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



- 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)

If the brake fluid level drops below the permitted level:

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

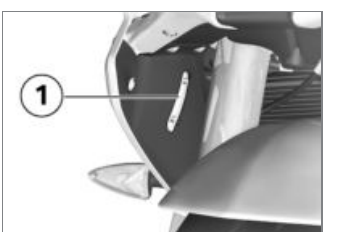
Check the brake-fluid level at regular intervals.◀

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

Coolant

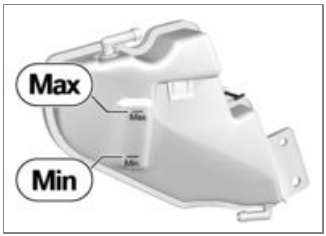
Checking coolant level

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



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

tion: From in front toward the inside of the right side panel.



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

If the coolant drops below the permitted level:

- Top up the coolant.

Topping up coolant

- Remove the side panel (➠ 119).

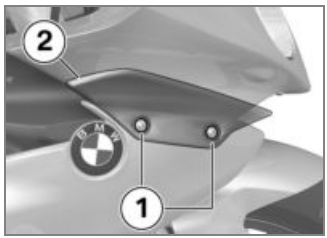
- Open cap **1** of the expansion tank.
- Top up coolant to specified level.
- Checking coolant level (➠ 118).
- Close the cap of the expansion tank.

- Install the side panel (➠ 120).

Body panels

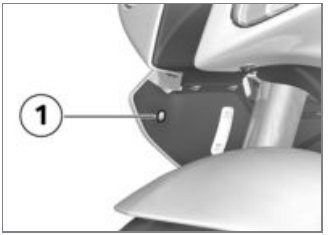
Removing side panel

The procedure described here for the right side apply applies by analogy to the left side panel.◀



- Remove screws **1** and remove slipstream deflector **2**.

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



- Remove screw **1** on the in-board side of the side panel.

- Remove screws **2**.
- Remove screws **3** with the washers.

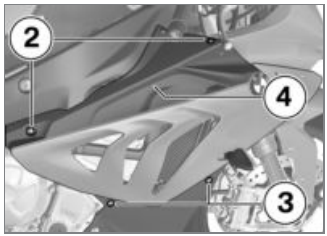
- Pull the fairing side panel at position **4** to disengage it from the rubber buffer and remove.

- Disconnect plug **5**.
- Remove the side panel.

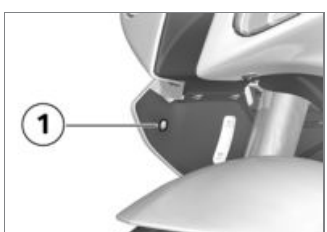
Installing side panel

- Engage the fairing side panel in mount **6** on the engine spoiler.

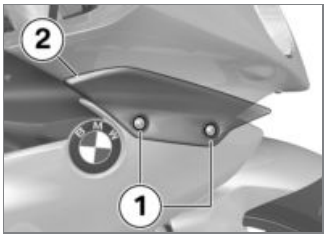
- Connect plug **5**.



- Seat the side panel in the rubber buffer at position **4**.
- Install screws **3** with the washers.
- Install screws **2**.



- Install screw **1**.



- Hold slipstream deflector **2** in position, making sure that it is the correct part for the side of the motorcycle on which you are working.

» The letter "R" for right or "L" for left is stamped on the back of the slipstream deflector.

- Install screws **1**.

Clutch

Check the clutch operation

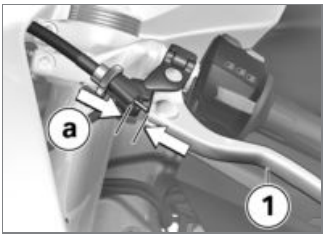
- Pull the clutch lever.

» 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.

Checking clutch-lever play



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

Clutch-lever play
– 0.5...1.0 mm (at the handlebar fitting, with engine cold)

Clutch play is out of tolerance:

- Adjust the clutch-lever play (➠ 122).

Adjusting clutch-lever play

- To increase clutch play: turn screw **2** in the tightening direction, i.e. into the handlebar fitting.
- To reduce clutch play: turn screw **2** in the loosening direction, i.e. out off the handlebar fitting.
- Check the clutch-lever play (➠ 122).
- Repeat the steps in this procedure until clutch play is set correctly.

Rims and tyres

Check the rims

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

Check the 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.

▷ Tyres have wear indicators integrated into the main tread grooves. 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.

Chain

Lubricating chain

⚠ Dirt, dust and inadequate lubrication will result in accelerated wear and significantly shorten the drive chain's useful life.

Clean and lubricate the drive chain at regular intervals.◀

- Lubricate the drive chain every 800 km at the latest. Lubricate the chain more frequently if the motorcycle is ridden in wet, dusty or dirty conditions.◁

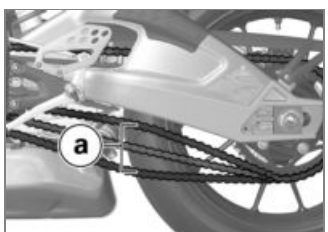
- Switch the ignition off and select neutral.
- Clean the drive chain with a suitable cleaning product, dry it and apply chain lubricant.
- To prolong chain life, BMW Motorrad recommends the use of BMW Motorrad chain lubricant, or:

– Chain spray

- Wipe off excess lubricant.

Checking chain tension

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Turn the rear wheel until it reaches the position with the lowest amount of chain sag.



- Use a screwdriver to push the chain up and down at a point midway along the run between pinion and sprocket and measure difference **a**.

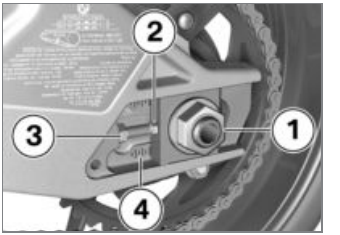
Chain deflection
– 40...50 mm (Motorcycle with no weight applied, supported on its side stand)

If measured value is outside permitted tolerance:

- Adjust the chain tension (➠ 124).

Adjusting chain tension

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



- Slacken quick-release axle nut **1**.
- Slacken locknuts **3** on left and right.
- Use adjusting screws **2** on left and right to adjust chain tension.
- Check the chain tension (➠ 123).
- Make sure that scale readings **4** are the same on left and right.
- Tighten locknuts **3** on left and right to the specified tightening torque.

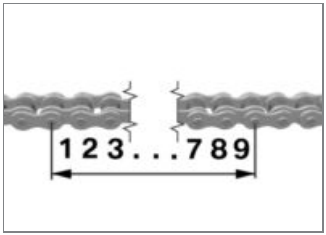
Locknut of the final-drive chain tensioning screw
– 19 Nm

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

Rear quick-release axle in swinging arm
– Thread-locking compound: Mechanical thread lock
– 100 Nm

Checking chain wear

- Engage 1st gear.
- Turn the rear wheel in the normal direction of travel until the chain is tensioned.
- Measure the length of the chain over 9 rivets below the rear wheel swinging arm.



	permissible chain length
–	max 144.30 mm (measured over 9 rivets, chain pulled taut)

If the chain has stretched to the maximum permissible length:

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

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.

You can obtain detailed information from your authorised BMW Motorrad dealer or on the Internet at www.bmw-motorrad.com.

Effect of wheel size on suspension-control systems

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

The sensor rings are essential for correct road-speed calculation, and they too must match the motorcycle's control systems and consequently cannot be changed.

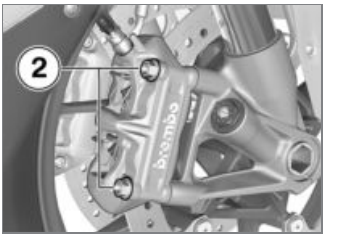
If you decide that you would like to fit non-standard wheels to your motorcycle, it is very important to consult a specialist workshop beforehand, preferably an authorised BMW Motorrad dealer. In some cases, the data programmed into the control units can be changed to suit the new wheel sizes.

Removing front wheel

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

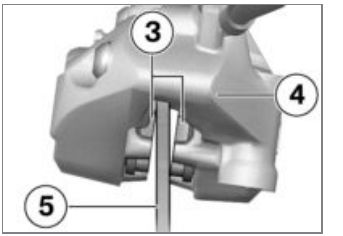
– with BMW Motorrad Race ABS OE

- Remove screw **1** 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 calipers.



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.◀

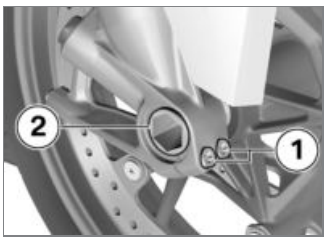
- Remove screws **2** of the brake calipers on left and right.



- Force the brake pads **3** slightly apart by rocking brake caliper **4** back and forth against brake disc **5**.
- Carefully pull the brake calipers back and out until clear of the brake discs.

- Place the motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad rear-wheel stand.
- Install the auxiliary stand at rear wheel (➠ 134).
- Raise front of motorcycle until the front wheel can turn freely. BMW Motorrad recommends

the BMW Motorrad front-wheel stand for lifting the motorcycle.
- Installing auxiliary stand at front wheel (➠ 132).



⚠ The left axle clamping screw locates the threaded bush in the front suspension. In order to ensure that the threaded bush remains correctly aligned, do not slacken or remove the left axle camping screw.◀

- Slacken right axle clamping screws **1**.
- Remove quick-release axle **2**, while supporting the wheel.
- Roll the front wheel forward to remove.

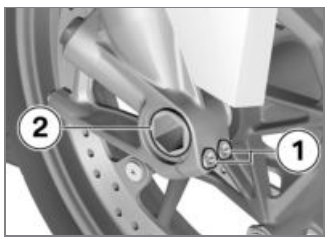
Installing front wheel

⚠ Possible malfunctions when ABS and DTC systems intervene if non-standard wheels are installed.
See the information on the effect of wheel size on the ABS and DTC 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.◀

⚠ 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.



- Raise the front wheel, insert quick-release axle **2** and tighten to specified torque.

	Quick-release axle in threaded bush
–	50 Nm

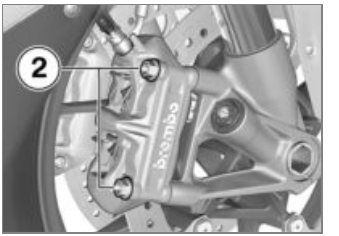
- Tighten right axle clamping screws **1** to the specified tightening torque.

Clamping screws in axle holder
– 19 Nm

- Remove the front-wheel stand and the auxiliary stand.
- Ease the brake calipers on to the brake discs.

– with BMW Motorrad Race ABS OE

- Hold clip **6** in position.◁



- Tighten screws **2** on left and right to the specified tightening torque.

Radial brake caliper to axle mount
– 38 Nm

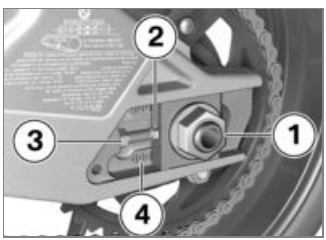
– with BMW Motorrad Race ABS OE

- Insert the ABS sensor into its bore and install screw **1**.◁
- Remove the adhesive tape from the wheel rim.
- Firmly pull the handbrake lever until the pressure point is perceptible, and repeat this operation several times.

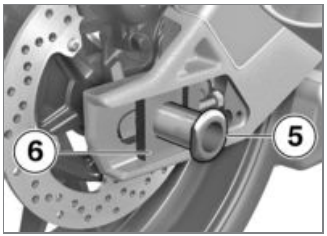
Removing rear wheel

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

- Install the auxiliary stand at rear wheel (➠ 134).
- Slip wooden chocks or similar under the rear wheel to prevent it from dropping out after the quick-release axle has been removed.

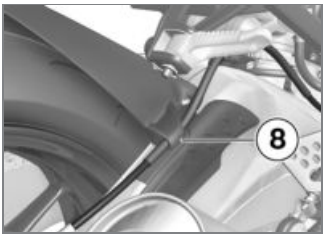


- Remove axle nut **1** with washer.
- Slacken locknuts **3** on left and right.
- Slacken adjusting screws **2** on left and right.
- Remove adjusting plate **4** and push the axle in as far as it will go.



- Remove quick-release axle **5** and remove adjusting plate **6**.

- Roll the rear wheel as far forward as possible and disengage chain **7** from the sprocket.



- Remove the brake line from holder **8**.

– with BMW Motorrad Race ABS[OE]

- Remove the brake and ABS line from holder **8**.

- When rolling the rear wheel clear of the motorcycle, take care not to damage ABS sensor **9**.◁

- Roll the rear wheel to the rear and clear of the swinging arm and at the same time pull brake-caliper carrier **10** back far enough to allow the rear wheel to clear it.

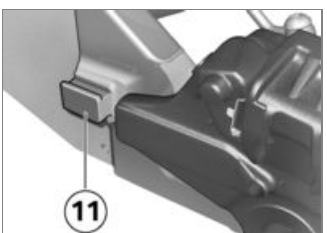
The sprocket and the spacer sleeves on left and right are loose fits in the wheel. Make sure that these parts are not damaged or lost on removal.◀

Install the rear wheel

Possible malfunctions when ABS and DTC systems intervene if non-standard wheels are installed.
See the information on the effect of wheel size on the ABS and DTC systems at the start of this chapter.◀

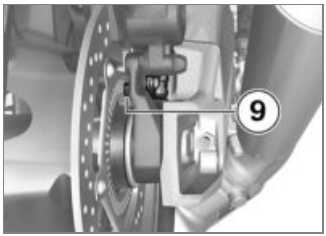
Threaded fasteners not tightened to the specified torque can work loose or their threads can suffer damage. Always have the security of the fasteners checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

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



- Insert the brake-caliper carrier into guide **11**.

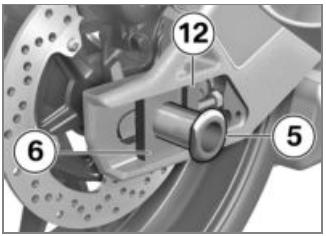
– with BMW Motorrad Race ABS OE



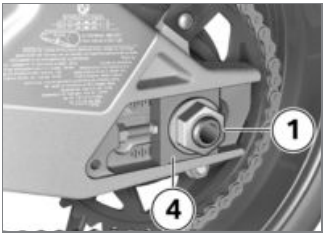
- When rolling the rear wheel into position, take care not to damage ABS sensor **9**.◁

- Roll the rear wheel further into the swinging arm, while pushing brake-caliper carrier **10** forward at the same time.

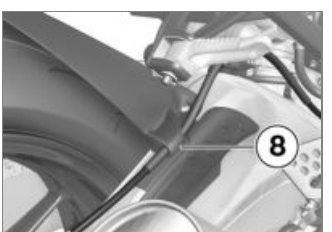
- Roll the rear wheel as far forward as possible and loop chain **7** over the sprocket.



- Insert right adjusting plate **6** into the swinging arm with stop **12** to the front.
- Lift the rear wheel and work quick-release axle **5** through the adjusting plate and into the brake-caliper carrier and the rear wheel.
- Make sure that the quick-release axle is seated against the stop of the adjusting plate.

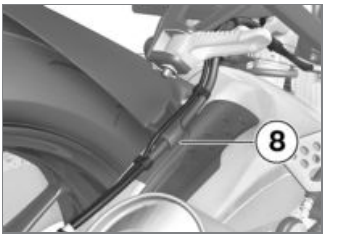


- Insert left adjusting plate **4**.
- Install axle nut **1** with its washer, but do not tighten the nut at this point.



- Engage the brake line in holder **8**.

– with BMW Motorrad Race ABS[OE]



- Seat the brake and ABS line in holder **8**.◁
- Adjust the chain tension (➠ 124).

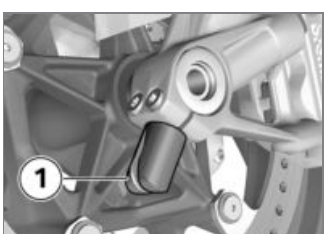
Front-wheel stand

Installing auxiliary stand at front wheel

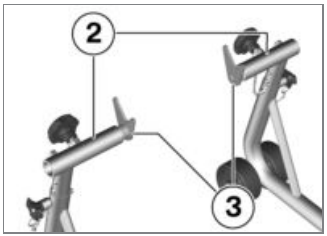
The BMW Motorrad front wheel stand is not designed to support motorcycles not fitted with a centre stand or without other auxiliary stands. A motorcycle resting only on the front wheel stand and the rear wheel can topple.
Place the motorcycle on its centre stand or another auxiliary stand before lifting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

- Place the motorcycle on an auxiliary stand; BMW Motorrad recommends the BMW Motorrad auxiliary stand.
- Install the auxiliary stand at rear wheel (➠ 134).

- Use basic stand (83 30 0 402 241) with the adapters (83 30 2 152 839).



- Insert adapter pins (83 30 2 152 840) **1** into the front suspension on left and right.



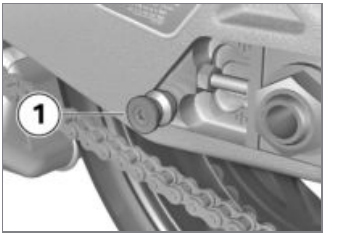
- Turn brackets **2** long ends in.
- Adjust adapters **3** to the width of the pins inserted in the front suspension.
- Set the height of the auxiliary stand to raise the front wheel slightly clear of the ground.

- Engage the auxiliary stand in the front suspension and apply even pressure to push it down to the ground.

Rear-wheel stand

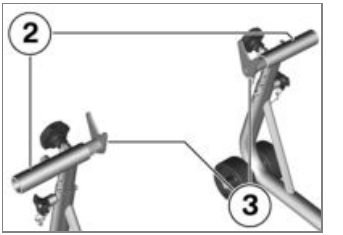
Installing auxiliary stand at rear wheel

- Use basic stand with tool number (83 30 0 402 241) and adapters (83 30 2 152 839).



- Install adapter pins (83 30 2 152 841) **1** in the rear wheel swinging arm on left and right and tighten to the specified torque.

	Adapter to rear wheel swinging arm
– 20 Nm	



- Turn brackets **2** long ends out.
- Adjust adapters **3** to the width of the pins inserted in the rear wheel swinging arm.
- Set the height of the auxiliary stand to raise the rear wheel slightly clear of the ground.

- Engage the auxiliary stand in the rear wheel swinging arm and apply even pressure to push it down to the ground.

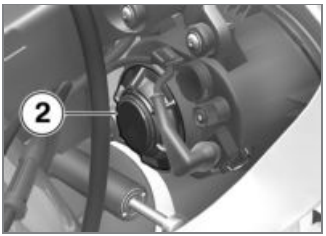
Bulbs

Replacing low-beam and high-beam headlight bulb

▷ The plug arrangement can differ from the illustration, depending on the bulb to be replaced.◀

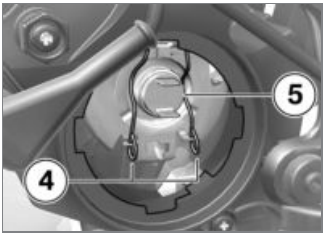
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Switch off the ignition.

- Remove cover **1** so that the low-beam headlight bulb can be replaced.



- Remove cover **2** so that the high-beam headlight bulb can be replaced.

- Disconnect plug **3**.



- Release spring clip **4** at left and right and swing it up.
- Remove bulb **5** from the socket.

- Replace the defective bulb.

Bulbs with higher light-intensity ratings are available through aftermarket suppliers. These bulbs burn out more rapidly and generate more heat than conceptional bulbs. Under adverse conditions the extra heat can cause damage to the headlight.◀

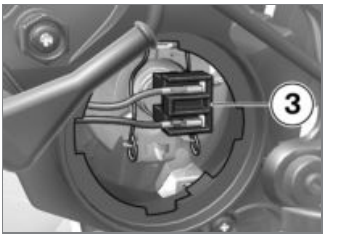
Bulbs for the low-beam headlight
– H7 / 12 V / 55 W

Bulb for high-beam headlight
– H7 / 12 V / 55 W

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

- Install bulb **5**. Begin by seating lug **6** and then press the bulb into the socket.

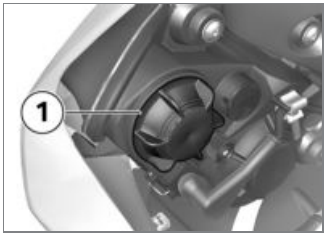
- Engage spring clip **4** in the catch on left and right.



- Connect plug **3**.
- Install the cover.

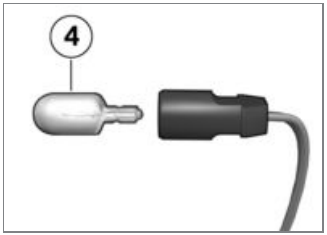
Replacing parking-light bulb, left

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



- Remove parking-light cover **1**.

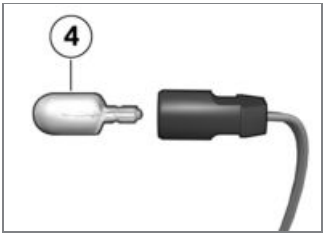
- Push down retainer **2** (using a screwdriver if necessary) and pull socket **3** out of the headlight housing.



- Remove bulb **4** from the socket.
- Replace the defective bulb.

	Bulb for parking light
– W5W / 12 V / 5 W	

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



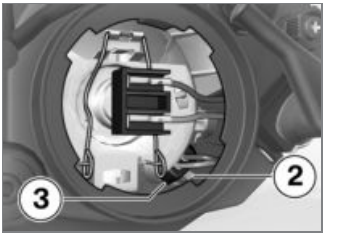
- Insert bulb **4** into the socket.

- Install socket **3** in the socket, making sure that retainer **2** engages
- Install the cover.

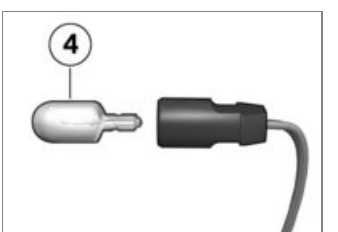
Replacing parking-light bulb, right

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

- Remove cover **1**.



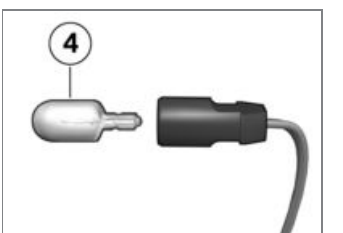
- Push down retainer **2** (using a screwdriver if necessary) and pull socket **3** out of the headlight housing.



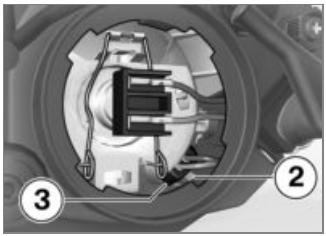
- Remove bulb **4** from the socket.
- Replace the defective bulb.

	Bulb for parking light
– W5W / 12 V / 5 W	

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



- Insert bulb **4** into the socket.



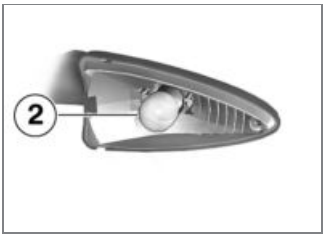
- Install socket **3** in the headlight housing, making sure that retainer **2** engages
- Install the cover.

Replacing turn indicator bulbs, front and rear

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

- Remove screw **1**.

- Pull the glass out of the reflector housing at the threaded-fastener side.



- Turn bulb **2** counter-clockwise and remove it from the bulb housing.
- Replace the defective bulb.

Bulbs for flashing turn indicators, front
– RY10W / 12 V / 10 W

Bulbs for flashing turn indicators, rear
– RY10W / 12 V / 10 W

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

- Turn bulb **2** clockwise to install it in the bulb housing.

- Working from the inboard side, insert the glass into the bulb housing and close the housing.

- Install screw **1**.

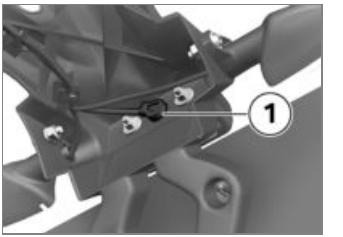
LED rear light

If the number of LEDs in the rear light that have failed exceeds the number stated in the Technical Data below, the rear light must be replaced. Under these circumstances:

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

Maximum number of defective LEDs in rear-light unit
– 1

Replacing number-plate light



- Pull number-plate light **1** out of the bulb housing.

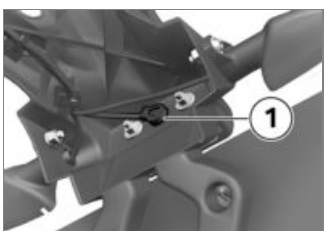
- Pull the bulb out of the bulb socket.

- Replace the defective bulb.

Bulb for number-plate light
– W5W / 12 V / 5 W

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

- Push the bulb into the bulb socket.



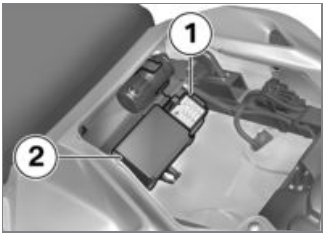
- Press number-plate light bulb **1** into the light housing.

Fuses

Removing fuse

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.◀

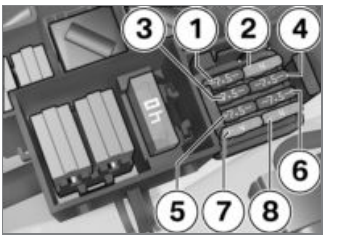
- Switch off the ignition.
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Remove the rear seat (➠ 55).



- Squeeze the latches together and remove cover of fuse box **1**.
- To replace the main fuse, remove cover **2** of the relay box.
- Pull the defective fuse up and out of the fuse box.

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

Install the fuse



- Remove the defective fuse and replace it with a fuse of the correct amperage rating.

The fuse assignments and fuse amperage ratings specified for your motorcycle are listed in the section entitled "Technical data". The figures in the graphic correspond to the fuse numbers.◀

- Close the fuse cover.
» The latch engages with an audible click.
- Install the rear seat (➠ 55).

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.◀

Touching live parts of the ignition system with the engine running can cause electric shock.
Do not touch parts of the ignition system when the engine is running.◀

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.◀

- When jump-starting the engine, do not disconnect the battery from the on-board electrical system.
- Remove the front seat (➠ 56).
- Run the engine of the donor vehicle during jump-starting.
- Begin by connecting one end of the red jump lead to the positive terminal of the discharged battery and the other end 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 the negative terminal of the discharged battery.
- Start the engine of the vehicle with the discharged battery in the usual way; if the engine does not start, wait a few minutes before repeating the attempt in order to protect the starter motor and the donor battery.
- Allow both engines to idle for a few minutes before disconnecting the jump leads.
- Disconnect the jump lead from the negative terminals first, then disconnect the second lead from the positive terminals.
- Install the front seat (➠ 56).

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

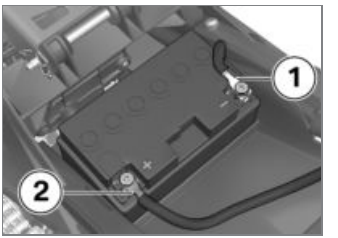
If the battery is not disconnected, the on-board electronics (e.g. clock, etc.) gradually drain the battery. This can cause the battery to run flat. If this hap-

pens, 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.◀

Disconnecting battery from motorcycle

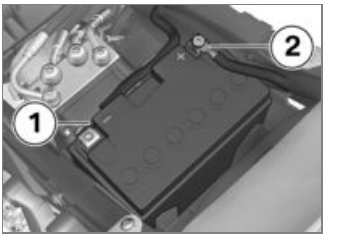
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Remove the front seat (➠ 56).



Disconnection in the wrong sequence increases the risk of short-circuits.
Always proceed in the correct sequence.◀

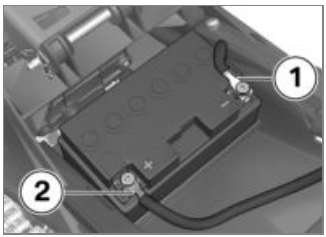
- Disconnect negative lead **1** first.
- Then disconnect positive lead **2**.

– with BMW Motorrad Race ABS OE



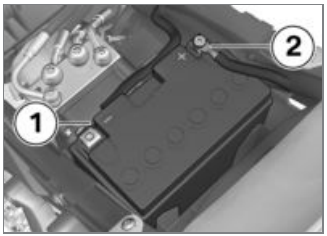
- Note the different positions of the battery and terminals **1** and **2**.◁

Connecting battery to motorcycle



- Connect battery positive lead **2** first.
- Then connect battery negative lead **1**.

– with BMW Motorrad Race ABS OE



- Note the different positions of the battery and terminals **1** and **2**.◁
- Install the front seat (➠ 56).

Recharge the battery

- Disconnect the battery from the motorcycle. (➠ 144).
- Charge the battery using a suitable charger.
- Comply with the operating instructions of the charger.
- Once the battery is fully charged, disconnect the charger's terminal clips from the battery terminals.

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

- Connect the battery to the motorcycle. (➠ 145).

Remove the battery

- Disconnect the battery from the motorcycle. (➠ 144).
- Lift the battery up and out; work it slightly back and forth if it is difficult to remove.

Installing battery

▷ If the battery was disconnected from the motorcycle for a prolonged period of time it will be necessary to enter the current date in the instrument panel, in order to ensure that the

service-due indicator functions correctly.
If you want to have the date set consult a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

- Place the battery in the battery compartment, positive terminal on the left in the forward direction of travel.

– with BMW Motorrad Race ABS OE

- Place the battery in the battery compartment, positive terminal on the right in the forward direction of travel.◁

- Connect the battery to the motorcycle. (➠ 145).

- Setting clock (➠ 35).

Care

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Washing motorcycle 148
Cleaning easily damaged components 148
Paint care 149
Protective wax coating 150
Laying up motorcycle 150
Restoring motorcycle to use 150

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 motorcycle

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 motorcycle.

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

Make sure that the motorcycle 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.◀

Cleaning easily damaged components

Plastics

If plastic parts are cleaned using unsuitable cleaning agents, the surfaces can be damaged.

Do not use cleaning agents that contain alcohol, solvents or abrasives to clean plastic parts.

Even fly-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 headlight 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.◀

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

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 other care products that contain silicon.◀

Paint care

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

Remove particularly aggressive substances immediately, however, as otherwise the paint can be affected or become discoloured. Substances of this nature include spilt fuel, oil, grease, brake fluid and bird droppings. We recommend BMW vehicle polish or BMW paint cleaner for this purpose.
Marks on the paintwork are particularly easy to see after the motorcycle 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 BMW tar remover for removing specks of tar. Remember to wax the parts treated in this way.

Protective wax coating

BMW Motorrad recommends applying only BMW car wax or products containing carnauba wax or synthetic wax.
It is time to rewax the paintwork when water "puddles" on the surface, instead of forming beads.

Laying up motorcycle

- Clean the motorcycle.
- Remove the battery.
- 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.

Before laying the vehicle up out of use, have the engine oil and the oil filter element changed by a specialist workshop, preferably an authorised BMW Motorrad dealer. Combine work for laying up/restoring to use with a BMW service or inspection.◀

Restoring motorcycle to use

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

Technical data

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troubleshooting chart

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

Possible cause	Rectification
Side stand extended and gear engaged	Retract the side stand.
Gear engaged and clutch not disengaged	Select neutral or pull the clutch lever.
No fuel in tank	Refuel (➠ 69).
Battery flat	Recharge the battery.

Threaded fasteners

Front wheel	FR	Valid
Quick-release axle in threaded bush		
M24 x 1.5	50 Nm	
Clamping screws in axle holder		
M8 x 35	19 Nm	
Radial brake caliper to axle mount		
M10 x 65	38 Nm	

Rear wheel	FR	Valid
Locknut of the final-drive chain tensioning screw		
M8	19 Nm	
Rear quick-release axle in swinging arm		
M24 x 1.5 Mechanical thread lock	100 Nm	

Rear wheel	FR	Valid
Adapter to rear wheel swinging arm		
M8 x 30	20 Nm	
Clamping bolt to upper spring cup		
M5 x 25	3 Nm	
Spring strut to main frame		
M10 x 65	56 Nm	

Mirrors	FR	Valid
Mirror to front panel carrier		
M6, Replace nuts Mechanical thread lock	8 Nm	

Engine

Engine design	Transversely mounted, four-cylinder four-stroke in-line engine tilted 32° forward, with four valves per cylinder, two overhead camshafts with cam followers; liquid cooled, with electronic fuel injection, integrated six-speed gearbox, wet-sump lubrication.
Displacement	999 cm^3
Cylinder bore	80 mm
Piston stroke	49.7 mm
Compression ratio	13:1
Nominal output	142 kW, at engine speed: 13000 min^{-1}
– with reduced power output, 79 kW[OE]	79 kW, at engine speed: 8750 min^{-1}
Torque	112 Nm, at engine speed: 9750 min^{-1}
– with reduced power output, 79 kW[OE]	89 Nm, at engine speed: 8500 min^{-1}
Maximum engine speed	max 14200 min^{-1}
Idle speed	1250 min^{-1}, Engine at regular operating temperature

Fuel

Recommended fuel grade	Super unleaded 95 ROZ/RON 89 AKI
Usable fuel capacity	approx. 17.5 l
Reserve fuel	approx. 4 l

BMW recommends BP fuels

Engine oil

Engine oil, capacity	3.5 l, with filter change
of products recommended by BMW Motorrad and generally admissible viscosity classes	
Castrol Power 1 Racing SAE 5W-40	Engine oil, API SL / JASO MA2 ≥-20 °C
SAE 5W-40	Engine oil for motorcycles with oil-bath clutch, API SJ / JASO MA2 ≥-20 °C

BMW recommends

SAE 10W-50	Engine oil for motorcycles with oil-bath clutch, API SJ / JASO MA2 ≥-20 °C
Engine oil, quantity for topping up	max 0.8 l, Difference between MIN and MAX

BMW recommends Castrol

Clutch

clutch type	Multiplate oil-bath clutch, anti-hopping

Transmission

gearbox type	Claw-shift 6-speed gearbox, integrated into engine block
Gearbox transmission ratios	1.652 (76:46 teeth), Primary transmission ratio 2.647 (45:17 teeth), 1st gear 2.091 (46:22 teeth), 2nd gear 1.727 (38:22 teeth), 3rd gear 1.500 (36:24 teeth), 4th gear 1.360 (34:25 teeth), 5th gear 1.261 (29:23 teeth), 6th gear

Rear-wheel drive

Type of final drive	Chain drive
Type of rear suspension	Two-arm cast-aluminium swinging arm
Number of teeth, rear-wheel drive (Pinion / sprocket)	17 / 45
Secondary transmission ratio	2.647

Running gear

Front wheel	
Type of front suspension	Upside-down telescopic fork
Spring travel, front	120 mm, At wheel
Rear wheel	
Type of rear suspension	Two-arm cast-aluminium swinging arm
Type of final drive	Chain drive
Spring travel, rear	130 mm, At wheel

Brakes

Type of front brake	Hydraulically radially operated twin disc brake with 4-piston radial fixed calipers and floating brake discs
Brake-pad material, front	Sintered metal
Type of rear brake	Hydraulically operated disc brake with 1-piston floating caliper and fixed disc
Brake-pad material, rear	Organic material

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	Cast aluminium, MT H2
front wheel rim size	3.50" x 17"
Tyre designation, front	120 / 70 ZR 17

Rear wheel	
rear-wheel type	Cast aluminium, MT H2
rear wheel rim size	6.0" x 17"
Tyre designation, rear	190 / 55 ZR 17
Tyre pressure	
Tyre pressure, front	2.5 bar, Tyre cold
Tyre pressure, rear	2.9 bar, Tyre cold

Electrics

Fuses	
Current rating of fuse 1 (Instrument panel)	10 A
Current rating of fuse 2 (Master relay, diagnosis plug)	4 A
Current rating of fuse 3 (Fan)	7.5 A
Current rating of fuse 4 (Low-beam headlight, load relief relay)	7.5 A
Current rating of fuse 5 (High-beam headlight)	7.5 A

Current rating of fuse 6 (Horn)	7.5 A
Current rating of fuse 7 (Ignition switch)	4 A
Current rating of fuse 8 (Sensor group)	4 A
Main fuse	40 A
Battery	
battery type	AGM (Absorbent Glass Mat) battery
battery rated voltage	12 V
battery rated capacity	10 Ah
Spark plugs	
Spark plugs, manufacturer and designation	NGK LMAR9D-J
Electrode gap of spark plug	0.8 mm
Lighting	
Bulb for high-beam headlight	H7 / 12 V / 55 W
Bulbs for the low-beam headlight	H7 / 12 V / 55 W
Bulb for parking light	W5W / 12 V / 5 W
Bulb for tail light/brake light	LED / 12 V

Maximum number of defective LEDs in rear-light unit	1
Bulbs for flashing turn indicators, front	RY10W / 12 V / 10 W
Bulbs for flashing turn indicators, rear	RY10W / 12 V / 10 W
Bulb for number-plate light	W5W / 12 V / 5 W

Frame

Frame type	Cast light alloy weldment with bolt-on light-alloy rear frame
type plate location	Steering head, right
VIN location	Steering head, right

Dimensions

Length of motorcycle	2056 mm
Height of motorcycle	1138 mm, To windscreen at DIN unladen weight
Width of motorcycle	826 mm, Across mirrors
Front-seat height	820 mm, Without rider
rider's inside-leg arc, heel to heel	1810 mm, Without rider

Weights

Unladen weight	202 kg, DIN unladen weight, ready for road, 90 % load of fuel, without OE
Permissible gross weight	405 kg
Maximum payload	203 kg

Riding specifications

Top speed	>200 km/h

Service

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BMW Motorrad Service

BMW Motorrad has an extensive after-sales service network 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 carry out reliably 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 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 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 motorcycle to you.

BMW Running-in Check

The BMW running-in check has to be performed when the motorcycle 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 motorcycle 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 motorcycles 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.◁

The regular service intervals as stated apply to motorcycles used on public roads. In the case of motorcycles used for racing the intervals have to be adapted accordingly in line with the increased wear and tear associated with this mode of use.

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.

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Details described or illustrated in this booklet may differ from the motorcycle's actual specification as purchased, the accessories fitted or the national-market specification. No claims will be entertained as a result of such discrepancies.
Dimensions, weights, fuel consumption and performance data are quoted to the customary tolerances.
The right to modify designs, equipment and accessories is reserved.
Errors and omissions excepted.

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Important data for refuelling

Fuel	
Recommended fuel grade	Super unleaded 95 ROZ/RON 89 AKI
Usable fuel capacity	approx. 17.5 l
Reserve fuel	approx. 4 l
Tyre pressure	
Tyre pressure, front	2.5 bar, Tyre cold
Tyre pressure, rear	2.9 bar, Tyre cold

BMW recommends Castrol

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