BMW Motorrad

The Ultimate Riding Machine

Rider's Manual
S 1000 RR

Vehicle data/dealership details

Vehicle data

Model

Vehicle Identification Number

Colour code

Date of first registration

Registration number

Dealership details

Person to contact in Service department

Ms/Mr

Phone number

Dealership address/phone number (company stamp)

Welcome to BMW

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

About this Rider's Manual

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

Suggestions and criticism

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

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

BMW Motorrad.

01 41 8 565 381

Table of Contents

General instructions

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 vehicle is documented in Chapter 13. This record of the maintenance work you have had performed on your vehicle is a precondition for generous treatment of goodwill claims.

When the time comes to sell your BMW, please remember to hand over this Rider's Manual; it is an important part of the motorcycle.

Abbreviations and symbols

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

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

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

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

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

◀ Indicates the end of an item of information.

• Instruction.

» Result of an activity.

Reference to a page with more detailed information.

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

Tightening torque.

Technical data.

ABS Anti-lock brake system.

ASC Automatic Stability Control.

DDC Dynamic Damping Control.

DTC Dynamic Traction Control.

DWA Anti-theft alarm (Diebstahlwarnanlage).

EWS Electronic immobiliser.

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

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

VDS Vertical Down Sensor (drop sensor).

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.

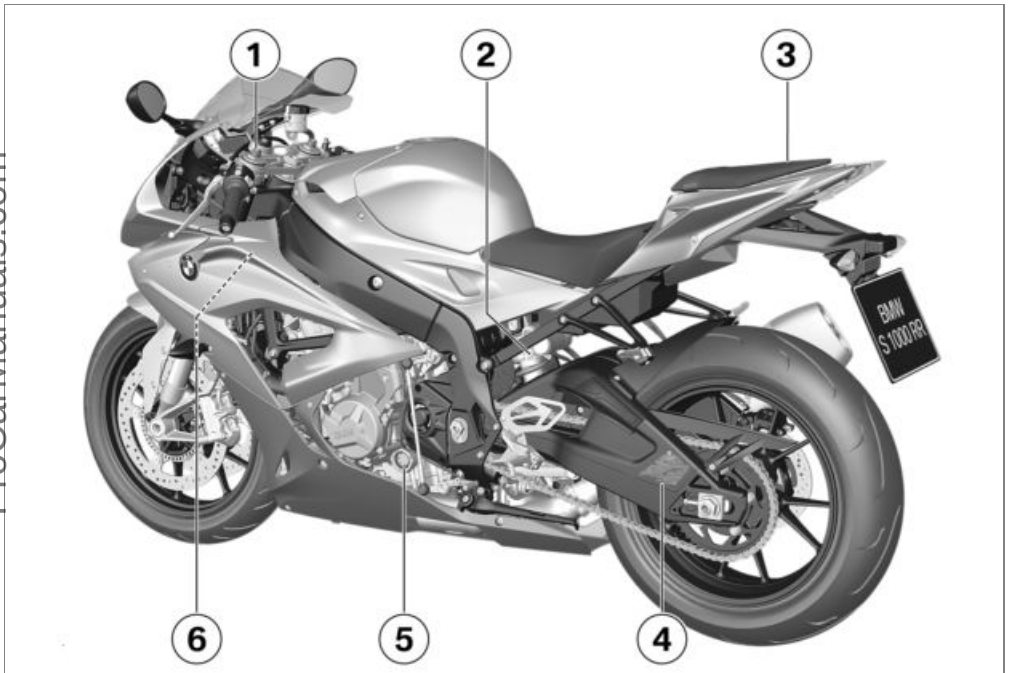
Technical data

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.

Actuality

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.

General views



General view, left side

1 – without Dynamic Damping Control (DDC)[OE]
Adjuster, spring preload, front (➠ 68)
Adjuster for front compression-stage damping (red scale) (➠ 72)

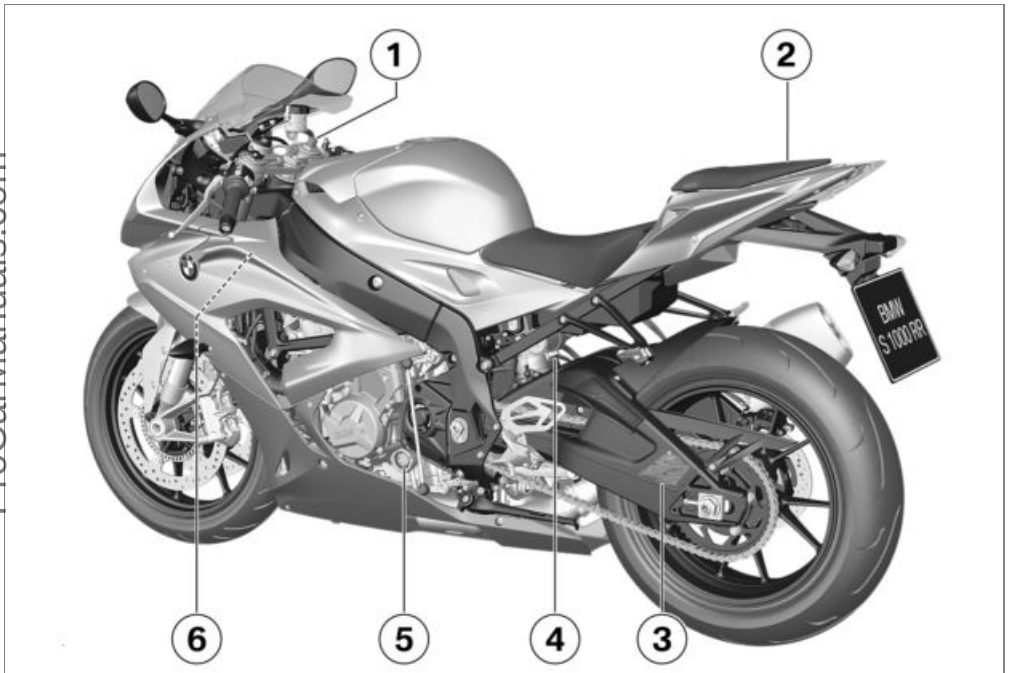
2 – without Dynamic Damping Control (DDC)[OE]
Adjuster for rear compression-stage damping (red scale) (➠ 74)
Adjuster for spring preload, rear (➠ 70)

3 Seat lock (➠ 62)

4 Table of tyre pressures
Payload table
Chain settings

5 Engine oil level indicator (➠ 159)

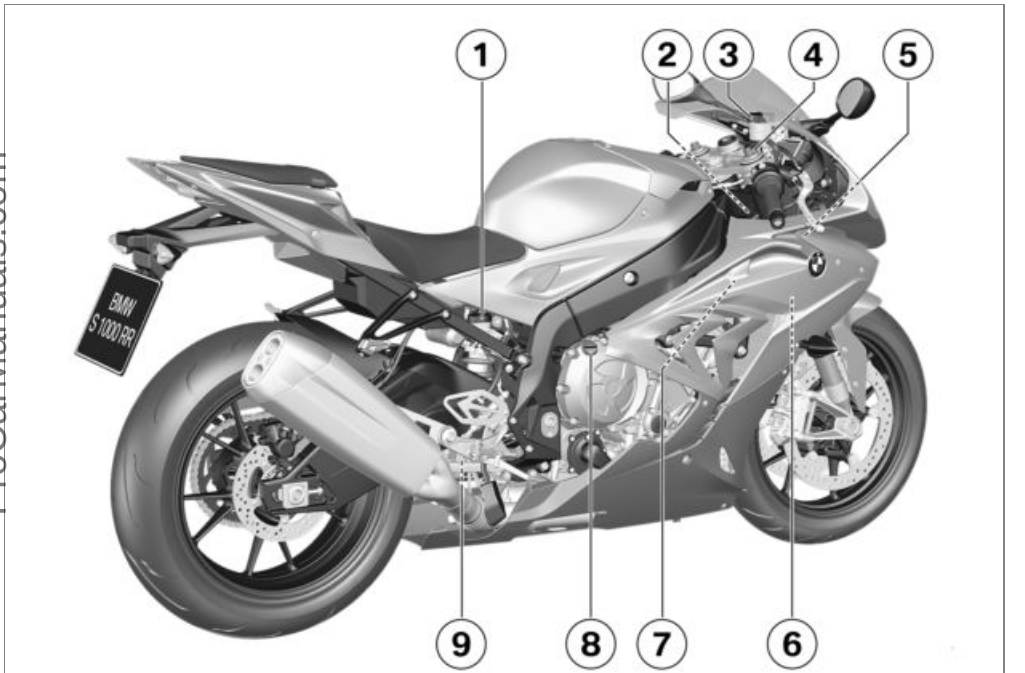
6 Socket for optional accessories (➠ 139)



General view, left side, with DDC

– with Dynamic Damping Control (DDC)[OE]

1 Adjusting spring preload for front wheel (➠ 69)
2 Seat lock (➠ 62)
3 Table of tyre pressures
Payload table
Chain settings
4 Adjuster for spring preload, rear (➠ 71)
5 Engine oil level indicator (➠ 159)
6 Socket for optional accessories (➠ 139)



General view, right side

1 Brake-fluid reservoir, rear (➠ 164)
2 VIN and type plate (on steering-head, right)
3 Brake-fluid reservoir, front (➠ 163)
4 Adjuster for rebound-stage damping
– without Dynamic Damping Control (DDC)[OE]
Adjust the rebound-stage damping for front wheel (➠ 73)
5 Adjusting steering damper (➠ 67)
6 Check coolant level (➠ 166)
7 Socket for optional accessories (➠ 138)
8 Oil filler neck (➠ 160)
9 – without Dynamic Damping Control (DDC)[OE]
Adjuster for rear rebound-stage damping (yellow scale) (➠ 75)

Multifunction switch, left

1 ABS Switching off (➠ 50)
ASC Switching off (➠ 51)
– with Dynamic Traction Control (DTC) OE
DTC Switching off (➠ 52)

2 High-beam headlight and headlight flasher (➠ 42)
Starting timing (➠ 100)

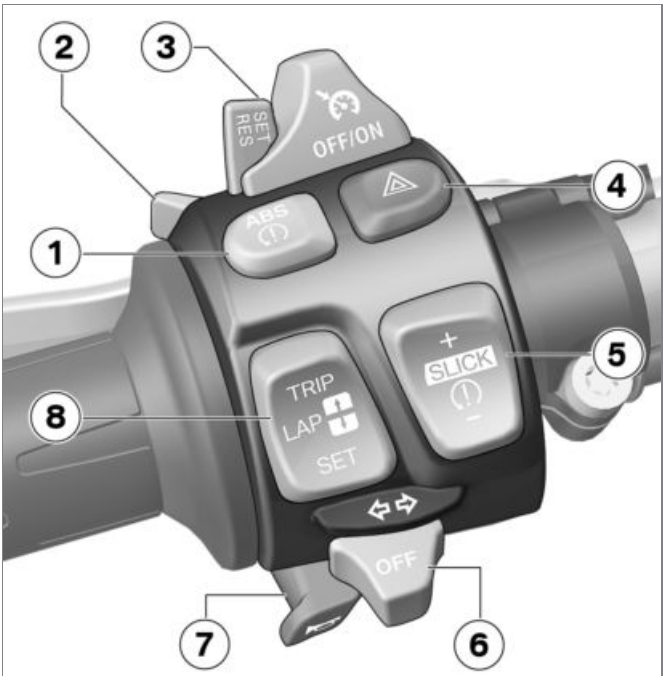
3 – with cruise control OE
Cruise-control system (➠ 57)

4 Hazard warning flashers (➠ 43)

5 – with Dynamic Traction Control (DTC) OE
DTC adjusting (➠ 127)

6 Turn indicators (➠ 44)

7 Horn



8 Setting the clock (➠ 50)
Resetting tripmeter (➠ 47)
Selecting readings (➠ 46)
Individualising lap timer (➠ 100)
Selecting submenu (➠ 113)

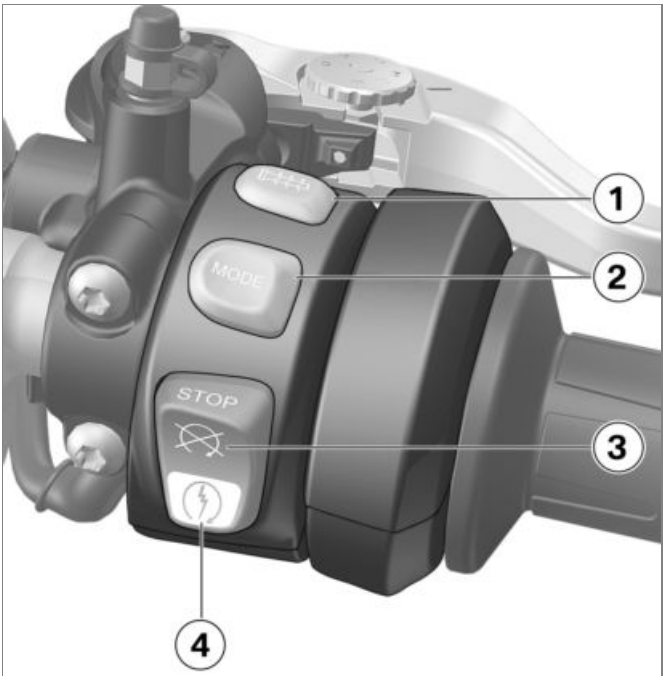
Multifunction switch, right

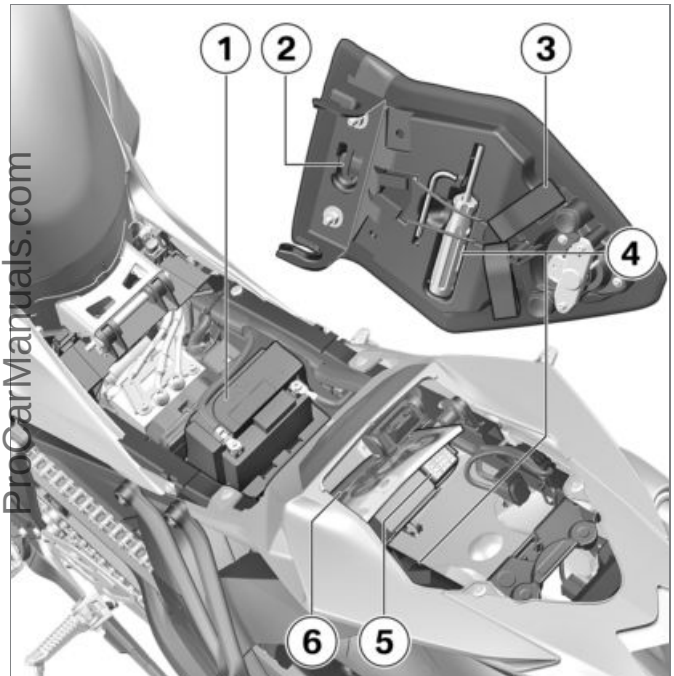
1 – with heated handlebar grips OE
Grip heating control (➠ 60)

2 Control for selecting the ride mode (➠ 54)

3 Emergency off switch (kill switch) (➠ 42)

4 Starter button
Start engine (➠ 82)
– with Pro riding modes OE
Launch control (➠ 128)
Speed limiter for pit lane (➠ 130)



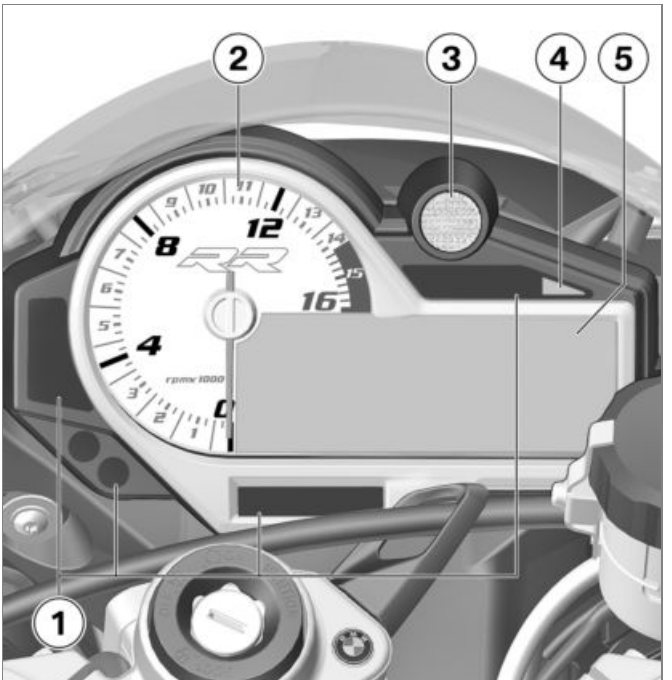


Underneath the seat

1 Battery (➠ 185)
– with alarm system (DWA)[OE]
Different position of the battery terminals: moved forward
2 Helmet holder (➠ 63)
3 Luggage loops (➠ 64)
4 Toolkit (➠ 156)
5 Fuse box (➠ 188)
6 Rider's Manual

Instrument panel

1 Panels for warning and tell-tale lights (➠ 22)
2 Rev. counter
3 Gearshift light (➠ 87)
4 Photosensor (for adapting the brightness of the instrument lighting)
– with alarm system (DWA) OE
DWA light-emitting diode (➠ 48)
5 Multifunction display (➠ 23)



Status indicators

Warning and telltale lights

1 ASC telltale and warning light (➠ 33)
– with Dynamic Traction Control (DTC)[OE]
DTC telltale light (➠ 33)

2 ABS telltale and warning light (➠ 32)

3 Turn indicators, left

4 General warning light, in combination with warnings in the multifunction display (➠ 24)

5 Turn indicators, right

6 Fuel reserve (➠ 37)

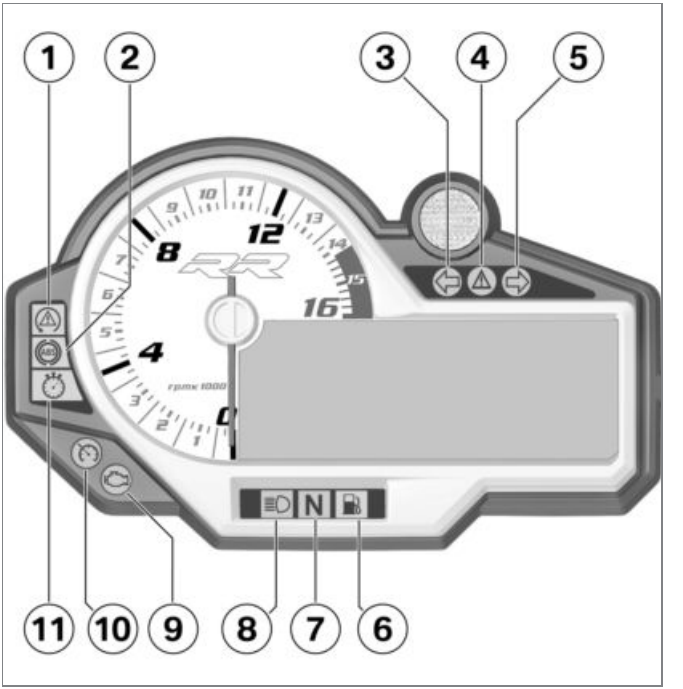
7 Telltale light for neutral

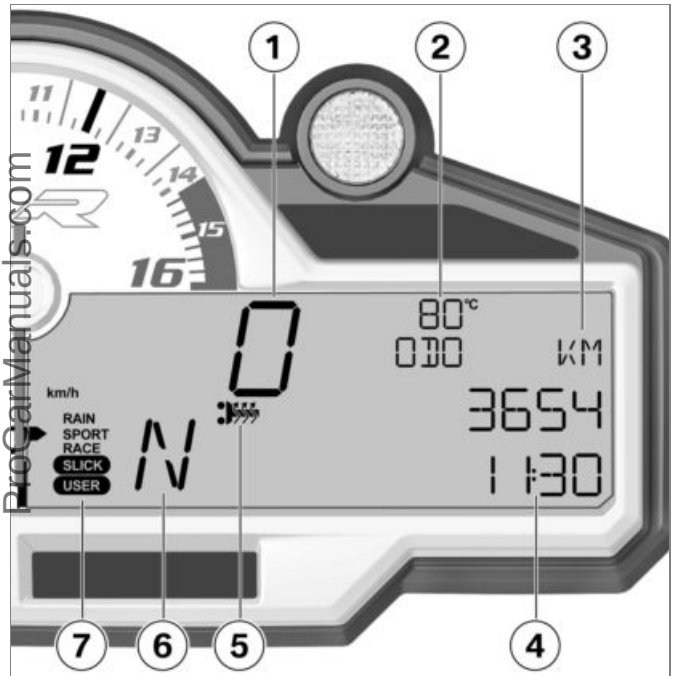
8 High-beam headlight

9 Warning light for engine electronics (➠ 29)

10 – with cruise control[OE]
Cruise-control system (➠ 57)

11 Light for the fastest lap (➠ 102)





Multifunction display

1 Speedometer
2 Coolant temperature
3 Odometer (➠ 46)
4 Clock (➠ 50)
5 – with heated handlebar grips[OE]
Heated handlebar grips (➠ 60)
6 Gear indicator; "N" indicates neutral.
7 Riding mode
RAIN
SPORT
RACE
Setting riding mode (➠ 54)
– with Pro riding modes[OE]
Additional riding modes
SLICK
USER

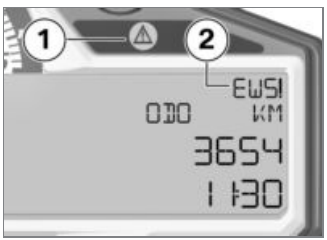
NOTICE

See Section 7 for information on the display modes for the race track.◀

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 pages.

Warnings, overview

Warning and telltale lights	Warning symbols in the display	Meaning
 lights up red	EWS ! appears on the display	Electronic immobiliser active (➠ 29)
 flashes red	Coolant-temperature reading flashes	Coolant temperature too high (➠ 29)
 lights up		Engine in emergency-operation mode (➠ 29)
 flashes yellow		Severe fault in the engine control unit (➠ 30)
 lights up		
	LAMP ! appears on the display	Bulbs for flashing turn indicators defective (➠ 30)
 lights up yellow	LAMPR ! appears on the display	Rear light defective (➠ 31)
 lights up yellow	LAMPF ! appears on the display	Bulbs for front parking light defective (➠ 31)

Warning and telltale lights	Warning symbols in the display	Meaning
 lights up yellow	LAMPS ! appears on the display	Rear light and bulbs for side lights faulty (➠ 31)
		Front lights defective (➠ 31)
 lights up yellow	VDS ! appears on the blank display	Motorcycle dropped (➠ 32)
 lights up yellow	VDS ! appears on the display	Drop sensor defective (➠ 32)
 flashes		ABS self-diagnosis not completed (➠ 32)
 lights up		ABS switched off (➠ 32)
 lights up		ABS fault (➠ 32)
 quick-flashes		ASC intervention (➠ 33)

Warning and telltale lights	Warning symbols in the display	Meaning
 slow-flashes		ASC self-diagnosis not completed (➠ 33)
 lights up		ASC switched off (➠ 33)
 lights up		ASC fault (➠ 33)
 quick-flashes		DTC intervention (➠ 33)
 slow-flashes		DTC self-diagnosis not completed (➠ 34)
 lights up		DTC switched off (➠ 34)
 lights up		DTC fault (➠ 34)
 lights up yellow	DDC! appears on the display	DDC fault (➠ 35)

Warning and telltale lights	Warning symbols in the display	Meaning
 lights up yellow	DWALO! appears on the display	DWA battery weak (➠ 35)
 lights up yellow	DWA! appears on the display	DWA battery flat (➠ 35)
 Shift indicator lights up or flashes	SPEED! appears on the display	Speed warning (➠ 36)
 Shift indicator lights up or flashes	0L-CON! appears on the display	Launch Control not ready (➠ 36)
 lights up red	NO CAN appears on the display	CAN open circuit/short circuit (➠ 36)
 lights up yellow	NO CODING appears on the display	No coding (➠ 36)
 lights up yellow	SERVICE! appears on the display	Service-due date has passed (➠ 37)
 lights up		Fuel down to reserve (➠ 37)

Electronic immobiliser active


General warning light shows red.

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 key used for the vehicle.
- Use the reserve key.
- Have the defective key replaced, preferably by an authorised BMW Motorrad dealer.

Coolant temperature too high


General warning light flashes red.

The coolant-temperature reading flashes.

ATTENTION

Riding with overheated engine.
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 electronics shows.

WARNING

Unusual ride characteristics when engine running in emergency-operation mode.
Risk of accident
- Adapt your style of riding accordingly.
- Avoid accelerating sharply and overtaking.◀

Possible cause:

The engine control unit has diagnosed a fault. The engine is in emergency-operation mode. In exceptional cases, the engine stops and refuses to start.
- 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.

Severe fault in the engine control unit


General warning light flashes yellow.


Warning light for engine electronics shows.

WARNING

Engine damage when running in emergency-operation mode.

Risk of accident
- Adapt your style of riding accordingly: Ride slowly, avoid sharp accelerating and overtaking.
- If possible, have the vehicle brought in and the fault rectified by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

Possible cause:

The engine control unit has diagnosed a fault which may cause severe secondary faults. The engine is in emergency-operation mode.
- It is possible to continue to ride but not recommended.
- Avoid high load and rpm ranges if possible.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Bulbs for flashing turn indicators defective

LAMP ! appears on the display.

WARNING

Failure of lights on the vehicle adds to possibility of other road users overlooking the vehicle.

Safety risk
- Replace defective bulbs as soon as possible; always carry a complete set of spare bulbs if possible.◀

Possible cause:

Bulb for turn indicator defective
- Replacing bulbs for front and rear turn indicators (➠ 180).

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 (➠ 133).

- In the SETUP EQUIPMENT submenu, suppress the fault message by setting the WARN LAMP OFF parameter.

Rear light defective


General warning light shows yellow.

LAMPR! appears on the display.

Possible cause:

Bulb for rear light or brake light defective.

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

Bulbs for front parking light defective


General warning light shows yellow.

LAMPF! appears on the display.

WARNING

Failure of lights on the vehicle adds to possibility of other road users overlooking the vehicle.

Safety risk

- Replace defective bulbs as soon as possible; always carry a complete set of spare bulbs if possible.◀

Possible cause:

Bulb for parking light defective.

- Replacing bulb for left parking light (➠ 178).
- Replacing bulb for right side light (➠ 179).

Rear light and bulbs for side lights faulty


General warning light shows yellow.

LAMPS! appears on the display. No indication of a fault if the high-beam or low-beam headlight fails.

Front lights defective

No indication of a fault if the high-beam or low-beam headlight fails.

WARNING

Failure of lights on the vehicle adds to possibility of other road users overlooking the vehicle.

Safety risk

- Replace defective bulbs as soon as possible; always carry a complete set of spare bulbs if possible.◀

Possible cause:

Front bulb is defective.

- Replacing bulbs for low-beam headlight and high-beam headlight (➠ 176).

Motorcycle dropped


General warning light shows yellow.

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


General warning light shows yellow.

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


ABS telltale and warning light flashes.

Possible cause:

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

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

ABS switched off


ABS telltale and warning light shows.

Possible cause:

The rider has switched off the ABS.

- ABS Switching on (➠ 51).

ABS fault


ABS telltale and warning light shows.

Possible cause:

The ABS control unit has detected a fault. The ABS function is not available or the functionality is subject to certain restrictions.

- You can continue to ride the vehicle, but make due provision for the fact that the ABS function is not available or is only conditionally available. Bear in mind the more detailed information on situations that can lead to an ABS fault (➠ 143).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably

an authorised BMW Motorrad dealer.

ASC intervention

ASC telltale and warning light quick-flashes.

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

ASC self-diagnosis not completed

ASC telltale and warning light slow-flashes.

Possible cause:

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

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

ASC switched off

ASC telltale and warning light shows.

Possible cause:

The rider has switched off the ASC.

- ASC Switching on (➠ 52).

ASC fault

ASC telltale and warning light shows.

Possible cause:

The ASC control unit has detected a fault.

- You can continue to ride. Bear in mind that the ASC is not available or the functionality is subject to certain restrictions. Bear in mind the more detailed information on situations that can lead to an ASC fault (➠ 145).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

DTC intervention

– with Dynamic Traction Control (DTC)[OE]


DTC telltale 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 Dynamic Traction Control (DTC)[OE]


DTC telltale light slow-flashes.

Possible cause:

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

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

DTC switched off

– with Dynamic Traction Control (DTC)[OE]


DTC telltale light shows.

Possible cause:

The rider has switched off the DTC system.

- DTC Switching on (➠ 53).

DTC fault

– with Dynamic Traction Control (DTC)[OE]


DTC telltale light shows.

Possible cause:

The DTC control unit has detected a fault. Bear in mind that the DTC function is not available or the functionality is subject to certain restrictions.

- You can continue to ride. Bear in mind the more detailed information on situations that can lead to a DTC fault (➠ 145).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably

an authorised BMW Motorrad dealer.

DDC fault

– with Dynamic Damping Control (DDC)[OE]


General warning light shows yellow.

DDC ! appears on the display.

Possible cause:

The DDC control unit has detected a fault.

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

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

Possible cause:

A DDC sensor fault has been detected.

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

» The semi-active functionality is deactivated.

DWA battery weak

– with alarm system (DWA)[OE]


General warning light shows yellow.

DWALO ! appears on the display.

NOTICE

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

Possible cause:

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

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

DWA battery flat

– with alarm system (DWA)[OE]


General warning light shows yellow.

DWA ! appears on the display.

NOTICE

This error message shows briefly only 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 vehicle'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.

Launch Control not ready

– with Pro riding modes OE

Gearshift light lights up or flashes.

OL-CON! appears on the display.

Possible cause:

The number of racing starts possible with Launch Control has been exceeded.

- Allow the clutch to cool.
- Racing start with Launch Control (➠ 128).

CAN open circuit/short circuit

General warning light shows red.

NO CAN (Controller Area Network) appears on the display.

Possible cause:

A fault in the Controller Area Network has been detected.

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

No coding

General warning light shows yellow.

NO CODING appears on the display.

Possible cause:

A coding fault has been detected.

- The reading remains visible for 10 seconds before disappearing automatically.
- Seek the advice of a specialist workshop, preferably an authorised BMW Motorrad dealer.

Service-due date has passed

General warning light shows yellow.

SERVICE! appears on the display.

Service-due indicator

The service-due date **1** shows when a service is due within one month.

When a service is due within 1000 km (700 miles), the countdown distance **1** is shown and counted down in steps of 100 km (100 miles). This reading appears 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.

NOTICE

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.◀

Fuel down to reserve

Warning light for fuel down to reserve shows.

WARNING

Irregular engine operation or engine shutdown due to lack of fuel.

Risk of accident. Damage to catalytic converter.

• Do not run the fuel tank dry.◀

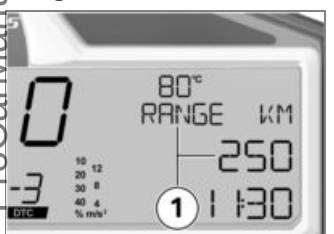
Possible cause:

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

	Fuel reserve
approx. 4 l	

• Refuelling (➠ 90).

Range



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

RANGE

– 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 range reading appears automatically on the multifunction display when fuel is down to the reserve level.
– After a refuelling stop, range is recalculated if the amount of fuel in the tank is greater than the reserve quantity.

NOTICE

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

Operation

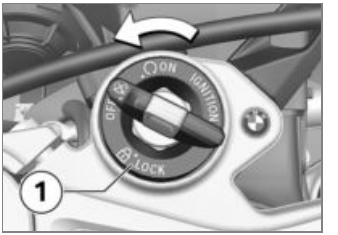
Ignition switch/steering lock

Keys

You receive 2 ignition keys. Please consult the information on the electronic immobiliser (EWS) if a key is lost or mislaid (➠ 41). Ignition switch/steering lock, fuel filler cap lock and seat lock are all operated with the same key.

Lock the handlebars

- Turn the handlebars all the way to left.

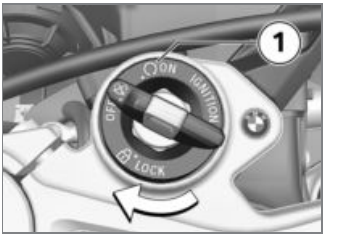


- Turn the vehicle key to position **1**, while moving the handlebars slightly.

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

Ignition

Switching on ignition

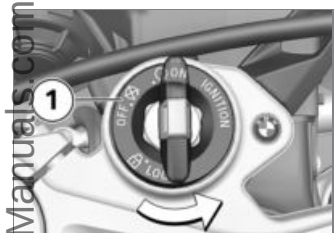


- Turn the vehicle key to position **1**.

» Parking lights and all function circuits switched on.
» Engine can be started.
» Pre-Ride-Check is performed. (➠ 83)
» ABS self-diagnosis is in progress. (➠ 84)
» ASC self-diagnosis is in progress. (➠ 84)

– with Dynamic Traction Control (DTC) OE
» DTC self-diagnosis is in progress. (➠ 85)◁

Switching off ignition



▶ Turn the vehicle key to position **1**.
» Lights switched off.
» Handlebars not locked.
» Vehicle key can be removed.

Electronic immobiliser

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 vehicle key as "authorised" for your motorcycle.

NOTICE

A spare key attached to the same ring as the ignition key used to start the engine could "irritate" the electronics, in which case the enabling signal for starting is not issued. The `EWS!` warning appears in the multifunction display.
Always keep the spare key separately from the ignition key.◀

If you lose your key, you can have it barred by your BMW Motorrad authorised dealer. If you wish to do this, you will need to bring all other keys for the motorcycle with you.
The engine cannot be started by a barred ignition key, but an ignition key that has been barred can subsequently be reactivated.
You can obtain replacement/extra keys only through an authorised BMW Motorrad dealer. The ignition 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.

Emergency off switch (kill switch)

1 Emergency off switch (kill switch)

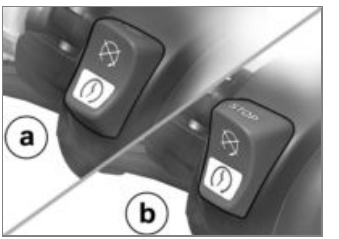
WARNING

Operation of the kill switch while riding.

Risk of fall due to rear wheel locking.

- Do not operate the kill switch when riding.◀

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



a Engine switched off
b Normal operating position (run)

Lights

Side light

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

NOTICE

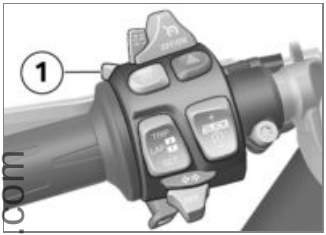
The side lights place a strain on the battery. Do not switch the ignition on for longer than absolutely necessary.◀

Low-beam headlight

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

High-beam headlight and headlight flasher

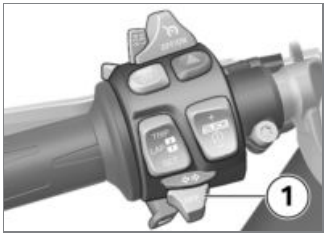
- Start the engine.



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

Parking lights

- Switch off the ignition.



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

NOTICE

You can switch on the parking lights within 10 seconds after switching off the ignition.◀

- Switch the ignition on and off again to switch off the parking lights.

Hazard warning flashers

Switching on hazard warning flashers

- Switch on the ignition.

NOTICE

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

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

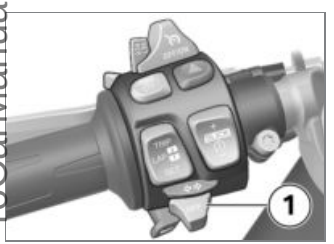
» Ignition can be switched off.

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

Turn indicators

Operating the turn indicators

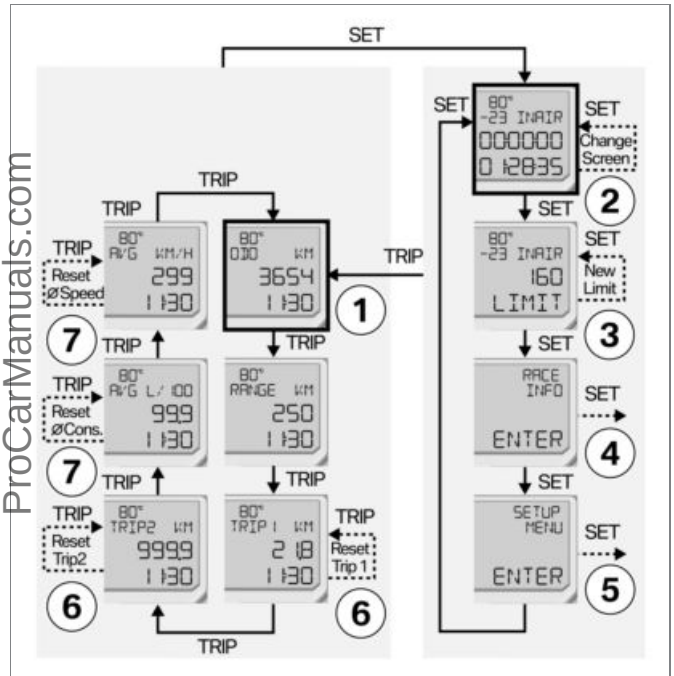
- Switch on the ignition.



- Push button **1** to the left to switch on the left turn indicators.
- Push button **1** to the right to switch on the right turn indicators.
- Operate centre button **1** to cancel the turn indicators.

NOTICE

The turn indicators are cancelled automatically after the defined time and distance. The defined time and distance can be set by an authorised BMW Motorrad dealer.◀



Multifunction display

Overview

— Solid line: short-press the button.

- - Broken line: press and hold down the button.

1 Odometer
Default display
Select the readings in the multifunction display (➠ 46)

2 LAPTIMER (➠ 99)

3 LIMIT (➠ 59)
Factory setting for WARN SPEED (➠ 118)

4 RACE INFO (➠ 103)

5 SETUP MENU (➠ 111)

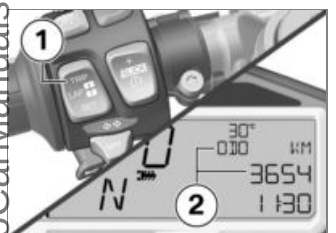
6 TRIP 1 / TRIP 2
Reset the tripmeter (➠ 47)

7 Average consumption and average speed
Resetting the average values (➠ 47)

Selecting readings in multifunction display

- Switch on the ignition.

» All the information necessary for riding on public roads is presented in the multifunction display by the on-board computer.

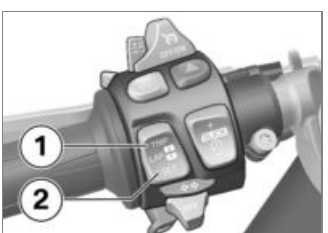


- Repeatedly short-press TRIP **1** until the value you want appears in panel **2**.

The following values of the on-board computer can be displayed:

– Total distance travelled ODO (default)
– Range RANGE
– Tripmeter 1 TRIP 1
– Tripmeter 2 TRIP 2
– Average consumption AVG in units of volume per unit of distance or in units of distance per unit of volume
– Average speed AVG in units of distance per hour

Selecting other readings



- Short-press SET **2** to view other readings.
- Short-press TRIP **1** to return to the odometer reading ODO (default).
- Repeatedly short-press SET **2** until the reading you want is selected.

The display readouts at your disposal are as follows:

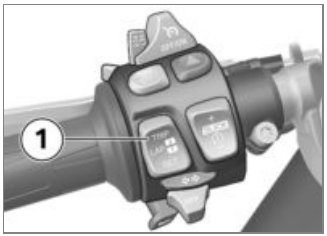
– **LAPTIMER**: Lap times and other data can be logged here and subsequently retrieved in the RACE INFO menu.
– **RACE INFO**: The information logged with the LAPTIMER can be retrieved for viewing here. RACE INFO can be called up only when the vehicle is at a standstill.
– **SETUP MENU**: The instrument panel can be configured to suit the rider's preferences here. SETUP MENU can be called up only when the vehicle is at a standstill.

- When the display shows the LAPTIMER, long-press SET **2**

to call up the various LAP-TIMER readings.
- When the display shows LIMIT, long-press SET **2** to set the current speed as the new limit.
- When the display shows RACE INFO ENTER or SETUP MENU ENTER, long-press SET **2** to call up the corresponding menu.

Resetting tripmeter

- Switch on the ignition.



- Repeatedly short-press TRIP **1** until the tripmeter you want appears on the display.

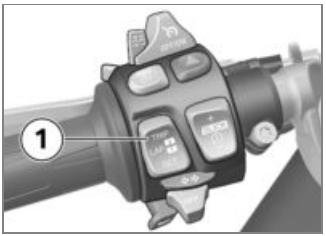
» TRIP 1 or TRIP 2 appears on the display.

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

» Tripmeter reading = 0.0

Resetting the average values

- Switch on the ignition.



- Repeatedly short-press TRIP **1** until the average you want to reset appears on the display.

» AVG appears on the display.

- Press and hold down TRIP **1** until the value you selected has reset.

» Average value = 0.0

Anti-theft alarm

– with alarm system (DWA) OE

Activation

- Switching on ignition (➠ 40).
- DWA adjusting (➠ 49).
- Switch off the ignition.

» DWA If the alarm system (DWA) is activated, then the alarm system will be armed automatically when the ignition is switched off.
» Activation takes approximately 30 seconds to complete.
» Turn indicators flash twice.
» Confirmation tone sounds twice (if programmed).
» Anti-theft alarm (DWA) is active.

Alarm

An alarm can be triggered by:

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

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

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

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

Deactivation

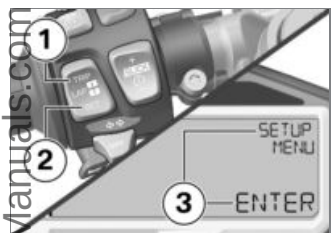
- Kill switch in operating position (run).
- Switch on the ignition.

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

» Anti-theft alarm (DWA) is deactivated.

DWA adjusting

• Switching on ignition (➠ 40).

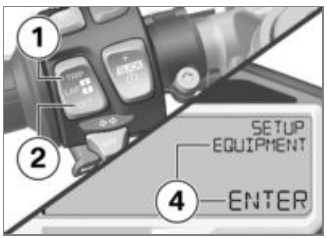


• Repeatedly short-press SET **2** until SETUP MENU ENTER **3** appears on the display.

NOTICE

If you scroll down too far, repeatedly short-press SET **2** until the menu returns to the start and then to the reading you want.◀

• Long-press SET **2** to open the menu.



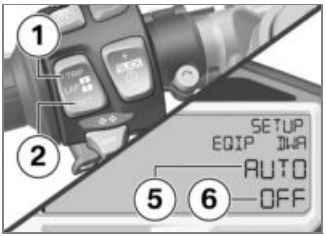
• Repeatedly short-press SET **2** until SETUP EQUIPMENT ENTER **4** appears on the display.

NOTICE

If you scroll down too far, short-press TRIP **1** to scroll back up.◀

• Long-press SET **2** to open the menu.

» The DWA AUTO parameter **5** and its current value **6** appear on the display.



• Long-press SET **2** to change the value of setting **6**.

» Value **6** flashes.

• Short-press TRIP **1** or SET **2** to change the value.

The following settings are available:

– DWA AUTO ON: The DWA anti-theft alarm is active and will be armed automatically when the ignition is switched off.

– DWA AUTO OFF: The DWA anti-theft alarm is deactivated.

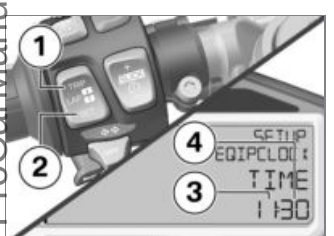
• Long-press SET **2** to save the new value.

» Value **6** stops flashing.
» This completes the process.
• Long-press TRIP **1** to abort the procedure.
» Adjustment aborted.
» ODO appears on the display

Clock

Setting the clock

• Switch on the ignition.



• Repeatedly short-press SET **2** until SETUP MENU ENTER appears on the display.
• Long-press SET **2**.
» The SETUP MENU opens.
• Repeatedly short-press SET **2** until SETUP EQUIPMENT ENTER appears on the display.
• Long-press SET **2**.
» The SETUP EQUIPMENT menu opens.
• Repeatedly short-press SET **2** until SETUP EQIP:CLOCK TIME appears on the display.
• Long-press SET **2**.
» Minutes reading **4** flashes.
• Short-press TRIP **1** to step the minutes reading up.
• Short-press SET **2** to step the minutes reading down.
• When the minutes readings is correct, long-press SET **2**.
» Hours reading **3** flashes.
• Short-press TRIP **1** to step the hours reading up.
• Short-press SET **2** to step the hours reading down.
• When the hours readings is correct, long-press SET **2**.
» The hours reading stops flashing.
» This completes the process.

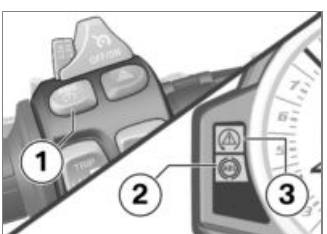
Anti-lock brake system

ABS Switching off

• Switch on the ignition.

NOTICE

You have the option of deactivating the BMW Motorrad Race ABS while the motorcycle is on the move.◀



• Press and hold down button **1** until first ASC / DTC telltale

light **3** and then ABS telltale and warning light **2** change status.

» The ASC / DTC setting remains unchanged.

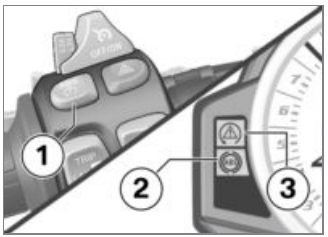
ABS telltale and warning light shows.

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

ABS telltale and warning light remains on.

ABS is switched off.

ABS Switching on



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

» The ASC / DTC setting remains unchanged.

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

• If the coding plug for the SLICK / USER riding mode is not inserted, you have the alternative of switching the ignition off and then on again.

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

min 10 km/h

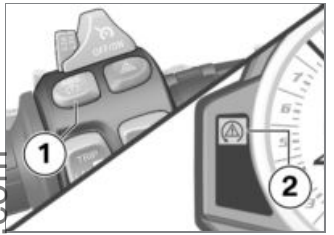
Automatic Stability Control

ASC Switching off

• Switch on the ignition.

NOTICE

You have the option of deactivating Automatic Stability Control (ASC) while the motorcycle is on the move.◀



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

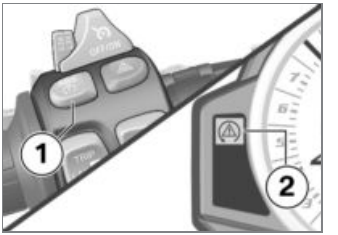
ASC telltale and warning light starts to show.

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

ASC telltale and warning light remains on.

» ASC is switched off.

ASC Switching on



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

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

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

ASC telltale and warning light remains off or continues to flash.

» ASC is switched on.

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

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

min 10 km/h

Dynamic Traction Control

– with Dynamic Traction Control (DTC)[OE]

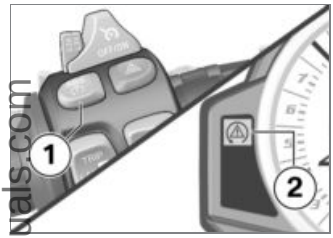
DTC Switching off

- Switch on the ignition.

NOTICE

You have the option of deactivating Dynamic Traction Control

(DTC) while the motorcycle is on the move.◀



- Press and hold down button **1** until DTC telltale light **2** changes status.

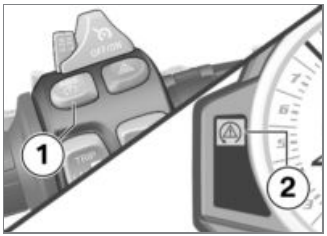
DTC telltale light starts to show.

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

DTC telltale light remains on.

» DTC is switched off.

DTC Switching on



- Press and hold down button **1** until DTC telltale light **2** changes status.

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

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

DTC telltale light remains off or continues to flash.

» DTC is switched on.

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

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

min 10 km/h

Riding mode

Using the riding modes

BMW Motorrad has developed 5 operational scenarios for your motorcycle from which you can select the scenario suitable for your situation:

– Riding on a rain-wet road surface.
– Sporty riding on a dry road surface.

– Riding on race circuits with stock tyres.

– with Dynamic Traction Control (DTC) OE

– Riding on race circuits with racing tyres.

– Riding on race circuits with racing tyres with provision for the rider's custom settings.

The interplay of engine torque, throttle response, ABS control and ASC or DTC control is optimised for each of these 5 scenarios.

– with Dynamic Damping Control (DDC) OE

The chassis adjustment also adapts to the selected scenario.

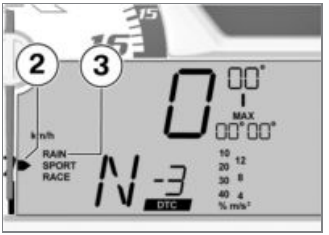
Setting riding mode

• Switching on ignition (➠ 40).

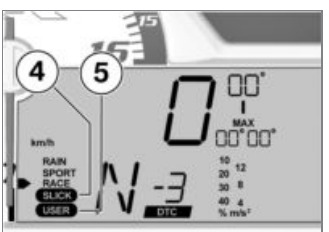
• Press button **1**.

NOTICE

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



Selection arrow **2** and selectable riding modes **3** are displayed. The most recently active riding mode flashes.



– with Pro riding modes OE

If the coding plug is installed the choice of modes also includes

the SLICK **4** and USER **5** modes.◁

WARNING

Activation of the SLICK mode of the race track or without racing slicks fitted.
Risk of accident due to lack of tyre grip.
- Activate the SLICK mode only on race tracks and only when running the motorcycle on racing slicks.◀

- Repeatedly press button **1** until selection arrow **2** points to the riding mode you want.

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

– Selection arrow **2** and the inactive riding modes disappear from the display.

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

– The throttle twistgrip is in the idle position.
– The brake levers are in the released positions.

The following ride modes can be selected:

– RAIN: For riding on a rain-wet road surface.
– SPORT: For sporty riding on a dry road surface.
– RACE: For riding on race circuits with stock tyres.

» The following riding modes are additionally available for selection:

– with Pro riding modes OE
– SLICK: For riding on race circuits with slicks (only with coding plug installed).◁
– with Pro riding modes OE
– USER: You can customise the settings for all available functions (ENGINE, ABS, DTC and DDC) to suit your individual preferences or the current boundary conditions. Technical understanding and an awareness of how the various parameters interact are essential (only with coding plug installed, see the section entitled "Engineering details").◁

» The mode selected in this way is retained with the engine-

characteristic, ABS, DTC and DDC adaptation settings even after the ignition has been switched off.

- When the SLICK riding mode is selected: Note that ABS control for the rear wheel is restricted (see the section entitled "Engineering details").
- The values selected in the SETUP USER-MODE do not remain permanently visible on the display; instead, they appear for a limited time and only after the following events:
  - After each Pre-Ride-Check when **USER** is the active riding mode.
  - After a change to the **USER** riding mode.
  - If button **1** (MODE) is pressed when the riding mode is **USER**, but there is no change of riding modes.

Installing coding plug

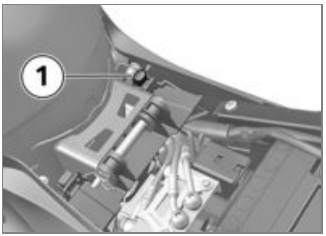
– with Pro riding modes OE

⚠ WARNING

Increased engine power available in all riding modes with coding plug inserted, vehicles with power reduction.

Risk of accident

- It is important for the rider intending to use these more sporty ride modes to familiarise himself/herself with their characteristics.
- Do not use the coding plug for riding on public roads.◀
- Switching off ignition (➠ 41).
- Removing front seat (➠ 63).

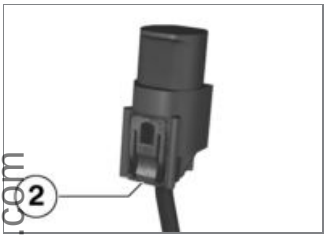


ATTENTION

Dirt and damp penetrating inside open connectors.

Malfunctions

- Reinstall the cap after removing the coding plug.◀
- Remove cap **1** of the plug connection.



- To do so, press in latch **2** and remove the cap.
- Install the coding plug.
- Switch on the ignition.
- For safety reasons, the RAIN riding mode is activated by default when the coding plug is inserted.
- Setting riding mode (➠ 54).
- The preset riding mode is retained in memory, even after the ignition is switched off.
- Installing front seat (➠ 63).
- Remove the number-plate carrier (➠ 132).

Cruise-control system

– with cruise control OE

Switching on cruise control

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

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

Saving road speed

- Briefly push button **1** forward.

	Adjustment range for cruise control
30...210 km/h	

Telltale light for cruise control shows.

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

Accelerating

- Briefly push button **1** forward.

Increasing speed
Speed is increased each time you press the button.
1 km/h

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

Decelerating

- Briefly push button **1** back.

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

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

Deactivate cruise control

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

NOTICE

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

NOTICE

For safety reasons, cruise control is deactivated automatically when the ASC and DTC systems intervene.◀

- » Telltale light for cruise control goes out.

Resuming former cruising speed

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

NOTICE

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

Telltale light for cruise control shows.

Switching off cruise control

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

» The system is deactivated.

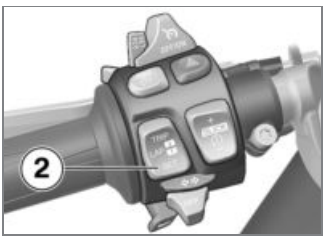
» Button **2** is disabled.

Speed warning

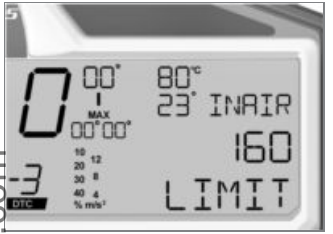
Adjusting speed warning

- If applicable, activate the speed warning in the SETUP EQUIPMENT submenu. See the section headed "On the race track":

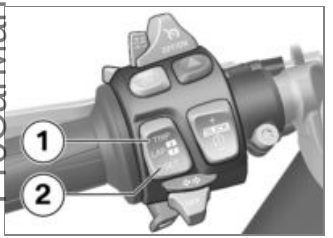
» Speed warning (➠ 118)



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



The current speed setting or OFF appears on the display.

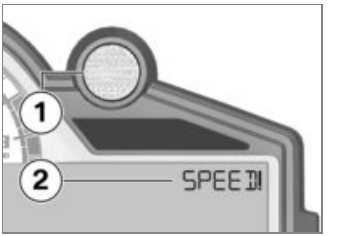


- To set the current speed as the new limit: Long-press SET **2**.

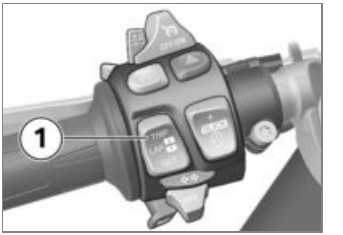
» The current speed is shown on the display

- To increase the preset speed: Short-press TRIP **1**.

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



If you exceed the limit set beforehand, shift indicator **1** lights up or flashes at the preset frequency and warning **2** appears on the display.



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

Heated handlebar grips

– with heated handlebar grips OE

Operating the heated handlebar grips

- Start the engine.

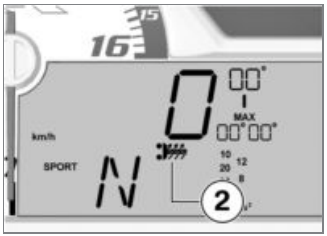
NOTICE

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

NOTICE

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

- Repeatedly press button **1** until the heating stage you want to use appears on the multifunction 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.

Second stage: 100 % heating power

First stage: 50 % heating power

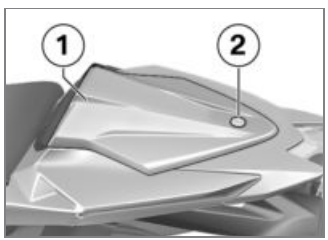
» The selected heating stage will be saved if you allow a certain length of time to pass without making further changes.

Front and rear seats

Removing tail-hump cover

– with rear-seat cover OE

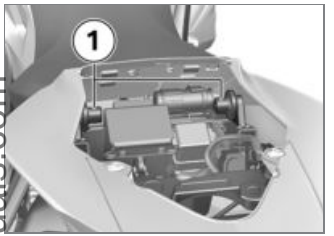
- Make sure the ground is level and firm and place the motorcycle on its stand.



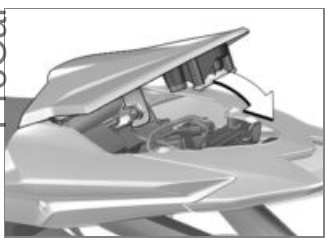
- Open lock **2** in tail-hump cover **1** with the vehicle key.
- Lift the tail-hump cover at the rear and then work it back and up to remove.

Installing tail-hump cover

– with rear-seat cover[OE]



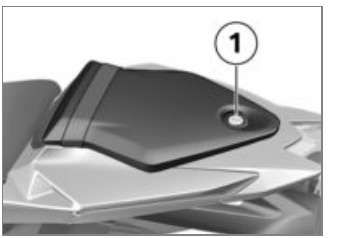
- Engage the tail-hump cover in mounts **1** on left and right.



- Swing the tail-hump cover down, pushing it lightly forward.
- Lock the lock with the ignition key.

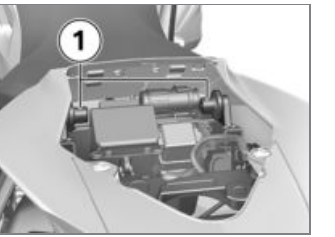
Removing rear seat

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

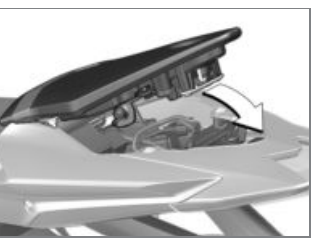


- Open seat lock **1** with the ignition key.
- Lift the rear seat at the rear and then work it back and up to remove.
- Remove the ignition key from the lock and place the rear seat, upholstered side down, on a clean surface.

Install the rear seat



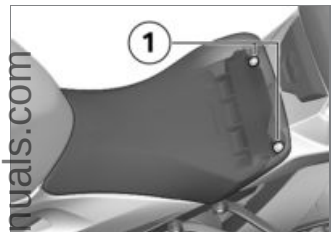
- Engage the rear seat in mounts **1** on left and right.



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

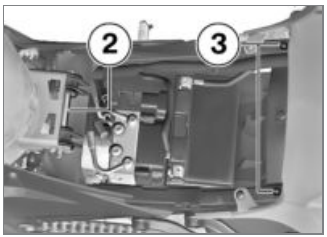
- Lock the seat lock with the ignition key.

Removing front seat

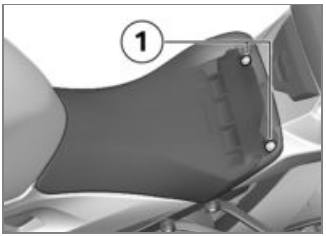


- Push the upholstery of the front seat forward slightly above screws **1** and hold it in this position.
- Remove the screws.
- Push the seat forward and lift it at the rear to remove. Take care not to let the screws scratch the trim panels.
- Place the seat, upholstered side down, on a clean surface.

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.

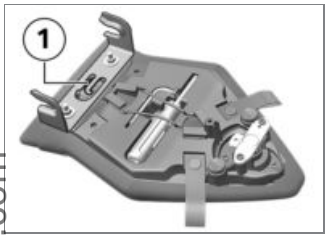


- Push the upholstery of the front seat forward slightly above the screw holes and hold it in this position.
- Install screws **1**.

Helmet holder

Securing the helmet to motorcycle

- Removing rear seat (➠ 62).
- Turn the rear seat upside down.



ATTENTION

Incorrect positioning of the helmet lock.

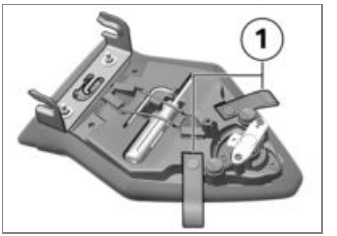
Scratch marks on trim panel.

- 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 (➠ 62).
- Place the helmet on the front seat.

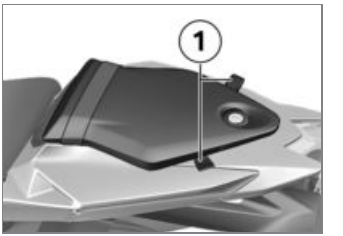
Luggage loops

Securing luggage to motorcycle

- Removing rear seat (➠ 62).
- Turn the rear seat upside down.



- Pull luggage loops **1** out of the holders and to the outside and down.
- Install the rear seat (➠ 62).



- Use luggage 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.

Adjustment

Mirrors

Adjusting mirrors

- Turn the mirror to the desired position.

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.

NOTICE

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

Brakes

Adjusting brake lever

WARNING

Changed position of the brake fluid reservoir.
Air in the brake system.

- Do not turn the handlebars or the handlebar fitting on the handlebar.◀

WARNING

Adjusting the brake lever while riding.
Risk of accident

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

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

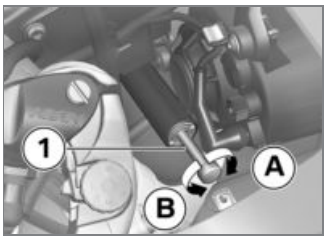
NOTICE

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

» Adjustment options:
from position 1: largest span between handlebar grip and brake lever
to position 6: smallest span between handlebar grip and brake lever

Steering

Adjusting steering damper



WARNING

Adjusting the steering damper while riding.
Risk of accident
- Do not attempt to adjust the steering damper unless the motorcycle is at a standstill.◀
- 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 8 clicks (from fully closed) (Public roads)
Open 5 clicks (from fully closed) (Race track)

Spring preload

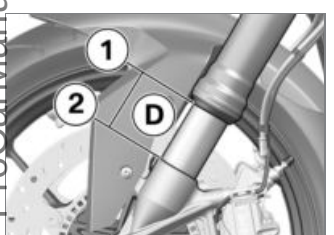
Adjustment

Front spring preload has to be adjusted to suit the rider's weight. Increase spring preload for heavier riders, decrease spring preload for lighter riders. It is essential to set spring preload of the rear suspension to suit the load carried by the motorcycle. Increase spring preload when the vehicle is heavily loaded and reduce spring preload accordingly when the vehicle is lightly loaded.

Adjusting spring preload for front wheel

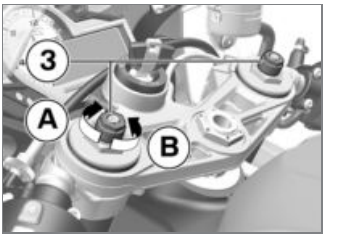
– without Dynamic Damping Control (DDC)[OE]

- 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)



⚠ WARNING

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

Impaired handling.

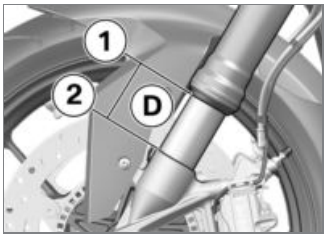
- Adjust spring-strut damping to suit spring preload.◀
- To reduce negative spring displacement (increase spring preload, in other words), use the tool from the on-board toolkit to turn adjusting screws **3** in direction **A**.
- To increase negative spring displacement (reduce spring

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 front wheel

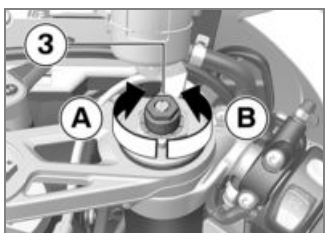
with Dynamic Damping Control (DDC) OE

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



- Hold the motorcycle upright, preferably with the assistance of a second person (do not prop the motorcycle on the side stand).
- Measure distance **D** between bottom edge **1** of the slider tube and front axle **2**.
- Apply the rider's weight to the motorcycle.
- With the assistance of second person, measure distance **D** between points **1** and **2** again.
- Calculate negative spring displacement as the difference between the two measured values.

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



WARNING

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

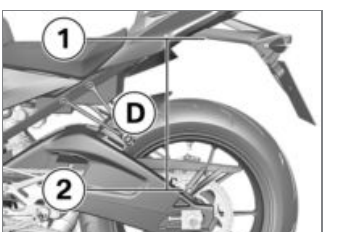
- Adjust spring-strut damping to suit spring preload.◀
- To reduce negative spring displacement (increase spring preload, in other words), use the tool from the on-board toolkit to turn adjusting screw **3** in direction **A**.
- To increase negative spring displacement (reduce spring preload, in other words), use the tool from the on-board toolkit to turn adjusting screw **3** in direction **B**.

Adjusting spring preload for rear wheel

– without Dynamic Damping Control (DDC)[OE]

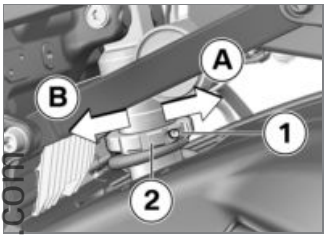
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Make sure there is no load on the motorcycle; remove all items of luggage, if carried.

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



- Hold the motorcycle upright (do not prop it on the side stand) 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
Suspension compression at rear wheel
8...12 mm (With rider 85 kg)



WARNING

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

Impaired handling.

- Adjust spring-strut damping 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 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.

Screw in adjusting ring
3 Nm

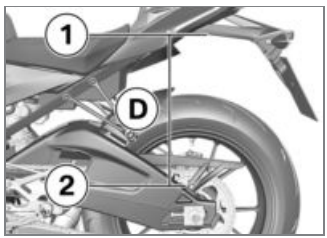
Adjusting spring preload for rear wheel

– with Dynamic Damping Control (DDC)[OE]

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Switch on the ignition.
- Start the engine to avoid discharging the battery.

NOTICE

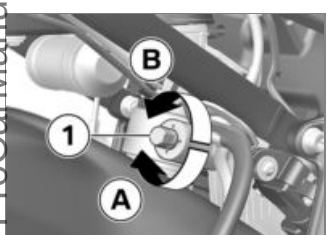
When you make changes to the DDC system settings the ignition has to be ON, because only then are the electric valves active.◀



- Hold the motorcycle upright, preferably with the assistance of a second person (do not prop the motorcycle on the side stand).
- Measure distance **D** from bottom edge **1** of the numberplate 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
Suspension compression at rear wheel
8...12 mm (With rider 85 kg)



- To reduce negative spring displacement (increase spring preload, in other words), use the tool from the on-board toolkit to turn adjusting ring **1** 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 ring **1** in direction **B**.

Damping

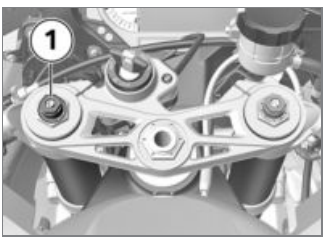
Adjustment

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

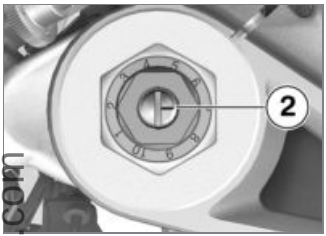
– An uneven surface requires softer damping than a smooth surface.
– An increase in spring preload requires firmer damping, a reduction in spring preload requires softer damping.

Adjusting compression-stage damping for front wheel

– without Dynamic Damping Control (DDC)[OE]



- Adjust compression-stage damping by turning adjusting screw **1** and reading the red scale on the left fork leg.

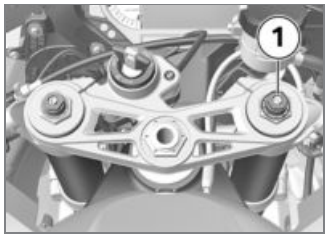


- To increase damping: Use the tool from the on-board kit to turn the adjusting screw in the appropriate direction so that mark **2** points to a higher reading on the scale.
- To reduce damping: Use the tool from the on-board kit to turn the adjusting screw in the appropriate direction so that mark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

Adjust the rebound-stage damping for front wheel

– without Dynamic Damping Control (DDC) OE



- Adjust rebound-stage damping by turning adjusting screw **1** and reading the yellow scale on the right fork leg.

- 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)

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

– without Dynamic Damping Control (DDC)[OE]

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

- Adjust compression-stage damping by turning adjusting screw **1** and reading the red scale.

- 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, rear
Position 2 (comfortable setting with rider 85 kg)
Position 4 (normal setting with rider 85 kg)
Position 9 (sports setting with rider 85 kg)

Adjusting rebound-stage damping for rear wheel

– without Dynamic Damping Control (DDC)[OE]

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

- Adjust compression-stage damping by turning adjusting screw **1** and reading the yellow scale.

- 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

DDC

Adjustment

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

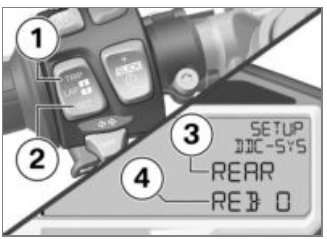
– An uneven surface requires softer damping than a smooth surface.
– An increase in spring preload requires firmer damping, a reduction in spring preload requires softer damping.

Adjusting the damping characteristic for rear wheel

– with Dynamic Damping Control (DDC)[OE]

Use the SETUP DDC-SYS submenu to make changes to the settings.

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Select the submenu (➠ 113).
» The SETUP DDC–SYS submenu is selected.



- To set the rebound stage for the rear wheel, repeatedly short-press TRIP **1** or SET **2** as applicable until line **3** shows REAR and line **4** shows REB**:** (Rebound).
- Long-press SET **2**.
» The value beside REB**:** flashes.

- Use TRIP **1** and SET **2** to adjust damping as desired.

» +1 ... +7: Increase damping through a maximum of seven levels (harder).

» −1 ... −7: Reduce damping through a maximum of seven levels (softer).

» 0: Factory setting

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

» The value for the riding mode currently selected is saved.

- To set the compression stage for the rear wheel, repeatedly short-press TRIP **1** or SET **2** as applicable until line **3** shows REAR and line **4** shows COM**:** (Compression).
- Long-press SET **2**.

» The value beside COM**:** flashes.

- Use TRIP **1** and SET **2** to adjust damping as desired.
- Press and hold down SET **2** until the value stops flashing.

NOTICE

In the SETUP DDC-SYS submenu damping is set separately for all riding modes and saved. Damping is also set separately and saved for the DDC modes possible in USER mode, which are DDC SPORT, DDC RACE and DDC SLICK.◀

» The value for the riding mode currently selected is saved.

Adjusting damping characteristic for front wheel

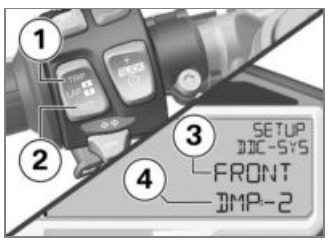
– with Dynamic Damping Control (DDC)[OE]

Use the SETUP DDC-SYS submenu to make changes to the settings.

- Make sure the ground is level and firm and place the motorcycle on its stand.
- Select the submenu (➠ 113).

» The SETUP DDC-SYS submenu is selected.

FRONT DMP adjusting



- To set the damping, repeatedly short-press TRIP **1** or SET **2** until line **3** shows FRONT and line **4** shows DMP**:** (Damping).

NOTICE

The reading differs if a spring-travel sensor for the front forks is fitted (racing accessory).◀

- Long-press SET **2**.

» The value beside DMP: flashes.
- Use TRIP **1** and SET **2** to adjust damping as desired.

» +1 ... +7: Increase damping through a maximum of seven levels (harder).
» −1 ... −7: Reduce damping through a maximum of seven levels (softer).
» 0: Factory setting
- Press and hold down SET **2** until the value stops flashing.

» The value for the riding mode currently selected is saved.

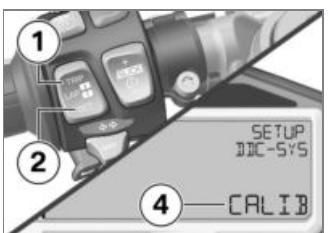
Performing a zero position alignment

– with Dynamic Damping Control (DDC)OE

Use the SETUP DDC-SYS submenu to make changes to the settings.

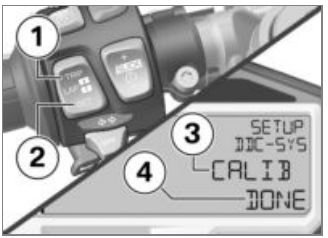
- Place the motorcycle on the side stand or on a suitable auxiliary stand.
- During the alignment, do not sit on the motorcycle; remove pieces of luggage.
- Select the submenu (➠ 113).

» The SETUP DDC-SYS submenu is selected.



- To calibrate, repeatedly short-press TRIP **1** or SET **2** until line **4** shows CALIB (Calibration).
- Long-press SET **2** until CALIB starts to flash.

» CALIB flashes.
» The system calibrates to the zero position.



To indicate that calibration was successful, lines **3** and **4** show CALIB DONE.
If CALIB FAIL appears on the display:
- Repeat alignment.
- If CALIB DONE is not displayed even after the calibration routine has been repeated, seek the advice of a specialist workshop, preferably an authorised BMW Motorrad dealer.

Riding

Safety instructions

Rider's equipment

Do not ride without the correct clothing! Always wear:

– Helmet
– Motorcycling jacket and trousers
– Gloves
– Boots

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

Loading

WARNING

Handling adversely affected by overloading and imbalanced loads.

Risk of falling

- Do not exceed the permissible gross weight and be sure to comply with the instructions on loading.◀
- Adjusting spring preload setting and damping to the 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.

WARNING

Exhaust gases adversely affecting health.

Risk of asphyxiation

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

Risk of burn injury

CAUTION

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

Risk of burn injury

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

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

ATTENTION

Unburned fuel in catalytic converter.

Damage to catalytic converter.

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

Risk of overheating

ATTENTION

Engine running for prolonged period with vehicle at standstill.

Overheating due to insufficient cooling. In extreme cases, the motorcycle could catch fire.

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

Tampering

ATTENTION

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

Damage to the affected parts, failure of safety-relevant functions. Damage due to tampering is not covered by the warranty.

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

Comply with checklist

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

Always before riding off:

- Operation of the brake system.
- Operation of the lights and signalling equipment.
- Checking clutch function (➠ 165).
- Check the tyre tread depth (➠ 168).
- Cases correctly installed and luggage secured.

Every 3rd refuelling stop:

– without Dynamic Damping Control (DDC)[OE]

- Adjusting spring preload for rear wheel (➠ 70).

- Adjusting compression-stage damping for rear wheel (➠ 74).◁

– with Dynamic Damping Control (DDC)OE

- Adjusting spring preload for rear wheel (➠ 71).

– with Dynamic Damping Control (DDC)OE

- Adjusting the damping characteristic for rear wheel (➠ 76).
- Checking engine oil level (➠ 159).
- Checking front brake pad thickness (➠ 161).
- Checking rear brake pad thickness (➠ 163).
- Checking brake-fluid level, front brakes (➠ 163).
- Checking the brake-fluid level, rear brakes (➠ 164).
- Checking coolant level (➠ 166).
- Lubricating chain (➠ 189).
- Checking chain tension (➠ 189).

Starting

Start engine

- Switch on the ignition.

» Pre-Ride-Check is performed. (➠ 83)

» ABS self-diagnosis is in progress. (➠ 84)

» ASC self-diagnosis is in progress. (➠ 84)

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

NOTICE

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**.

NOTICE

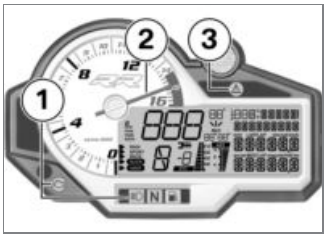
The start attempt is automatically interrupted if battery voltage is too low. Recharge the battery before you start the engine, or use jump leads and a donor battery to start.
See the subsection on jump starting in "Maintenance" for more details.◀

» The engine starts.
» Consult the troubleshooting chart below if the engine refuses to start. (➠ 200)

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 **3** shows yellow.
Needle **2** 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. The odometer reading appears on the display.

If a warning light does not show:

⚠ WARNING

Faulty warning lights.
No indication of malfunctions.
- Check all the warning and telltale lights.◀
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

ABS self-diagnosis

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-speed sensors to be tested.

Phase 1

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

ABS telltale and warning light flashes.

Phase 2

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

ABS telltale and warning light flashes.

ABS self-diagnosis completed

» The ABS telltale and 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 the ABS and integral braking function are not available or the functionality is subject to certain restrictions.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

ASC self-diagnosis

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

Phase 1

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

ASC telltale and 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 ASC self-diagnosis to complete.

ASC telltale and warning light slow-flashes.

ASC self-diagnosis completed

» The ASC symbol no longer shows.

If an indicator showing an ASC fault appears when ASC self-diagnosis completes:
- You can continue to ride. Bear in mind that the ASC is not available.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

DTC self-diagnosis

– with Dynamic Traction Control (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 vehicle at a standstill.


DTC telltale light slow-flashes.

Phase 2

» Pullaway test of the system components with diagnostic capability.


DTC telltale light slow-flashes.

DTC self-diagnosis completed

» The DTC symbol no longer shows.

- Check all the warning and telltale lights.

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

If an indicator showing a DTC fault appears after DTC self-diagnosis completes:
- You can continue to ride. Bear in mind that the DTC function is not available or the functionality might be subject to certain restrictions.
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Running in

Engine

- Until the running-in check (first inspection), 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.

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

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

NOTICE

Engine rpm is governed by the electronic engine management system until the vehicle has undergone its running-in check. The authorised BMW Motorrad dealer deactivates this rpm governing function when the motorcycle is brought in for its running-in check.◀

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

 Engine-rpm governing until the running-in check
max 9000 min^{-1}

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.

WARNING

New brake pads.
Longer stopping distance. Risk of accident.

- Apply the brakes in good time.◀

Tyres

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

WARNING

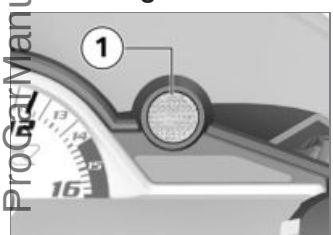
New tyres losing grip on wet roads and at extreme bank angles.

Risk of accident

- Ride carefully and avoid extremely sharp inclines.◀

Shifting gear

Gearshift light



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

Shift speed

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

– Gearshift 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 Pro

– with Pro shift assistant OE

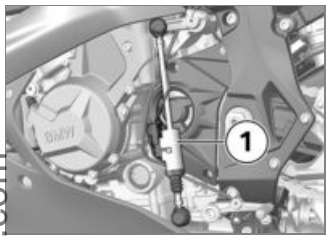
The shift assistant assists upshifts and downshifts without the rider having to pull the clutch or close the throttle. This is not an automatic-shift system. The rider is the most important part of the system and decides when to shift gears.

NOTICE

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

NOTICE

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



- You select the gear in the usual way by means of the foot-operated shift lever.
  » Sensor **1** on the selector rod registers the shift request and triggers shift assistance.
  » When riding at a steady speed in a low gear at high engine rpm, an attempt to shift gear without pulling the clutch can cause a severe load-change reaction. BMW Motorrad recommends disengaging the clutch for shifts in these circumstances. It is advisable to avoid using the shift assistant at engine speeds close to the limits at which the governor cuts in to limit engine rpm.
  » Shift assistance is not available in the following situations:
  – with the clutch lever pulled
  – shift lever not in its initial position
  – upshifts with the throttle valve closed (coasting) and when slowing
- After a gearshift, the shift lever has to be fully released before another gearshift with the shift assistant can take place.

Brakes

How can stopping distance be minimised?

Each time the brakes are applied, a load distribution shift takes place with the load shifting forward from the rear to the front wheel. The sharper the vehicle decelerates, the more load is shifted to the front wheel. The higher the wheel load, the more braking force can be transmitted without the wheel locking.
To optimise stopping distance, apply the front brakes rapidly and keep 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.
BMW Motorrad RACE ABS prevents the front wheel from locking up.
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. In the absence

of load on the wheel the ABS has to intervene to prevent the front wheel from locking even if the brakes are applied only very lightly. This leads to a reduced braking effect.

Descending mountain passes

WARNING

Braking only with the rear brake on mountain descents.
Brake fade. Destruction of the brakes due to overheating.
- Use both front and rear brakes, and make use of the engine's braking effect as well.◀

Wet and dirty brakes

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

WARNING

Moisture and dirt.
Diminished braking effect.
- 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.
- On a gradient, the motorcycle should always face uphill; select 1st gear.

ATTENTION

Poor ground underneath the stand.
Risk of damage to parts if vehicle topples.
- Always check that the ground under the stand is level and firm.◀
- Extend the side stand and prop the motorcycle on the stand.

ATTENTION

Additional weight placing strain on the side stand.
Risk of damage to parts if vehicle topples.

- Do not sit or lean on the vehicle while it is propped on the side stand.◀
- If the camber of the roadway permits, turn the handlebars all the way to the left.

Refuelling

Fuel grade

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

ATTENTION

Leaded fuel.

Damage to catalytic converter.

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

ATTENTION

Engine operation with ethanol E85.

Damage to engine and fuel supply system.

- Do not attempt to run the engine on ethanol E85, i.e. a fuel with an ethanol content of 85 %, or flex fuel.◀
- You can run the engine on fuel with a maximum ethanol content of 10 %, i.e. E10.

Recommended fuel grade
Super Plus, unleaded (max. 10 % ethanol, E10) 98 ROZ/RON 91 AKI

Alternative fuel grade
Premium unleaded (slight power- and consumption-related restrictions) (max. 10 % ethanol, E10) 95 ROZ/RON 89 AKI

Refuelling

WARNING

Fuel is highly flammable.

Risk of fire and explosion.

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

WARNING

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

Risk of falling

• Do not overfill the fuel tank.◀

ATTENTION

Fuel attacks plastic surfaces.
Surfaces become unsightly or dull.
• Clean plastic parts immediately after contact with fuel.◀

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

NOTICE

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

• Open the protective cap.

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

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

NOTICE

When refuelling after running on reserve, make sure that you top up the tank to a level above reserve, as otherwise the new level will not be registered and the fuel warning light indicating that the level is down to reserve will not be switched off.◀

NOTICE

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

Usable fuel capacity
approx. 17.5 l

Fuel reserve	
approx. 4 l	

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

Securing motorcycle for transportation

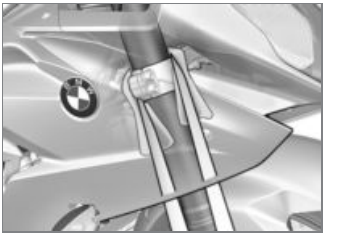
- Make sure that all components that might come into contact with straps used to secure the motorcycle are adequately protected against scratching. Use adhesive tape or soft cloths, for example, for this purpose.

ATTENTION

Vehicle topples to side when being lifted on to stand.

Risk of damage to parts if vehicle topples.

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

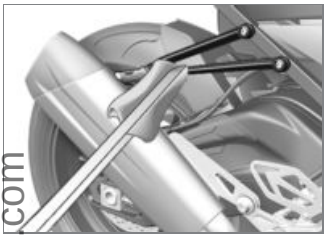


ATTENTION

Trapping of components.

Component damage

- Do not trap components such as brake lines or cable legs.◀
- At the front, loop a strap over the bottom fork bridge on each side.
- Pull the straps down and tight.



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

On the race track

Status indicators for racing

Multifunction display

1 Current bank angle when heeled for cornering

2 Direction for bank angle
\ = left
| = upright
/ = right

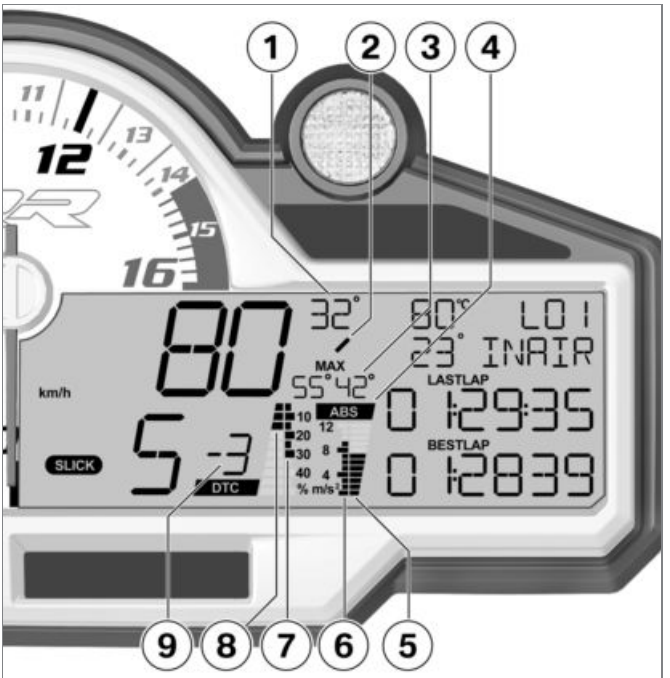
3 Maximum bank angle for left and right
Factory setting for BANK DISP (➠ 119)

4 ABS-intervention when braking
ABS Switching off (➠ 50)
ABS Switching on (➠ 51)

5 Current retardation rate during braking
Factory setting for BRAKE DISP (➠ 120)

6 Maximum braking rate

7 Maximum DTC torque reduction

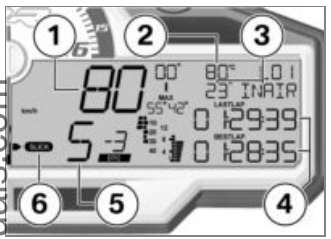


8 DTC torque reduction
– with Dynamic Traction Control (DTC) OE
Factory setting for DTC DISP (➠ 119)

9 DTC setting
– with Dynamic Traction Control (DTC) OE
DTC Adapting (➠ 127)

LAPTIMER

Multifunction display



1 Speed
2 Coolant temperature
3 Intake-air temperature
4 LAPTIMER
The readings in these lines can be changed by the rider.
Individualise the LAPTIMER (➠ 100).
LAPTIMER display layout (➠ 121)
As shown:
RUN: The running time for the current lap.
BESTLAP: The fastest of the laps currently logged in memory.
5 Gear indicator
6 Riding mode (➠ 53)

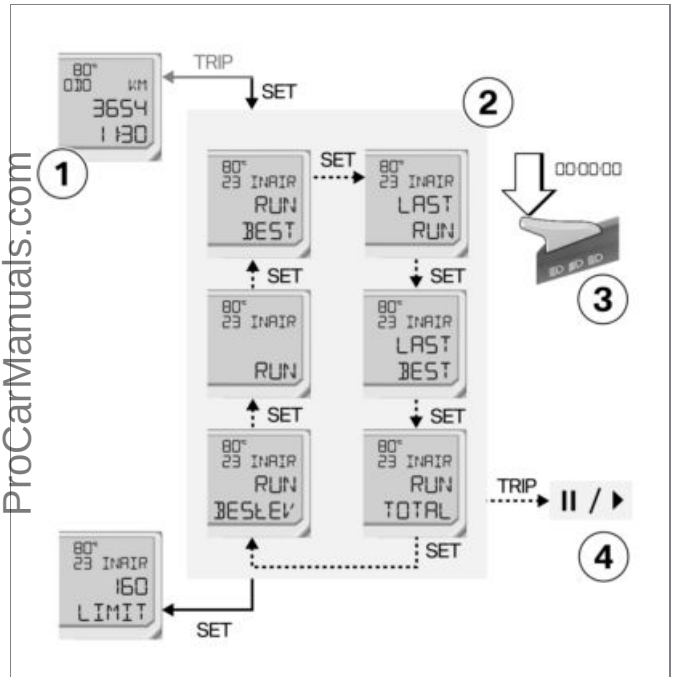
Labels for the values shown on the display

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

The following times can be displayed in the fourth 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 (➠ 121).

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 (➠ 123).



Overview, LAPTIMER

— Solid line: short-press the button.

- - Broken line: press and hold down the button.

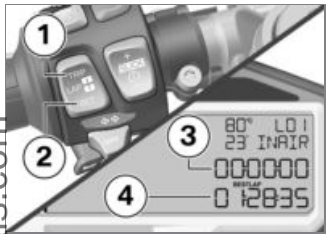
1 Odometer
Default display
Select the readings in the multifunction display (➠ 46).

2 Individualise the LAPTIMER (➠ 100).

3 Starting timing (➠ 100).

4 Pause/resume timing (➠ 101)

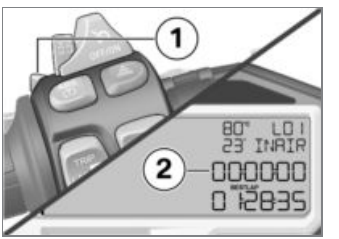
Individualising LAPTIMER



- Activate the default reading (➠ 109).
  - » The odometer reading (ODO) appears on the display.
- Short-press SET **2**.
  - » The LAPTIMER is called up and shows in the factory settings RUN **3** and BESTLAP **4**.
- If you want to change the content of lines **3** and **4** in the LAPTIMER, repeatedly long-press SET **2** until lines **3** and **4** show the readings you want.
  - » Your chosen LAPTIMER display layout is accepted and saved in memory.
  - » LAPTIMER display layout (➠ 121)

Starting timing

The LAPTIMER is called up.



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

NOTICE

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

- » Timing RUN **2** is running.
- 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.
  - » RUN **2** starts again at 00:00:00.
  - » 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 LAPTIMER. In these circumstances, note the following:

– The infrared receiver available as an optional accessory has to be connected to the plug for optional accessories located

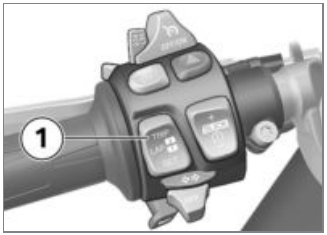
underneath the right side panel (➠ 138).
– In SETUP RACETRACK, the LAPTIMER trigger mode has to be set to LAPTM TRIG AUTO or LAPTM TRIG EXTERN (➠ 124).

The headlight flasher button can be used to operate the instrument panel even when the infrared receiver is installed. To do so you must have the LAPTIMER trigger mode set to LAPTM TRIG AUTO or LAPTM TRIG MANUAL.

A lap timeout can be defined to stop the receiver from registering completion of a lap prematurely in response to spurious signals (➠ 124). Signals received before this time elapses are ignored.

Interrupting timing

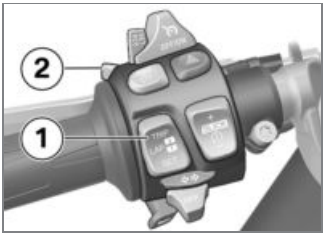
Timing is running.



- Long-press TRIP **1** to interrupt timing.
- Long-press TRIP **1** again to resume timing.

Ending timing

Timing is running.



- Long-press TRIP **1** to pause timing.
- Short-press button **2**.

» The time shown on the display is deleted: – – : – – : – –

– Timing is ended.
– No lap time is saved in memory.

- Short-press TRIP **1** to exit the lap timer.

NOTICE

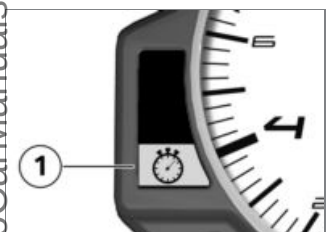
If more laps are subsequently timed, lap numbering resumes. Lap numbering does not restart with lap 1 unless all

laps have been deleted from RACE INFO.◀

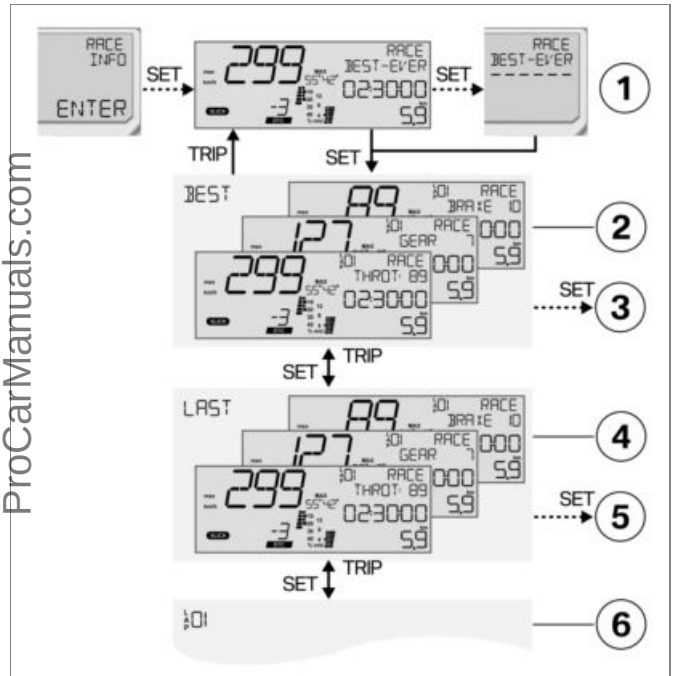
» ODO appears on the display.

Fastest lap anticipated

This function has to be activated in the SETUP RACETRACK menu (➠ 124).



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.



RACE INFO

RACE INFO part 1

— Solid line: short-press the button.

- - Broken line: press and hold down the button.

1 Delete the all-time best lap.

2 Information about the current best lap.
Succession of three readings.
Information per lap (➠ 106)

3 Delete current best lap.

4 Information about last lap.

5 Delete last lap.

6 Information about other laps.
Select a saved lap (➠ 105).
Delete the lap (➠ 108).

RACE INFO part 2

— Solid line: short-press the button.

- - Broken line: press and hold down the button.

1 Information about lap 01. Select a saved lap (➠ 105).
Information per lap (➠ 106)

2 Delete the lap (➠ 108).

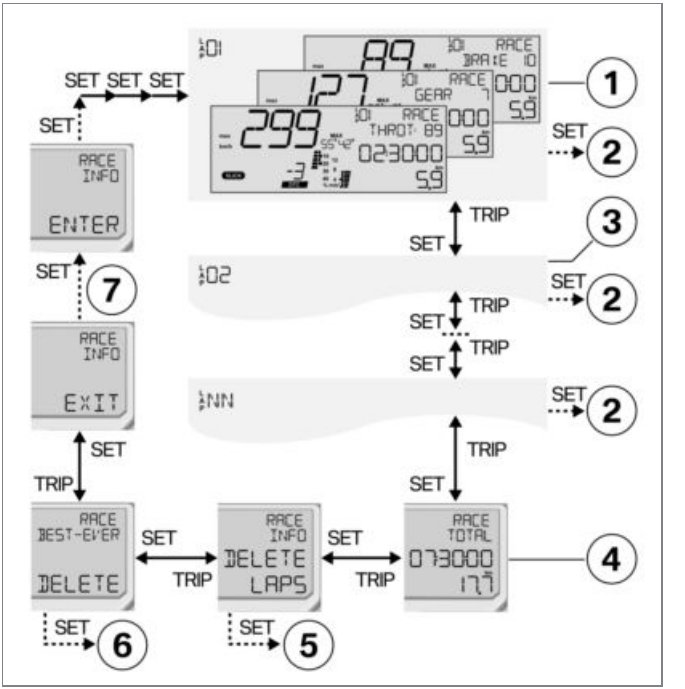
3 Information about lap 02.

4 Total of all lap times and distances.

5 Clearing all saved data (➠ 108).

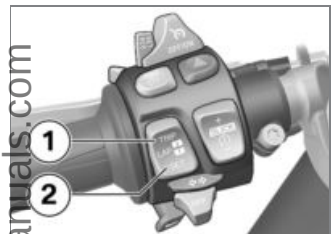
6 Delete the all-time best lap.

7 Exit the RACE INFO (➠ 109).
Activate the default reading (➠ 109).



Selecting saved lap

RACE INFO appears on the display.



Short-press TRIP **1** or SET **2** to step through the laps stored in memory one by one.

NOTICE

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

Each time SET **2** is pressed the laps logged in memory and the functions are shown in the sequence described below; each time TRIP **1** is pressed they are shown in reverse sequence:

- Best-ever lap BEST-EVER
- Best lap logged in memory BEST
- Last lap logged in memory LAST
- All other laps logged in memory LAP 01 ... LAP 60
- Aggregate time and distance for all laps logged in memory TOTAL
- Delete lap data logged in memory DELETE LAPS
- Delete the best-ever lap logged in memory BEST-EVER DELETE
- Exit RACE INFO RACE INFO EXIT

Information per lap

1 In succession for the lap currently displayed:
Maximum speed (max)
Average speed (Ø)
Minimum speed (min)

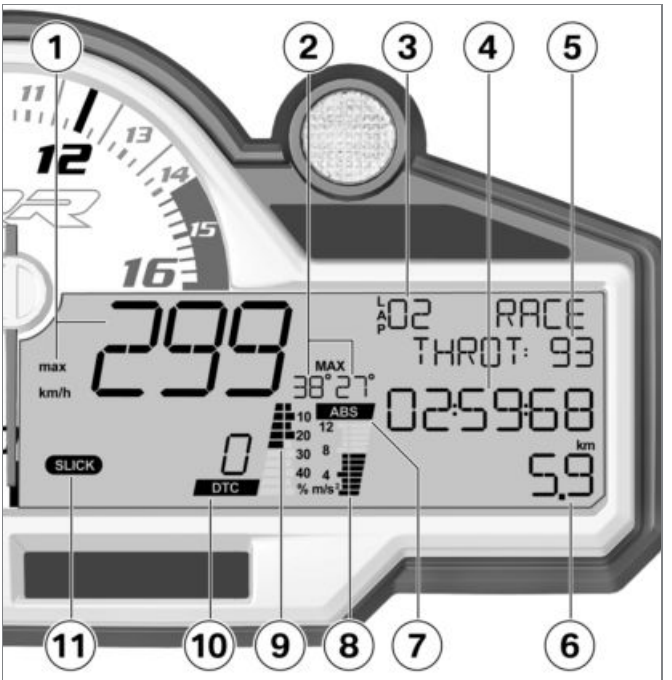
2 Maximum bank angle for left and right on the lap currently displayed

3 Lap for which the data on the display apply

4 Lap time for the lap currently displayed

5 In succession for the lap currently displayed:
Average throttle utilisation (THROT) in percent
Proportion ridden with brakes applied (BRAKE) in percent
Number of gearshifts (GEAR) on the lap currently displayed

6 Distance ridden on the lap currently displayed



7 ABS intervention:
"ABS" visible = lap with ABS intervention
"ABS" not visible = lap without ABS intervention

8 Maximum braking rate on the lap currently displayed

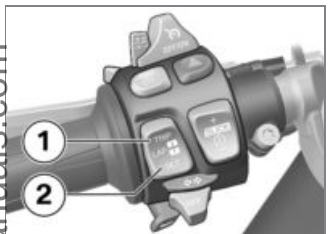
9 Maximum DTC torque reduction on the lap currently displayed

10 DTC setting for the lap currently displayed

11 Riding mode for the lap currently displayed

Clearing all saved data

RACE INFO appears on the display.



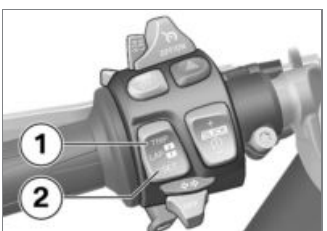
- Repeatedly short-press TRIP **1** or SET **2** until DELETE LAPS appears on the display.
- Long-press SET **2** to delete all the logged data from memory.
  - » BEST-EVER DELETE appears on the display.
- Either short-press SET **2** to skip deleting the best-ever lap time.
- Or long-press SET **2** to delete the data for the best-ever lap time.
  - » BEST-EVER is deleted: --:--:--
  - » All logged data are deleted.
  - » RACE INFO EXIT appears on the display.

All-time best lap

The all-time best lap (BEST-EVER) is the fastest of all timed laps and is updated as soon as a faster lap is timed.
The best-ever 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-ever lap from earlier races.
The best-ever lap can also be deleted from memory.
If the best-ever lap is from a race timed in the past, it is accompanied on the display by the appropriate lap number. If the best-ever 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

RACE INFO appears on the display.



- Repeatedly short-press TRIP **1** or SET **2** until the lap you want to delete appears on the display.
- Long-press SET **2** to delete the lap.

» When a logged lap has been deleted from memory it is superseded as follows:

– BEST-EVER: The best race-lap time still in memory becomes the new all-time best lap.

– BEST: The lap that was the second-best time until the best time was deleted becomes the new best lap.

– LAST: The lap that was the preceding lap until the lap was deleted becomes the new last lap.

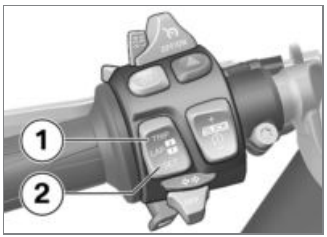
When a random lap has been deleted the following is taken into account:

– Total time is reduced by the time for the lap you deleted.

– Total distance is reduced by the distance for the lap you deleted.

– The numbering of the remaining laps remains unchanged.

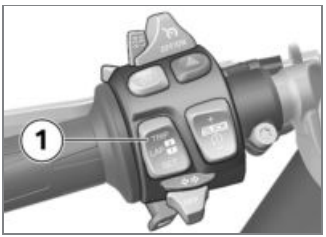
Exiting RACE INFO



- Repeatedly short-press TRIP **1** or SET **2** until RACE INFO EXIT appears on the display.
- Long-press SET **2** to exit RACE INFO.

» The readings already recorded remain saved in memory.

Activating default reading



- Long-press TRIP **1**.

NOTICE

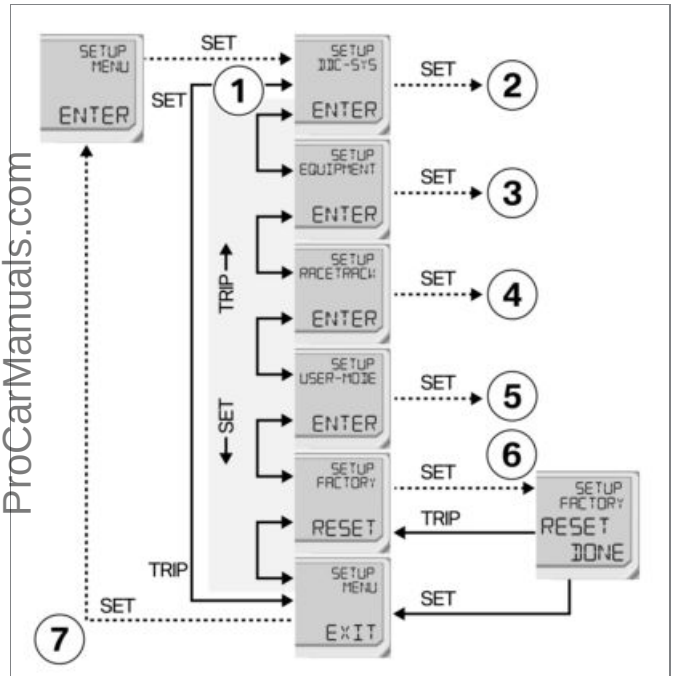
Regardless of what is shown on the multifunction display at any given time, long-pressing TRIP **1** always calls up the default layout with the odometer reading (ODO).

The only exceptions are the following:

LAPTIMER with timing in progress/paused: Long-pressing TRIP **1** pauses or resumes timing, as applicable.

LIMIT: Long-pressing TRIP **1** switches the speed warning off (LIMIT OFF).◀

» ODO appears on the display.



SETUP MENU

Overview, SETUP MENU

— Solid line: short-press the button.

- - Broken line: press and hold down the button.

1 Select the submenu (➠ 113)

2 Call up submenu
– with Dynamic Damping Control (DDC)[OE]
SETUP DDC-SYS
(➠ 113)
Setting parameters
(➠ 115)

3 Call up submenu
SETUP EQUIPMENT
(➠ 113)

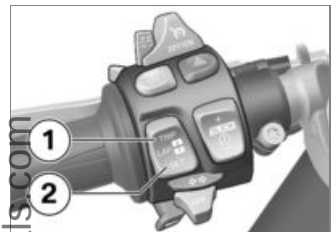
4 Call up submenu
SETUP RACETRACK
(➠ 114)

5 Call up submenu
Only when the USER riding mode is active
– with Pro riding modes[OE]
SETUP USER-MODE
(➠ 115)

6 Reset all parameters
FACTORY RESET

7 Exit SETUP MENÜ
Exiting SETUP mode
(➠ 116)

Selecting submenu



1. Switching on ignition (➠ 40).
2. Repeatedly short-press SET **2** until SETUP MENU ENTER appears on the display.

NOTICE

If you scroll down too far, repeatedly short-press SET **2** until the menu returns to the start and then to the reading you want.◀

- Long-press SET **2**.
- Repeatedly short-press TRIP **1** or SET **2** until the submenu you want appears on the display.
- Long-press SET **2** to call up the submenu you want.

Each time SET **2** is pressed the possible parameters are shown in the sequence described below; each time TRIP **1** is pressed they are shown in reverse sequence.

SETUP DDC-SYS

– with Dynamic Damping Control (DDC)[OE]

SETUP DDC-SYS
– Rebound-stage damping, rear REAR REB
– Compression-stage damping, rear REAR COM
– Without spring travel sensor for front forks: Front damping FRONT DMP
– With spring travel sensor for front forks: Front rebound-stage damping FRONT REB
– With spring travel sensor for front forks: Front compression-stage damping FRONT COM
– Calibration CALIB
– Damping adjustable while riding: Switch function on SET-DR ON (During Ride) or off SET-DR OFF.
– Reset DDC parameters for the current riding mode RESET ACTUAL.
– Reset DDC parameters for all riding modes RESET ALL.◁

SETUP EQUIPMENT

SETUP EQUIPMENT
– with alarm system (DWA)[OE]
– Automatically activate anti-theft alarm function when the ignition is switched off DWA AUTO ON or leave the automatic function switched off DWA AUTO OFF.◁
– Set the time CLOCK TIME.

– Adjust display brightness DISP BRIGHT.
– Switch speed warning on WARN SPEED ON or off WARN SPEED OFF.
– Switch warning for defective bulbs on WARN LAMP ON or off WARN LAMP OFF.
– Switch off indicator for current bank angle BANK DISP OFF or switch on with a preset update interval: BANK DISP FAST, BANK DISP MID or BANK DISP SLOW
– with Dynamic Traction Control (DTC)OE
– Switch indicator for current and maximum DTC torque reduction on DTC DISP ON or off DTC DISP OFF.◁
– Switch indicator for current and maximum braking BRAKE DISP ON or off BRAKE DISP OFF.
– Submenu for changing units of measure for speed, total distance, range, temperature, average consumption and time UNITS

SETUP EQIP:UNITS

SETUP EQIP:UNITS
– Change unit of measure for speed: UNIT SPEED KM/H or UNIT SPEED MPH
– Change unit of measure for odometer: UNIT ODO KM or UNIT ODO MLS
– Change unit of measure for temperature: UNIT TEMP DEG: C or UNIT TEMP DEG: F
– Change unit of measure for average consumption: UNIT CONS L/100, UNIT CONS MPG: US, UNIT CONS MPG: UK or UNIT CONS KM/L
– Set 24-hour or 12-hour mode for clock: UNIT CLOCK 24 or UNIT CLOCK 12

SETUP RACETRACK

SETUP RACETRACK
– Switch-on speed for gearshift light GSL ON-RPM (Gear Shift Light)
– Switch-off speed for gearshift light GSL OFF-RPM
– Gearshift-light brightness GSL BRIGHT
– Gearshift light flash frequency GSL FREQ
– Set LAPTIMER readings: Current lap LAPTM RUN, time required for preceding lap LAPTM LAST, best lap LAPTM BEST, total of all lap times and lap distances logged in memory LAPTM TOTAL, best-ever lap LAPTM BEST-EVER

– Display-freeze period for the most recent lap time LAPTM HOLD
– Debounce time (waiting time before a new lap can be started) of the headlight-flasher button for LAPTIMER LAPTM DEB-TM in seconds or LAPTM DEB-TM CUSTOM in minutes and seconds.
Have a lap that is anticipated as the fastest lap indicated by the "best lap" light BLIP ON (Best Lap In Progress) or not indicated BLIP OFF.
with infrared receiver OA
Change the headlight-flasher button to trigger lap timing.
LAPTM TRIG AUTO: Trigger by headlight-flasher button or infrared receiver; LAPTM TRIG MANUAL: Trigger by headlight-flasher button only; LAPTM TRIG EXTERN: Trigger by infrared receiver only.◁
– with Pro riding modes OE
– Set engine speed for pit lane limiter PIT LIMIT ... or switch off pit lane limiter PIT LIMIT OFF.◁

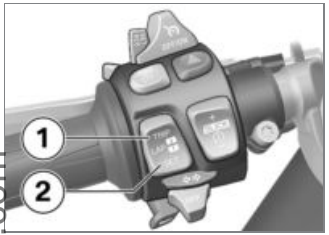
SETUP USER-MODE

– with Pro riding modes OE

SETUP USER-MODE
– Antilock brake system for racing tyres ABS SLICK
– Sport mode for antilock brake system ABS SPORT
– Antilock brake system for racing with stock tyres ABS RACE
– Dynamic traction control for racing tyres DTC SLICK
– Dynamic traction control for racing with stock tyres DTC RACE
– Sport mode for dynamic traction control DTC SPORT
– Dynamic traction control for wet surface DTC RAIN
– Sport mode for dynamic traction control DDC SPORT
– Dynamic damping control for racing with stock tyres DDC RACE
– Dynamic damping control for racing tyres DDC SLICK
– Throttle response for racing ENGINE RACE
– Throttle response for wet surface ENGINE RAIN
– Reset all USER mode settings RESET.◁

Setting parameters

Parameter appears on the display.



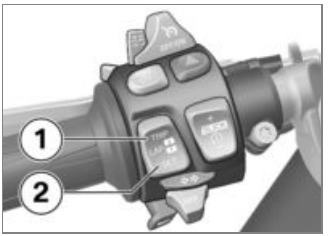
- Press and hold down SET **2** until the parameter starts to flash.
- Repeatedly short-press TRIP **1** or SET **2** until the value you want appears on the display.

When the value you want is shown:

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

» The value is saved.

Exiting SETUP mode



- Press and hold down TRIP **1** until the multifunction display switches to the default display mode.

» A value that is still flashing will be saved.

- Alternatively: Repeatedly press TRIP **1** or SET **2** until SETUP ... EXIT appears in the submenu.
- Long-press SET **2** to exit the submenu.

» SETUP ... ENTER appears on the display.

- Repeatedly press TRIP **1** or SET **2** until SETUP MENU EXIT appears on the display.
- Long-press SET **2** to exit the SETUP MENU.

» SETUP MENU ENTER appears on the display.

SETUP DDC-SYS

– with Dynamic Damping Control (DDC)[OE]

Adjusting damping, rear

Adjusting rebound damping on the rear suspension strut.

Range of values

– -7 (soft) … +7 (hard)

– Factory setting: 0

Adjusting compression damping on the rear suspension strut.

Range of values

– -7 … +7

– Factory setting: 0

Adjusting damping, front

Adjust damping on the front suspension strut without separation of rebound and compression damping.

Range of values

– -7 … +7

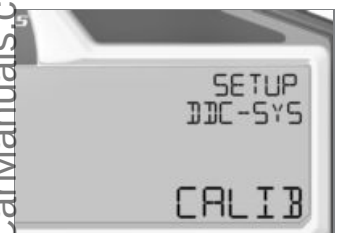
– Factory setting: 0

NOTICE

The spring-travel sensor necessary for separate adjustment of the rebound stage and the compression stage is not offered by BMW Motorrad. Available

from racing accessory stockists. You can request more detailed information by sending an email to "hp-race-support@bmw-motorrad.com".◀

Calibration of height sensor



Calibration of ride-height sensor on the rear spring strut, e.g. after changes to the suspension height (➠ 78).

SETUP EQUIPMENT

Display brightness

You can set display brightness to any of five levels.

Range of values

– 1, 2, 3, 4, 5
– Factory setting: 5

Speed warning

You can set a LIMIT speed. If your speed exceeds this limit SPEED! appears as a warning and the gearshift light shows or flashes.

Range of values

– ON, OFF
– Factory setting: OFF

Bulb fault

If the turn indicators are removed in preparation for a race-track session, the electronics detect a bulb failure and the appropriate warning appears on the display. This function can be used to suppress this warning.

Range of values

– ON, OFF
– Factory setting: ON

Heel angle

Status-indicator display settings for bank angle: Bank angle, direction for bank angle and maximum bank angle on the current lap for heeling the motorcycle left and right. You can set the interval for updating of the status indicators can be set, and you also have the option of hiding or showing the status indicators.

Range of values

– OFF, FAST, MID, SLOW
– Factory setting: OFF

Dynamic Traction Control

– with Dynamic Traction Control (DTC)[OE]

Status-indicator display settings for DTC: Current and maximum DTC torque reduction, and DTC setting. You can either show or hide the status indicators.

Range of values

– OFF, ON
– Factory setting: OFF

Braking

Status-indicator display settings for braking: Current and maximum braking rate in m/s², and ABS intervention. You can either show or hide the status indicators.

Range of values

– OFF, ON
– Factory setting: OFF

SETUP RACETRACK

Engine speed for shift light ON

Switch-on rpm setting for the gearshift light.

Range of values

– 7000, 9000, 10000, 11000, 12000, 12500, 13000, 13500, 14000
– Factory setting: 7000
– You can select only engine speeds that are lower than the gearshift light OFF speed.

Engine speed for shift light OFF

Switch-off rpm setting for the gearshift light.

Range of values

– 9000, 10000, 11000, 12000, 12500, 13000, 13500, 14000, 16000
– Factory setting: 16000
– You can select only engine speeds that are higher than the shift light ON speed.

Shift-light brightness

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

Range of values

– 20, 30, 40, … 100
– Factory setting: 100

Shift-light flash frequency

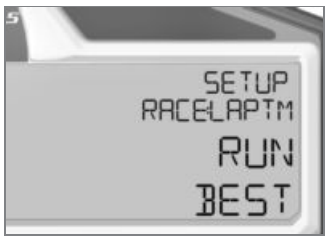
Settings for the frequency at which the gearshift light and the speed warning flash, in Hz (1/s).

Range of values

– 0, 4, 8
– Factory setting: 4
– If you select 0, the gearshift light and the speed warning show continuously.
– If you select 4, the gearshift light and the speed warning flash slowly.
– If you select 8, the gearshift light and the speed warning flash quickly.

LAPTIMER display layout

There is a choice of six LAPTIMER display layouts.

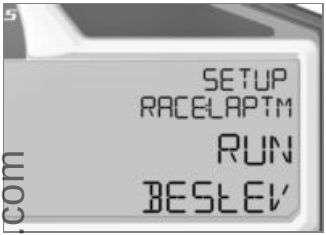


Layout 1 (factory setting)
Line 3 shows the running time for the current lap, the best lap currently logged in memory is shown in line 4.

Version 2
Line 3 shows the time recorded for the preceding lap, the running time for the current lap is shown in line 4.

Version 3
Line 3 shows the time needed for the preceding lap, the best lap currently logged in memory is shown in line 4.

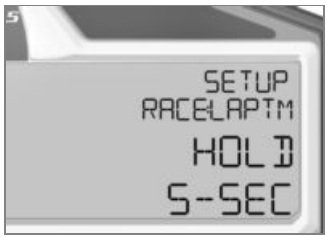
Version 4
Line 3 shows the running time for the current lap, the total time for all the laps currently logged in memory is shown in line 4.



Version 5
Line 3 shows the running time for the current lap, the all-time best lap (➠ 108) is shown in line 4.

Version 6
Line 3 is blank, line 4 shows the running time for the current lap.

Display-freeze period for the most recent time



Setting for HOLD time in seconds.
After the start of a new lap the time for the preceding lap remains visible for this preset HOLD time. When this hold time expires the readout switches back to the running time for the current lap.

Range of values

– 0, 3, 8, 13, 18, ... 30
– Factory setting: 3

Minimum lap time

You can set the minimum time that must elapse from when the first signal is received until a second signal will be accepted.

– Within this debounce time the headlight flasher can be used without it triggering the signal for a new lap.
– When an infrared receiver is being used this prevents the signals from two or more transmitters in close proximity from being accepted for processing.

Range of values

– 0, 10, 30, 45, 60, CUSTOM
– Factory setting: 10

If you select `CUSTOM` you can enter the debounce time in minutes and seconds (`MM:SS`).

Range of values

– 00:00 ... 99:99
– Factory setting: 01:00

Fastest lap

The "Fastest lap anticipated" (➠ 102) function is switched on or off, as applicable.

Range of values

– ON, OFF
– Factory setting: ON

LAPTIMER trigger mode

– with infrared receiver[OA]

There are the various options for starting lap timing.

Range of values

– AUTO, EXTERN, MANUAL
– Factory setting: AUTO
– AUTO: Pressing the headlight flasher button and a signal from the lap trigger are both accepted as the trigger source.
– EXTERN: Only a signal from the lap trigger is accepted as the trigger source.
– MANUAL: Only pressing the headlight flasher button is accepted as the trigger source.

Speed limiter for pit lane

– with Pro riding modes OE

Setting for maximum engine rpm (±100) for riding in the pit lane in 1st gear with the start button pressed and held down. The engine is throttled back if this setting is exceeded. You have the option of switching off the rpm limiter for the pit lane.

Range of values

– 4000, 4100, 4200, …, 8000, OFF
– Factory setting: OFF

SETUP USER-MODE

ABS

ABS antilock brake system setting in USER-MODE mode.

Range of values

– SPORT, RACE, SLICK
– Factory setting: SLICK
– The tick appears only if the setting was changed.
– With tick: The specified value was accepted by the ABS.
– Without tick: The specified value was not accepted.

DTC

Settings for Dynamic Traction Control DTC in USER-MODE mode.

Range of values

- RAIN, SPORT, RACE, SLICK
- Factory setting: SLICK
- The tick appears only if the setting was changed.
- With tick: The specified value was accepted by the DTC.
- Without tick: The specified value was not accepted.

DDC

Settings for Dynamic Damping Control DDC in USER-MODE mode.

Range of values

- SPORT, RACE, SLICK
- Factory setting: SPORT
- The tick appears only if the setting was changed.
- With tick: The specified value was accepted by the DDC.
- Without tick: The specified value was not accepted.

ENGINE

Settings for throttle response ENGINE in USER-MODE mode.

Range of values

- RAIN, RACE, SLICK
- Factory setting: SLICK
- The tick appears only if the setting was changed.
- With tick: The specified value was accepted by ENGINE.
- Without tick: The specified value was not accepted.

DTC

– with Dynamic Traction Control (DTC) OE

DTC adjustment

The DTC controls permissible rear-wheel slip in accordance with your selected riding mode. In the SLICK and USER riding modes it is also possible to adapt the system-imposed DTC setting.

DTC Adapting

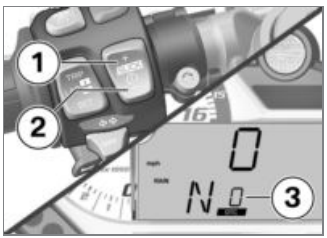
• Activate the SLICK or USER riding mode; to do so install the coding plug, if applicable.

NOTICE

You can make changes to the DTC settings in the SLICK and USER riding modes only.◀

NOTICE

It is also possible to adjust the DTC settings while on the move.◀



• Short-press button **1** (+) to increase value **3**.

WARNING

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

• Reduce DTC for riding on racing circuits only.◀

• Short-press button **2** (-) to reduce value **3**.

» Preset value **3** appears on the multifunction display and is between −7 and +7:

» +1 ... +7: reduce slip at the rear wheel in a maximum of seven steps. +7 is the value corresponding to earliest DTC intervention.

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

» 0: factory setting

» DTC status indicator and value **3** suppressed: DTC is switched on.

DTC switch-off

On very loose surfaces (for example in a gravel trap of a race track), the DTC's attempts to control propulsive power might reduce drive to the extent that

the rear wheel no longer turns. Under these circumstances, BMW Motorrad recommends temporarily switching off DTC. Bear in mind that the rear wheel will spin on the loose surface and close the throttle in good time before you reach a firm surface. Then reactivate DTC.

Racing start

– with Pro riding modes OE

Launch Control

Launch Control supports riders by maintaining ideal engine revving for a racing start. Launch Control can be activated in the SLICK and USER riding modes only.

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

When L-CON is active engine torque is reduced so that forward propulsion is maximised on the flat with the front wheel just starting to lift off the ground. Torque is temporarily reduced slightly when the electronics detect front-wheel lift. Engine rpm limitation is deactivated when the motorcycle reaches a certain speed.

 Speed at which rpm limitation for Launch Control is deactivated
approx. 70 km/h

Launch Control is turned off in the following circumstances:
– The third gear is engaged.
– The angle of inclination is greater than 30°.
– The engine or the ignition is switched off.
– The riding mode is changed.

The number of consecutive starts using Launch Control is limited in order to protect the clutch. The number of possible starts still remaining is shown in the multifunction display.

Racing start with Launch Control

CAUTION

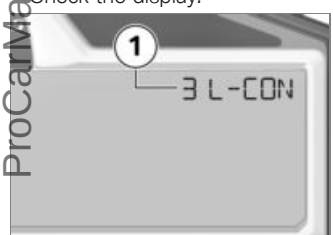
Launch Control permits maximum acceleration, so unfamiliar riding situations can occur.

Risk of accident through increased acceleration.

- Use Launch Control only on race tracks.◀
- Select SLICK or USER as the riding mode.
- Bring vehicle to starting position.

» Vehicle is stationary, engine is running.

- Press and hold down starter button **1** until the reading on the display changes.
  Check the display.



The display shows the remaining number of permissible starts **1** with Launch Control and L-CON.

Start with Launch Control is possible.

- Start as described below.

If no start using Launch Control is currently possible, the number 0 is shown, alongside an exclamation mark **1**.

- Allow the clutch to cool.

	Cooling period for the clutch
approx. 3 min (when the engine is running)	
approx. 20 min (when the engine is not running)	

- When starting as normal, open the throttle only as much as is necessary to reach the speed limitation.
- After engaging the clutch, open the throttle completely.

Gearshift light lights up or flashes.

» Launch Control governs ideal torque at the rear wheel and keeps engine speed constant until the vehicle reaches the speed stated below.

- Keep the throttle twistgrip fully open.

Speed at which rpm limitation for Launch Control is deactivated	
approx. 70 km/h	

» As soon as rpm limitation ceases, engine rpm increases because the throttle twistgrip is in the full-throttle position.
» Throttle-twistgrip reaction is normal again.
• Depending on the racing circuit, upshift and lean into the bends.
» As soon as third gear is engaged or the motorcycle is heeled to a lean angle in excess of 30°, the ... L-CON readout disappears from the display.
» The racing start with Launch Control is concluded.

Speed limiter for pit lane

– with Pro riding modes OE

• Ride in 1st gear.

NOTICE

The PIT LIMIT ... maximum engine rpm has to be set in the SETUP RACETRACK submenu.
The road speed resulting from the maximum engine rpm depends on transmission ratio and tyre size.◀

• Press and hold down starter button **1**.
• Open the throttle twistgrip until PIT LIMIT ... is reached.
» The ignition is interrupted to limit engine speed.

WARNING

As soon as the starter button is released the vehicle accelerates in accordance with the position of the throttle twistgrip.
Risk of crashing due to severe jerk forward if throttle twistgrip in full load position.
• Do not fully open the throttle twistgrip; instead, turn it only to the position at which the engine reaches its speed-limit rpm.◀
• Release starter button **1**.
» The vehicle accelerates at the maximum rate.

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.

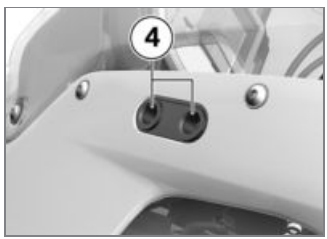
- Secure fairing **2** to fairing bracket **3** on left and right. If cable ties are used, affix adhesive tape as protection at the points where chafing might occur.

NOTICE

Use the HP Race Cover Kit from BMW Motorrad to cover the screw holes and restore the secure fastening of the mount.◀

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	
8 Nm	

Removing and installing number-plate carrier

Remove the number-plate carrier

ATTENTION

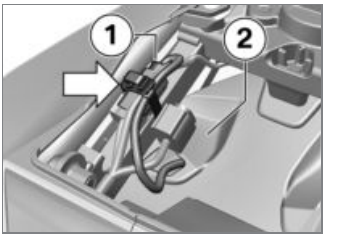
Removal of the number plate carrier.

Voiding of homologation for riding on public roads.

- With the number-plate carrier removed, do not ride the motorcycle on public roads.◀
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Removing rear seat (➠ 62).

– with rear-seat cover[OE]

- Remove the tail-hump cover (➠ 61).



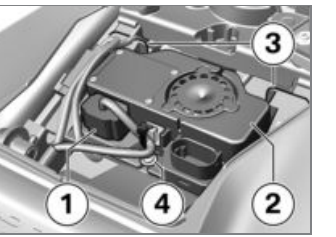
- Remove the cable tie **(arrow)** and disconnect plug **1** for the number-plate carrier.

NOTICE

If the number-plate carrier is removed in preparation for a racetrack session, the electronics detect a bulb failure and the appropriate warning appears on the display. Activating the WARN LAMP OFF function in the SETUP EQUIPMENT submenu suppresses this warning.◀

- Work plug **1** with the cable through tail bottom section **2** until clear.

– with alarm system (DWA)[OE]



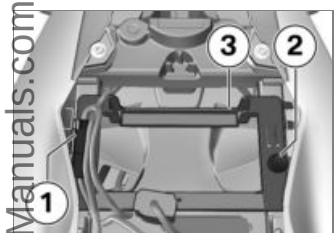
- Disconnect plug **1** for the anti-theft alarm.

NOTICE

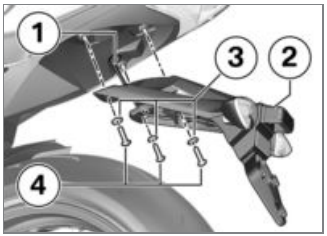
Before disconnecting the plug for the anti-theft alarm, check that DWA has been deactivated in the SETUP EQUIPMENT

submenu with the DWA AUTO OFF function.◀

- Remove screw **4**.
- Remove anti-theft alarm **2**, disengaging it from bracket **3**.



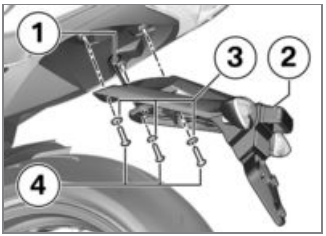
- Disengage plug **1** for the number-plate carrier.
- Remove body-bound rivets **2** on left and right.
- Remove bracket **3** for the anti-theft alarm.◁



- Remove screws **4** with washers **3**.
- Remove number-plate carrier **2** and work cable leg **1** out until clear.
- Install the rear seat (➠ 62).

Installing number-plate carrier

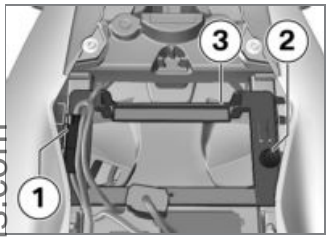
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Removing rear seat (➠ 62).



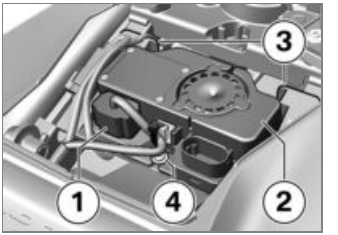
- Hold number-plate carrier **2** in position and work cable leg **1** into position.
- Install screws **4** with washers **3**.

	Number-plate carrier to rear frame
5 Nm	

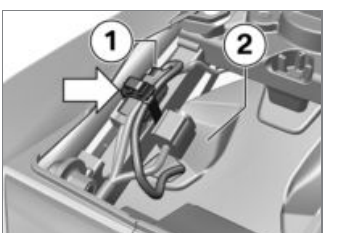
– with alarm system (DWA)[OE]



- Install bracket **3** for the anti-theft alarm.
- Install body-bound rivet **2**.
- Secure plug **1** for the number-plate carrier.



- Insert anti-theft alarm **2**, engaging it in bracket **3**.
- Install screw **4**.
- Connect plug **1** for the anti-theft alarm.◁



- Work plug **1** with the cable through tail bottom section **2**.
- Connect plug **1**, hold it in position and secure the cable tie **(arrow)**.

NOTICE

If the warning for bulb failure is suppressed in preparation for a race-track session, before the motorcycle is ridden on public roads the warning has to be reactivated by opening the SETUP EQUIPMENT submenu and selecting the SETUP EQIP: WARN LAMP ON function.◀

- Install the rear seat (➠ 62).

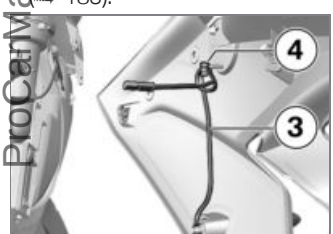
Removing and installing front turn indicators

Removing front flashing turn indicator

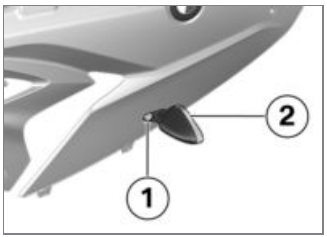
NOTICE

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

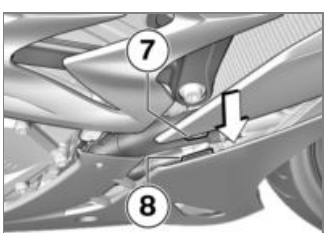
- Remove the side panel (➡ 183).



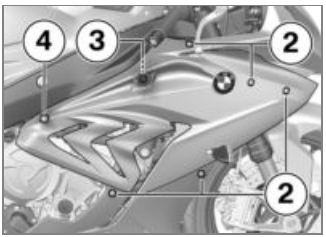
- Disengage cable **3** from holder **4**.



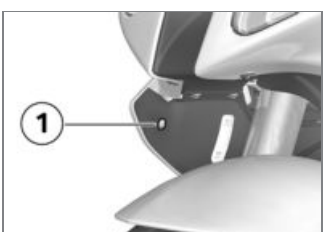
- Remove screw **1** and remove flashing turn indicator **2**.
- Work the cable through the fairing side panel.



- Engage side panel **7** in mount **8** on the engine spoiler.

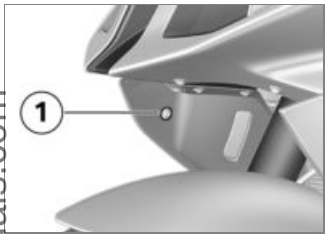


- Secure the side panel in grommet **3** and detent pin **4**.
- Install screws **2**.

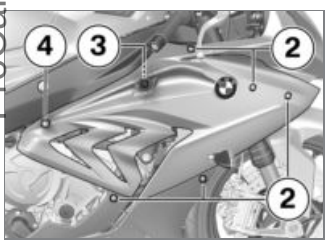


- Install screw **1**.

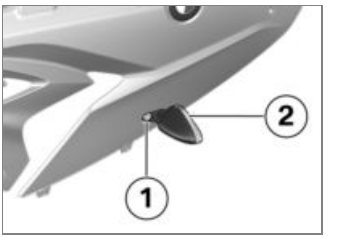
Installing front flashing turn indicator



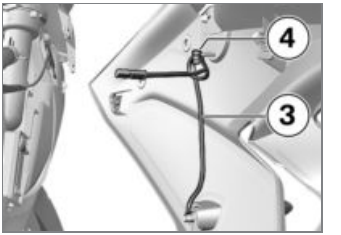
- Remove screw **1** on the inboard side of the right side panel.



- Remove screws **2**.
- Disengage side panel from grommet **3** and detent pin **4**.
- Work the cable through the fairing side panel.



- Hold turn indicator **2** in position and install screw **1**.



- Clip cable **3** into holder **4**.
- Installing side panel (➠ 184).

Gearshift-pattern reverser

Shift pattern for racing

The shift pattern can be reversed for racing by changing the position of the selector rod. Reversing the shift pattern means that the gearshift lever is lifted up for 1st gear and pressed down for all the other gears. This is the reverse of the arrangement for riding on public roads.

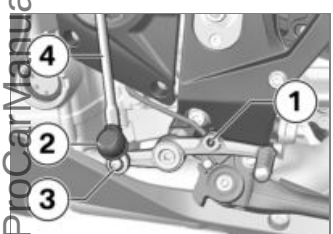
Reversing shift pattern

ATTENTION

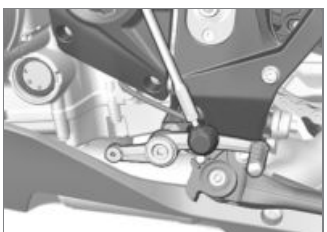
Riding with shift pattern reversal.

Voiding of homologation for riding on public roads.

- Do not install the gearshift-pattern reverser for riding on public roads.◀



- Clean threads **1**.
- Push protective cap **2** on to selector rod **4**.
- Remove screw **3**.
- Remove the washer from between the ball joint and the gearshift lever.
- Reposition selector rod **4** toward threads **1**.



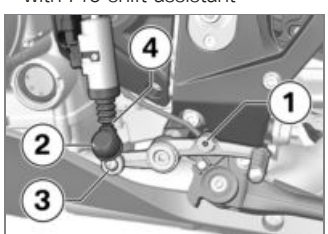
- Slip the screw through the ball joint and the washer and install it in the threads for the gearshift-pattern reverser.

Selector rod to gearshift lever
Joining compound: Micro-encapsulated or medium-strength thread-locking compound
8 Nm

- Install the protective cap.

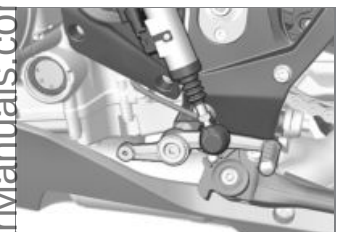
» The gearshift-pattern reverser for racing is set up.

– with Pro shift assistant OE



- Clean threads **1**.
- Push protective cap **2** on to selector rod **4**.

- Remove screw **3**.
- Remove the washer from between the ball joint and the gearshift lever.
- Reposition selector rod **4** toward threads **1**.



- Slip the screw through the ball joint and the washer and install it in the threads for the gearshift-pattern reverser.

	Selector rod to gearshift lever
Joining compound: Micro-encapsulated or medium-strength thread-locking compound	
8 Nm	

- Install the protective cap.

» The gearshift-pattern reverser for racing is set up.◁

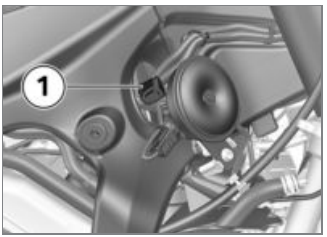
Socket for optional accessories

Equipment

The vehicle is fitted with the following plugs for optional accessories and racing accessories:

– Infrared receiver
– Spring-travel sensor
– Optional accessory
– HP Race data logger

Underneath the right side panel



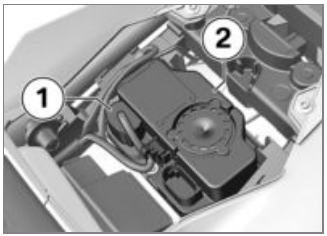
1 Plug for infrared receiver

Underneath the left side panel

1 Optional accessory (plug with power supply + LIN; for example for navigation system)
2 Spring travel sensor for front forks (racing accessory)

Underneath the rear seat

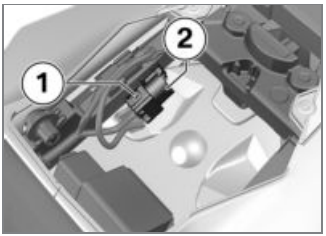
– with alarm system (DWA) OE



1 Plug for anti-theft alarm and HP Race data logger
2 DWA

Underneath the rear seat

– without alarm system (DWA) OE



1 Plug for anti-theft alarm and HP Race data logger
2 Terminating resistor

Connecting optional accessories and racing accessories

Remove the side panel, rear seat or tail-hump cover, as applicable, to gain access to the plugs.

- Remove the side panel (➠ 183).
- Removing rear seat (➠ 62).

– with rear-seat cover OE

- Remove the tail-hump cover (➠ 61).

- Unlock the protective cap or terminating resistor, as applicable, and disconnect it from the plug.
- Connect the optional accessory or racing accessory, as applicable.

NOTICE

Comply with the installation instructions supplied with the optional accessory or racing accessory.◀

NOTICE

Tightening the cable ties has to be the last step in the process; this is in order to ensure that the wiring harness can be positioned correctly and that there is no strain on the cable legs with plugs.◀

ATTENTION

Dirt and damp penetrating inside open connectors.

Malfunctions

- Reinstall the cap or terminating resistor, as applicable, after removing the plug.◀
- After removing the accessory: Reinstall the cap or terminating resistor, as applicable.
- Installing side panel (➠ 184).
- Install the rear seat (➠ 62).

– with rear-seat cover OE

- Install the tail-hump cover (➠ 62).

Engineering details

Anti-lock brake system

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.

ATTENTION

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 (burnout).

Damage to rear brake and clutch.

- Do not attempt a burn-out unless the ABS function is switched OFF.◀

How does ABS work?

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

If the rider increases braking pressure to the extent that braking force exceeds the maximum transferable limit, the wheels start to lock and the vehicle loses its directional stability; a fall is imminent. Before this situation can occur, ABS intervenes and adapts braking pressure to the maximum transferable braking force, 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 brak-

ing force accordingly to achieve optimum braking.

What feedback does the rider receive from the BMW Motorrad Race ABS?

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

When the brake 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 brake 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.

⚠ WARNING

Rear wheel lift due to severe braking.

Risk of falling

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

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 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?

WARNING

Brake system not regularly serviced.

Risk of accident

- 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.

Dynamic Damping Control

DDC

Movement of the rear spring strut is registered by the ride height sensor. The electric EDC (Electronic Damper Control) valve is opened or closed, depending on the direction of travel and speed of travel registered by the sensor, and also on the chosen riding mode. Front-wheel damping also depends on the riding mode, but spring travel is not measured.

The damping values for the front wheel and for the rear wheel can be changed in the SETUP DDC-SYS menu either to one of seven levels to make the damping "softer" or one of seven levels to make the damping "harder". Rebound and compression damping can be altered on the back wheel separately.

A spring travel sensor (racing accessory) has to be installed on the front forks for separate compression-stage and rebound-stage adjustment of the damping values for the front suspension. A connecting plug for the sensors is already present on the motorcycle; it can be found under the left side panel.

Calibration is necessary if a spring travel sensor has been installed on the front forks, an existing ride-height sensor on the rear spring strut replaced, or the height of the suspension altered. Calibration is started in the SETUP DDC-SYS menu.

Traction control

How does traction control work?

Traction control is available in two versions

– **without** provision for the bank angle: Automatic Stability Control ASC

ASC is a rudimentary function intended to prevent falls.

– **with** provision for bank angle: Dynamic Traction Control DTC

– DTC controls more comfortably and is suitable for improving lap times on the race track.

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

⚠ WARNING

Risky riding.

Risk of accident despite ASC/DTC.

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

Special situations

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

The speeds of the front and rear wheels are compared and DTC, unlike ASC, also takes the bank angle into account in processing data to detect the rear wheel's incipient tendency to spin or slip sideways.

– with Dynamic Traction Control (DTC)[OE]

If the electronic processor receives values for the bank angle that it considers implausible over a lengthy period, a dummy value is used for the bank angle or the DTC function is switched off. Under these circumstances the

indicator for a DTC fault shows. Self-diagnosis has to complete before fault messages can be issued.

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

Exceptional riding conditions:

– Riding for a lengthy period with the front wheel lifted off the ground (wheelie).
– Rear wheel rotating with the vehicle held stationary by 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 and USER riding modes is not inserted, accelerating the motorcycle to a defined minimum speed after switching the ignition off and then on again reactivates the DTC.

 Minimum speed for activation of DTC
min 10 km/h

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

Wheelie assistance is deactivated in the SLICK riding mode. 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.

Riding mode

Selection

Five riding modes enable the motorcycle's characteristics to adapt to the prevailing weather conditions, the road surface, and the rider's style of riding:

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

– USER (only with coding plug inserted)

– with Pro riding modes OE

WARNING

Increased engine power available in all riding modes with coding plug inserted, vehicles with power reduction.

Risk of accident

It is important for the rider intending to use these more sporty ride modes to familiarise himself/herself with their characteristics.

• Do not use the coding plug for riding on public roads.◀

ATTENTION

Riding on public roads with coding plug inserted, vehicles with power reduction.

Risk of accident. Voiding of homologation for riding on public roads.

• Do not use the coding plug for riding a vehicle with power reduction on public roads.◀

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 riding modes are set up for riding with standard tyres recommended by BMW Motorrad. The SLICK and USER riding modes are 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

Throttle response

– The engine's maximum torque is not made available. The torque curve for rain is imposed.

– Motorcycles with power reduction: With the coding plug inserted the torque curve for rain

is imposed. Homologation for riding on public roads is voided.
– Power increase when you open the throttle is virtually linear, engine response is soft.
– Overrun cut-off is activated.

ASC
– The ASC intervenes early enough to prevent the rear wheel from spinning whenever possible.
– Front-wheel lift detection is ON and offers maximum assistance.

DTC
– The DTC intervenes early enough to prevent the rear wheel from spinning whenever possible.
– Front-wheel lift detection is ON and offers maximum assistance.
– DTC changeover is deactivated.
– Launch Control (L-CON) is deactivated.

ABS
– 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.
– Maximum assistance with integral pressure build-up when only the handbrake lever is pulled.
– ABS for the rear wheel is switched on.
– Rear-wheel lift detection is switched on.

DDC
– Setting for damping: Road = comfortable damping.
– The damping can be precision-adjusted by means of the instrument panel.

SPORT

Throttle response
– The engine's maximum torque is made available.
– Motorcycles with power reduction: With the coding plug inserted the torque curve for maximum torque is imposed. Homologation for riding on public roads is voided.
– Engine response is optimum and direct.
– Overrun cut-off is activated.

ASC
– The ASC intervenes later than in RAIN mode, so it is possible to induce slight drift when exiting corners.
– Front-wheel lift detection is ON and offers maximum assistance.

DTC
– The DTC intervenes later than in RAIN mode, so it is possible

to induce slight drift when exiting corners.
– Front-wheel lift detection is ON and offers maximum assistance.
– DTC changeover is deactivated.
– Launch Control (L-CON) is deactivated.

ABS

– The behaviour of the ABS is the same as in RAIN mode.
– 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.
– Maximum assistance with integral pressure build-up when only the handbrake lever is pulled.
– ABS for the rear wheel is switched on.
– Rear-wheel lift detection is switched on.

DDC

– Setting for damping: Road = comfortable damping.
– The damping can be precision-adjusted by means of the instrument panel.

RACE

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

Throttle response

– The engine's maximum torque is made available.
– Motorcycles with power reduction: With the coding plug inserted the torque curve for maximum torque is imposed. Homologation for riding on public roads is voided.
– Engine response is optimum and direct.
– Overrun cut-off is activated.

ASC

– The ASC intervenes early enough to prevent the rear wheel from spinning whenever possible.
– Front-wheel lift detection is ON and offers maximum assistance.

DTC

– The DTC intervenes even later than in the other modes, so lengthy drifts and short wheelies are possible when exiting corners.
– Front-wheel lift detection is ON, but it offers less assistance.
– DTC changeover is deactivated.
– Launch Control (L-CON) is deactivated.

ABS

– The ABS always intervenes early enough to prevent as ef-

fectively as possible the wheels from locking.
– In this riding 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 reduced. The rear wheel can lift clear of the ground.
– Assistance with integral pressure build-up is reduced.
– ABS for the rear wheel is switched on.

DDC

– Setting for damping: Dynamic = sporty damping.
– The damping can be precision-adjusted by means of the instrument panel.

SLICK

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

The SLICK riding 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 parameter settings for this mode are based is that the motorcycle is fitted with racing slicks with a very high level of dry-surface grip.

Throttle response

– The engine's maximum torque is made available.
– Motorcycles with power reduction: With the coding plug inserted the torque curve for maximum torque is imposed. Homologation for riding on public roads is voided.
– Engine power, power increase and throttle response are all set up for maximum sportiness.
– Overrun cut-off is deactivated.

DTC

– When this mode is selected, the DTC controller 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!
– The DTC intervenes even later than in the other modes, so lengthy drifts and short wheelies are possible when exiting corners.
– Front-wheel lift detection is deactivated.
– DTC changeover is switched on.
– Launch Control (L-CON) is switched on.

ABS

– The ABS intervenes only when the handbrake lever is pulled.
– In this riding mode, the ABS intervenes later. It still prevents the wheels from locking, but the rear wheel can lift off the ground.
– Assistance with integral pressure build-up is reduced sooner than in the SPORT riding mode.
– ABS for the rear wheel is deactivated. When the rider depresses the footbrake lever there is no ABS control response at the rear wheel. Under these circumstances, the rear wheel can lock up.
– Rear-wheel lift detection is deactivated.

DDC

– Setting for damping: Track = sporty damping for race track riding.
– The damping can be precision-adjusted by means of the instrument panel.

USER

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

Behaviour corresponds to that in the SLICK riding mode, but the following systems can be set up in accordance with the individual rider's preferences:

Throttle response (ENGINE)

– RAIN
– RACE
– SLICK
– On a vehicle with power reduction and coding plug inserted the torque curves are imposed as follows: RACE / SLICK setting = maximum torque, RAIN setting = torque curve for rain. Homologation for riding on public roads is voided.
– Overrun cut-off is deactivated.

DTC

– RAIN
– SPORT
– RACE
– SLICK
– DTC changeover is switched on. The DTC changeover is saved separately for each DTC mode.
– Launch Control (L-CON) is switched on.

ABS

– SPORT
– RACE
– SLICK

DDC

– SPORT
– RACE
– SLICK

ASC off

– ASC assistance is deactivated.
– Front-wheel lift detection is deactivated.

DTC off

– DTC assistance is deactivated.
– Front-wheel lift detection is deactivated.
– DTC changeover is deactivated.
– Launch Control (L-CON) is switched on, but engine speed limitation is the only function in effect.

ABS off

– ABS assistance is deactivated.
– No assistance for integral pressure build-up when only the handbrake lever is pulled.
– ABS for the rear wheel is deactivated.
– Rear-wheel lift detection is deactivated.

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 (on the move)

– The throttle twistgrip must be in the fully closed position,
– The brake levers must be in the released positions.

The desired riding 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.

Shift assistant Pro

– with Pro shift assistant[OE]

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

Advantages

– 70-80 % of all gearshifts on a trip can be done without using the clutch.
– Less relative movement between rider and passenger because the shift pauses are shorter.

– It is not necessary to close the throttle valve when shifting under acceleration.
– When braking and downshifting (throttle valve closed), engine speed is adjusted by blipping the throttle.
– Shift time is shorter than a gearshift with clutch actuation.

In order for the system to identify a request for a gearshift, the rider has to move the shift lever from its idle position in the desired direction against the force of the spring through a certain "overtravel" at ordinary speed or rapidly and keep the shift lever in this position until the gearshift is completed. It is not necessary to increase the force applied to the gearshift lever while shifting is in progress. Once the gearshift has completed the shift lever has to be fully released before another gearshift with the Pro shift assistant can take place. When shifting gears with the shift assistant, the rider has to keep load state (throttle twistgrip position) constant before and during the gearshift. A change in the position of the throttle twistgrip during a gearshift can cause the function to abort and/or lead to a missed shift. The shift assistant provides no assistance for the gearshift if the rider declutches.

Downshifting

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

 Maximum engine speed
max 14200 min^{-1}

Upshifting

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

 Idle speed
1250 min^{-1} (Engine at regular operating temperature)

Maintenance

General instructions

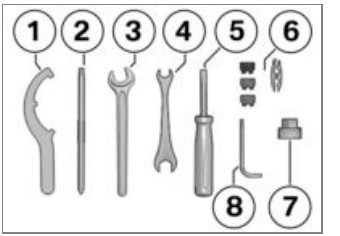
The Maintenance chapter describes straightforward procedures for checking and replacing certain wear parts.

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

You will find information on more extensive maintenance and repair work in the Repair Manual on DVD for your vehicle, which is available from your authorised BMW Motorrad dealer.

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

Toolkit



1 Hook wrench
- without Dynamic Damping Control (DDC)[OE]
- Adjusting spring preload for rear wheel (➠ 70).

2 Reversible screwdriver blade
Phillips PH1 and Torx T25
- Removing and installing body panels.
- Removing front seat (➠ 63).
- Replacing bulbs for front and rear turn indicators (➠ 180).

3 Open-ended spanner
Width across flats 17
- without Dynamic Damping Control (DDC)[OE]
- Adjusting spring preload for front wheel (➠ 68).
- with Dynamic Damping Control (DDC)[OE]
- Adjusting spring preload for front wheel (➠ 69).

4 Open-ended spanner
Width across flats 10/13
- Removing battery (➠ 187).
- with Dynamic Damping Control (DDC)[OE]
- Adjusting spring preload for rear wheel (➠ 71).

5 Reversible-blade screwdriver with star-head and plain tips

5
- without Dynamic Damping Control (DDC)[OE]
- Adjusting compression-stage damping for front wheel (➡ 72).
- without Dynamic Damping Control (DDC)[OE]
- Adjust the rebound-stage damping for front wheel (➡ 73).
- without Dynamic Damping Control (DDC)[OE]
- Adjusting rebound-stage damping for rear wheel (➡ 75).
- without Dynamic Damping Control (DDC)[OE]
- Adjusting compression-stage damping for rear wheel (➡ 74).

6 Spare fuses with puller tool
Miniature fuses, 4 A, 7.5 A and 10 A
- Puller tool for removing fuses.

6
- Spare fuses.

7 Plastic adapter
- with Dynamic Damping Control (DDC)[OE]
- Adjusting spring preload for front wheel (➡ 69).

8 Torx bit, T25
- Removing and installing body panels.
- Removing front seat (➡ 63).

Front-wheel stand

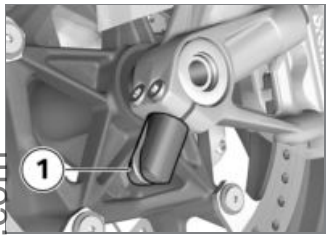
Installing auxiliary stand at front wheel

ATTENTION

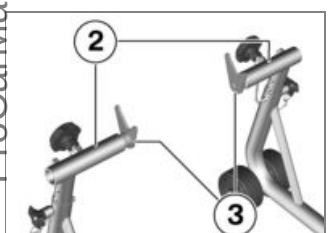
Use of the BMW Motorrad front wheel stand without also accompanying use of centre stand or auxiliary stand.
Risk of damage to parts if vehicle topples.

- 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 rear-wheel stand (➡ 158).

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



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



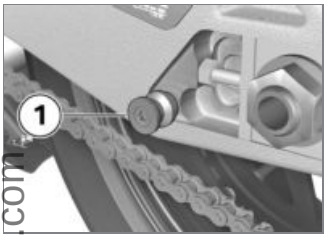
- Turn brackets **2** with long ends facing inwards.
- Adjust adapters **3** to the width of the service adapters inserted in the front suspension.
- Set the height of the auxiliary stand to raise the front wheel slightly clear of the ground.

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

Rear-wheel stand

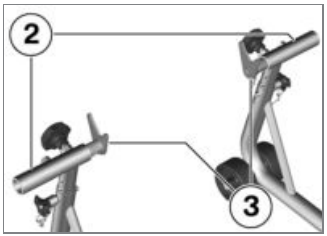
Install the rear-wheel stand

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



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

Swinging-arm adapter to rear wheel swinging arm
20 Nm



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

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

Engine oil

Checking engine oil level

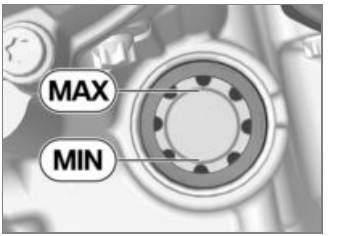
ATTENTION

The oil level varies with the temperature of the oil. The higher the temperature, the higher the level of oil in the sump.

Misinterpretation of the oil level

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

Engine oil, capacity
SAE 5W-40, API SL / JASO MA2, Additives (e.g. molybdenum-based) are not permissible because they can attack coated components of the engine, BMW Motorrad recommends BMW Motorrad ADVANTEC Ultimate oil

Engine oil, capacity
approx. 3.5 l (with filter change)

If the oil level is below the minimum mark:

- Topping up the engine oil (➠ 160).

If the oil level is above the maximum mark:

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

Topping up the engine oil

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

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

ATTENTION

Not enough or too much engine oil.

Engine damage

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

- Top up the engine oil to the specified level.
- Checking engine oil level (➠ 159).
- Install oil filler cap **1**.

Brake system

Checking function of brakes

- Operate the brake lever.

» The pressure point must be clearly perceptible.

- Press the footbrake lever.

» The pressure point must be clearly perceptible.

If pressure points are not clearly perceptible:

ATTENTION

Work on brake system not in compliance with correct procedure.

Risk to operational reliability of the brake system.

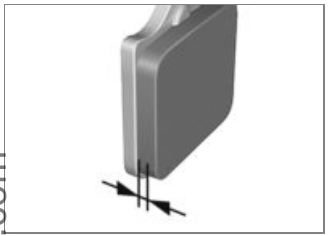
- Have all work on the brake system undertaken by trained and qualified specialists.◀

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

Checking 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)

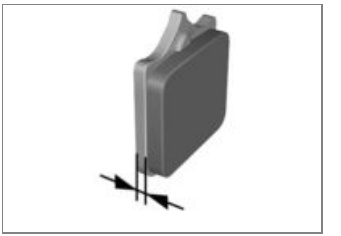
If the brake pads are worn:

WARNING

Brake-pad thickness less than permissible minimum.

Diminished braking effect. Damage to the brakes.

- In order to ensure the dependability of the brake system, do not permit the brake pads to wear past the minimum permissible thickness.◀
- Have the brake pads replaced by a specialist workshop, preferably an authorised BMW Motorrad dealer.
- If the brake pads installed are not genuine BMW Motorrad brake pads, it is absolutely essential to measure the thickness of the brake-pad carrier plates.



Thickness of brake-pad carrier plate
min 4.5 mm

If the thickness of the carrier plates is insufficient:

WARNING

Use of unsuitable brake pads.

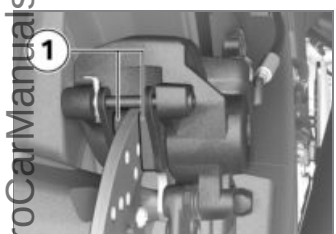
Failure of the brake system due to loss of the brake pads.

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

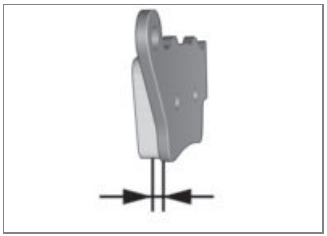
- BMW Motorrad recommends installing only genuine BMW Motorrad brake pads.

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.)	

If the wear indicating mark is no longer visible:

⚠ WARNING

Brake-pad thickness less than permissible minimum.
Diminished braking effect. Damage to the brakes.

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

Checking 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**.

NOTICE

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:

WARNING

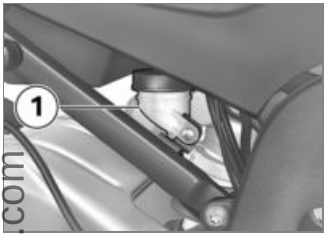
Not enough brake fluid in brake fluid reservoir.

Considerably reduced braking power due to air in the brake system.

- 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 the 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**.

NOTICE

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:

WARNING

Not enough brake fluid in brake fluid reservoir.

Considerably reduced braking power due to air in the brake system.

- 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.

Clutch

Checking clutch function

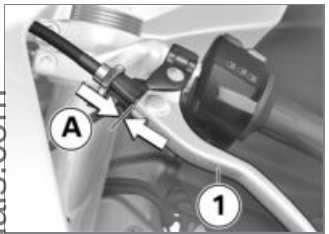
- Pull the clutch lever.

» The pressure point must be clearly perceptible.

If the pressure point is not clearly perceptible:

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

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 (➠ 166).

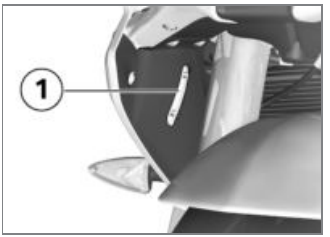
Adjusting clutch-lever play

- 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.
- Checking clutch-lever play (➠ 166).
- Repeat the steps in this procedure until clutch play is set correctly.

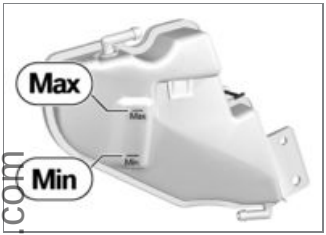
Coolant

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



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

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

Top up coolant

- Remove the side panel (➠ 183).

- Open cap **1** of the expansion tank.
- Top up coolant to specified level.
- Checking coolant level (➠ 166).
- Close the cap of the expansion tank.
- Installing side panel (➠ 184).

Tyres

Checking tyre pressure

⚠ WARNING

Incorrect tyre pressure.

Impairment of the motorcycle's handling characteristics. Shorter useful tyre life.

- Always check that the tyre pressures are correct.◀

⚠ WARNING

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

Sudden loss of tyre pressure.

- Install valve caps fitted with rubber sealing rings and tighten firmly.◀
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Check tyre pressures against the data below.

Tyre pressure, front
2.5 bar (tyre cold)

 Tyre pressure, rear
2.9 bar (tyre cold)

If tyre pressure is too low:
- Correct tyre pressure.

Rims and tyres

Checking rims

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

Check the tyre tread depth

WARNING

Riding with badly worn tyres
Risk of accident due to impaired handling
- If applicable, have the tyres changed in good time before they wear to the minimum tread depth permitted by law.◀
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Measure the tyre tread depth in the main tread grooves with wear marks.

NOTICE

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

If the tyre tread is worn to minimum:
- Replace tyre or tyres, as applicable.

Wheels

Tyre recommendation

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

Effect of wheel size on chassis and suspension control systems

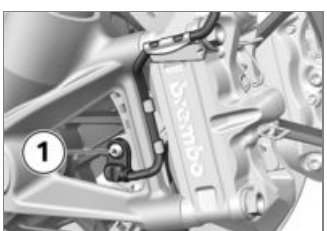
Wheel size is very important as a parameter for the frame and suspension control systems ASC and DTC. In particular, the diameter and the width of a vehicle's wheels are programmed into the control unit and are fundamental to all calculations. Any change in these influencing variables, caused for example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

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

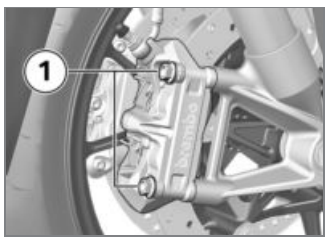
If you decide that you would like to fit non-standard wheels to your motorcycle, it is very important to consult a specialist workshop beforehand, preferably an authorised BMW Motorrad dealer. In these cases, the data programmed into the control units has to be changed to suit the new wheel sizes.

Removing front wheel

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



- Remove screw **1** and remove the wheel-speed sensor from its bore.
- Mask off the parts of the wheel rim that could be scratched in the process of removing the brake calipers.

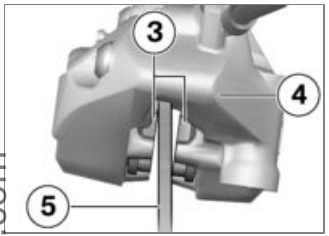


ATTENTION

Brake pads pushed together with brake caliper removed.

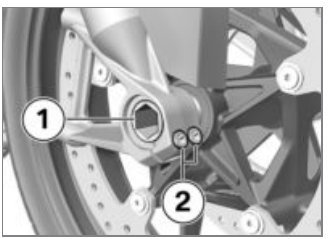
It is not possible to slip the brake caliper over the brake disc.

- Do not operate the brake lever while a brake caliper has been removed.◀
- Remove screws **1** of the brake callipers on left and right.



- Force 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 rear-wheel stand (➠ 158).
  - 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 (➠ 157).



ATTENTION

Incorrect gap between sensor ring and wheel speed sensor due to misaligned threaded bush in front suspension.

Damage to wheel speed sensor. ABS malfunction.

- Left clamp locates the threaded bush; do not loosen or remove this clamp.◀

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

Installing front wheel

WARNING

Use of a non-standard wheel.

Malfunctions in operation of ABS and DTC.

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

ATTENTION

Tightening threaded fasteners to incorrect tightening torque.

Damage, or threaded fasteners work loose.

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

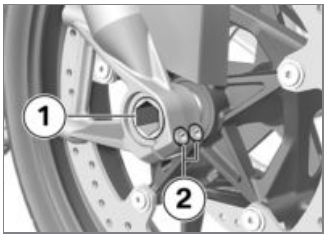
ATTENTION

Front wheel installed wrong way round.

Risk of accident

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

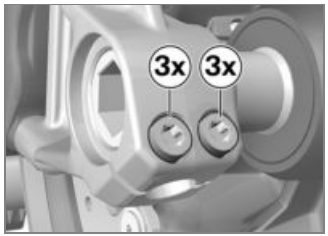
- Roll the front wheel into position between the front forks.



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

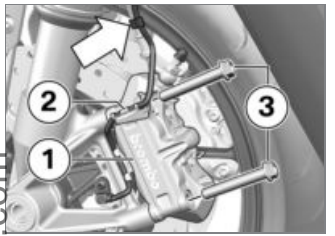
Quick-release axle in threaded bush
50 Nm

- Tighten clamping screws **2** to the specified tightening torque.



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

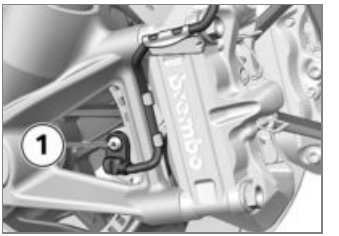
- Remove the front-wheel stand and the auxiliary stand.
- Ease the brake calipers on to the brake discs.



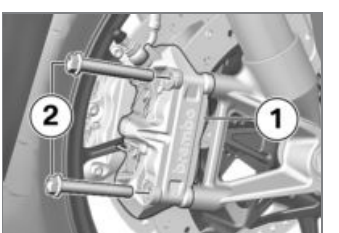
- Hold left brake caliper **1** in place and position cable guide **2**.
- Install screws **3** and tighten to the specified tightening torque.

Radial brake caliper to axle mount
38 Nm

- Secure the cable for the wheel-speed sensor in the holder **(arrow)**.



- Insert the wheel-speed sensor into the bore and secure it with screw **1**.



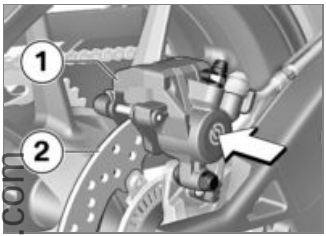
- Hold right brake caliper **1** in position, install screws **2** and tighten to specified torque.

Radial brake caliper to axle mount
38 Nm

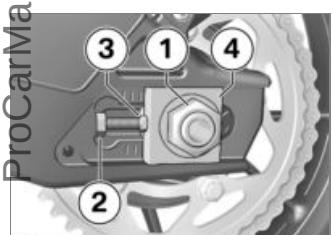
- Remove the adhesive tape from the wheel rim.
- Firmly pull the brake lever until the pressure point is perceptible, and repeat this operation several times.

Remove the rear wheel

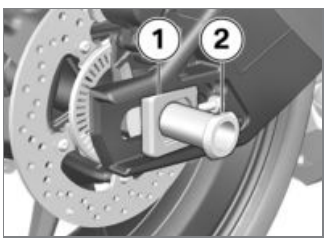
- Lift the motorcycle, preferably with a BMW Motorrad rear-wheel stand.
- Install the rear-wheel stand (➠ 158).
- Slip wooden chocks or similar under the rear wheel to prevent it from dropping out after the quick-release axle has been removed.



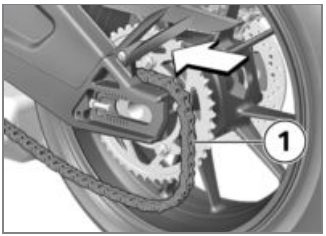
- Press brake caliper **1** against brake disc **2**.
- Brake pistons are pushed back.



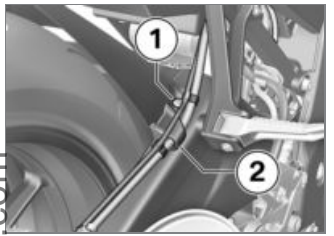
- Remove axle nut **1** with washer.
- Slacken locknuts **2** on left and right.
- Slacken adjusting screws **3** on left and right.
- Remove adjusting plate **4** and push the axle in as far as it will go.



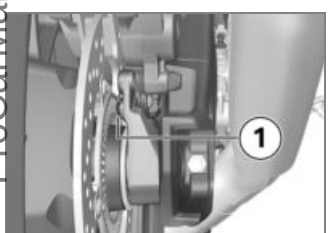
- Remove quick-release axle **2** and remove adjusting plate **1**.



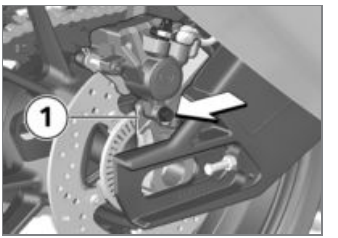
- Roll the rear wheel as far forward as possible and disengage chain **1** from the sprocket.



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



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



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

NOTICE

The sprocket and the spacer sleeves on left and right are loose fits in the wheel. Take care when removing to ensure that no parts are damaged or mislaid.◀

Installing the rear wheel

ATTENTION

Change in tyre size.

Effect on control systems.

- If the rear wheel tyre size is changed from 190 / 55 ZR 17 to 200 / 55 ZR 17 or vice versa, the parameters of the control systems have to be re-coded by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

ATTENTION

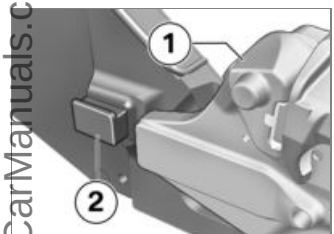
Tightening threaded fasteners to incorrect tightening torque.

Damage, or threaded fasteners work loose.

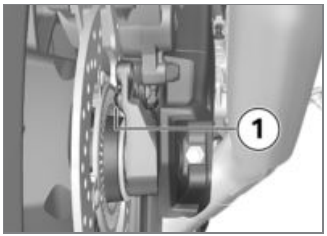
- Always have the security of the fasteners checked by a specialist workshop, preferably

an authorised BMW Motorrad dealer.◀

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

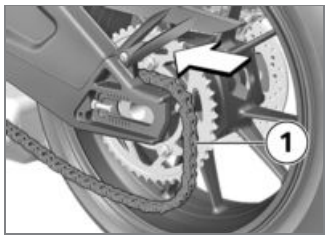


- Insert brake-caliper carrier **1** into guide **2**.

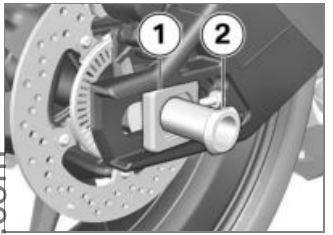


- When rolling the rear wheel into position, take care not to damage wheel-speed sensor **1**.

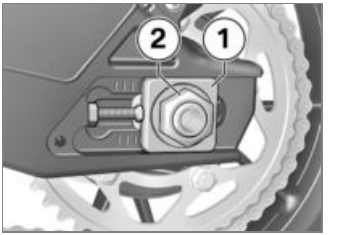
- Roll the rear wheel further into the swinging arm, while pushing brake-caliper carrier **1** forward at the same time.



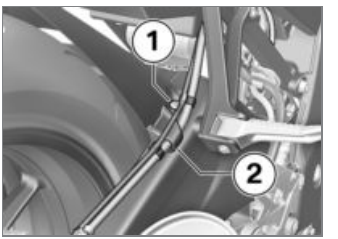
- Roll the rear wheel as far forward as possible and loop chain **1** over the sprocket.



- Install right adjusting plate **1** in the swinging arm.
- Lift the rear wheel and work quick-release axle **2** through the adjusting plate and into the brake-caliper carrier and the rear wheel.
- Make sure that the quick-release axle fits into the recess for the flats.



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



- Secure the brake line in holder **2** and install screw **1**.
- Adjust the chain tension (➠ 190).

Lighting

Replacing bulbs for low-beam headlight and high-beam headlight

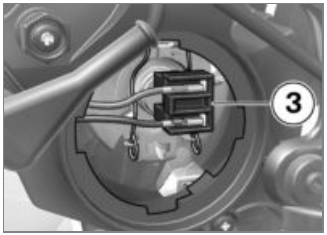
NOTICE

The plug might face in a direction other than that shown here, depending on which bulb is being replaced.◀

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

- Remove cover panel **1** to replace the bulb for the low-beam headlight.

- Remove cover panel **2** to replace the bulb for the high-beam headlight.



- Disconnect connector **3**.

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

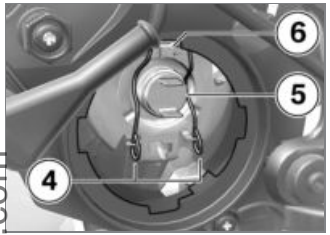
NOTICE

Bulbs with higher light-intensity ratings are available through aftermarket suppliers. These bulbs burn out more rapidly and generate more heat than conventional 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 bulb by the base only, in order to keep the glass free of foreign matter.



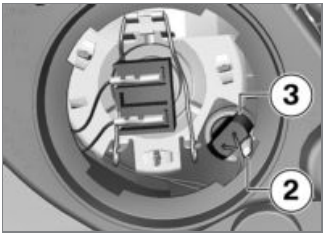
- Install bulb **5**. Begin by seating lug **6** and then press the bulb into the socket.
- Engage spring clip **4** in the catch on left and right.

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

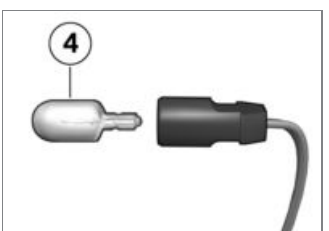
Replacing bulb for left parking light

- 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.

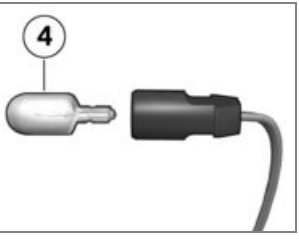


- Remove bulb **4** from the socket.

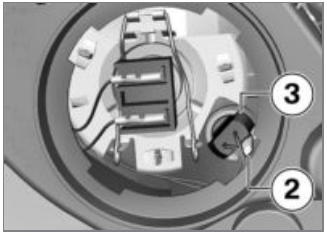
- Replace the defective bulb.

Bulb for parking light
W5W / 12 V / 5 W

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



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

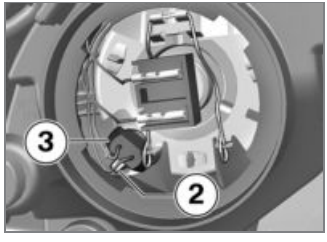


- Insert socket **3** into the headlight housing, making sure that retainer **2** engages.
- Install the cover.

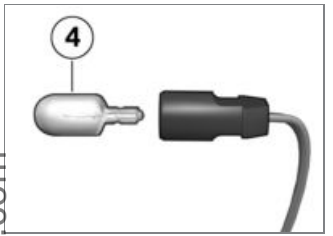
Replacing bulb for right side light

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

- Remove cover **1**.



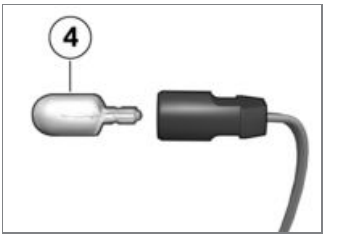
- Push down retainer **2** (using a screwdriver if necessary) and pull socket **3** out of the headlight housing.



- 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 bulb in order to keep the glass free of foreign matter.



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

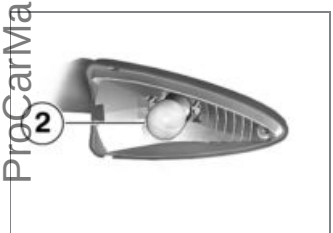
- Insert socket **3** into the headlight housing, making sure that retainer **2** engages.
- Install the cover.

Replacing bulbs for front and rear turn indicators

- 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.



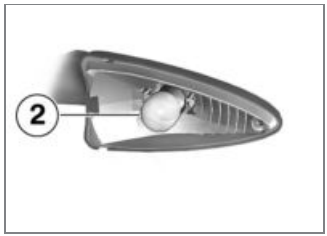
- Press bulb **2** in, turn it counterclockwise and remove it from the light housing.

- 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 bulb in order to keep the glass free of dirt and foreign matter.



- Press bulb **2** in and turn it clockwise to install it in the light housing.

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

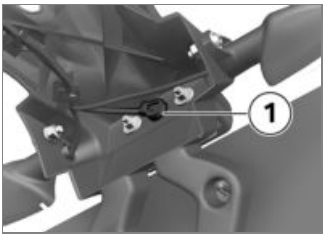
- Install screw **1**.

LED rear light

If LEDs in the rear light fail the rear light has to be replaced. Under these circumstances:

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

Replacing number-plate light



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

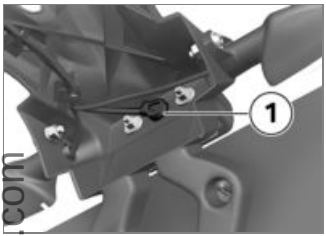
- Remove the bulb from the socket.

- Replace the defective bulb.

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

- Use a clean, dry cloth to hold the 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.

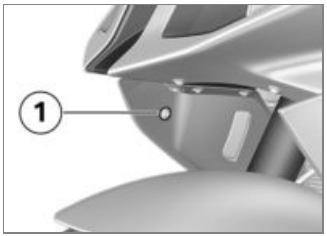
Body panels

Remove the side panel

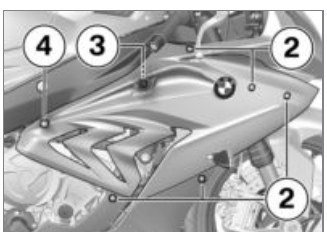
NOTICE

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

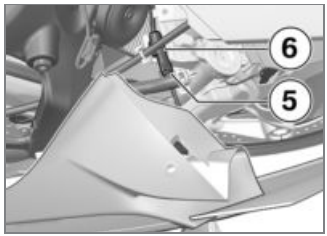
- Make sure the ground is level and firm and place the motorcycle on its stand.



- Remove screw **1** from the inboard side of the side panel.

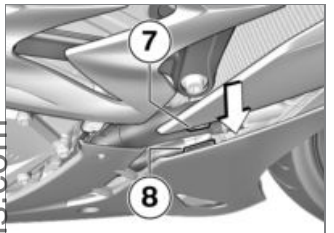


- Remove screws **2**.
- Disengage side panel from grommet **3** and detent pin **4**.

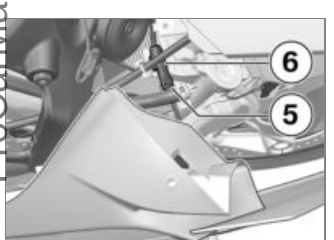


- Disconnect plug **5** for the flashing turn indicators.
- Remove the side panel.
- Protect plug **6** on the motorcycle to prevent the ingress of foreign matter.

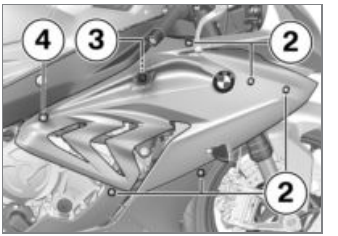
Installing side panel



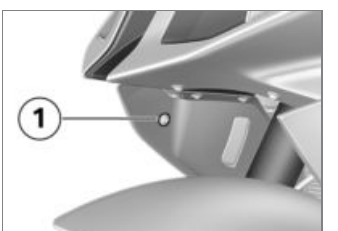
- Engage side panel **7** in mount **8** on the engine spoiler.



- Connect plug **5** to plug **6**.



- Secure the side panel in grommet **3** and detent pin **4**.
- Install screws **2**.



- Install screw **1**.

Jump-starting

CAUTION

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

Electric shock

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

ATTENTION

Excessive current flowing when the motorcycle is jump-started

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

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

ATTENTION

Contact between crocodile clips of jump leads and vehicle.

Risk of short-circuit

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

ATTENTION

Jump-starting with a voltage greater than 12 V.

Damage to the on-board electronics.

- Make sure that the battery of the donor vehicle has a voltage rating of 12 V.◀
- When jump-starting the engine, do not disconnect the battery from the on-board electrical system.
- Removing front seat (➠ 63).
- 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.
- Installing front seat (➠ 63).

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.

ATTENTION

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

Battery is deep-discharged; this voids the guarantee.

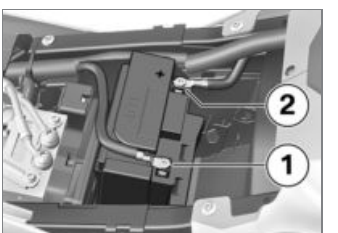
- Connect a float charger to the battery if the motorcycle is to remain out of use for more than four weeks.◀

NOTICE

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.
- Removing front seat (➠ 63).



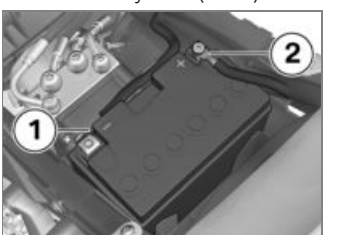
ATTENTION

Battery not disconnected in accordance with correct procedure.

Risk of short-circuit

- Always proceed in compliance with the specified disconnection sequence.◀
- First disconnect battery negative lead **1**.
- Then disconnect battery positive lead **2**.

– with alarm system (DWA) OE



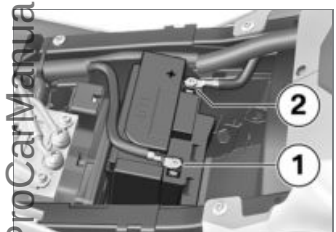
ATTENTION

Battery not disconnected in accordance with correct procedure.

Risk of short-circuit

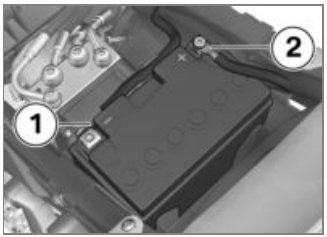
- Always proceed in compliance with the specified disconnection sequence.◀
- First disconnect battery negative lead **1**.
- Then disconnect battery positive lead **2**.◁

Connecting battery to motorcycle



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

– with alarm system (DWA) OE



- Connect battery positive lead **2** first.
- Then install battery negative lead **1**.◁
- Installing front seat (➠ 63).

Recharging battery

- Disconnecting battery from motorcycle (➠ 186).
- 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.

NOTICE

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.◀

- Connecting battery to motorcycle (➠ 187).

Removing battery

- Removing front seat (➠ 63).
- Disconnecting battery from motorcycle (➠ 186).
- Lift the battery up and out; work it slightly back and forth if it is difficult to remove.

Installing battery

NOTICE

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 right in the forward direction of travel.
- Place the battery in the battery compartment, negative terminal on the left in the forward direction of travel.
- Connecting battery to motorcycle (➠ 187).
- Installing front seat (➠ 63).
- Setting the clock (➠ 50).

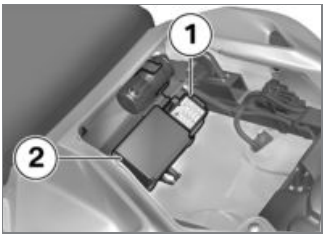
Fuses

Removing fuse

ATTENTION

Jumpering of blown fuses.
Risk of 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.
- Removing rear seat (➠ 62).

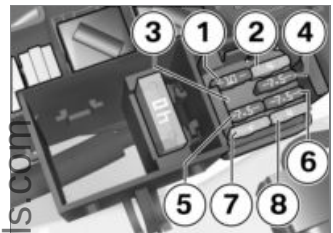


- Squeeze the latches together and remove cover of fuse box **1**.
- To replace the main fuse, remove cover **2**.
- Pull the defective fuse up and out of the fuse box.

NOTICE

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

Installing fuse



- Replace the defective fuse with a fuse of the correct amperage rating.

NOTICE

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 (➠ 62).

Chain

Lubricating chain

ATTENTION

Inadequate cleaning and lubrication of the drive chain.
Accelerated wear.

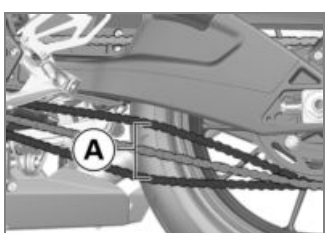
- Clean and lubricate the drive chain at regular intervals.◀
- Lubricate the drive chain every 800 km at the latest. Lubricate the chain more frequently if the motorcycle is ridden in wet, dusty or dirty conditions.
- Switch the ignition off and select neutral.
- Clean the drive chain with a suitable cleaning product, dry it and apply chain lubricant.
- To prolong chain life, BMW Motorrad recommends the use of BMW Motorrad chain lubricant, or:

Lubricant
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**.

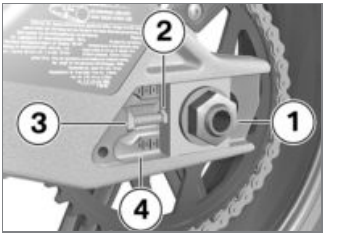
Chain deflection
45...50 mm (Motorcycle with no weight applied, supported on its side stand)

If measured value is outside permitted tolerance:

- Adjust the chain tension (➠ 190).

Adjust the 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.
- Checking chain tension (➠ 189).
- 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.

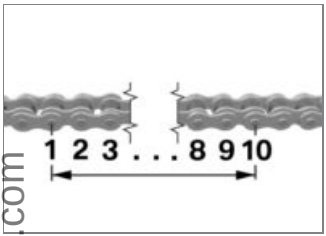
Locknut of the final-drive chain tensioning screw
19 Nm

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

Rear quick-release axle in swinging arm
Thread-locking compound: mechanical
100 Nm

Checking the chain wear

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



Permissible chain length
max 144.30 mm (measured **centre to centre** over 10 pins, 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.

Accessories

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 (➠ 169).

⚠ CAUTION

Use of other-make products.
Safety risk

- BMW Motorrad cannot examine or test each product of outside origin to ensure that it can be used on or in connection with BMW vehicles without constituting a safety hazard. Country-specific official authorisation does not suffice as assurance. Tests conducted by these instances cannot make provision for all operating conditions experienced by BMW vehicles and, consequently, they are not sufficient in some circumstances.
- Use only parts and accessories approved by BMW for your vehicle.◀

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

Care

Care products

BMW Motorrad recommends that you use the cleaning and care products you can obtain from your authorised BMW Motorrad dealer.

The substances in BMW CareProducts have been tested in laboratories and in practice; they provide optimised care and protection for the materials used in your vehicle.

ATTENTION

Use of unsuitable cleaning and care products.

Damage to vehicle parts.

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

Washing the vehicle

BMW Motorrad recommends that you use BMW insect remover to soften and wash off insects and stubborn dirt on painted parts prior to washing the vehicle.

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

Make sure that the vehicle is washed frequently, especially during the winter months.

To remove road salt, clean the motorcycle with cold water immediately after every trip.

WARNING

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

Diminished braking effect.

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

ATTENTION

Effect of road salt intensified by warm water.

Corrosion

- Use only cold water to wash off road salt.◀

ATTENTION

Damage due to high water pressure from high pressure cleaners or steam cleaners.

Corrosion or short-circuit, damage to seals, to the hydraulic brake system, to the electrics and the seat.

- Exercise restraint when using a steam jet or high-pressure cleaning equipment.◀

Cleaning easily damaged components

Plastics

ATTENTION

Use of unsuitable cleaning agents.

Damage to plastic surfaces.

- Do not use cleaning agents that contain alcohol, solvents or abrasives.
- Do not use insect-remover pads or cleaning pads with hard, scouring surfaces.◀

Body panels

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

Windscreens and lenses made of plastic

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

NOTICE

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.

ATTENTION

Radiator fins easily bent.

Damage to radiator fins.

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

Rubber

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

ATTENTION

Application of silicone sprays to rubber seals.

Damage to the rubber seals.

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

Paint care

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

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 vehicle has been washed. Remove stains of this kind immediately, using cleaning-grade benzene or petroleum spirit on a clean cloth or ball of cotton wool. BMW Motorrad recommends BMW tar remover for removing specks of tar. Remember to wax the parts treated in this way.

Laying up the motorcycle

- Clean the motorcycle.
- Fill the motorcycle's fuel tank.
- Removing battery (➠ 187).
- Spray the brake and clutch lever pivots and the main and side stand pivots with a suitable lubricant.
- Coat bright metal and chrome-plated parts with an acid-free grease (e.g. Vaseline).
- Stand the motorcycle in a dry room in such a way that there is no load on either wheel (preferably using the front-wheel and rear-wheel stands from BMW Motorrad).

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.

Restoring motorcycle to use

- Remove the protective wax coating.
- Clean the motorcycle.
- Installing battery (➠ 188).
- Comply with checklist (➠ 81).

Technical data

Troubleshooting chart

Engine does not start or is difficult to start.

Possible cause	Rectification
Side stand extended and gear engaged	Retract the side stand.
Gear engaged and clutch not disengaged	Select neutral or pull the clutch lever.
No fuel in tank	Refuelling (➠ 90).
Battery flat	Recharge the battery.

Threaded fasteners

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

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

Rear wheel	Value	Valid
Swinging-arm adapter to rear wheel swinging arm		
M8 x 30	20 Nm	
Screw in adjusting ring		
M5 x 25	3 Nm	– without Dynamic Damping Control (DDC)[OE]
Spring strut to main frame		
M10 x 65 - 10.9	56 Nm	

Mirrors	Value	Valid
Mirror to front panel carrier		
M6, Replace nuts mechanical	8 Nm	

Selector rod to gearshift lever	Value	Valid
Selector rod to gearshift lever		
M6 x 20 Micro-encapsulated or medium-strength thread-locking compound	8 Nm	

Fuel

Recommended fuel grade	Super Plus, unleaded (max. 10 % ethanol, E10) 98 ROZ/RON 91 AKI
Alternative fuel grade	Premium unleaded (slight power- and consumption-related restrictions) (max. 10 % ethanol, E10) 95 ROZ/RON 89 AKI
Usable fuel capacity	approx. 17.5 l
Fuel reserve	approx. 4 l

Engine oil

Engine oil, capacity	approx. 3.5 l, with filter change
Viscosity class	
SAE 5W-40, API SL / JASO MA2	Additives (e.g. molybdenum-based) are not permissible because they can attack coated components of the engine, BMW Motorrad recommends BMW Motorrad ADVANTEC Ultimate oil

BMW recommends ADVANTEC ORIGINAL BMW ENGINE OIL

Engine oil, quantity for topping up	max 0.8 l, Difference between MIN and MAX

BMW recommends ADVANTEC ORIGINAL BMW ENGINE OIL

Engine

Engine design	Water-/oil-cooled four-cylinder four-stroke inline engine, four valves per cylinder, two overhead camshafts
Displacement	999 cm^3
Cylinder bore	80 mm
Piston stroke	49.7 mm
Compression ratio	13:1
Nominal output	146 kW, at engine speed: 13500 min^{-1}
– with power reduction OE	79 kW, at engine speed: 7750 min^{-1}
Torque	113 Nm, at engine speed: 10500 min^{-1}
– with power reduction OE	97 Nm, at engine speed: 7750 min^{-1}
Maximum engine speed	max 14200 min^{-1}
Idle speed	1250 min^{-1}, Engine at regular operating temperature

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 (33:22 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 aluminium swinging arm
Number of teeth, rear-wheel drive (Pinion / sprocket)	17:45
Secondary transmission ratio	2.647

Frame

Frame type	Aluminium composite bridge frame, load-bearing engine
Type plate location	Frame, front right, on steering head
Position of the Vehicle Identification Number	Frame, front right, on steering head

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 aluminium swinging arm
Type of final drive	Chain drive
Spring travel, rear	120 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 actuated disc brake with 1-piston floating caliper and fixed disc
Brake-pad material, rear	Organic material

Wheels and tyres

Recommended tyre sets	Your authorised BMW Motorrad dealer will be happy to supply an up-to-date list of the approved wheel/tyre combinations, or you can check the information posted on the bmw-motorrad.com website.
Speed category, front/rear tyres	W, required at least: 270 km/h
Front wheel	
Front wheel type	Aluminium cast wheel
Front wheel rim size	3.50" x 17"
Tyre designation, front	120/70 ZR 17
Load index, front tyre	min. 48
Permissible front-wheel imbalance	max 5 g
Rear wheel	
Rear-wheel type	Aluminium cast wheel
Rear wheel rim size	6.0" x 17"
Tyre designation, rear	190/55 ZR 17
– with forged wheels[OE]	200/55 ZR 17
Load index, rear tyre	min. 63
Permissible rear-wheel imbalance	max 45 g

Tyre pressure	
Tyre pressure, front	2.5 bar, tyre cold
Tyre pressure, rear	2.9 bar, tyre cold

Electrics

Fuses	
Retainer 1	10 A, Instrument panel
Retainer 2	4 A, Master relay, diagnosis plug, anti-theft alarm
Retainer 3	Not used
Retainer 4	7.5 A, Low-beam headlight
Retainer 5	7.5 A, High-beam headlight
Retainer 6	7.5 A, Socket for optional accessories, number-plate light
Retainer 7	4 A, Ignition lock / electronic immobiliser (EWS)
Retainer 8	4 A, Angular rate sensor, left multi-function switch, infrared receiver (optional accessory)
Main fuse	40 A

Battery	
Battery type	AGM (Absorbent Glass Mat) battery
Battery rated voltage	12 V
Battery rated capacity	8 Ah
– with alarm system (DWA)[OE]	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
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

Dimensions

Length of motorcycle	2050 mm, about spray guard
Height of motorcycle	1140 mm, to windscreen at DIN unladen weight
Width of motorcycle	826 mm, across mirrors
Front-seat height	815 mm, without rider
Rider's inside-leg arc, heel to heel	1805 mm, without rider

Weights

Unladen weight	204 kg, DIN unladen weight, ready for road, 90 % load of fuel, without optional extras
Permissible gross weight	407 kg
Maximum payload	203 kg

Riding specifications

Top speed	min 200 km/h

Service

BMW Motorrad Service

BMW Motorrad has an extensive network of dealerships in place to look after you and your motorcycle in more than 100 countries. Authorised BMW Motorrad dealerships have the technical information and the technical know-how to reliably carry out all maintenance and repair work on your BMW.

Visit our website www.bmw-motorrad.com to find out where the nearest authorised BMW Motorrad dealership is located.

WARNING

Maintenance and repair work not in compliance with correct procedure.

Risk of accident due to subsequent damage.

- BMW Motorrad recommends you to have all the associated work on your motorcycle carried out by a specialist workshop, preferably an authorised BMW Motorrad dealer.◀

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

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

BMW Motorrad Mobility services

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

Maintenance work

BMW Pre-delivery Check

Your authorised BMW Motorrad dealer conducts the BMW pre-delivery check before handing over the vehicle to you.

BMW Running-in Check

 First running-in check
500...1200 km

BMW Service

The BMW Service is carried out once a year; the extent of servicing can vary, depending on the age of the vehicle and the distance it has covered. Your authorised BMW Motorrad dealer confirms that the service work has been carried out and enters the date when the next service will be due.

Riders who cover long distances in a year might have to bring in their vehicles for service before the next scheduled date. It is to allow for these cases that a maximum odometer reading is entered as well in the confirmation of service. Servicing has to be brought forward if this odometer reading is reached before the next scheduled date for the service.

The service-due indicator in the multifunction display reminds you about one month or 1000 km in advance when the time for a service is approaching, on the basis of the programmed values.

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.

To find out more about service go to:
bmw-motorrad.com/service

The maintenance tasks necessary for your vehicle are set out in the maintenance schedule below:

	500 -1200 km 300 - 750 mls	**10 000 km** 6 000 mls	**20 000 km** 12 000 mls	**30 000 km** 18 000 mls	**40 000 km** 24 000 mls	**50 000 km** 30 000 mls	**60 000 km** 36 000 mls	**70 000 km** 42 000 mls	**80 000 km** 48 000 mls	**90 000 km** 54 000 mls	**100 000 km** 60 000 mls	**12 months**	**24 months**
①	X												
②												X	
③	X	X	X	X	X	X	X	X	X	X	X	X[a]	
④				X			X			X			
⑤				X			X			X			
⑥				X			X			X			
⑦		X	X	X	X	X	X	X	X	X	X		
⑧				X			X			X			
⑨												X[b]	X[b]

Maintenance schedule

1 BMW Running-in check
2 Standard BMW service (➠ 220)
3 Engine-oil change, with filter
4 Check valve clearance
5 Checking timing
6 Replace all spark plugs
7 Replacing air filter
8 Oil change in the telescopic forks
9 Change brake fluid, entire system
annually or every 10,000 km (whichever comes first)
for the first time after one year, then every two years

Standard BMW service

A standard BMW service consists of the following maintenance work:

- Perform vehicle test with the BMW Motorrad diagnosis system.
- Visually inspect the brake pipes, brake hoses and connections.
- Check the front and rear brake-fluid levels.
- Check the front and rear brake pads and brake discs for wear.
- Check the steering-head bearing.
- Check the coolant level.
- Check the fastener of the clutch lever fitting.
- Check the clutch cable and clutch-lever play.
- Lubricate the clutch mechanism.
- Check the drive chain, sprocket and pinion.
- Check the tyre pressures and tread depth.
- Check the ease of movement of the side stand.
- Lubricate the side stand.
- Check the lights and signalling equipment.
- Check that the engine start suppression system is in working order.
- Perform final inspection and check of roadworthiness.
- Set the service-due date and service countdown distance.
- Check the battery charge state.
- Confirm BMW service in the on-board documentation.

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

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or, if logged beforehand,

Odometer reading

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

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or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
at the latest

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or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

on_____

Odometer reading_____

Next service
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or, if logged beforehand,

Odometer reading_____

Stamp, signature

BMW Service
Completed

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Odometer reading

Next service
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or, if logged beforehand,

Odometer reading

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or, if logged beforehand,

Odometer reading

Stamp, signature

BMW Service
Completed

on

Odometer reading

Next service
at the latest

on

or, if logged beforehand,

Odometer reading

Stamp, signature

Confirmation of service

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

Item	Odometer reading	Date

Item	Odometer reading	Date

Appendix

FCC Approval

Ring aerial in the ignition switch

To verify the authorization of the ignition key, the electronic immobilizer exchanges information with the ignition key via the ring aerial.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

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

Approbation de la FCC

Antenne annulaire présente dans le commutateur d'allumage

Pour vérifier l'autorisation de la clé de contact, le système d'immobilisation électronique échange des informations avec la clé de contact via l'antenne annulaire.

Le présent dispositif est conforme à la partie 15 des règles de la FCC. Son utilisation est soumise aux deux conditions suivantes :

(1) Le dispositif ne doit pas produire d'interférences nuisibles, et

(2) le dispositif doit pouvoir accepter toutes les interférences extérieures, y compris celles qui pourraient provoquer une activation inopportune.

Toute modification qui n'aurait pas été approuvée expressément par l'organisme responsable de l'homologation peut annuler l'autorisation accordée à l'utilisateur pour utiliser le dispositif. ◀

Details described or illustrated in this booklet may differ from the vehicle's actual specification as purchased, the accessories fitted or the national-market specification. No claims will be entertained as a result of such discrepancies.

Dimensions, weights, fuel consumption and performance data are quoted to the customary tolerances.

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

Errors and omissions excepted.

Original rider's manual, printed in Germany.

Important data for refuelling:

Fuel	
Recommended fuel grade	Super Plus, unleaded (max. 10 % ethanol, E10) 98 ROZ/RON 91 AKI
Alternative fuel grade	Premium unleaded (slight power- and consumption-related restrictions) (max. 10 % ethanol, E10) 95 ROZ/RON 89 AKI
Usable fuel capacity	approx. 17.5 l
Fuel reserve	approx. 4 l
Tyre pressure	
Tyre pressure, front	2.5 bar, tyre cold
Tyre pressure, rear	2.9 bar, tyre cold

For further information on all aspects of your motorcycle, visit bmw-motorrad.com

BMW recommends ADVANTEC ORIGINAL BMW ENGINE OIL

Order No.: 01 41 8 565 381
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