Rider's Manual

HP4 RACE

Vehicle data/dealership details

Vehicle data

Model

Vehicle Identification Number

Colour code

Initial operation

Number on fork bridge

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 vehicle from BMW Motorrad and welcome you to the community of BMW riders. Familiarise yourself with your new vehicle so that you can use it safely and confidently on the race track.

About this Rider's Manual

Read this rider's manual before you start your new BMW. Here you will find important information concerning operation of the vehicle which will allow you to get the best out of the advanced engineering of your BMW.
In addition, you will find information on servicing and care that will help with operating safety and will ensure that your vehicle keeps its value.

Proof of maintenance work completed is a prerequisite for treating claims as goodwill.
Make sure you also pass on the rider's manual of your BMW should you decide to sell it one day. It represents a vital element of your vehicle.

Suggestions and criticism

If you have any questions surrounding your vehicle, do not hesitate to contact your authorised BMW Motorrad Retailer at any time.

We hope you enjoy your BMW and wish you a safe and pleasant journey

BMW Motorrad.

01 40 8 406 641

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.

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.

NV National-market version.

DTC Dynamic Traction Control.

EBR Engine Brake
Engine brake

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 for 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.

Welcome to BMW Motorrad M Sport

The world of racing is fascinating. But it also entails certain risks. So that you always have fun racing and lasting enjoyment with your HP4 Race, several things must be kept in mind.

The HP4 Race is a pure racing vehicle. This means that technical equipment which provides comfort or safety on a street-legal motorcycle is missing or is designed differently. These considerations include:

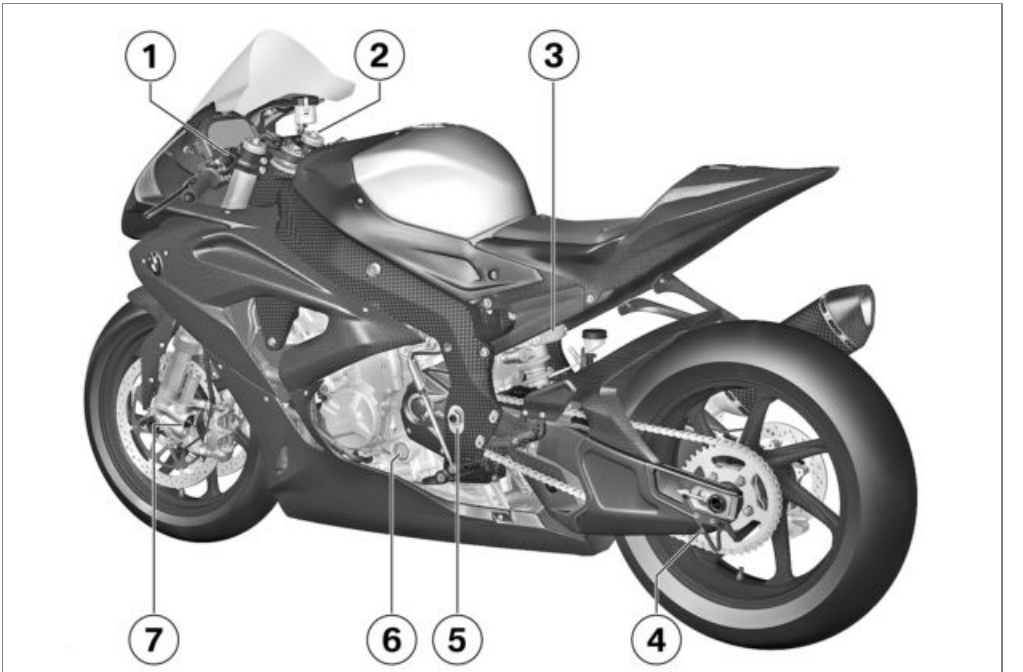
- As is typical in racing, the motorcycle does not have ABS.
- The cooling system does not have an electric fan. If the coolant temperature is too high, the engine must be switched off and external cooling may be required.
- The engine has thermal upper and lower limits. Exceeding and undershooting these limits are indicated by warning lights and displays in the instrument cluster. Only ride the motorcycle when the coolant temperature is in the "green" range.
- The motorcycle can only be operated in a limited temperature range. The safety information must be observed. (➠ 77)
- The engine does not have knock control. Always use the specified fuel grade and octane number.
- The DTC intervenes considerably later than that of the famil-

iar S 1000 RR. This provides maximum performance with slicks. Become familiar with this feature slowly.
– The starter motor does not have engine start suppression. With a gear engaged, the motorcycle may start to roll if the starter button is pressed. Furthermore, a mounted tyre heater may be damaged. Pull the clutch to start it or better yet put it into idle.
– The gearshift is set at the factory to inverse gear shift. This means 1st gear is engaged upwards, while the gears 2 to 6 engage downwards.
– The HP Pro shift assistant enables upshifting and downshifting without the clutch.
– The brakes must be cleaned regularly. Note the information on this in the section Maintenance. (➠ 117)
– The motorcycle does not have a side stand. To stop, the provided rear-wheel stand must be used

The HP4 Race has a variety of ranges of adjustment to the geometry, chassis and suspension and engine control. Each change to the settings can diminish the drivability and result in cambering. Only make adjustments in small increments and only to one component at a time.

You must also heed the safety information for this motorcycle.

General views


1
2
3
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6
5
4

General view, left side

1 Adjuster, handelbar sweep (➠ 41)

2 Adjuster, spring preload, front (➠ 56)

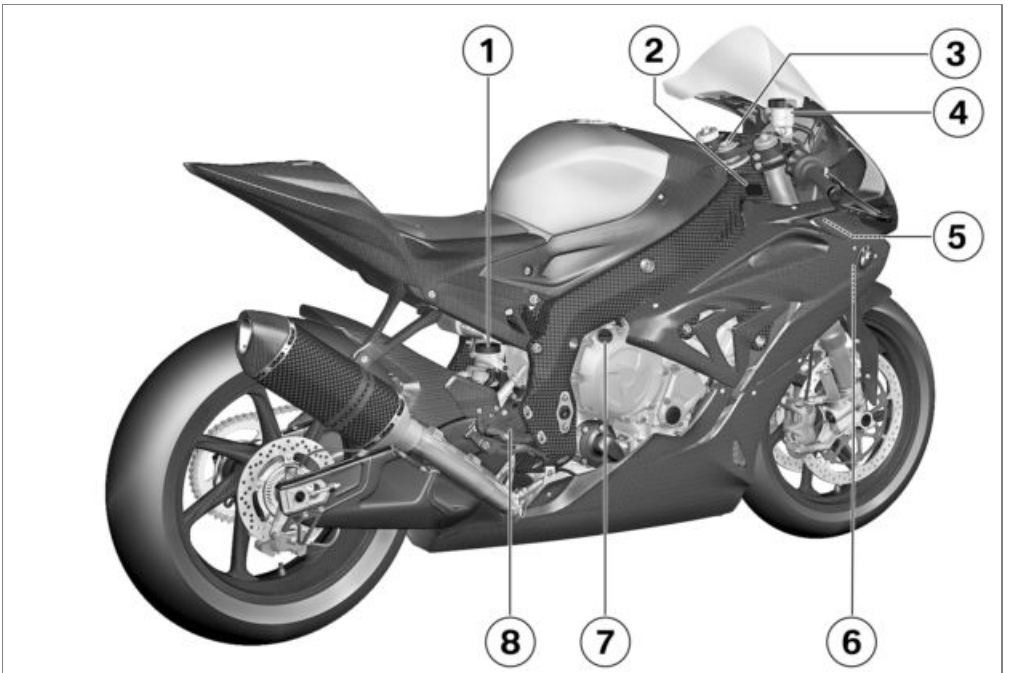
3 Adjuster, rebound-stage damping, rear (➠ 59)
Adjuster, compression-stage damping, rear (➠ 60)
Adjuster for spring preload, rear (➠ 57)

4 Mounting for auxiliary stand (➠ 106) (➠ 106)

5 Adjuster, swinging arm pivot (➠ 70)

6 Engine oil level indicator (➠ 107)

7 Adjuster, rebound-stage damping, front (➠ 58)
Adjuster, compression-stage damping, front (➠ 59)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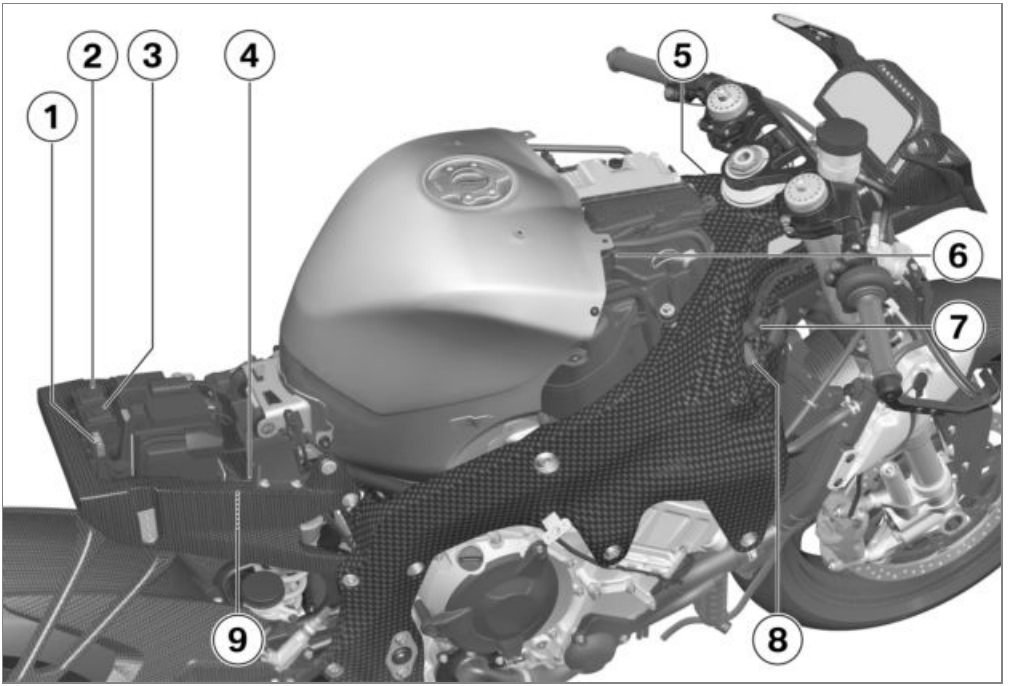
General view, right side

1 Brake-fluid reservoir, rear (➠ 111)
2 VIN and type plate (on steering-head, right)
3 Adjust the steering head angle. (➠ 42)
Adjust the fork bridge offset. (➠ 52)
4 Brake-fluid tank, front (➠ 110)
5 Adjust the steering damper. (➠ 40)
6 Check the coolant level. (➠ 122)
7 Oil filler neck (➠ 108)
8 Adjust the footrests. (➠ 65)


1
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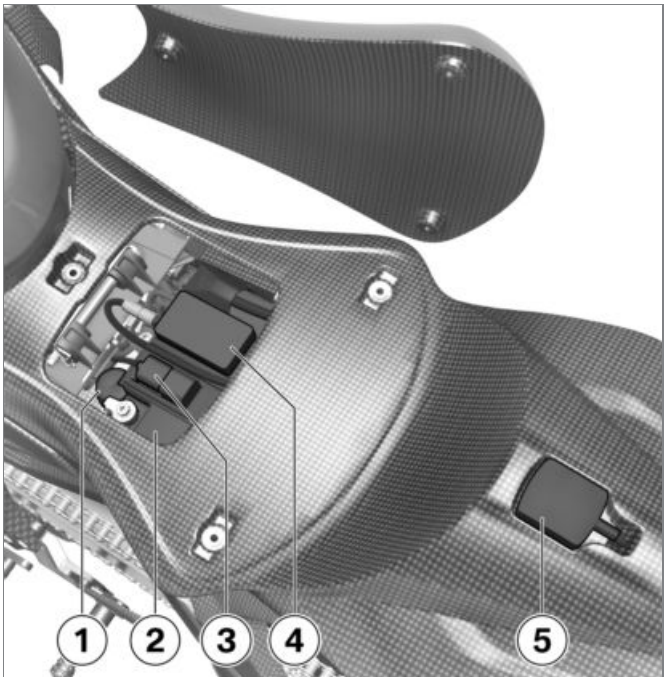
9

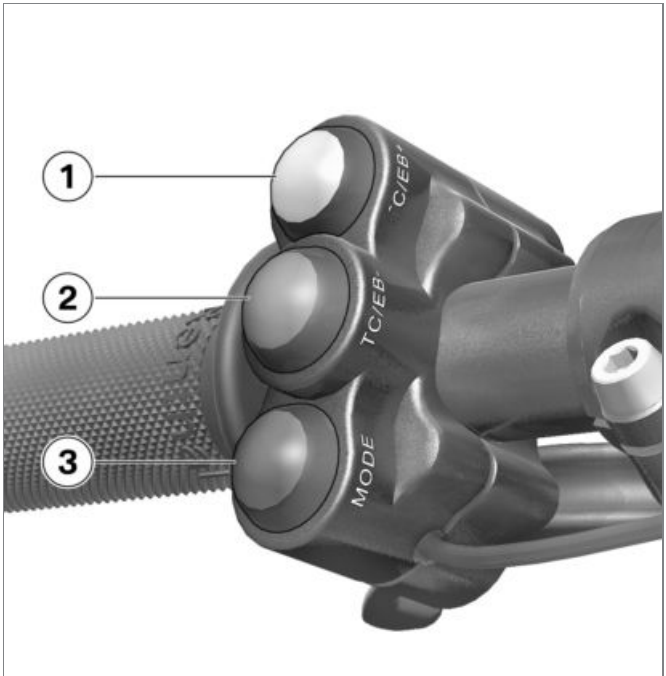
General view without trim panel

1 Fuse (➠ 138)
2 Starter motor relay
3 Main relay
4 Connector for brake pressure sensor, rear (➠ 144)
5 Connector for deflection sensor, front (➠ 144)
6 Connector for CAN bus signal and voltage supply (➠ 145)
7 Connector for brake pressure sensor, front (➠ 144)
8 Plug for infrared receiver (➠ 145)
9 Connector for deflection sensor, rear (➠ 144)

Underneath the seat

1 Diagnostic connector (➠ 139)
2 Battery (➠ 135)
3 USB connector (➠ 95)
4 Data logger (➠ 95)
5 GPS receiver (➠ 95)





Multifunction switch, left - front

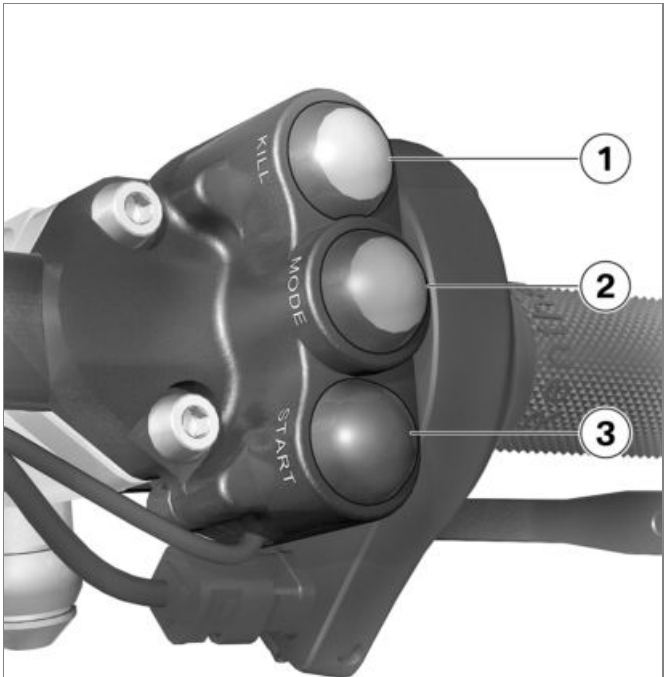
1 TC/EB- button
DTC Adapting (➠ 93).
Adapting EBR (➠ 94).

2 TC/EB+ button
DTC Adapting (➠ 93).
Adapting EBR (➠ 94).

3 MODE button
DTC Adapting (➠ 93).
Adapting EBR (➠ 94).

Multifunction switch, left - rear side

4 OFF/PAGE button
Selecting readings in multi-function display (➠ 35).
DTC Switching off (➠ 36).
DTC Switching on (➠ 36).



Multifunction switch, right

1 KILL button
Emergency off switch (kill switch) (➠ 32)

2 MODE button
Control for selecting the ride mode (➠ 37)

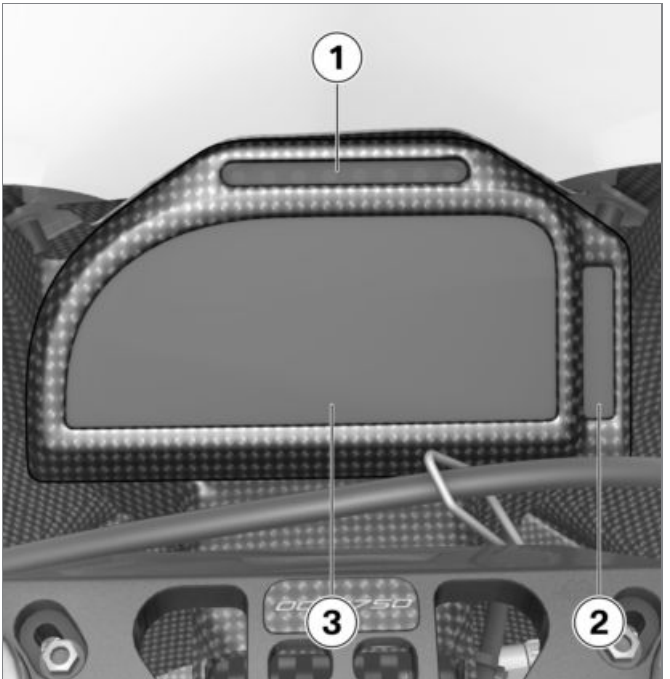
3 START button
Start the engine. (➠ 78)
Launch control (➠ 83)
Speed limiter for pit lane (➠ 84)

Instrument panel

1 LED display: for visualising the speed limit (➠ 80)
Gearshift light (➠ 80)

2 Indicator and warning lights (➠ 22)

3 Multifunction display for rider's view (➠ 23)



Status indicators

Indicator and warning lights

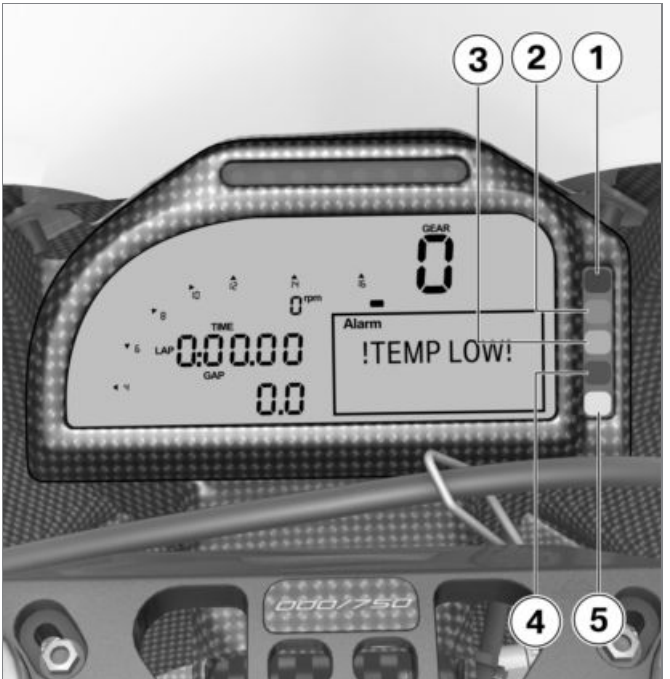
1 Coolant temperature, cold (blue) (➠ 24)

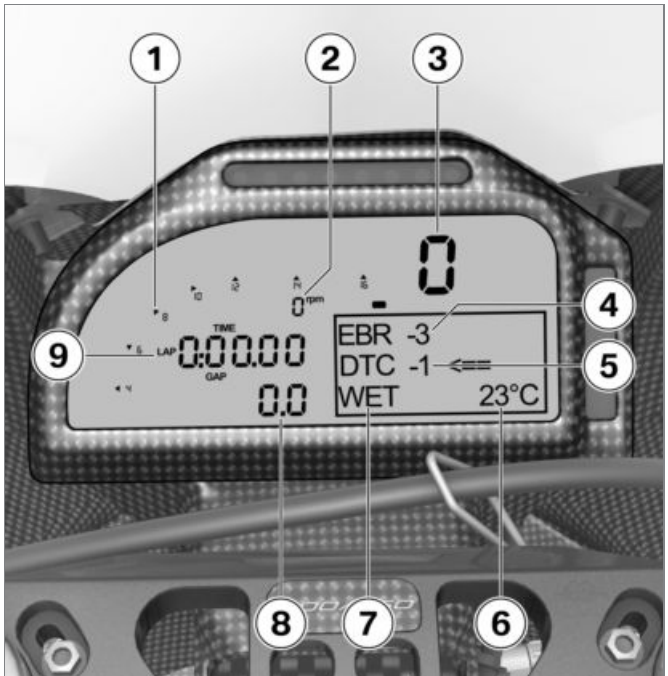
2 Fuel reserve or battery voltage too low (orange) (➠ 27)

3 Light for the quickest lap (green) (➠ 27)

4 Coolant or oil temperature too high (red) (➠ 24)

5 DTC (orange) (➠ 29)





Multifunction display for rider's view

1 Engine speed display bar chart
2 Engine speed display, digital
3 Gear indicator
4 Status display of engine brake EBR (➠ 94)
5 Status display for traction control DTC (➠ 36)
6 Coolant temperature
7 Riding mode
Set riding mode. (➠ 37)
8 Difference between last lap time and best lap time
9 Current lap time

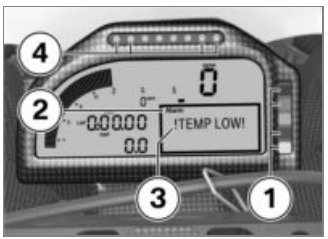
NOTICE

Information on the display mode for the mechatronics technician can be found in chapter 7.◀

Warnings

Mode of presentation

Warnings are indicated by the corresponding warning lights.



In addition to the warning light **1**, an alarm 2 with the relevant warning **3** is displayed in the multifunction display. Moreover, two external LEDs **4** on the LED display flash depending on the alarm.

If two or more warnings occur at the same time, all the appropriate warning lights appear, warning words are rotated as applicable.

The possible warnings are listed on the next pages.

The warning and the LEDs can be suppressed by pressing the OFF/PAGE **1** button. The warning light remains ON. Pressing on the OFF/PAGE **1** button again displays the warning again.

Warnings, overview

Indicator and warning lights	Display text	Meaning
 Blue warning light flashes.	!TEMP LOW! is displayed.	Coolant temperature too cold (➠ 27)
 Orange warning light (top) lights up.	!FUEL! is displayed.	Fuel down to reserve (➠ 27)
 Orange warning light (top) lights up.	!UB LOW! is displayed.	Battery voltage low (➠ 27)
 Green indicator light lights up.		Fastest lap (➠ 27)
 Red warning light flashes.	!TWAT HIGH! is displayed.	Coolant temperature above 104 °C (➠ 27)
 Red warning light flashes.	!ENGINE! is displayed. LED flashes.	Coolant temperature above 115 °C (➠ 28)
 Red warning light flashes.	!TOIL HIGH! is displayed. LED flashes.	Engine oil temperature too high (➠ 28)

Indicator and warning lights	Display text	Meaning
 Red warning light flashes.	!POIL! is displayed. LED flashes.	Oil pressure too low (with mounted sensor) (➠ 28)
 Orange warning light (bottom) lights up.	!DTC OFF! is displayed.	DTC switched off (➠ 29)
 Orange warning light (bottom) lights up.	!DTC ERROR! is displayed. LED flashes.	DTC fault (➠ 29)
	!LAUNCH! is displayed. LED flashes.	Launch Control activated (➠ 29)

Coolant temperature too cold


Blue warning light for coolant temperature too low lights up.

!TEMP LOW! is displayed.
Possible cause:

- The engine must only be moved within the optimum temperature window. The coolant and engine oil must be heated up by letting it idle. (➠ 79)

Fuel down to reserve


Orange warning light (top) lights up.

!FUEL! is displayed.

WARNING

Irregular engine running or engine shutdown due to lack of fuel
Risk of accident

- 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 (➠ 88).

Battery voltage low


Orange warning light (top) lights up.

!UB LOW! is displayed.
Possible cause:

WARNING

Irregular engine operation or engine shutdown due to low battery voltage
Risk of accident

- If the warning lights up, drive the motorcycle to the pit at the next opportunity.◀
- If the vehicle voltage drops below 12.2 V, the orange warning light lights up. Check the voltage regulator and alternator.

Fastest lap


Green indicator light for fastest lap lights up.
After starting a new lap, the sector time is stopped at regular intervals and compared with the corresponding sector time from the saved best lap. If the current sector time is better than the one from the best lap, a new best time can be expected. The green indicator light lights up.

Coolant temperature above 104 °C


Red warning light for coolant temperature too high lights up (temperature higher than 104 °C).

!TWAT HIGH! is displayed.

Coolant temperature above 115 °C

 Red warning light for coolant temperature too high lights up (temperature higher than 115 °C).

!ENGINE! is displayed.
LED flashes.

ATTENTION

Riding with overheated engine

Irreparable engine damage

- Continue your journey only in the partial load range.◀

Possible cause:

The coolant temperature is too high.

- If possible, ride back to the pit in the part load range to cool down the engine, but not too slowly.
- Since the motorcycle does **not** have an electric fan due to making weight savings, the engine must not run for too long when not moving. If the coolant temperature is too high, cool the radiator with a fan or blower if necessary.
- If the coolant temperature is frequently too high, have the fault rectified as soon as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Engine oil temperature too high

 Red warning light flashes.

!TOIL HIGH! is displayed.
LED flashes.

ATTENTION

Riding with overheated engine

Irreparable engine damage

- Continue your journey only in the partial load range.◀

Possible cause:

- If possible, ride back to the pit in the part load range to cool down the engine.
- Check cooling system, particularly engine oil cooler.

Oil pressure too low (with mounted sensor)

 Red warning light flashes.

Possible cause:

ATTENTION

Driving with insufficient oil pressure

Engine damage

- Do not continue your journey.◀
- Stop the motorcycle **immediately** and switch off the engine.

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

DTC switched off


Orange warning light for DTC lights up.

!DTC OFF! is displayed.
Possible cause:

The rider has switched off the DTC system.

- DTC Switching on (➠ 36).

DTC fault


Orange warning light for DTC lights up.

!DTC ERROR! is displayed.
LED flashes.
Possible cause:

The control unit has detected a fault with the DTC. 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 (➠ 100).
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

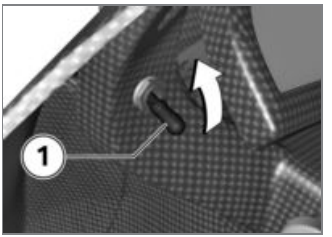
Launch Control activated

!LAUNCH! is displayed.
LED flashes.

Operation

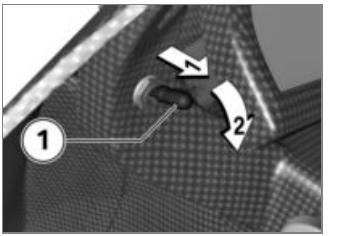
Ignition switch

Switching on ignition



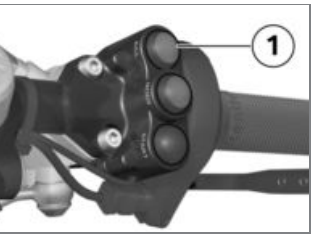
- Position ignition switch **1** in its up position.
» Resettable fuse engages.
» All function circuits switched on.
» Engine can be started when emergency-off switch is in operating position.
» Pre-Ride-Check is performed. (➠ 78)

Switching off ignition



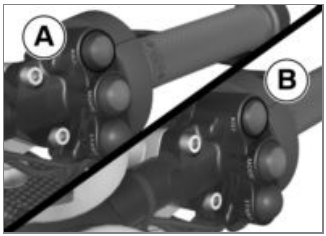
- Pull on the ignition switch **1**.
» Resettable fuse is released.
- Position ignition switch **1** in its down position.
» All function circuits switched off.

Emergency off switch (kill switch)



1 Emergency off switch (kill switch)

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)

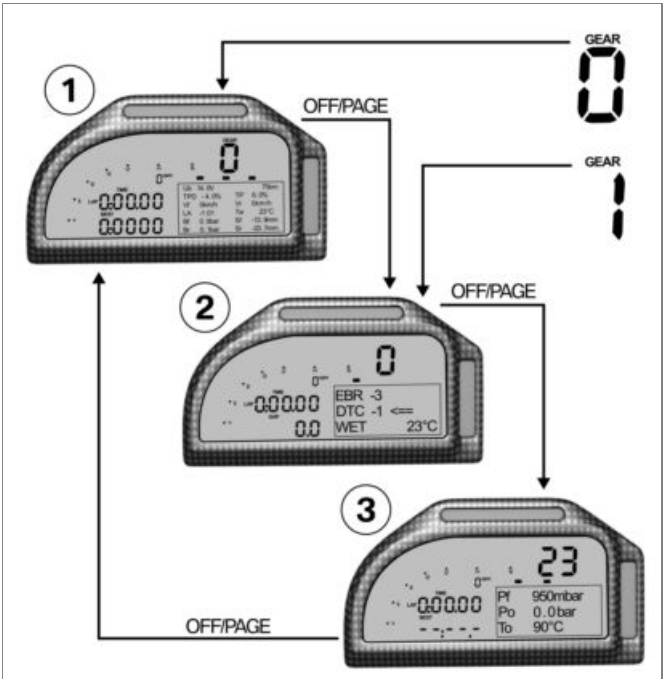
Multifunction display

Overview

1 Mechatronics technician's view 1
Default display
Selecting readings in multi-function display (➠ 35).

2 Rider's view
Selecting readings in multi-function display (➠ 35).

3 Mechatronics technician's view 2
Selecting readings in multi-function display (➠ 35).



Selecting readings in multifunction display

- Switch on the ignition.

» When the motorcycle is stationary and in idle position, the mechatronics technician's view 1 is shown automatically in the multifunction display.

- Press OFF/PAGE **1** once.

» Rider's view **2** is displayed.

- Press OFF/PAGE **1** once.

» Mechatronics technician's view 2 **3** is displayed.

- Press OFF/PAGE **1** once.

» Mechatronics technician's view 1 **4** is displayed.

- If the gear is engaged or the motorcycle begins to move, the multifunction display switches to the rider's view. Only this view is displayed while riding.

Dynamic Traction Control (DTC)

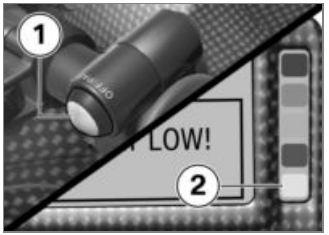
DTC Switching off

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

NOTICE

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

- Change the display on the multifunction display to the driver view.



- Press and hold OFF/PAGE **1** until the DTC indicator and warning light **2** illuminates and the warning `!DTC OFF!` is displayed.

Orange warning light for DTC lights up.

- Release OFF/PAGE **1** within two seconds.

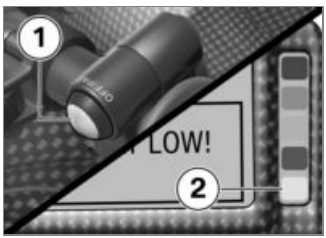
- The warning can be suppressed by pressing the OFF/PAGE **1** button. The warning light remains ON. Pressing on the OFF/PAGE **1** button again displays the warning again.

DTC Switching on

- Change the display on the multifunction display to the driver view.

NOTICE

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



- Press and hold OFF/PAGE **1** until the DTC indicator and warning light **2** goes out and the warning disappears.
- Release OFF/PAGE **1** within two seconds.

» DTC is switched on.

- The status of the DTC is stored by the control unit and is established again after switching the ignition off and on. This means that a switched-off DTC must be switched on again manually.

Riding mode

Using the riding modes

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

– Riding on a rain-wet roadway.
– Journeys on slightly wet or dry roadway.
– Riding on a dry roadway.

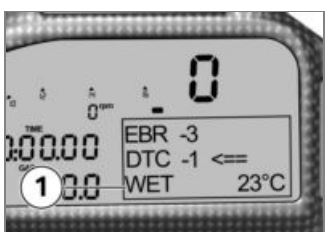
The interplay of engine torque, throttle response, gas control, DTC and EBR control is optimised for each of these scenarios.

Setting riding mode

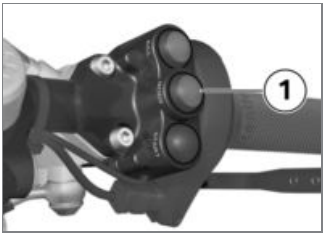
NOTICE

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

- Switching on ignition (➠ 32).
- Change the display on the multifunction display to the driver view.



The currently selected riding mode **1** is shown in the multifunction display.



- Briefly press **MODE 1 twice** consecutively.

» Riding mode is changed.

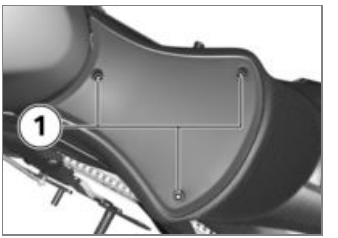
The following ride modes can be selected:

– WET: For riding on a rain-wet roadway with rain tyres.
– INT: For journeys on slightly wet or dry roadway.
– DRY1: For riding on a dry roadway with softer response characteristics.
– DRY2: For riding on a dry roadway with full power.

- Repeat the process until the desired riding mode is displayed in the multifunction display.

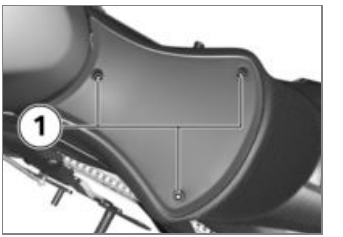
Front seat

Removing front seat



- Remove bolts **1** and take off the centre rider's seat.
- Place the seat, upholstered side down, on a clean surface.

Installing front seat



- Position the rider's seat and install bolts **1**.

NOTICE

Maintain torque, otherwise there is a risk of damage to the carbon component.◀

Rider's seat on tail section
Joining compound: Lubricating the bolt, Optimoly TA
3 Nm

Adjustment

Brakes

Adjusting brake lever

WARNING

Relocated brake fluid tank

Air in the brake system

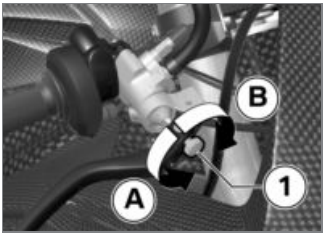
- Do not turn the handlebars or the handlebar fitting on the handlebar.◀

WARNING

Adjusting the brake lever while riding

Risk of accident

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



- Turn the adjusting screw **1** in the desired position.

Brake lever adjustment range
20 stages

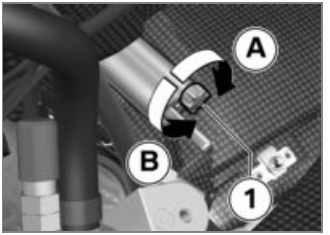
» Adjustment options:

– In direction **A**: distance between handlebar grip and brake lever has been shortened.

– In direction **B**: distance between handlebar grip and brake lever has been lengthened.

Steering damper

Adjusting steering damper



WARNING

Adjusting the steering damper while riding.

Risk of accident

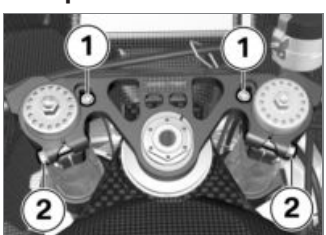
- Do not attempt to adjust the steering damper unless the motorcycle is at a standstill.◀
- Turn adjusting screw **1** in direction **A** to increase damping.
- Turn adjusting screw **1** in direction **B** to reduce damping.

Steering damper basic setting
10 clicks opened (from completely closed)

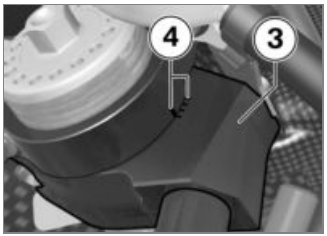
Steering damper adjustment range
18 clicks

Stub handlebars

Adjuster, handelbar sweep



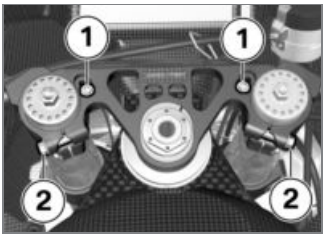
- Remove bolts **1** and bolts **2**.



- Adjust right handlebar clamp **3** to the desired position in the area of the marks **4**. Adjust the left handlebar clamp in the same way and ensure that both handlebars are adjusted in the **same position**.

Handelbar sweep basic setting
2nd position of handlebar fully to the rear

Handelbar sweep adjustment range
4 positions



- First tighten bolts **1** and then bolts **2** to the specified tightening torque.

Retaining screw on fork bridge, top
Joining compound: Lubricate thread, Optimoly TA
8 Nm

Handlebar clamp on fork leg
Joining compound: Lubricate thread, Optimoly TA
19 Nm

Comply with the adjustment range on the telescopic forks

ATTENTION

Freedom of movement of components in steering gear field not guaranteed

Certain setting combinations can lead to component collisions

- Do not install the setting combinations found in the technical data.
- The freedom of movement of the front suspension, steering damper, trim panel components, radiator and brake line must be checked after each change to the riding position.◀

The HP4 Race has a variety of ranges of adjustment on the chassis and suspension. However, not every possible combination makes sense and for safety reasons, not all combinations may be used.

This combination must not be installed

– Fork bridge offset 32 mm and steering head angle +1°

Bear in mind the reduced ground clearance when the front is lowered due to the increased fork-tube projection. The maximum permitted fork-tube projection of 25 mm cannot be used with some settings for the fork bridge offset and steering head angle. Comply with the **data for the maximum fork-tube projections** in the section **technical data**.

The clearances in all suspension and cornering conditions must always be checked after each change in the chassis and suspension settings.

Steering head angle

Adjustment

The concept of the HP4 Race offers the option to adjust the steering head angle using different inserts in five different angles. Special tools and additional tools such as engine lifter or axle stands are required on the frame and footrests, however their usage will not be dealt with in detail here. If you are in doubt as to whether you would be able to complete this work, contact a specialist workshop, a BMW Motorrad partner would be best.

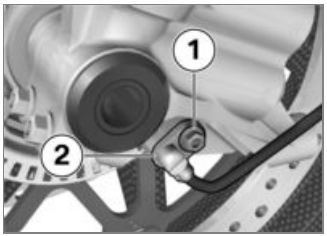
Adjusting the steering head angle

NOTICE

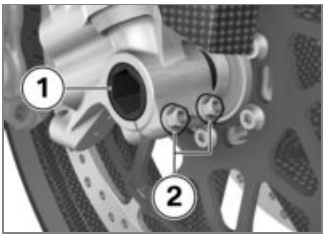
The additional steering head angle inserts are delivered without bearing shell.

If the steering head angle inserts are to be replaced, either the existing bearing shell must be modified or an additional steering-head bearing set is required. The latter can permanently install the bearing shells in the steering head angle inserts, which enables the steering head angle to be changed quickly.◀

- Removing engine spoiler (➠ 128).
- Removing the right fairing side panel (➠ 129).
- Remove the left fairing side panel in the same way.
- Removing fairing top section (➠ 129).
- Raise the motorcycle with engine lifter so that the front end is relieved. Secure the motorcycle against falling over.



- Remove the bolt **1** and loosen the wheel speed sensor **2**.
- Removing brake calipers (➠ 112).



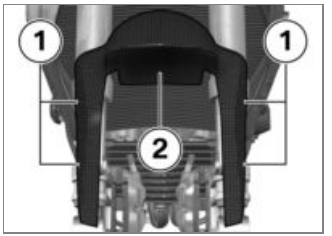
⚠ CAUTION

Component damage and malfunction of assistance systems

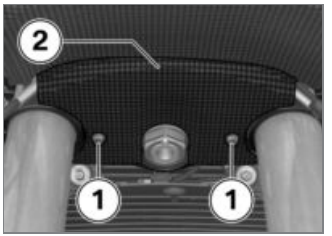
Incorrect distance between sensor ring and wheel speed sensor

- Left clamp fixes the threaded bush and must not be released or removed.◀
- Loosen clamping bolts **2**.
- Remove quick-release axle **1**, while supporting the wheel.

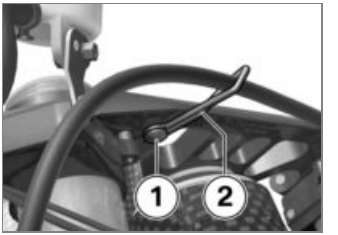
- Roll the front wheel forward to remove.



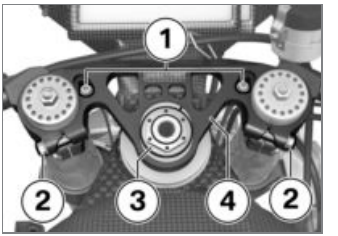
- Remove bolts **1** and remove front-wheel cover **2**.



- Remove bolts **1** and remove fork partition **2**.

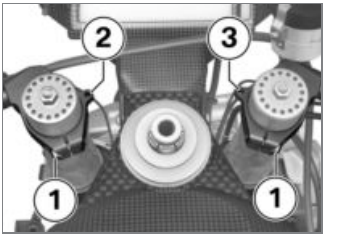


- Remove bolts **1** and remove bracket **2**.

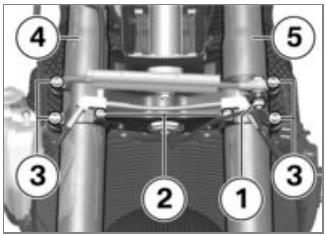


- Remove bolts **1**.
- Remove bolts **2**.
- Remove the steering head nut **3**.

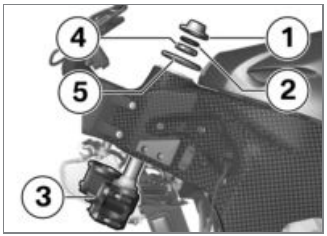
- Remove the top fork bridge **4**.



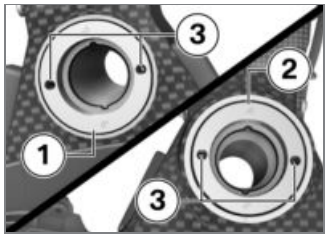
- Remove bolts **1**.
- Pull the left stub handlebar **2** and the right stub handlebar **3** off of fork legs and hang them on the motorcycle.



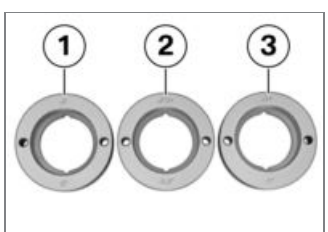
- Remove the bolt **1** with washer and nut for the steering damper.
- Remove the bolts **2** and place the brake lines to one side.
- Remove bolts **3** and remove fork legs **4** and **5** downwards.



- Remove the lock nut **1** and rubber washer **2**.
- Hold down the fork bridge **3** and remove the slotted nut **4** with cover disc **5**.
- Pull out fork bridge **3** downwards.



- Press out the bottom **1** and top **2** steering-head bearing inserts evenly using the removal thread **3**.



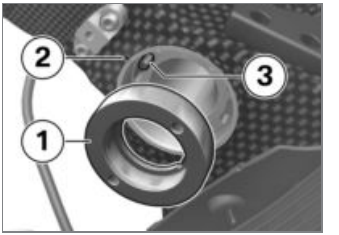
- In addition to the factory-installed steering-head bearing inserts with 0° **1**, steering-head

bearing inserts with +/- 0.5° **2** and steering-head bearing inserts with +/- 1° **3** are supplied.

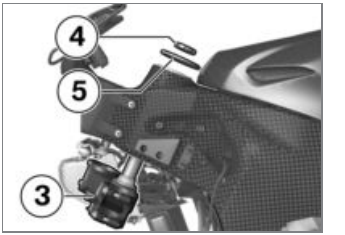
Steering head angle basic setting
Steering head angle insert 0°

Steering head angle adjustment range
Steering head angle inserts +/- 0.5°; 0.0° and +/- 1°

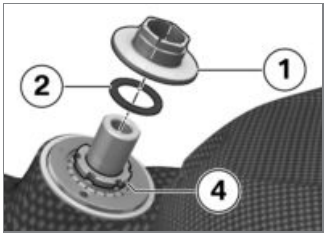
- When installing them, ensure that two of the same steering-head bearing inserts are installed at the top and bottom respectively and these are aligned to the marks on the frame with the same values.



- Align the steering-head bearing insert **1** with the desired angular offset to the mark **2** on the frame.
- Position the steering-head bearing insert **1** by hand, so that the centring pin **3** engages in the bore hole on the steering-head bearing insert **1**.
- Install the steering-head bearing insert **1** in frame with bearing puller set (83 30 0 444 323).



- Insert the fork bridge **3** from below.
- Install the slotted nut **4** with cover washer **5**.

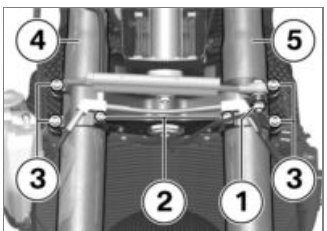


- Tighten the slotted nut **4** according to the adjusting instructions.

Adjusting instructions for steering-head bearing
25 Nm (Tightening torque)
Swivel fork 3-times left/right
80° (Loosen (fork on steering stop left))
5 Nm (Tightening torque (fork on steering stop right))

- Install rubber ring **2** and lock nut **1** and tighten to the specified tightening torque.

Lock nut for steering-head bearing adjusting nut
3 Nm (Tightening torque)



- Install the fork legs **4** and **5** and tighten bolts **3** provisionally. After installing the top fork bridge, the fork-tube projection must be adjusted.
- Position brake lines, install bolts **2** and tighten to the specified tightening torque.

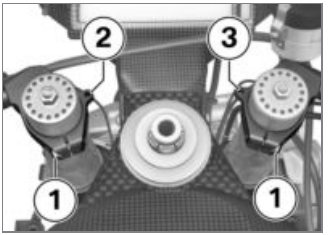
Brake line on fork bridge
Joining compound: Lubricate thread, Optimoly TA
8 Nm

- Install the bolt **1** with the washer and nut the for steering damper and tighten to the specified tightening torque.

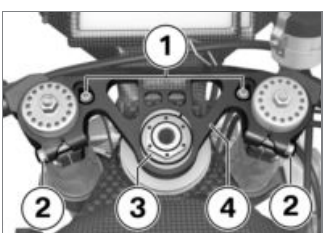
NOTICE

Washer must be installed between the **steering damper** and **fork bridge**.◀

Steering damper on fork bridge
Thread-locking compound: Loctite 243, Medium strength
19 Nm



- Install the left stub handlebar **2** and right stub handlebar **3** on the fork legs.
- Tighten bolts **1** provisionally.



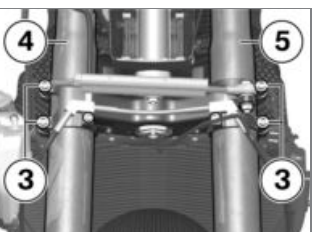
- Install the top fork bridge **4**.
- Install steering head nut **3** and tighten to the specified tightening torque.

Top fork bridge on steerer tube
80 Nm

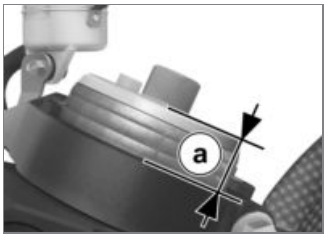
- Do not tighten bolts **2**.
- Install bolts **1**, do not tighten yet.

- Position bracket **2** and install bolt **1**.

Clutch cable bracket on top fork bridge
Joining compound: Lubricate thread, Optimoly TA
3 Nm

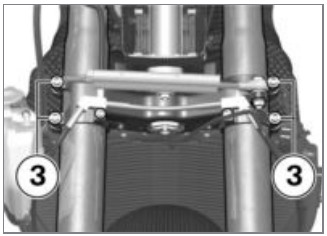


- Remove the bolts **3** on the bottom fork bridge and adjust the fork-tube projection on both fork legs **4** and **5**.

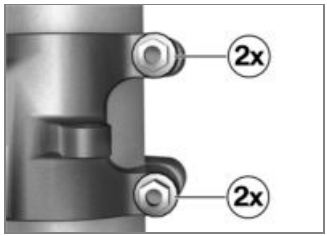


- Adjust the desired fork-tube projection dimension **a** on both fork legs to be the same.

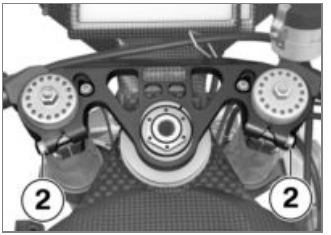
Projection of fork tube in fork bridge, top
with cap
15 mm (Basic setting)
5...25 mm (Adjustment range)



- Tighten bolts **3** to the specific tightening torque.

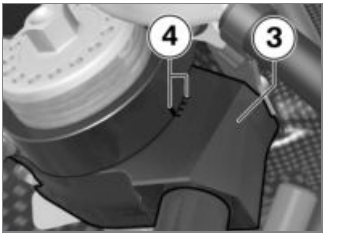


Bottom fork bridge on fixed fork tube
Tightening sequence: Tighten bolts 4 times in alternate sequence
Joining compound: Lubricate thread, Optimoly TA
14 Nm

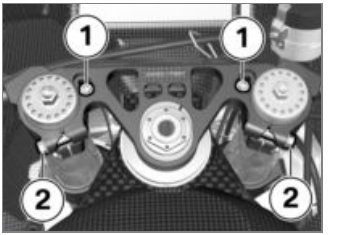


- Tighten bolts **2** to the specific tightening torque.

Top fork bridge on fixed fork tube
Joining compound: Lubricate thread, Optimoly TA
19 Nm



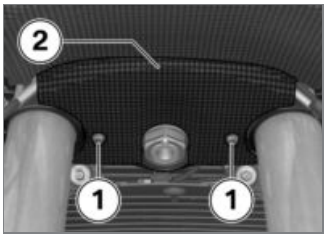
- Adjust the handlebar clamp **3** to the desired position in the area of the marks **4**. Adjust the left handlebar clamp to the same position.



- First tighten bolts **1** and then bolts **2** to the specified tightening torque.

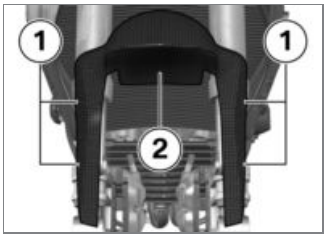
Retaining screw on fork bridge, top
Joining compound: Lubricate thread, Optimoly TA
8 Nm

Handlebar clamp on fork leg
Joining compound: Lubricate thread, Optimoly TA
19 Nm



- Position the fork partition **2** and install the bolts **1**.

Fork partition on fork bridge
Joining compound: Lubricate thread, Optimoly TA
5 Nm



- Position the front-wheel cover **2** and install the bolts **1**.

Front-wheel cover on bracket for front-wheel cover
Thread-locking compound: Loctite 243, Medium strength
5 Nm

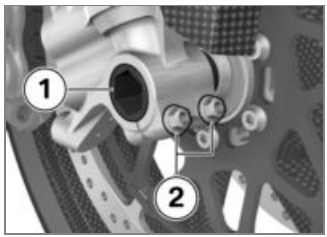
ATTENTION

Front wheel installed wrong way round

Risk of accident

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

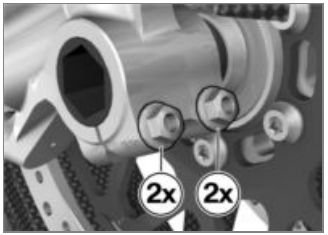
- Roll the front wheel into position between the front forks.



- Lift front wheel and fit quick-release axle **1** with torque.

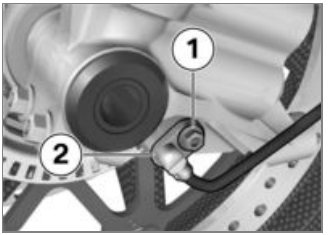
Quick-release axle in threaded bush
Joining compound: Lubricate the quick-release axle and thread, Optimoly TA
50 Nm

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



Clamping bolts in wheel axle clamp
Tightening sequence: Tighten bolts 4 times in alternate sequence
Joining compound: Lubricate thread, Optimoly TA
19 Nm

- Securing brake calliper (➠ 113).



- Secure wheel speed sensor **2** and install bolt **1**.

Front wheel speed sensor on bracket
Joining compound: Lubricate thread, Optimoly TA
5 Nm

- Remove the engine lifter.
- Installing the fairing top section (➠ 130).
- Installing the right fairing side panel (➠ 130).
- Install the left fairing side panel in the same way.
- Installing the engine spoiler (➠ 131).

Fork bridge offset

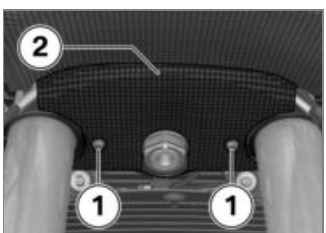
Adjustment

The concept of the HP4 Race offers the option to adjust the fork bridge offset using different inserts in four offsets. Special tools and additional tools such as engine lifter or axle stands are required on the frame and footrests, however their usage will not be dealt with in detail here. If you are in doubt as to whether you would be able to complete this work, contact a specialist workshop, a BMW Motorrad partner would be best.

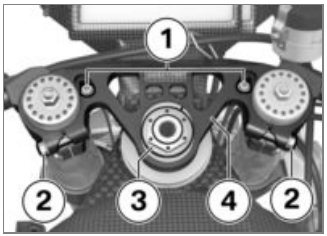
Adjusting the fork bridge offset

- Removing engine spoiler (➠ 128).

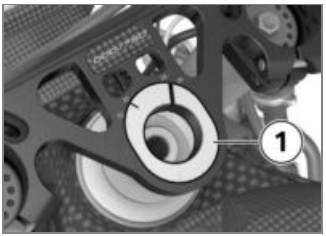
- Removing the right fairing side panel (➠ 129).
- Remove the left fairing side panel in the same way.
- Raise the motorcycle with engine lifter so that the front end is relieved. Secure the motorcycle against falling over.
- Removing front wheel (➠ 123).



- Remove bolts **1** and remove fork partition **2**.

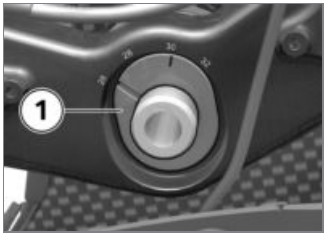


- Remove bolts **1**.
- Remove bolts **2**.
- Remove the steering head nut **3**.
- Raise the top fork bridge **4**.

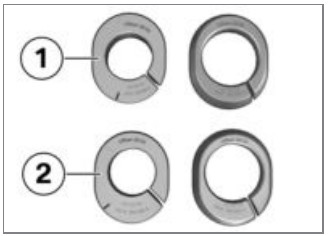


- Remove the fork bridge insert **1**.
- Support the front forks with suitable auxiliary materials.

- Remove the retaining screw **1**.
- Remove nut **2**.



- Remove the fork bridge insert **1**.

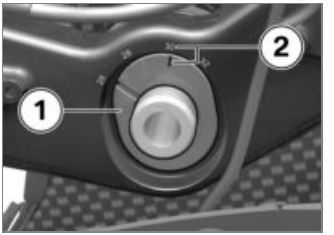


- In addition to the factory-installed fork bridge inserts with 28/30 mm **1**, fork bridge inserts with 26/32 mm **2** are supplied.

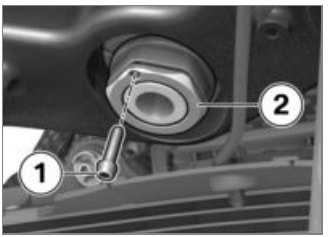
Fork bridge offset basic setting
Fork bridge insert 30 mm

Fork bridge offset adjustment range
Fork bridge inserts 26/32 mm and 28/30 mm

- The fork bridge inserts can be installed in two positions, resulting in four different fork bridge offsets.
- When installing them, ensure that the fork bridge inserts are installed with the same offset at both the top and bottom and these are aligned to the marks on the fork bridge with the same values.



- Install the fork bridge insert **1**, while aligning it to the mark **2** for the desired offset on the fork bridge.

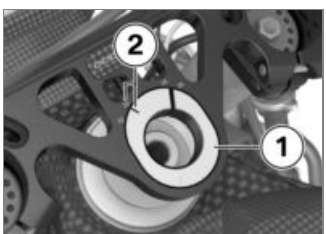


- Install the nut **2** and tighten to the specified tightening torque.

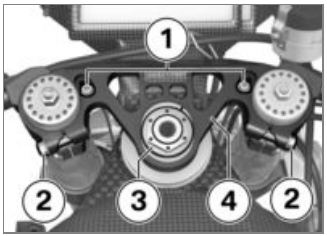
Lock nut on bottom steerer tube
60 Nm

- Install locking screw **1**.

Retaining screw on lock nut for bottom steerer tube
3 Nm



- Install the fork bridge insert **1**, while aligning it to the mark **2** for the desired offset on the fork bridge.



- Install top fork bridge **4**.
- Install steering head nut **3** and tighten to the specified tightening torque.

Top fork bridge on steerer tube
80 Nm

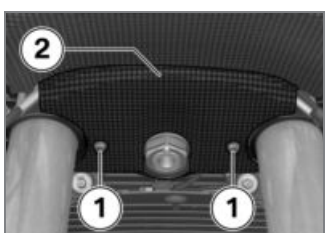
- Tighten bolts **2** to the specified tightening torque.

Top fork bridge on fixed fork tube
Joining compound: Lubricate thread, Optimoly TA

Top fork bridge on fixed fork tube
19 Nm

- Install the bolts **1** and tighten to the specified tightening torque.

Retaining screw on fork bridge, top
Joining compound: Lubricate thread, Optimoly TA
8 Nm



- Position the fork partition **2** and install the bolts **1**.

- Installing front wheel (➠ 124).
- Remove the engine lifter.
- Installing the right fairing side panel (➠ 130).
- Install the left fairing side panel in the same way.
- Installing the engine spoiler (➠ 131).

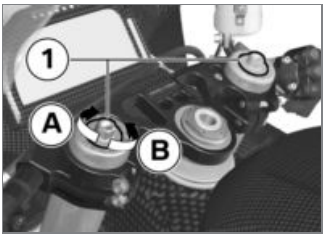
Spring preload

Adjusting spring preload for front wheel

- Place the motorcycle on its stand on firm, even ground.
- Set the spring preload to the rider's weight as the basic setting. The data of the spring travel indicator or the data recording must be used for fine tuning.

Front forks spring preload basic setting
Turn adjuster counter-clockwise to the limit position, then turn 5 mm (5 turns) clockwise

Front forks spring preload adjustment range
0...18 mm corresponds to 18 turns



⚠ WARNING

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

Impaired handling.

- Adjust spring-strut damping to suit spring preload.◀
- To reduce the compression (to increase spring preload), rotate the adjusting screws **1** in direction **A**.
- To increase the compression (to reduce spring preload), rotate the adjusting screws **1** in direction **B**.

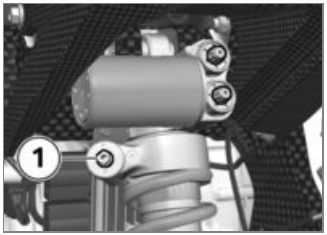
- Make sure that the same values are set on the left and on the right.

Adjusting spring preload for rear wheel

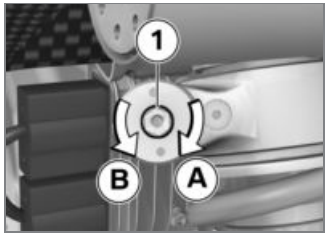
- Place the motorcycle on its stand on firm, even ground.
- Set the spring preload to the rider's weight as the basic setting. The data of the data recording must be used for fine tuning.

Spring strut spring preload basic setting
Turn adjuster counter-clockwise to the limit position, then turn 1 mm (2 turns) clockwise

Spring strut spring preload adjustment range
0...8.5 mm corresponds to 17 turns



- Adjust the rebound-stage damping using the adjusting screw **1**.



⚠ WARNING

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

Impaired handling.

- Adjust spring-strut damping to suit spring preload.◀
- To reduce the compression (to increase spring preload), rotate the adjusting screw **1** in direction **A**.
- To increase the compression (to increase spring preload), rotate the adjusting screw **1** in direction **B**.

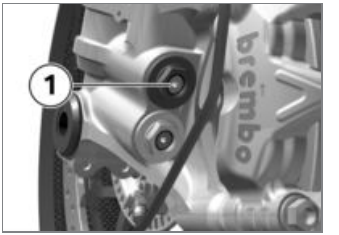
Damping

Adjustment

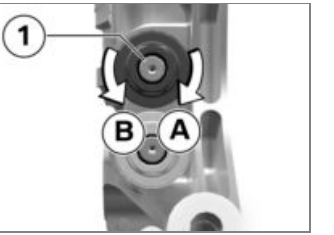
Damping must be adapted to suit the condition of the surface on which the motorcycle is ridden and to suit spring preload.

– 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.
– Adjustment of the damping action is counted from a completely closed position (turn the adjusting screw clockwise to the limit position).

Adjust the rebound-stage damping for front wheel



- Adjust the rebound-stage damping on the forkleg of both fork legs using the top adjusting screw **1**.



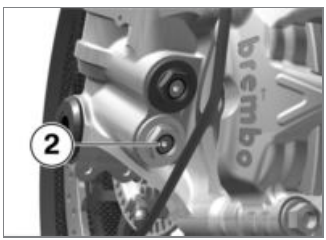
- To increase the damping action: turn adjusting screw **1** in direction **A**.
- To reduce the damping action: turn adjusting screw **1** in direction **B**.

Front forks rebound basic setting
Turn adjuster (R) to the limit position clockwise, then turn 20 clicks counter-clockwise

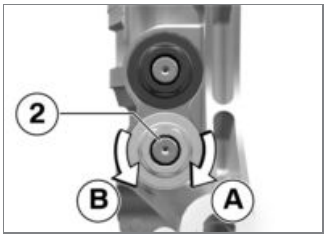
Front forks rebound adjustment range
1...26 clicks

- Make sure that the same values are set on the left and on the right.

Adjusting compression-stage damping for front wheel



- Adjust the compression-stage damping on the forkleg of both fork legs using the adjusting screw **2**.



- To increase the damping action: turn adjusting screw **2** in direction **A**.
- To reduce the damping action: turn adjusting screw **2** in direction **B**.

Front forks compression stage basic setting
Turn adjuster (C) to the limit position clockwise, then turn 20 clicks counter-clockwise

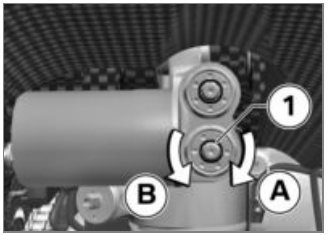
Front forks compression stage adjustment range
1...26 clicks

- Make sure that the same values are set on the left and on the right.

Adjusting rebound-stage damping for rear wheel

- Place the motorcycle on its stand on firm, even ground.

- Adjust the rebound-stage damping using the bottom adjusting screw **1**.



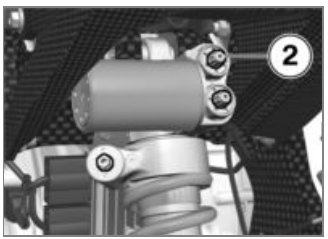
- To increase the damping action: turn adjusting screw **1** in direction **A**.
- To reduce the damping action: turn adjusting screw **1** in direction **B**.

Spring strut rebound basic setting
Turn adjuster (R) to the limit position clockwise, then turn 12 clicks counter-clockwise

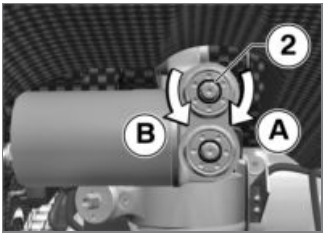
Spring strut rebound adjustment range
1...26 clicks

Adjusting compression-stage damping for rear wheel

- Place the motorcycle on its stand on firm, even ground.



- Adjust the compression-stage damping using the top adjusting screw **2**.



- To increase the damping action: turn adjusting screw **2** in direction **A**.
- To reduce the damping action: turn adjusting screw **2** in direction **B**.

Spring strut compression stage basic setting
Turn adjuster (C) to the limit position clockwise, then turn 18 clicks counter-clockwise

Spring strut compression stage adjustment range
1...26 clicks

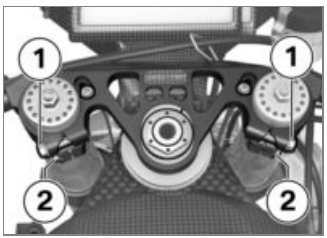
Riding height

Adjustment

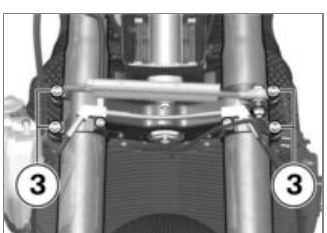
When adjusting the ride height, bear in mind that with certain setting combinations, the clearances to different components cannot be guaranteed. Therefore, after making changes, the clearance to the steering, front wheel, rear wheel swinging arm and rear wheel must always be checked.

Adjusting the riding height, front

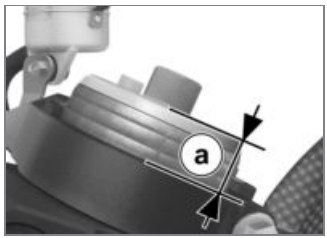
- Place the motorcycle on its stand on firm, even ground.
- Removing engine spoiler (➠ 128).
- Removing the right fairing side panel (➠ 129).
- Remove the left fairing side panel in the same way.
- Raise the motorcycle with engine lifter so that the front end is relieved. Secure the motorcycle against falling over.



- Remove bolts **1**.
- Remove bolts **2**.



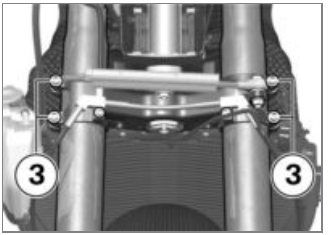
- Support the front forks with suitable auxiliary materials.
- Remove bolts **3**.



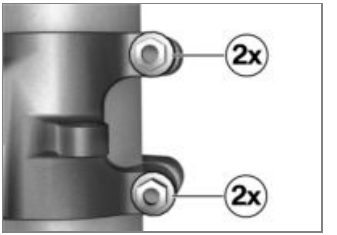
- Adjust the fork-tube projection (corresponds to ride height) **a** to the desired value.

Projection of fork tube in fork bridge, top
with cap
15 mm (Basic setting)
5...25 mm (Adjustment range)

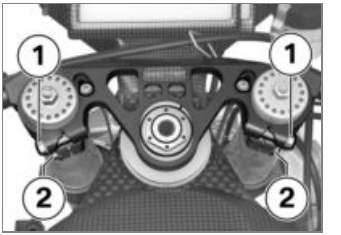
- Ensure that the fork-tube projection on both fork legs is adjusted the same.



- Tighten bolts **3** to the specified tightening torque.



Bottom fork bridge on fixed fork tube
Tightening sequence: Tighten bolts 4 times in alternate sequence
Joining compound: Lubricate thread, Optimoly TA
14 Nm



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

Top fork bridge on fixed fork tube
Joining compound: Lubricate thread, Optimoly TA
19 Nm

- Tighten bolts **2** to the specified tightening torque.

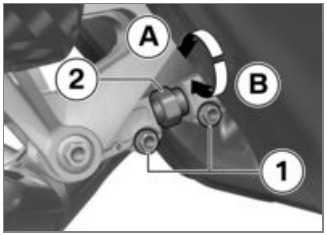
Handlebar clamp on fork leg
Joining compound: Lubricate thread, Optimoly TA

Handlebar clamp on fork leg
19 Nm

- Remove the engine lifter.
- Installing the right fairing side panel (➠ 130).
- Install the left fairing side panel in the same way.
- Installing the engine spoiler (➠ 131).

Adjusting rear riding height on the tension strut

- Place the motorcycle on its stand on firm, even ground.
- Removing engine spoiler (➠ 128).
- Raise motorcycle with engine lifter, so that the rear wheel swinging arm is relieved. Secure the motorcycle against falling over.



- Loosen clamping bolts **1**.
- To increase the riding height, turn the adjusting screw **2** in direction **A**.
- To reduce the riding height, turn the adjusting screw **2** in direction **B**.

Tension strut length
113 mm (Basic setting)
108...118 mm (Adjustment range)

- Tighten clamping screws **1**.

Clamping bolt on tension strut
Joining compound: Lubricate thread, Optimoly TA
10 Nm

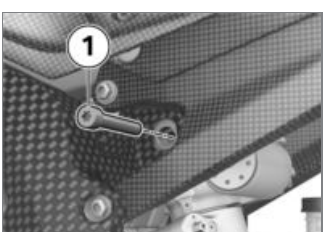
- Remove the engine lifter.
- Installing the engine spoiler (➠ 131).

Ride height, rear (Ride-Height)

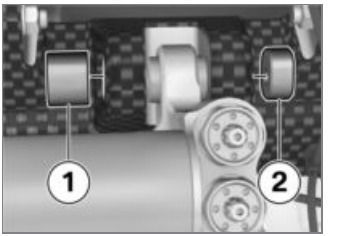
The ride height on the rear-wheel guide can be adjusted using the following parameters: position of swinging arm pivot, position of top spring strut mounting and tension strut length. Before delivery of the racing motorbike to the customer, the ride height of the motorcycle is adjusted exactly by adjusting the tension strut length. The tension strut length can therefore deviate slightly from the nominal size of 113 mm.

Adjusting the rear riding height at the spring strut attachment point

- Place the motorcycle on its stand on firm, even ground.
- Removing engine spoiler (➠ 128).
- Raise motorcycle with engine lifter, so that the rear wheel swinging arm is relieved. Secure the motorcycle against falling over.

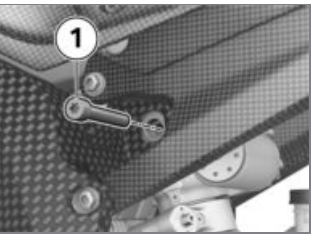


- Remove bolt **1**.



- Remove the idling blocks **1** and **2** and install them in the reverse position.

Vehicle height, rear
0 mm (eye facing down) (Basic setting)
0/-3 mm (Adjustment range)



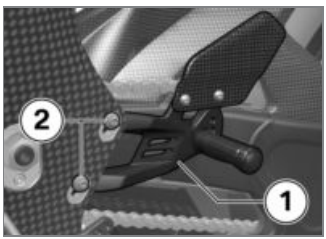
- Install bolt **1** and tighten to the specified tightening torque.

Spring strut on main frame
56 Nm

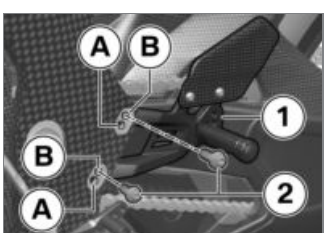
- Remove the engine lifter.
- Installing the engine spoiler (➠ 131).

Footrests

Adjusting the footrests



- To adjust the footrest plate **1**, remove the bolts **2**.

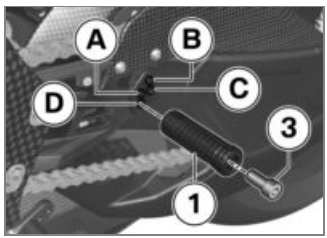


- Position the footrest plate **1** in the desired position. The footrest plate **1** can be installed in two repair positions **A** or **B**.
- Install bolts **2** and tighten to the specified tightening torque.

	Rider's footrest bracket on main frame
Joining compound: Lubricate thread, Optimoly TA	
19 Nm	

- Adjust the footrest plate on the right side in the same way.

- Remove the protective cap **2** to adjust the footrest **1**.
- Remove bolt **3** and take off the footrest **1**.



- Position the footrest **1** in the desired position. The footrest **1** can be installed in four repair positions **A**, **B**, **C** or **D**.
- Install the bolt **3** and tighten to the specified tightening torque, counter-holding the footrest **1**.

	Footrest to footrest plate
Thread-locking compound: Loctite 243, Medium strength	

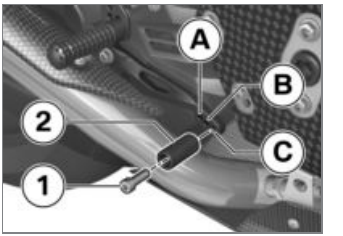
Footrest to footrest plate
25 Nm

- Install cap **2**.

Peg for footbrake lever

Adjusting the footbrake lever peg

- Remove bolt **1** and remove peg **2**.



- Insert the peg **2** in the desired position. The peg **2** can be installed in three positions **A**, **B** or **C**.
- Install bolt **1** and tighten to the specified tightening torque.

Peg to footbrake lever
10 Nm

Height of footbrake lever

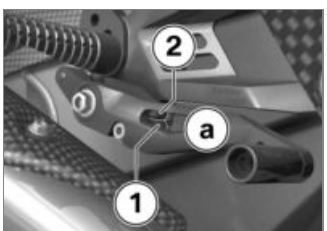
Adjusting the height of the footbrake lever

NOTICE

After adjusting the footbrake lever, the free travel of the push-rod on the footbrake cylinder must be adjusted.◀

- Slacken screw **1**.
- Press the footbrake lever **2** down and turn the eccentric **3** until desired height of the foot-brake lever **2** is reached.
- Tighten the bolt **1**, while counter-holding the eccentric **3**.

Eccentric height adjust-ment on brake lever
Joining compound: Lubricate thread, Optimoly TA
5 Nm

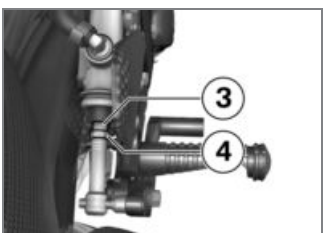


- Check the blow-by clearance **a** between the eccentric **1** and the limit position **2**.

Blow-by clearance of the footbrake lever
2 mm (Between eccentric and limit position)

Blow-by clearance not correct

- Adjust the blow-by clearance.

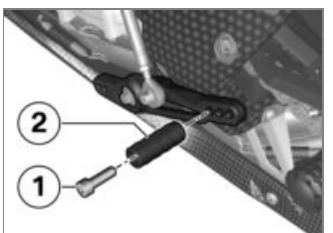


- Loosen the nut **3** on the push-rod **4**.
- Twist the pushrod **4** until the play on the brake lever is cor-rect.
- Fix the nut **3** on the pushrod **4**.

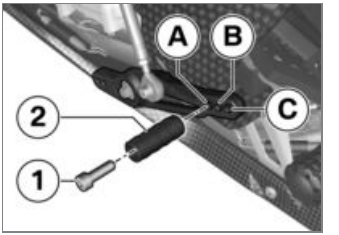
Pushrod, footbrake cylinder
6 Nm

Peg for gearshift lever

Adjusting the peg on the gearshift lever



- Remove bolt **1** and remove peg **2**.

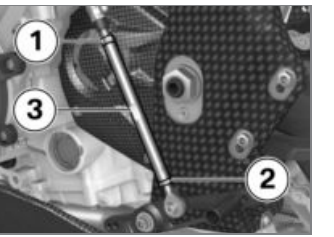


- Insert the peg **2** in the desired position. The peg **2** can be installed in three positions **A**, **B** or **C**.
- Install bolt **1** and tighten to the specified tightening torque.

Peg to gearshift lever
10 Nm

Height of gearshift lever

Adjusting the height of the shift lever



- Loosen nuts **1** and **2**, while counter-holding the gearshift rod **3**.
- Turn the gearshift rod **3** until the gearshift lever has reached the desired height.

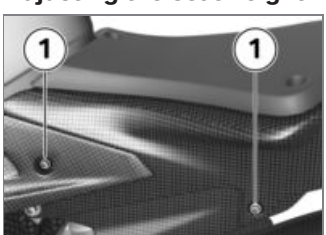
Selector-rod length
Pitch between the two rod-end centrelines

Selector-rod length
260.8 mm (Delivery status)
260.8...272.8 mm (Adjustment range)

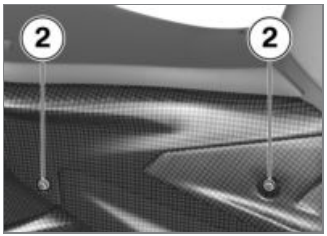
- Tighten the nuts **1** and **2**, while counter-holding the gearshift rod **3**.
- Ensure that joints are not tensioned during tightening.

Seat height

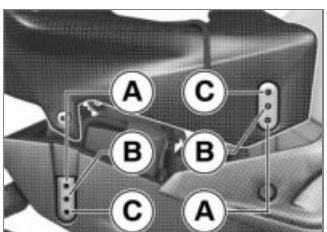
Adjusting the seat height



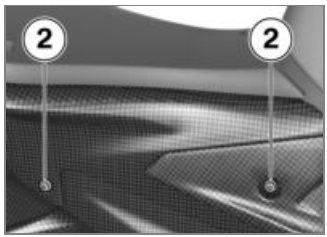
- Remove bolts **1**.



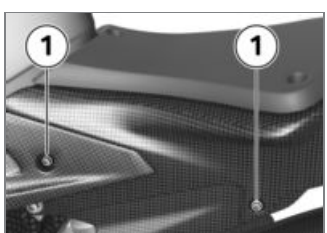
- Remove bolts **2**.



- The tail section can be installed on the positions **A**, **B** or **C**.
- Make sure that the same height is adjusted at the front and rear.
- Position **A** is the delivery status.



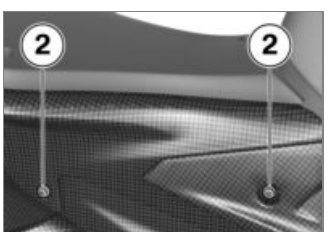
- Insert the bolts **2**, do not tighten them.



- Install and secure bolts **1**.

Tail section with tank cover on rear frame
Thread-locking compound: Loctite 243, Medium strength
8 Nm

Tail section on rear frame
Thread-locking compound: Loctite 243, Medium strength
8 Nm



- Tighten bolts **2**.

Tail section with tank cover on rear frame
Thread-locking compound: Loctite 243, Medium strength
8 Nm

Tail section on rear frame
Thread-locking compound: Loctite 243, Medium strength
8 Nm

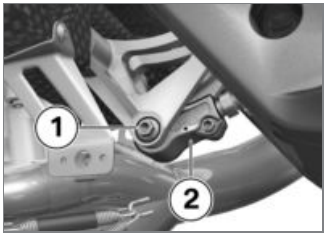
Swinging arm

Adjustment

The concept of the HP4 Race offers the option to adjust the swinging arm pivot in different positions. Additional tools such as engine lifter or footrest stands are required, however this subject will not be dealt with in detail here. If you are in doubt as to whether you would be able to complete this work, contact a specialist workshop, a BMW Motorrad partner would be best.

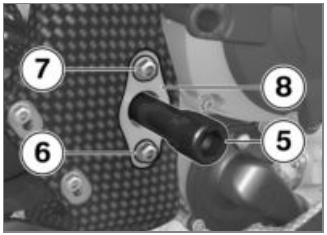
Adjuster, swinging arm pivot

- Place the motorcycle on its stand on firm, even ground.
- Removing engine spoiler (➠ 128).
- Raise motorcycle with an engine lifter or another suitable lifter, so that the rear wheel swinging arm is relieved.
- Support the rear wheel swinging arm before removing the swinging arm axle and secure it against falling.

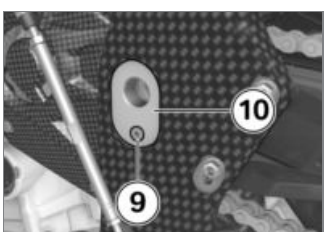


• Remove the screw **1** and detach the pivot strut **2**.

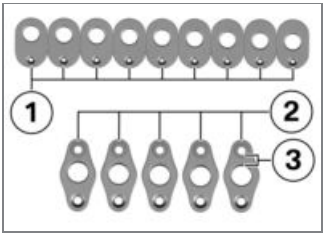
• Remove nut **3** and washer **4**.



• Remove the swinging arm axle **5**.
• Remove bolts **6** and **7** and insert **8**.

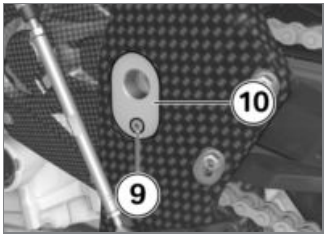


• Remove bolt **9** and insert **10**.



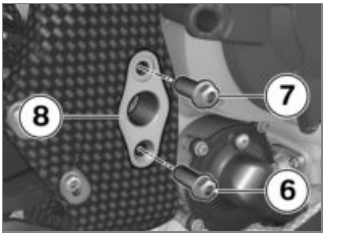
• Select the desired inserts for left **1** and right **2**.
• Note the following:
– The inserts for the right side can be installed in two positions. The offset is indicated with + or - on the insert.
– The offset information **3**, which can be read above the swinging arm axle, is the valid value.
– The inserts for the left side can only be installed in one position.
– **The inserts for left and right must always be**

installed with the same offset.

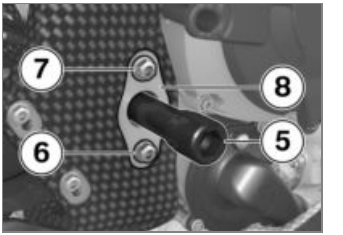


- Install desired insert **10** and bolt **9**.

Swinging-arm pivot insert, left, to frame
Thread-locking compound: Loctite 243, Medium strength
5 Nm (Countersunk bolt)



- When installing the bolts **6** and **7**, ensure that the bolt **6** with drawdown cone is installed in the countersunk bore hole of the insert **8**.



- Install the desired insert **8** and install the bolt **6** hand-tight.
- Install the bolt **7** and tighten both bolts to the specified tightening torque.

Swinging-arm pivot insert, right, to frame
Joining compound: Lubricate threads, Optimoly TA
38 Nm (with drawdown cone)
Joining compound: Lubricate threads, Optimoly TA
38 Nm (with waistband)

- Install the swinging arm axle **5** and tighten to the specified tightening torque.

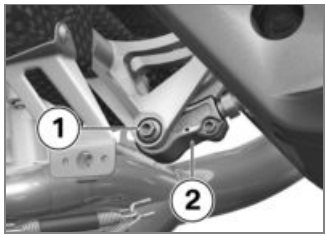
Swinging arm axle on frame
10 Nm

- Install the nut **3** with washer **4** and tighten to the specified tightening torque, counter-holding the **swinging arm axle 5.**

Nut on swinging arm axle
Thread-locking compound: mechanical
100 Nm

- Tighten bolts **9** to the specified tightening torque.

Swinging-arm pivot insert, left, to frame
Thread-locking compound: Loctite 243, Medium strength
5 Nm (Countersunk bolt)



- Position the pivot strut **2**, install the bolt **1** and tighten to the specified tightening torque.

Pivot strut on relay lever
Joining compound: Lubricate thread, Optimoly TA
38 Nm

- Remove the engine lifter.
- Installing the engine spoiler (➠ 131).

Riding

Safety instructions

Motorsport is dangerous

BMW Motorrad hopes you enjoy your motorcycle. Be aware that this is why the HP4 Race is an extra special motorcycle whose only purpose is the race track. The power of the engine at Superbike WM level and a weight similar to a MotoGP motorcycle produces exceptional driving dynamics that are not comparable with a street-legal motorcycle. It requires a prudent driving style, particularly in the initial turns. Gradually get used to the driving feel, throttle response, control characteristics of the assistance systems, engine performance and braking performance. Familiarise yourself with the racing features. Read this rider's manual and note the warnings and instructions.

Rider's equipment

Never ride without wearing the correct clothing! Always wear:
– Helmet
– Leather combination
– Back protector
– Gloves
– Boots

This applies in for all seasons. Your authorised BMW Motorrad dealer will be glad to advise you on the correct clothing for every purpose.

Speed

If you ride at high speed on the race track, always bear in mind that various marginal conditions can adversely affect the handling of your motorcycle:
– Settings of the spring-strut and shock-absorber system
– Wrong tyre pressure
– Worn racing tyres
– Temperature and condition of the roadway
– 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.◀

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.
- Once the operating temperature has been reached, ride off or turn off the engine again.◀

Ambient temperatures

Do not move the motorcycle outside the predefined temperature range.

Recommended outside-temperature range
5...40 °C

Tampering

ATTENTION

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

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

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

Checklist

Comply with checklist

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

Always before riding off:

- Check the tyre pressure and tyre condition.
- Check operation of the brake system.
- Checking clutch function (➠ 121).
- Check the functions and freedom of movement of the steering dampers and the steering.
- Check the settings of the DTC, EBR and riding mode.

Starting

Starting the engine

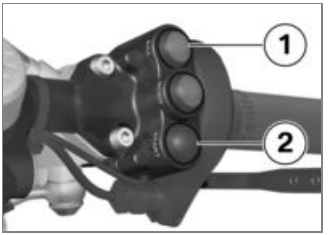
- Switch on the ignition.

ATTENTION

Component damage

Start the engine with the gear engaged

- The motorcycle is not equipped with engine start suppression. Always engage the idle position or pull the clutch to start.◀
- Select neutral or, if a gear is engaged, pull the clutch lever.
- For a cold engine start and low temperatures: pull clutch.



- Press button KILL **1**.

» The button engages.

- Press button START **2**.

NOTICE

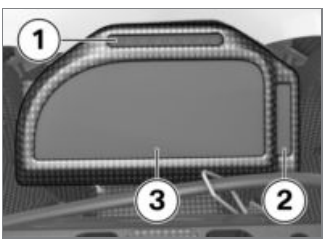
The start attempt is automatically interrupted if battery voltage is too low. Recharge the battery before you start the engine, or use jump leads and a donor battery to start.
See the subsection on jump starting in "Maintenance" for more details.◀

» The engine starts.

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. Only start the engine when the Pre-Ride-Check is complete.

Phase 1



The LED display **1** lights up from left to right.
The warning and indicator lights **2** light up from the top to the bottom.
The start screen appears in the multifunction display **3**.

Phase 2

The LED display and the warning and indicator lights go out and the mechanic screen 1 is displayed in the multifunction display.

If a warning light does not show:

WARNING

Faulty warning lights

No indication of malfunctions

- Check all the telltale and warning lights.◀
- Have the fault rectified as quickly as possible by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Bringing the engine to operating temperature

It is very important that the engine and its operating fluids are at the correct temperature before you ride on the race track.
Therefore, heat the coolant and engine oil in accordance with the following procedure:

– Let the engine run in idle until the coolant temperature of 90 °C is reached.
– Turn off engine and wait 10 minutes.
– Start the engine again and let it run until the coolant temperature reaches 90 °C again.

Your motorcycle is now fully warmed up and ready for use.

Running in

Engine

- The HP4 Race engine is run in at the factory and can be immediately subjected to full load within the specified temperature limits.

Brake discs

New brake discs must be run in so that they can reach their optimum performance and to avoid damage due to distortion.
If possible, use used brake pads to run in the brake discs. Ride 4-5 laps and brake gently at a medium speed. Avoid any type of thermal peak load. After the running-in laps, park the motorcycle in the pit and let the brakes cool completely without auxiliary materials.
Do not brake while you are accelerating the motorcycle. This can lead to a sudden increase in temperature that worsens the

coefficient of friction of the brake discs.

⚠ WARNING

New brake discs
Longer stopping distance, risk of accident
- Apply the brakes in good time.◀

Brake pads

New brake pads have to be run in before they can achieve their optimum friction levels.
If possible, use used brake discs to run in the brake pads. Ride 2-3 laps and brake gently at a medium speed. Avoid any type of thermal peak load.
If new brake pads and new brake discs must be run in at the same time, carry out the run-in procedure especially carefully.
Do not brake while you are accelerating the motorcycle. This can lead to a sudden increase in temperature that worsens the coefficient of friction of the brake pads.

⚠ 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.

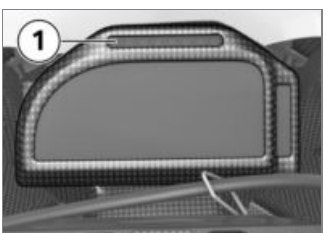
⚠ WARNING

New tyres losing grip on wet roads and at extreme bank angles
Risk of accident
- Ride carefully and avoid extremely sharp inclines.◀

The tyres must always be preheated with a tyre heater. This reduces the risk of an accident due to cold tyres and increases the service life of the tyres.

Shifting gear

Gearshift light



When the motorcycle is on the move, LED display **1** indicates the engine speed at which the rider should upshift.

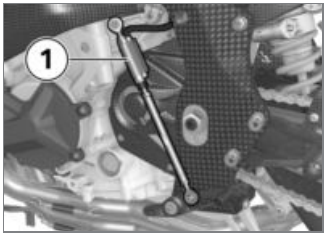
– LEDs light up: shifting speed will be reached shortly.
– LED display flashing: shifting speed reached.

The speed thresholds of the diodes can be adapted using the 2D software.

Shift assistant HP Pro

NOTICE

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



- 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.
» Shift assistance is not available in the following situations:
– 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.
The adjustable electronically controlled engine brake EBR stabilises the motorcycle during the braking process.

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.
– After work has been carried on the brakes, due to traces of oil or grease.
– When riding on dirty roadways.

⚠ WARNING

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

Racing start

Launch Control

Launch Control supports riders by maintaining ideal engine revving for a racing start. The Launch Control is activated every time the motorcycle comes to a standstill. This ensures that the driver does not become distracted before the race starts and the Launch Control is available.

 Engine speed after activating Launch Control at full throttle
9000 min^{-1}

When Launch Control is active engine torque is reduced so that forward propulsion is maximised on the flat with the front wheel just starting to lift off the ground. Torque is temporarily reduced slightly when the electronics detect front-wheel lift. Engine rpm limitation is deactivated if one of the following conditions arises.

 Conditions for deactivating engine speed limitation for Launch Control
approx. 180 km/h
3rd gear is engaged.
Angle of heel exceeds 30°

Launch Control is turned off in the following circumstances:
– The third gear is engaged.
– The speed exceeds 180 km/h.
– The angle of heel exceeds 30°.

Racing start with Launch Control

CAUTION

Risk of accident due to incorrect handling of the Launch Control.

If engaged too quickly, the engine may stop or the front wheel may lift abruptly despite Wheely-Control

- Engage in a controlled way during racing start with Launch Control.◀

NOTICE

Racing start with Launch Control causes increased clutch wear. Let the clutch cool down after racing start.

The number of briefly consecutive racing starts that can be executed with Launch Control is limited to 3.◀

- The Launch Control is activated by switching on the ignition and starting the engine. When the engine is running, the Launch Control activates automatically after coming to a stop.
- Bring vehicle to starting position.

» Vehicle is stationary, engine is running, Launch Control is activated.

– `!LAUNCH!` is displayed in the multifunction display, LED flashes.

- Proceed as usual when starting, open the **throttle grip fully**, the engine speed limitation keeps the speed at the previously set value.
- Engage the gears as soon as possible, but be gentle nonetheless.

» Launch Control controls the ideal torque on the rear wheel and keeps the engine speed constant up to the speed specified below.

- Leave the throttle grip completely open.

» As soon as rpm limitation ceases, engine rpm increases because the throttle grip is in the full-throttle position.

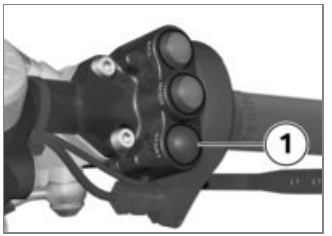
» The throttle grip again reacts as normal.

- Depending on the racetrack, upshift and lean into bends.

» When the third gear is engaged, the speed increases to above 180 km/h or an angle of heel of more than 30° is reached, the Launch Control switches off.

» The race start with Launch Control is completed.

Speed limiter for pit lane



- Ride in 1st gear.

NOTICE

The maximum speed can be set with the Race Calibration Kit Pro. The speed resulting from the maximum rotational speed is dependent on the ratio and tyre size.◀

- Press and hold down starter button **1**.
- Open the throttle grip until cutoff speed 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.

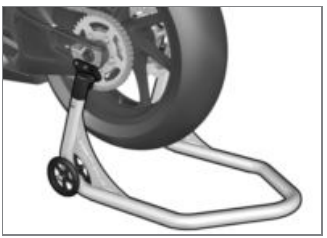
Risk of crashing due to severe jerk forward if throttle twistgrip in full load position.

- 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 in accordance with the throttle grip.

Parking your motorcycle

Rear-wheel stand



- Switch off the engine.

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.◀

- Attach the rear-wheel stand to the motorcycle and park the motorcycle.
- Installing the rear-wheel stand (➠ 106).

In the pit

Refuelling

Fuel grade

- To avoid engine damage, petrol at the recommended fuel grade must be used when refuelling.

Recommended fuel grade
Petrol as per DIN EN 228 (max 5 % ethanol) min 98 ROZ/RON min 93 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.◀

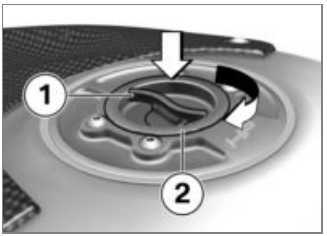
ATTENTION

Wetting of plastic surfaces by fuel

Damage to the surfaces (surfaces become unsightly or dull)

- Clean plastic surfaces immediately after contact with fuel.◀

- Place the motorcycle on its stand on firm, even ground.



- Press the lock **1** and turn it in a clockwise direction.

» Fuel filler cap is unlocked.

- Remove the fuel filler cap **2**.

- Refuel with fuel of the grade stated above; do not fill the

tank past the bottom edge of the filler neck.

NOTICE

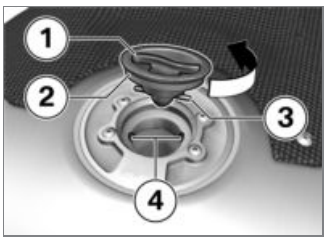
When refuelling after running on reserve, make sure that you top up the tank to a level above reserve, as otherwise the new level will not be registered and the fuel warning light indicating that the level is down to reserve will not be switched off.◀

NOTICE

The "usable fuel capacity" specified in the technical data is the quantity that the fuel tank could hold if refilled after 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

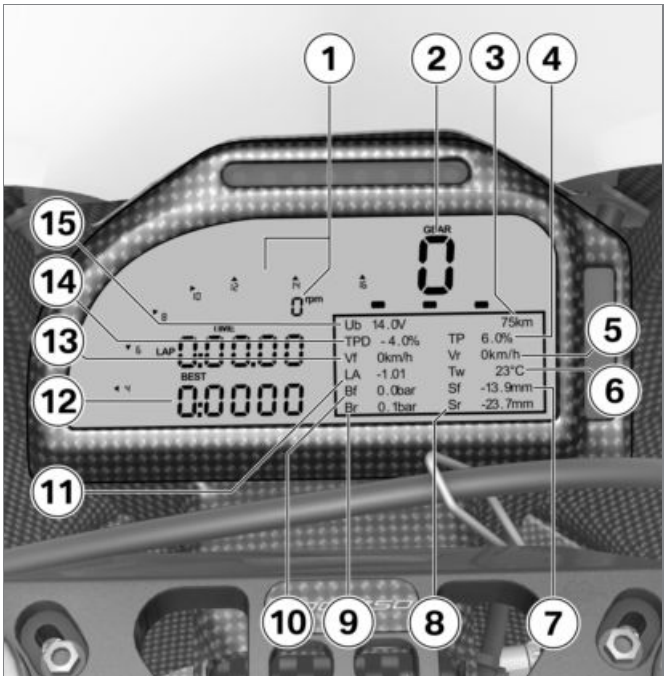


- Install the fuel filler cap **2** so that the bolts **3** are inserted through the recesses **4**.
- Turn the lock **1** counter-clockwise until the fuel filler cap audibly engages.

Displays for the mechatronics technician

Multifunction display for mechatronics technician's view 1

1 Engine speed display
2 Gear indicator
3 Odometer
4 Opening angle of throttle valve
5 Wheel speed, rear
6 Coolant temperature
7 Spring travel, front (with mounted sensor)
8 Spring travel, rear (with mounted sensor)
9 Brake pressure, rear (with mounted sensor)
10 Brake pressure, front (with mounted sensor)
11 Angle of heel
12 Best lap time
13 Wheel speed, front

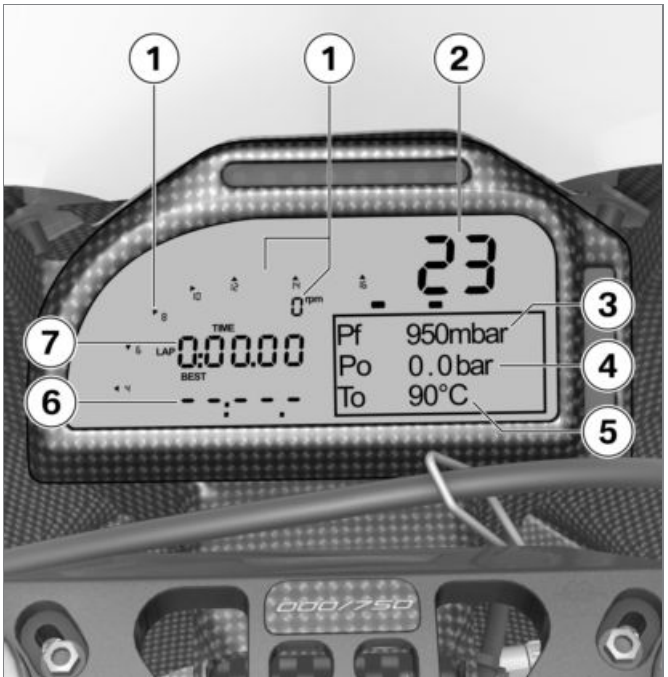


14 Opening angle, throttle grip
15 Battery voltage

Displays for the mechatronics technician

Multifunction display for mechatronics technician's view 2

1 Engine speed display
2 Coolant temperature
3 Fuel pressure
4 Oil pressure (with mounted sensor)
5 Oil temperature
6 Best lap time
7 Last lap time



DTC

DTC setting

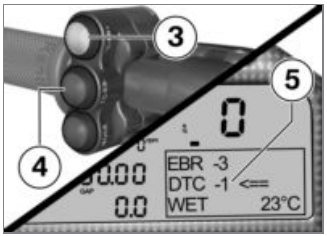
A setting for the DTC is stored in each mode. This setting can be adapted to your individual needs when the motorcycle is stationary and while riding it.

DTC Adapting

Requirement

Multifunction display must show the rider's view

- Press MODE **1** to select EBR **2**.



- Briefly press button TC/EB+ **3** to increase the value **5**.
- Briefly press button TC/EB- **4** to reduce the value **5**.

» The set value **5** is shown on the multifunction display and is between −7 and +7:

» +1 ... +7: Reducing the slip on the rear wheel by a maximum of seven stages. The value +7 corresponds to the earliest DTC intervention.

» −1 ... −7: Increasing the slip on the rear wheel by a maximum of seven stages. The value −7 corresponds to the latest DTC intervention.

DTC deactivation

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. Please note that the rear wheel will spin on loose surfaces and remember to release the throttle grip in due time before reaching firm surfaces.
Then reactivate DTC.

EBR

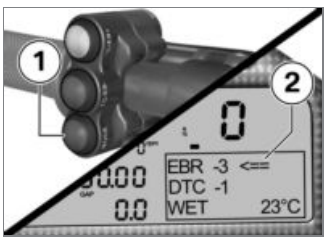
EBR setting

A setting for the EBR is stored in each mode. This setting can be adapted to your individual needs when the motorcycle is stationary and while riding it.

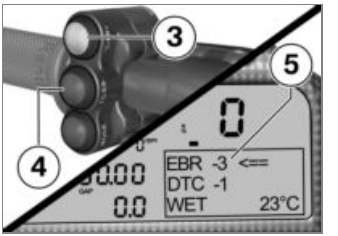
Adapting EBR

Requirement

Multifunction display must show the rider's view



- Press MODE **1** to select EBR **2**.



- Briefly press button TC/EB+ **3** (+) to increase the value **5**.
- Briefly press button TC/EB- **4** (-) to reduce the value **5**.

» The set value **5** is shown on the multifunction display and is between −7 and +7:

» +1 ... +7: Increasing the drag torque on the rear wheel by a maximum of seven stages. The value +7 corresponds to the highest braking effect due to the engine drag torque.

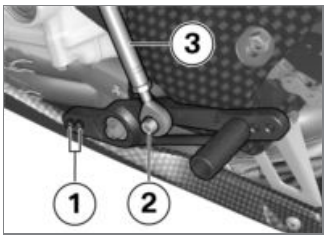
» −1 ... −7: Decreasing the drag torque on the rear wheel by a maximum of seven stages. The value −7 corresponds to the lowest braking effect due to the engine drag torque.

Gearshift-pattern reverser

Gearshift-pattern reverser

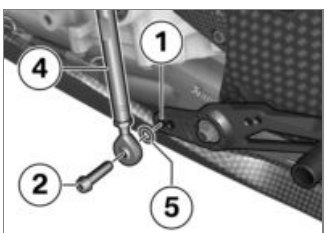
As standard, the motorcycle is equipped with a shift pattern that is the best and fastest way to change gears on the race track. If desired, the shift pattern can be reversed by modifying the gearshift rod. Then, as is the case with riding on public roads, the first gear is engaged down and all other gears are up.

Reversing the shift pattern



- Clean desired thread **1**.
- Remove bolt **2**.
- Remove washer between ball joint and gearshift lever.
- Relocate the gearshift rod **3** to the desired thread **1**.

Attachment points, gearshift rod on gearshift lever
Thread to the outer pivot point (Basic setting for both shift patterns) Thread to outer or inner pivot point (Adjustment range for both shift patterns)



- Insert the bolt **2** through the ball joint **4** and washer **5** and install in the thread **1** and tighten to the specified tightening torque.

Selector rod to gearshift lever
Joining compound: Lubricate thread, Optimoly TA
8 Nm

» The gearshift is set up for operation using a standard shift pattern.

- Check and if necessary adjust the height of the gearshift lever.
- Adjusting the height of the shift lever (➠ 68).

Data recording and 2D software

Data recording and 2D software

You can receive all the information and support for dealing with the 2D software, reading out and evaluating recorded driving data under:

2d-datarecording.com

NOTICE

The motorcycle can only be operated with the 2D data logger connected.
Do not remove the data logger or replace it with another make.◀

HP Race Calibration Kit Pro

– with HP Callibration Kit Pro OA

The HP Race Calibration Kit Pro can be used to access and make adjustments to different parameters of the engine control unit. More information on this can be found in the operating instructions supplied with the HP Race Calibration Kit Pro or in the Internet under:
bmw-motorrad.com/hprace

Socket for optional accessories

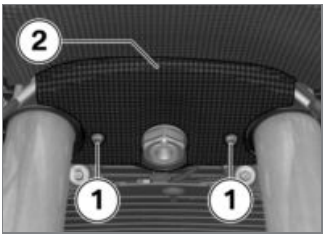
Equipment

The vehicle is fitted with the following plugs for optional accessories and racing accessories:
– Brake pressure sensors, front and rear
– Deflection sensors, front and rear
– Infrared receiver
– CAN bus connection

A detailed description can be found in the Accessories section.

Securing motorcycle for transportation

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



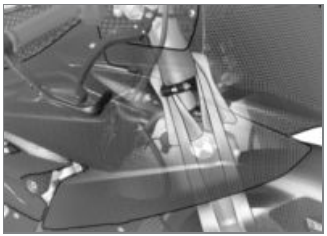
- Remove bolts **1** and take off fork partition **2**.

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 transport surface.



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.

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

Engineering details

Lightweight construction

Every gram less brings success.

By dispensing with unnecessary components for the racing circuit, such as headlight, turn indicators, horn, rear footrests and use of comprehensive CFRP carbon components such as frame, wheels, unitary carbon-rear frame, trim panel and full titanium exhaust system, the HP4 RACE is lighter than the WSBK racing motorbike.
Titanium bolts are used on the engine and frame. High-strength special bolts are used only in places where due to the load, it was not otherwise possible.
Advantage:

– maximum weight reduction and minimum requirement for tools. A large portion of the motorbike can be dismantled and assembled using three spanner sizes.

Dynamic Traction Control (DTC)

How does traction control work?

DTC takes into account the angle of heel of the motor vehicle and is suited to improving the 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.
The DTC on the HP4 RACE is adjustable from +7 to -7. The DTC intervenes by means of ignition interruption, so-called ignition "cuts". The acoustic awareness creates a much greater degree of trust when compared to the DTC.

⚠ WARNING

Risky riding

Risk of accident despite DTC

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

Special situations

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

With DTC, the speeds of the front and rear wheels are compared and the angle of heel taken into account as one means of detecting the rear wheel's incipient tendency to spin or slip sideways.

If the 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.

When riding on a slippery surface, never snap the throttle grip 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.

Engine brake (EBR)

How does the engine brake (EBR) work?

The EBR adjusts the engine braking behaviour using the throttle valves and ignition switch-offs at closed throttle grip so that an even traction characteristic is reached on the rear wheel. In addition, the slip between the front wheel and the rear wheel is taken into account to prevent a blocking of the rear wheel.
The EBR on the HP4 Race is adjustable from +7 to -7.

Riding mode

Selection

4 riding modes enable the motorcycle's characteristics to adapt to the prevailing weather conditions, the road condition, and the tyres:

– WET
– MED
– DRY1
– DRY2

Configuration of modes

WET

– Progression Map (power) 1-4 gear reduced; 5th, 6th gear full power; relative maximum engine torque (G1-G6): 67%, 71%, 75%, 96%, 100%, 100%, 1-6 WheelyControl on

MED

– Progression Map (power) 1st-3rd gear reduced; 4th, 5th, 6th gear full power; relative maximum engine torque (G1-G6): 71%, 79%, 88%, 100%, 100%, 100%, 1-6 WheelyControl on

DRY1

– Progression Map (power) 1st-3rd gear reduced; 4th, 5th, 6th gear full power; relative maximum engine torque (G1-G6): 75%, 83%, 92%, 100%, 100%, 100%, 1-6 WheelyControl on

DRY2

– Progression Map (power) 1st-3rd gear reduced; 4th, 5th, 6th gear full power; relative maximum engine torque (G1-G6): 75%, 92%, 96%, 100%, 100%, 100%, 1-2 WheelyControl on, 3-6 off

Shift assistant Pro

The shift assistant HP Pro enables the upshifts and downshifts without clutch or throttle grip actuation especially in the upper engine speed ranges.

Advantages

– 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 contrast to the shift assistants of the S 1000 RR, the spring-type accumulator is not required. This makes the shift assistant much more crisp and precise. The driver receives significantly more feedback with each gear shift.

Downshifting

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

 Maximum engine speed
max 14300 min^{-1} (1st gear)
max 14500 min^{-1} (2nd - 6th gear)

Upshifting

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

 Idle speed
1500 min^{-1} (Engine at regular operating temperature)

Maintenance

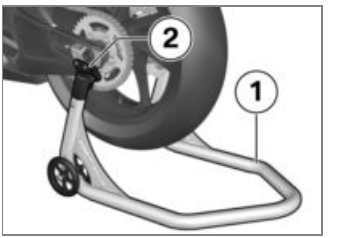
General instructions

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".

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.

Rear-wheel stand

Installing the rear-wheel stand

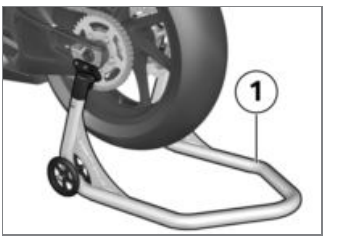


- Hold the motorcycle straight and position the rear-wheel stand **1** on the stand bosses **2**.

ATTENTION

Vehicle toppling to side
Risk of damage to parts if vehicle topples
- Make sure that the vehicle is secured so that it cannot topple sideways.◀
- Press the rear-wheel stand **1** down until the motorcycle is upright and the handle of the rear-wheel stand **1** is on the ground.

Removing rear-wheel stand



- Secure the motorcycle against falling and lower the rear-wheel stand **1** slowly, remove the rear-wheel stand **1**.

Engine oil

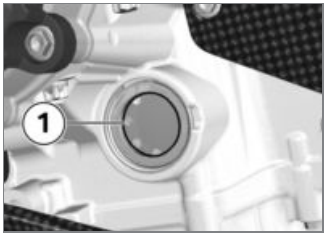
Checking engine oil level

ATTENTION

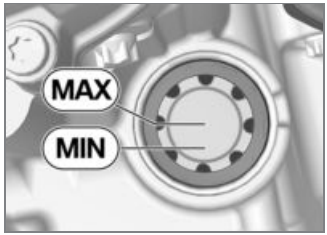
Misinterpretation of oil level reading, because oil level is temperature-dependent (the higher the temperature, the higher the oil level)

Engine damage

- Check the oil level only after a lengthy ride or when the engine is at operating temperature.◀
- After switching off the engine, wait 1 min until the oil level can be read.
- Make sure the engine is at operating temperature and hold the motorcycle upright.



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



Engine oil, specified level
Filling level in the sight glass: 1/3 to 1/2 full

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. 4.5 l (with filter change)	

If the oil level is below the minimum mark:

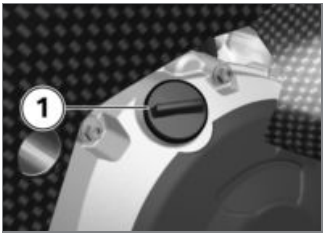
- Top up the engine oil (➠ 108).

If the oil level is above the maximum mark:

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

Top 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** for oil filler opening.

ATTENTION

Use of insufficient engine oil 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 (➠ 107).
- Install oil filler cap **1**.

Brake system

Checking function of brakes

- Operate 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

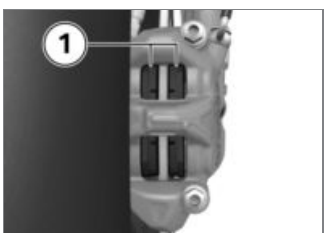
Risk to operational reliability of the brake system

- Have all work on the brake system undertaken by trained and qualified specialists.◀
- Have the brakes checked by a specialist workshop, preferably

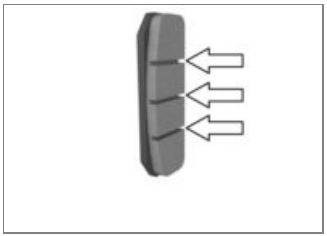
an authorised BMW Motorrad dealer.

Checking front brake pad thickness

- Place the motorcycle on its stand on firm, even ground.
- 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
Grooves in friction lining no longer visible, or	
min 6.5 mm (Friction lining with carrier plate.)	

If the brake pads are worn:

WARNING

Brake-pad thickness less than permissible minimum

Diminished braking effect, damage to the brakes

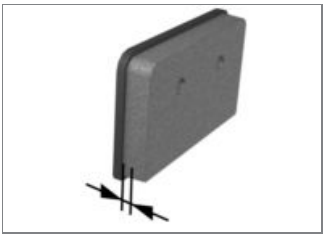
- In order to ensure the dependability of the brake system, do not permit the brake pads to wear past the minimum permissible thickness.◀
- Have the brake pads replaced by a specialist workshop, preferably an authorised BMW Motorrad dealer.

Checking rear brake pad thickness

- Place the motorcycle on its stand on firm, even ground.

- Visually inspect the brake pads to ascertain their thickness.

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



Brake-pad wear limit, rear
min 6.5 mm (Friction lining with carrier plate.)

If the wear indicating mark is no longer visible:

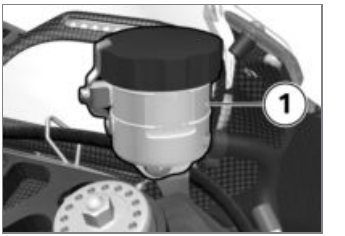
WARNING

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 on brake fluid tank **1**.

NOTICE

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

Brake fluid level, front
Brake fluid, Brembo Racing
The brake fluid level must not 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 tank

Considerably reduced braking power due to air in the brake system

- Adjust the riding mode immediately until the fault is rectified.
- 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, Brembo Racing
The brake fluid level must not drop below the **MIN** mark. (Brake-fluid reservoir, horizontal)

If the brake fluid level drops below the permitted level:

WARNING

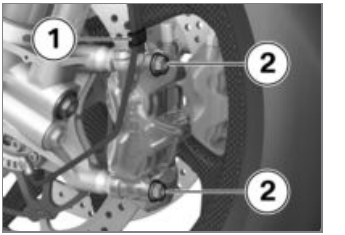
Not enough brake fluid in brake fluid tank

Considerably reduced braking power due to air in the brake system

- Adjust the riding mode immediately until the fault is rectified.
- 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.

Removing brake calipers

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



- Remove holder **1** from cable for wheel speed sensor.

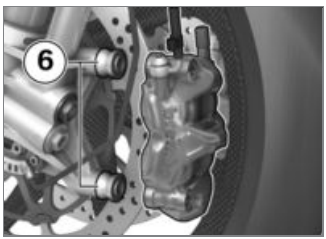
ATTENTION

Unwanted inward movement of the brake pads

Component damage on attempt to install the brake caliper or because brake pads have to be forced apart

- Do not operate the brakes with a brake caliper not correctly secured.◀
- Remove bolts **2** of the brake callipers on left and right.

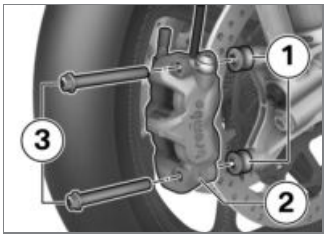
- Carefully pull the brake calipers back and out until clear of the brake discs.



- Remove left and right spacer bush **6**.

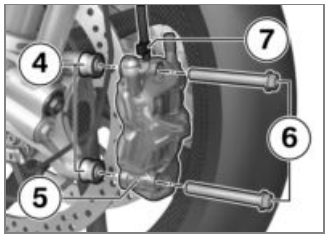
Securing brake calliper

- Before pressing back the brake pistons, these must be cleaned.
- Cleaning the brake caliper, front (➠ 117).



- Install the spacer bushes **1**.
- Push and position the right brake caliper **2** on the brake disc.
- Install bolts **3** and tighten to specified torque.

Radial brake caliper on wheel axle clamp
Joining compound: Lubricate thread, Optimoly TA
38 Nm



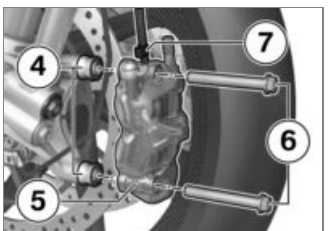
- Install the spacer bushes **4**.
- Push and position the left brake caliper **5** on the brake disc.
- Install bolts **6** and tighten to the specified torque.

Radial brake caliper on wheel axle clamp
Joining compound: Lubricate thread, Optimoly TA
38 Nm

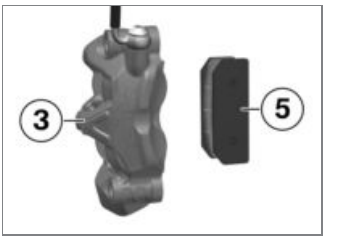
- Secure cable for wheel speed sensor in the bracket **7**.
- Remove the adhesive tape from the wheel rim.

- Powerfully pull brake lever several times until the pressure point can be felt.

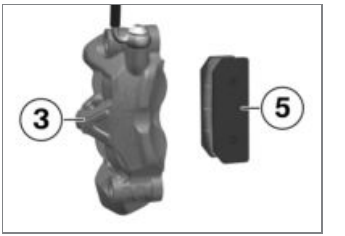
Replacing the front brake pads



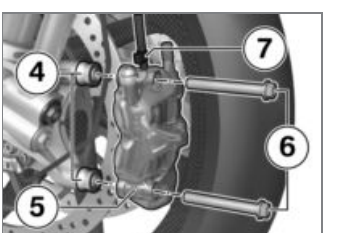
- Mask off the parts of the wheel rim that could be scratched in the process of removing the brake calipers.
- Remove the cable for wheel speed sensor from the bracket **7**.
- Remove bolts **6**.
- Remove the brake caliper **5**, left.
- Remove the spacer bushes **4**.



- Remove the brake pads **5** out of the brake caliper **3**.
- Before pressing back the brake pistons, these must be cleaned.
- Cleaning the brake caliper, front (➠ 117).



- Install new brake pads **5** in the brake caliper **3** so they are aligned as shown.

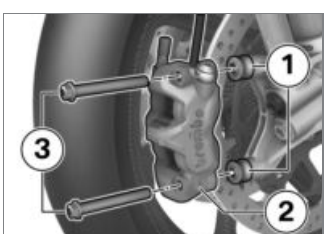


- Install the spacer bushes **4**.

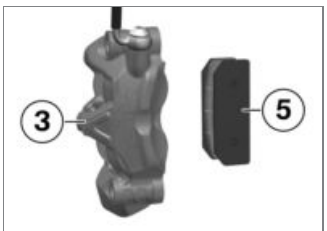
- Push and position the left brake caliper **5** on the brake disc.
- Install bolts **6** and tighten to specified torque.

Radial brake caliper on wheel axle clamp
Joining compound: Lubricate thread, Optimoly TA
38 Nm

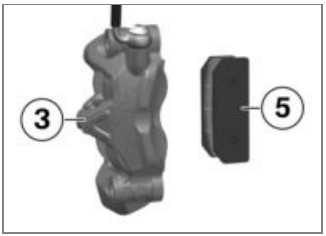
- Secure cable for wheel speed sensor in the bracket **7**.



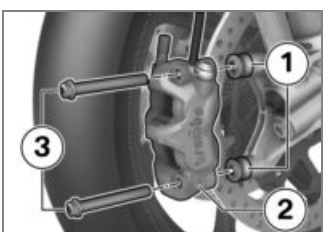
- Remove bolts **3**.
- Carefully pull the right brake caliper **2** back and out until clear of the brake disc.
- Remove the spacer bushes **1**.



- Remove the brake pads **5** out of the brake caliper **3**.
- Before pressing back the brake pistons, these must be cleaned.
- Cleaning the brake caliper, front (➠ 117).



- Install new brake pads **5** in the brake caliper **3** so they are aligned as shown.



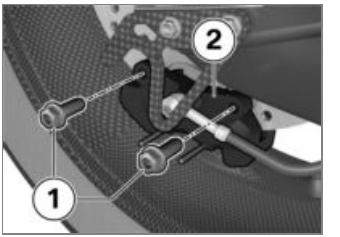
- Install the spacer bushes **1**.

- Push and position the right brake caliper **2** on the brake disc.
- Install bolts **3** and tighten to specified torque.

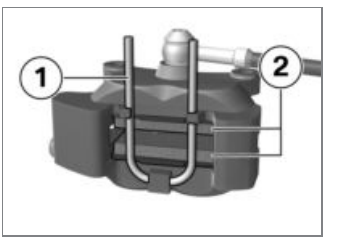
Radial brake caliper on wheel axle clamp
Joining compound: Lubricate thread, Optimoly TA
38 Nm

- Remove the adhesive tape from the wheel rim.
- Powerfully pull brake lever several times until the pressure point can be felt.

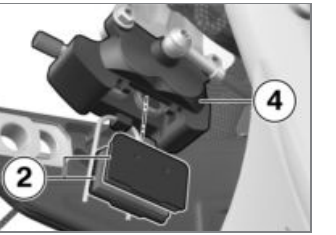
Replacing rear brake pads



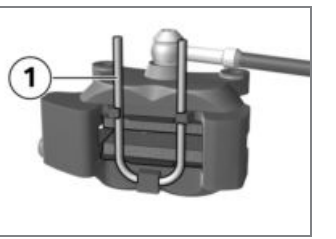
- Remove bolts **1** and pull brake caliper **2** off of brake disc.



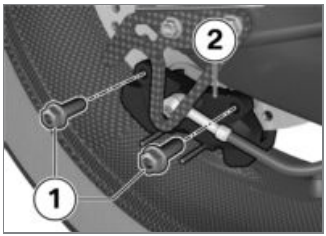
- Release the retaining clip **1**.
- Remove brake pads **2**.



- Install new brake pads **2** in the brake caliper **4** in the alignment shown.



- Secure the retaining clip **1**.



- Push the brake caliper **2** on the brake disc.
- Install bolts **1** and tighten to the specified tightening torque.

Rear brake caliper on brake caliper mount
Thread-locking compound: Loctite 243, Medium strength
13 Nm

Cleaning the brakes

Cleaning the brake calipers and the rear brake disc

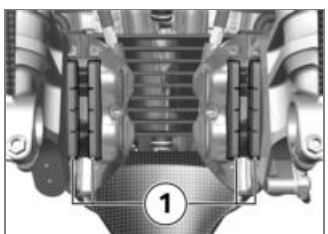
The brake dust produced during operation settles on the brake calipers and the brake pistons. In particular, the dirt adhering to the brake pistons can negatively impact their freedom of movement and as a result the response characteristics of the brakes. Therefore, the brake calipers must be cleaned regularly after each event.

Tyre wear particles that are flung at the rear brake disc while riding and are deposited there can cause the braking effect of the rear brake to deteriorate. Therefore, the rear brake disc must be cleaned after every event.

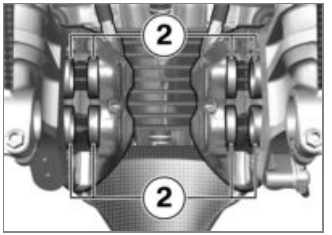
The work described here assumes a certain level of knowledge about the operating principle and maintenance of brake systems. If you are not confident about whether you are able to do this work, contact a specialist workshop, preferably a BMW Motorrad partner.

Cleaning the brake caliper, front

- Removing front wheel (➠ 123).

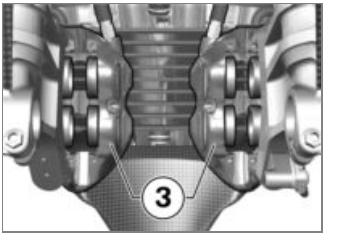


- Remove brake pads **1**.



ATTENTION

Escaping brake fluid
Component damage
- Pay attention to the brake piston when pushing it out. Push the brake piston **out steadily and not too far**.◀
- Press out the brake pistons **2** using a little stroke on the brake lever. Take care not to let the brake pistons **2** be pressed out too far.

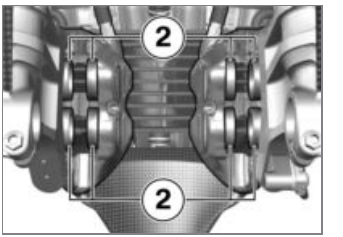


ATTENTION

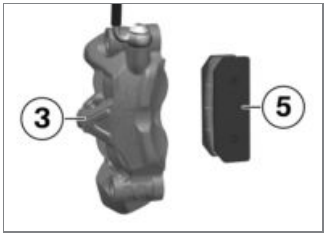
Use of aggressive cleaning agents
Damage to seals, leaks
- Only use mild soap solution for cleaning.
- Do not use any brake cleaner.◀
- Carefully clean both brake calipers **3** and all brake pistons with **mild soap solution** and a soft brush or paintbrush until all contaminations caused by brake dust are removed.

ATTENTION

Damaged seals
Component damage
- Do **not use compressed air** to dry the brake caliper after cleaning.◀
- Then rinse with clear water and dry with a cloth.



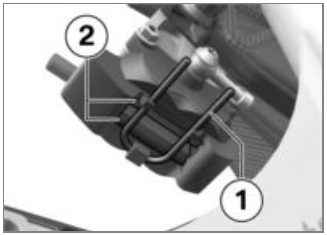
- Press back the brake pistons **2** with a suitable tool, ensuring that the brake pistons **2** do not get stuck.



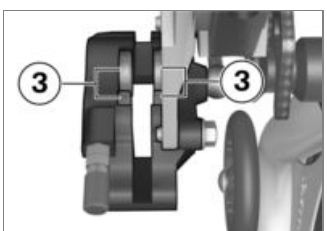
- Install the brake pads **5** in the brake caliper **3** so they are aligned as shown.
- Installing front wheel (➠ 124).

Cleaning the brake caliper and brake disc, rear

- Removing rear wheel (➠ 126).



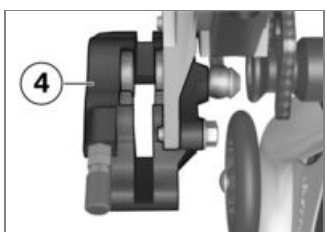
- Release the retaining clip **1**.
- Remove brake pads **2**.



ATTENTION

Escaping brake fluid
Component damage

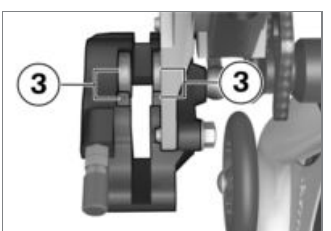
- Pay attention to the brake piston when pushing it out. Push the brake piston **out steadily and not too far**.◄
- Press out the brake pistons **3** using a little stroke on the brake lever. Take care not to press out the brake pistons **3** evenly and not too far out.



ATTENTION

Use of aggressive cleaning agents
Damage to seals, leaks

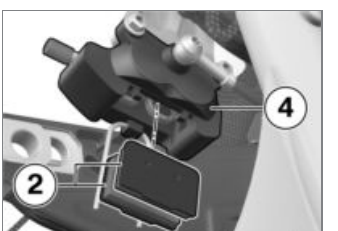
- Only use mild soap solution for cleaning.
- Do not use any brake cleaner.◀
- Carefully clean the brake caliper **4** and all brake pistons with mild soap solution and a soft brush or paintbrush until all contaminations caused by brake dust are removed.
- Then rinse with clear water and dry with a cloth.



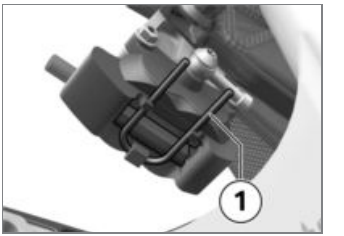
ATTENTION

Escaping brake fluid
Component damage

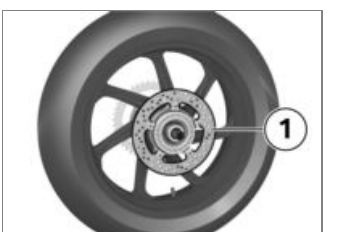
- Ensure that brake piston does not fall out when pushing back on the other brake caliper. If necessary, block with suitable auxiliary materials.◀
- Press back the brake pistons **3** with your hands, ensuring that the brake pistons **3** do not get stuck.



- Install the brake pads **2** in the brake caliper **4** so they are aligned as shown.



- Secure the retaining clip **1**.



- With rear wheel removed, clean the brake disc with brake cleaner and a cloth.

Cleaner
Brake cleaner

- Installing the rear wheel (➠ 127).

Clutch

Checking clutch function

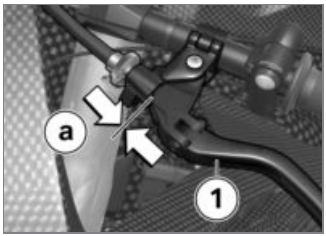
- Pull the clutch lever.

» 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



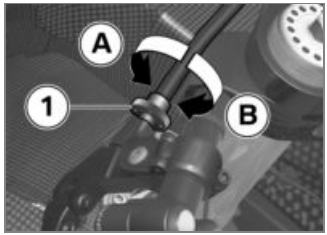
- Pull clutch lever **1** until resistance is perceptible.
- In this position, measure clutch play **a** between the handlebar fitting and the clutch lever.

Clutch-lever play
0.5...1.0 mm (On the manual controls, with cold engine)

Clutch play is out of tolerance:

- Adjusting the clutch-lever play (➠ 121).

Adjusting the clutch-lever play

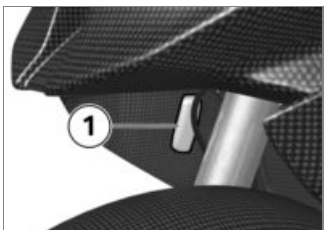


- To increase the clutch lever play: turn the bolt **2** in direction **A**.
- To reduce the clutch lever play: turn the bolt **2** in direction **B**.
- Checking clutch-lever play (➠ 121).
- Repeat the steps in this procedure until clutch lever play is set correctly.

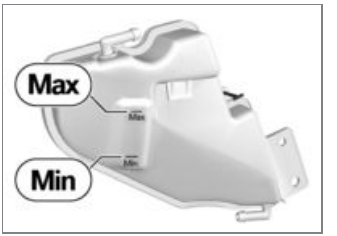
Coolant

Checking coolant level

- Place the motorcycle on its stand on firm, even ground.



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



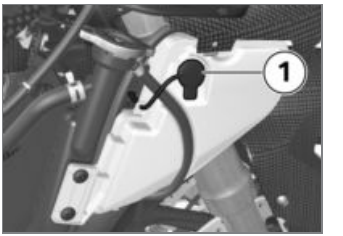
	Specified level for coolant
Between and MIN and MAX mark on the expansion tank (With cold engine)	

If the coolant drops below the permitted level:

- Top up the coolant.

Topping up coolant

- Removing engine spoiler (➠ 128).
- Removing the right fairing side panel (➠ 129).



- Open cap **1** of the expansion tank.
- Top up coolant to specified level.
- Checking coolant level (➠ 122).
- Close cap **1** of the expansion tank.

- Installing the right fairing side panel (➠ 130).
- Installing the engine spoiler (➠ 131).

Tyres

Checking tyre pressure

WARNING

Incorrect tyre pressure
Impaired handling characteristics of the motorcycle, shorter useful tyre life
- Always check that the tyre pressures are correct.◀

WARNING

Tendency of valve inserts to open by themselves at high riding speeds
Sudden loss of tyre pressure
- Install valve caps fitted with rubber sealing rings and tighten firmly.◀
- Make sure the ground is level and firm and place the motorcycle on its stand.
- Adjust tyre pressure according to the specifications of the tyre manufacturer to the conditions (ambient temperature, route layout; asphalt composition, etc.).

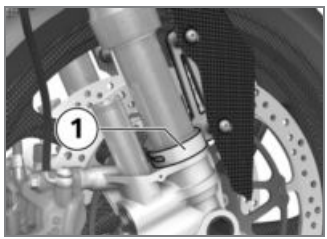
Wheel rims and tyres

Checking rims

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

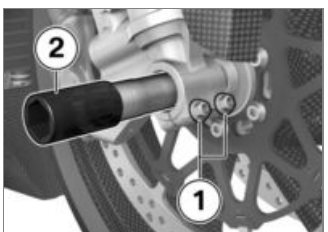
Wheels

Removing front wheel



- The front forks are equipped with a quick-release system for removing the wheel. This enables the front wheel to be removed without disassembly of the brake calipers. The brackets **1** for the front-wheel cover can be turned to secure them, this enables the fork legs together with the brake calipers to be turned and the front wheel to be removed. This assumes the use of a front-wheel

stand that allows the fork legs to turn.
- Lift the front of the motorcycle until the front wheel is clear of the ground, preferably using a BMW Motorrad front-wheel stand.

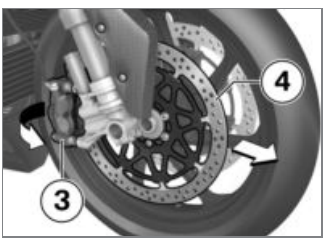


CAUTION

Component damage and malfunction of assistance systems

Incorrect distance between sensor ring and wheel speed sensor

- Left clamp fixes the threaded bush and must not be released or removed.◀
- Loosen clamping bolts **1**.
- Remove quick-release axle **2**, while supporting the wheel.



- Pull the front wheel slightly to the front until the brake calipers **3** slip off the brake disc **4**.
- Swivel the forklegs on the brake calipers **3** to the left and right outwards and pull out the front wheel forwards.

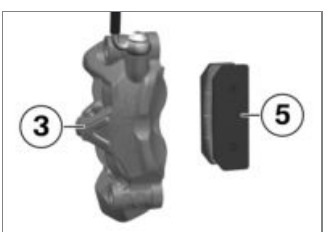
Installing front wheel

ATTENTION

Tightening threaded fasteners to incorrect tightening torque

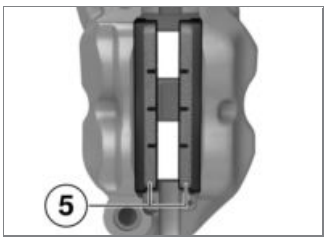
Damage, or threaded fasteners work loose

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

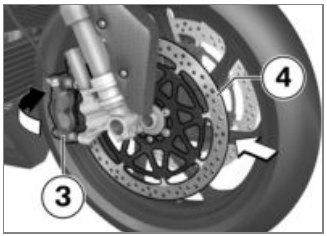


- The brake pads **5** can fall out of the brake calipers **3**.

» Install the brake pads **5** in the brake caliper **3** so they are aligned as shown.



- Check if the brake pads **5** are in the correct position.
- Use a suitable tool to carefully push apart brake pads **5**.

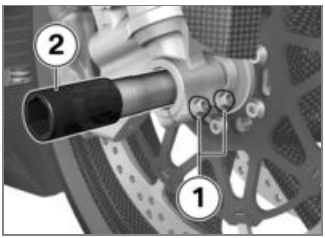


ATTENTION

Front wheel installed wrong way round

Risk of accident

- Note direction-of-rotation arrows on tyre or rim.◀
- Raise the front wheel into the front suspension until the brake calipers **3** can no longer touch the wheel rim.
- Swivel the forklegs on the brake calipers **3** left and right inwards.
- Slide the front wheel fully into the front suspension, guiding the brake discs **4** into the brake calipers **3**.

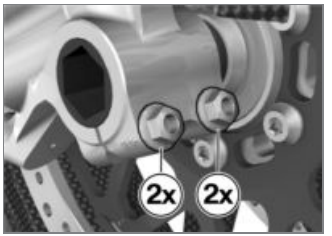


- Install the quick-release axle **2** and tighten to the specified tightening torque.

Quick-release axle in threaded bush
Joining compound: Lubricate the quick-release axle and thread, Optimoly TA
50 Nm

- Compress the forks several times strongly.

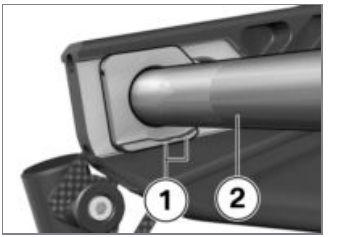
- Tighten clamping bolts **1** to the specified tightening torque.



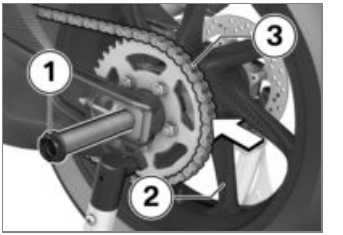
Clamping bolts in wheel axle clamp
Tightening sequence: Tighten bolts 4 times in alternate sequence
Joining compound: Lubricate thread, Optimoly TA
19 Nm

- Removing the front-wheel stand.

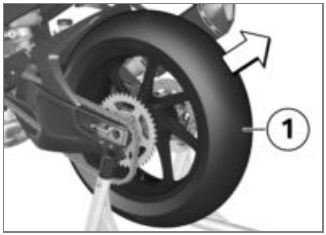
Removing rear wheel



- The rear wheel swinging arm is equipped with a quick-release system for removing the wheel. This enables the rear wheel to be removed without disassembly of the brake caliper. Furthermore, the stop-flats **1** integrated into the chain tensioner stop the rear wheel from falling when the quick-release axle **2** is pulled out. In addition, the chain tensioner does not need to be slackened.



- Release and remove the quick-release axle **1**.
- Slide the rear wheel **2** forwards until it tangibly engages in the front stop-flat.
- Take off the chain **3** and remove it from the camshaft sprocket by turning the rear wheel.



- Remove the rear wheel **1** to the rear and upwards.

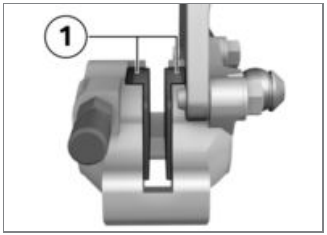
Installing the rear wheel

ATTENTION

Tightening threaded fasteners to incorrect tightening torque

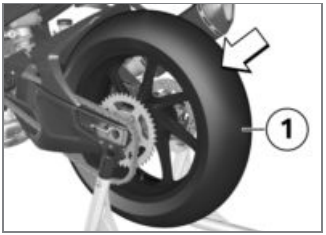
Damage, or threaded fasteners work loose

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

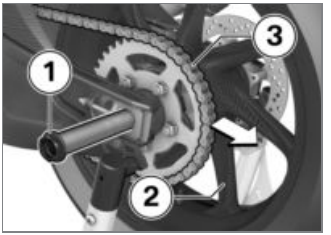


- Position the brake pads **1** and clamp suitable auxiliary material between them.

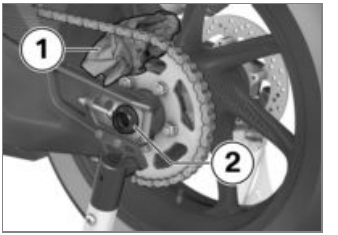
» Brake pads remain in position and the brake disc can be better fitted.



- Install the rear wheel **1** and place it in the front stop-flat.
- Ensure that the auxiliary material between the brake pads is removed.



- Place the chain **3** on the camshaft sprocket and fit it fully by turning the rear wheel **2**.
- Pull the rear wheel **2** to the rear until it tangibly engages in the rear stop-flats.
- Install the quick-release axle **1**, but do not tighten yet.
- Checking chain sag (➠ 140).



- Clamp the cloth **1** between the chain and camshaft sprocket by turning it.

» The quick-release axle is pulled to the limit positions of the chain tensioner.

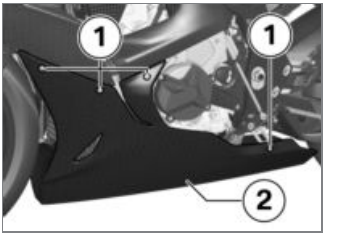
- Tighten quick-release axle **2** to the specified tightening torque.

Rear quick-release axle in swinging arm
Joining compound: Lubricate the quick-release axle and thread, Optimoly TA
100 Nm

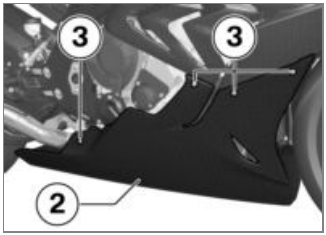
- Remove the cloth **1**.
- Powerfully pull rear brake lever several times until the pressure point can be felt.

Trim panel components

Removing engine spoiler



- Remove snap fastener bolts **1**.
- Support the engine spoiler **2**.



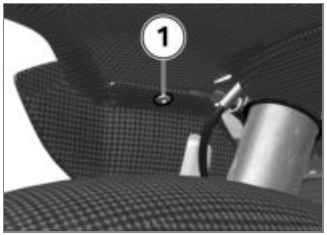
- Remove snap fastener bolts **3**.
- Remove the engine spoiler **2**.

Removing the side panel

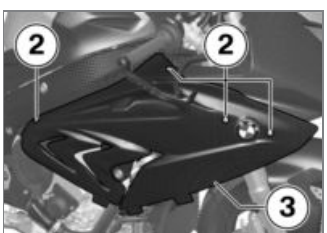
NOTICE

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

- Place the motorcycle on its stand on firm, even ground.

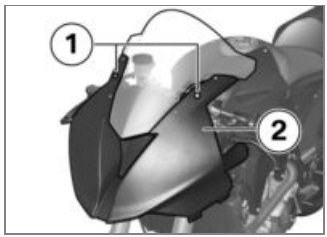


- Remove snap fastener bolts **1** on the inside of the fairing side panel.



- Remove snap fastener bolts **2**.
- Remove fairing side panel **3**.

Removing fairing top section

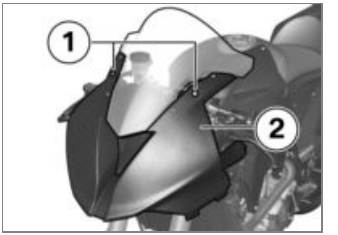


- Remove snap fastener bolts **1**.
- Take off fairing top section **2**, while ensuring that the air inlet does not drop out.

• Remove the air inlet **3**.

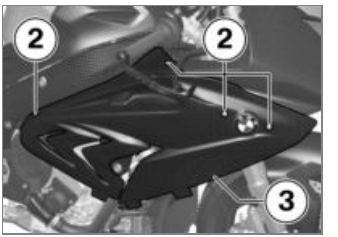
Installing the fairing top section

• Install the air inlet **3**.



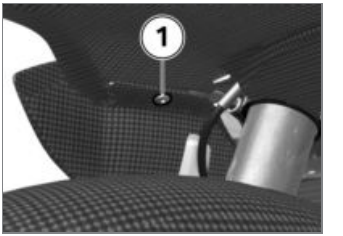
• Position the fairing top section **2**.
• Install snap fastener bolts **1**.

Installing side panel



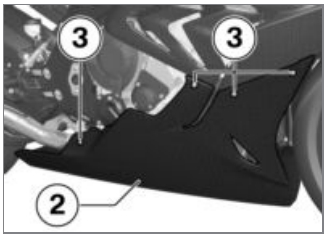
• Position the fairing side panel **3**.

• Install snap fastener bolts **2**.

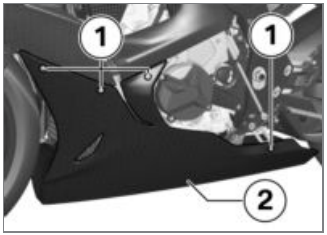


• Install snap fastener bolts **1**.

Installing the engine spoiler

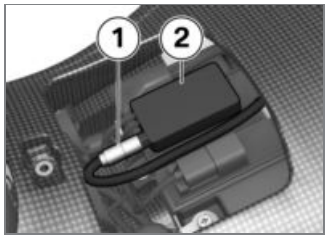


- Hold engine spoiler **2** in position.
- Install snap fastener bolts **3**.
- Support the engine spoiler **2**.

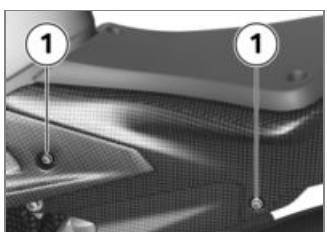


- Hold engine spoiler **2** in position.
- Install snap fastener bolts **1**.

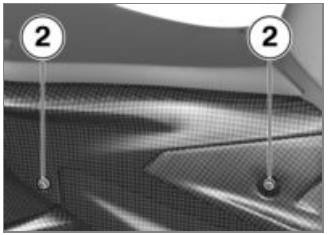
Removing tail section



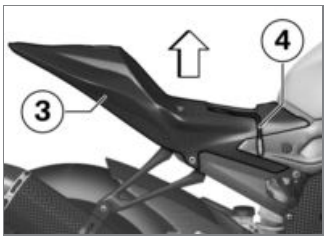
- Disconnect the connector **1** from the data logger **2** and allow it to dangle to one side.



- Remove bolts **1**.

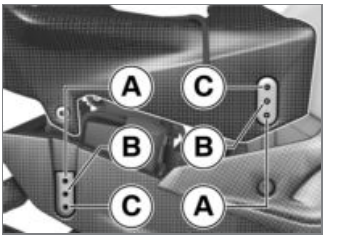


• Remove bolts **2**.

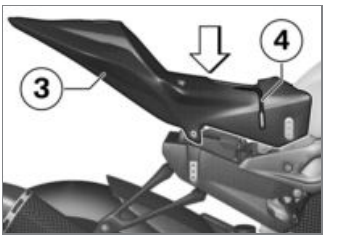


• Remove tail section **3**, pull out the cable **4** from the GPS receiver.

Installing the tail section

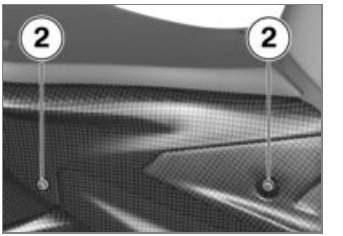


• During installation, adjust the tail section to the desired seat height **A**, **B** or **C**.

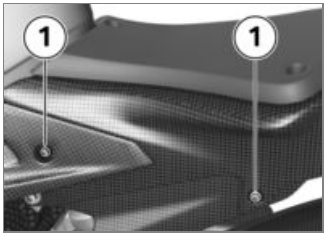


• Feed through the cable **4** from the GPS receiver as shown.

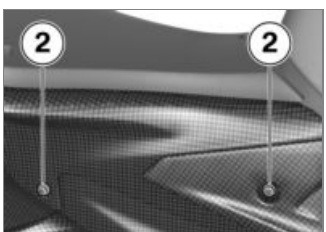
• Position tail section **3**, spreading, if necessary, the tank cover **5** on the left and right slightly.



• Insert the bolts **2**, do not tighten them.



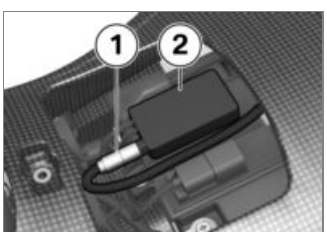
• Install and secure bolts **1**.



• Tighten bolts **2**.

Tail section with tank cover on rear frame
Thread-locking compound: Loctite 243, Medium strength
8 Nm

Tail section on rear frame
Thread-locking compound: Loctite 243, Medium strength
8 Nm



• Connect the connector **1** with data logger **2**.

Tail section with tank cover on rear frame
Thread-locking compound: Loctite 243, Medium strength
8 Nm

Tail section on rear frame
Thread-locking compound: Loctite 243, Medium strength
8 Nm

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

Contact between crocodile clips of jump leads and vehicle

Risk of short-circuit

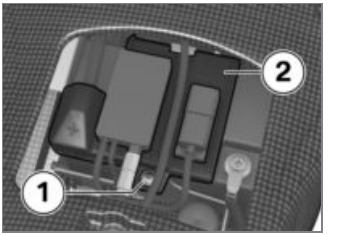
- Use jump leads fitted with fully insulated crocodile clips at both ends.◀

ATTENTION

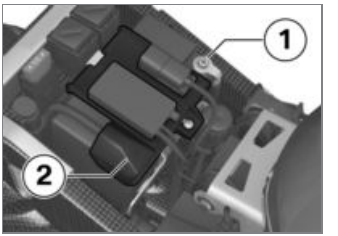
Jump-starting with a voltage greater than 12 V

Damage to the on-board electronics

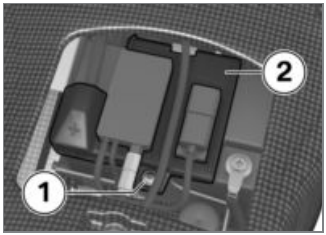
- Make sure that the battery of the donor vehicle does not exceed a voltage of 12 V.◀
- When jump-starting the engine, do not disconnect the battery from the on-board electrical system.
- Removing front seat (➠ 38).



- Remove bolt **1**.
- Unhook the battery holder **2**, lift it and place it to one side.



- Run the engine of the donor vehicle during jump-starting.
- First use the red jump lead to connect the positive terminal **2** of the discharged battery to the positive terminal of the donor battery.
- Then connect one end of the black jump lead to the negative terminal of the donor battery and the other end to negative terminal **1** of the discharged battery.
- 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.



- Position the battery holder **2** and hook it in place.
- Install bolt **1**.
- Installing front seat (➠ 38).

Battery

Maintenance instructions

Correct upkeep, recharging and storage will prolong the life of the lithium ion 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.
- Only charge the battery with a charger suitable for lithium ion batteries.
- Be sure to read and comply with the instructions for charging the battery on the following pages.

ATTENTION

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

Battery is deep-discharged; this voids the guarantee

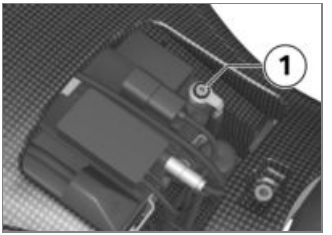
- Connect a float charger to the battery if the motorcycle is to remain out of use for more than four weeks.◀

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.◀

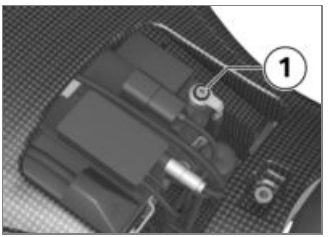
Disconnecting battery from motorcycle

- Place the motorcycle on its stand on firm, even ground.
- Removing front seat (➠ 38).



- Remove bolt **1** and take off battery earth lead.

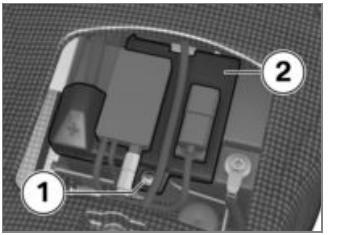
Connecting battery to motorcycle



- Position the battery earth lead and install the bolt **1**.
- Installing front seat (➠ 38).

Recharging battery

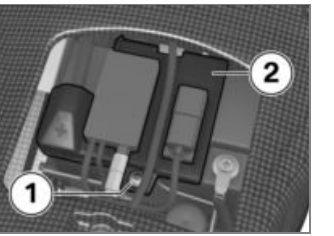
- Removing front seat (➠ 38).



- Remove bolt **1**.
- Unhook the battery holder **2**, lift it and place it to one side.
- 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

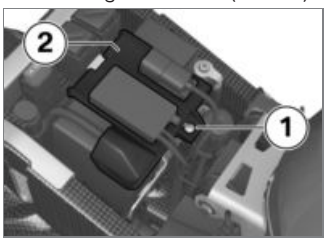
The battery has to be recharged at regular intervals in the course of a lengthy period of disuse. See the instructions for caring for your battery. Always fully recharge the battery before restoring it to use.◀



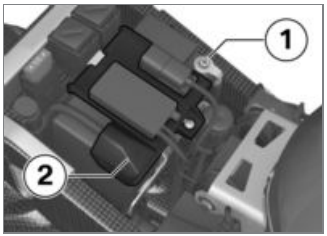
- Position the battery holder **2** and hook it in place.
- Install bolt **1**.
- Installing front seat (➠ 38).

Removing battery

- Removing front seat (➠ 38).
- Removing tail section (➠ 131).



- Remove bolt **1**.
- Unhook the battery holder **2**, lift it and place it to one side.



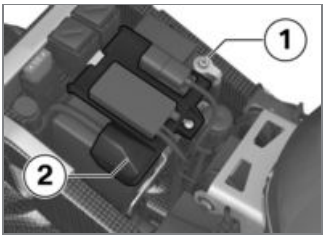
ATTENTION

Battery not disconnected in accordance with correct procedure

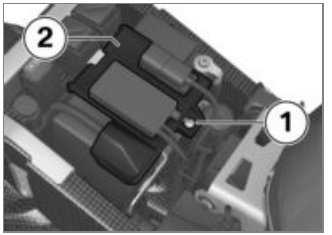
Risk of short-circuit

- Always proceed in compliance with the specified disconnection sequence.◀
- First disconnect battery negative lead **1**.
- Then disconnect battery positive lead **2**.
- Lift the battery up and out: work it slightly back and forth if it is difficult to remove.

Installing battery



- Place the battery in the battery compartment, positive terminal on the right in the forward direction of travel.
- Connect battery positive lead **2** first.
- Then install battery negative lead **1**.



- Position the battery holder **2** and hook it in place.
- Install bolt **1**.

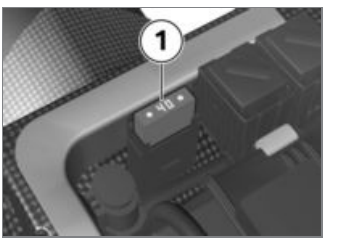
- Installing the tail section (➠ 132).
- Installing front seat (➠ 38).

Fuse

Removing the fuse

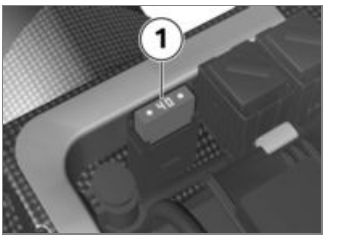
ATTENTION

Jumpering of blown fuses
Risk of short-circuit and fire
- Never attempt to jumper a blown fuse.
- Always replace a defective fuse with a new fuse of the same amperage.◀
- Switch off the ignition.
- Place the motorcycle on its stand on firm, even ground.
- Removing front seat (➠ 38).
- Removing tail section (➠ 131).



- Remove the faulty fuse **1** upwards out of the fuse box.

Installing a fuse



- Replace faulty fuse with a fuse with the required current level.
- Install a new fuse **1** in the fuse box.

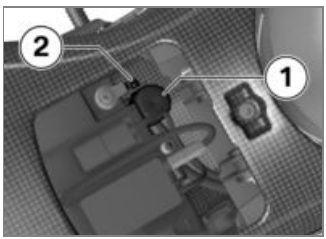
NOTICE

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

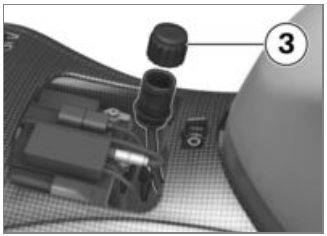
- Installing the tail section (➠ 132).
- Installing front seat (➠ 38).

Diagnostic connector

Disengaging diagnostic connector



- Unplug the diagnostic connector **1** from the bracket **2**.

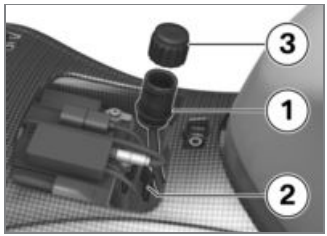


- Remove the cap **3**.

» The interface to the diagnosis and information system can be connected to diagnostic connector **1**.

Securing the diagnostic connector

- Disconnect the interface for the diagnosis and information system.



- Install cap **3**.
- Secure the diagnostic connector **1** in the holder **2**.
- Installing front seat (➠ 38).

Chain

Lubricating chain

ATTENTION

Inadequate cleaning and lubrication of the drive chain

Accelerated wear

- Clean and lubricate the drive chain at regular intervals.◀

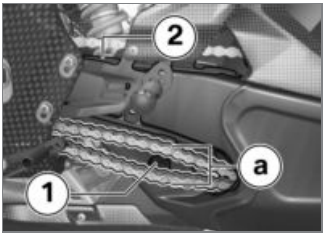
- Lubricate the drive chain regularly.After driving through wet conditions, carry out lubrication more often correspondingly.
- Switch the ignition off and select neutral.
- Clean the drive chain with a suitable cleaning product, dry it and apply chain lubricant.
- To prolong chain life, BMW Motorrad recommends the use of BMW Motorrad chain lubricant or:

Lubricant
Chain spray

- Wipe off excess lubricant.

Checking chain sag

- Place the motorcycle on its stand on firm, even ground.
- Turn the rear wheel until it reaches the position with the lowest amount of chain sag.



- Press the chain up and down to the height of the threaded bore **1** and measure the difference **a**.
- The top chain strand must not touch the swinging arm cover **2** when the bottom chain strand is pressed down.

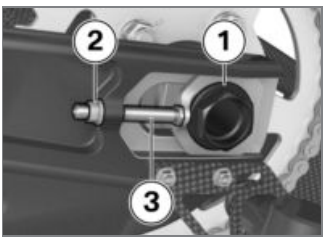
Chain deflection
30...35 mm (Motorcycle with no weight applied, supported on its rear-wheel stand)

If measured value is outside permitted tolerance:

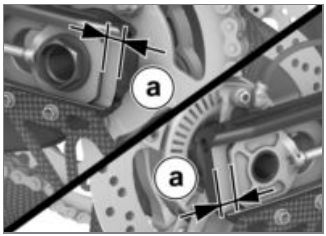
- Adjusting chain sag (➠ 140).

Adjusting chain sag

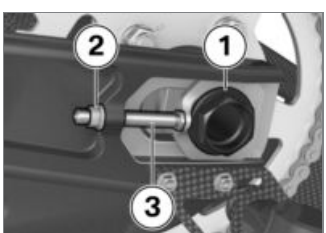
- Place the motorcycle on its stand on firm, even ground.



- Release the quick-release axle **1**.
- Slacken locknuts **2** on left and right.
- Use adjusting screws **3** on left and right to adjust chain sag.
- Checking chain sag (➠ 140).



- Adjust the chain tensioner on left and right to have the same distance **a** to the edge of the rear wheel swinging arm.



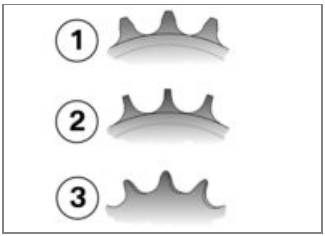
- Tighten quick-release axle **1** to the specified tightening torque.

Rear quick-release axle in swinging arm
Joining compound: Lubricate the quick-release axle and thread, Optimoly TA
100 Nm

- Tighten locknuts **2** on left and right, counter-holding adjusting screws **3**.

Checking the chain wear

- Check the chain, camshaft sprocket and pinion regularly for wear and irregularities.



- Check the camshaft sprocket and pinion for deformation.

Image 1: no or slight deformation detectable on the teeth.

- Camshaft sprocket and pinion are good.

Image 2 or 3: deformation or heavy wear detectable on the teeth.

- Renew the chain set.

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.

⚠ 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.◀

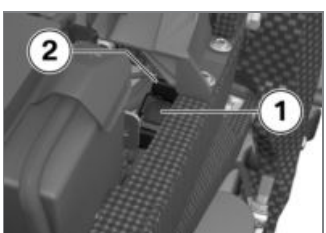
Connections for additional sensors

The wiring harness is prepared for the 2D sensor system typical of racing.

– Brake pressure sensor, front
– Brake pressure sensor, rear
– Deflection sensor, front
– Deflection sensor, rear
– Oil pressure sensor

The connector **1** for the front brake pressure sensor is located on the frame on the front right.

The connector **1** for the front deflection sensor is located on the frame on the front left.



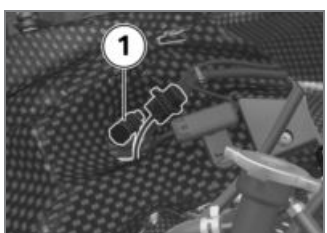
The connector **1** for the rear deflection sensor is located on the rear frame on the right in front of the battery.

The connector **2** for the rear brake pressure sensor is located on the rear frame on the right under the tank bridge.

Connection for CAN bus signal

The connector **1** next to the ECU is provided for accepting the CAN data bus signal. It also provides a connection to the voltage supply of the vehicle electrical system and is therefore suitable for connecting, for example, an action cam. Sensor data can be input into the image using the CAN bus signal. Please follow the manufacturer's documentation for the Action-Cam and the documentation from 2D when installing an Action-Cam.

Connection for infrared receiver



The connector **1** on the right of the frame is provided for connecting the infrared receiver from the BMW Motorrad optional accessories.

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.
Wash the vehicle thoroughly after every event with water and BMW Motorrad solvent cleaner.

WARNING

Wet brake discs and brake pads after vehicle wash, after riding through water and in rainy conditions
Diminished braking effect, risk of accident
- Apply the brakes in good time to allow the friction and heat to dry the brake discs and brake pads.◀

ATTENTION

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

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.◀

Trim panel components

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.◀

Radiator

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

ATTENTION

Bending of radiator fins

Damage to radiator fins

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

Rubber

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 using BMW tar remover for removing specks of tar. Remember to wax the parts treated in this way.

Protective wax coating

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

Laying up the motorcycle

- Cleaning the motorcycle.
- Fill the motorcycle's fuel tank with fuel.
- Removing battery (➠ 137).
- Spray the brake lever, clutch lever and gearshift lever with suitable lubricant.
- Preserve exposed parts with acid-free grease (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 stand from BMW Motorrad).

Restoring motorcycle to use

- Remove the protective wax coating.
- Clean the motorcycle.
- Installing battery (➠ 137).
- Comply with checklist (➠ 77).

Technical data

Screw connections

Front wheel	Value	Valid
Quick-release axle in threaded bush		
M24 x 1.5 Lubricate the quick-release axle and thread, Optimoly TA	50 Nm	
Clamping bolts in wheel axle clamp		
M8 x 30 Lubricate thread, Optimoly TA	**Tightening sequence: Tighten bolts 4 times in alternate sequence**	
	19 Nm	

Front forks	Value	Valid
Top fork bridge on fixed fork tube		
M8 x 40 Lubricate thread, Optimoly TA	19 Nm	

Front forks	Value	Valid
Bottom fork bridge on fixed fork tube		
M8 x 45 Lubricate thread, Optimoly TA	**Tightening sequence: Tighten bolts 4 times in alternate sequence**	
	14 Nm	
Adjusting instructions for steering-head bearing		
Bottom slotted nut, M30 x 1	Tightening torque, 25 Nm	
	Swivel fork 3-times left/right	
	Loosen (fork on steering stop left), 80°	
	Tightening torque (fork on steering stop right), 5 Nm	
Lock nut for steering-head bearing adjusting nut		
Lock nut, M30 x 1	Tightening torque, 3 Nm	
Top fork bridge on steerer tube		
M28 x 1	80 Nm	

Front forks	Value	Valid
Brake line on fork bridge		
M6 x 15 Lubricate thread, Optimoly TA	8 Nm	
Front wheel speed sensor on bracket		
M5 x 15 Lubricate thread, Optimoly TA	5 Nm	

Steering	Value	Valid
Retaining screw on fork bridge, top		
M6 x 20 Lubricate thread, Optimoly TA	8 Nm	
Handlebar clamp on fork leg		
M8 x 25 Lubricate thread, Optimoly TA	19 Nm	
Steering damper on fork bridge		
M8 x 35 Loctite 243, Medium strength	19 Nm	

Steering	Value	Valid
Steering damper on frame		
M8 x 35 Loctite 243, Medium strength	19 Nm	

Front brake	Value	Valid
Radial brake caliper on wheel axle clamp		
M10 x 1.25 x 75 Lubricate thread, Optimoly TA	38 Nm	

Rear brake	Value	Valid
Rear brake caliper on brake caliper mount		
M7 x 65 Loctite 243, Medium strength	13 Nm	

Rear wheel swinging arm	Value	Valid
Swinging arm axle on frame		
Swinging arm axle, M27 x 1.25	10 Nm	

Rear wheel swinging arm	Value	Valid
Nut on swinging arm axle		
M18 x 1.5, Replace nut mechanical	100 Nm	
Swinging-arm pivot insert, left, to frame		
M5 x 16 Loctite 243, Medium strength	Countersunk bolt, 5 Nm	
Swinging-arm pivot insert, right, to frame		
M10 x 27 Lubricate threads, Optimoly TA	with drawdown cone, 38 Nm	
M10 x 25 Lubricate threads, Optimoly TA	with waistband, 38 Nm	
Pivot strut on relay lever		
M10 x 55 Lubricate thread, Optimoly TA	38 Nm	
Clamping bolt on tension strut		
M6 x 16 Lubricate thread, Optimoly TA	10 Nm	

Rear wheel swinging arm	Value	Valid
Wheel speed sensor/cable clip on rear brake caliper mount		
M5 x 15 Lubricate thread, Optimoly TA	5 Nm	

Footrests	Value	Valid
Rider's footrest bracket on main frame		
M8 x 20 Lubricate thread, Optimoly TA	19 Nm	
Footrest to footrest plate		
M8 x 20 Loctite 243, Medium strength	25 Nm	

Rear brake actuation	Value	Valid
Peg to footbrake lever		
M6 x 20	10 Nm	
Pushrod, footbrake cylinder		
M6, Lock nut	6 Nm	

Rear brake actuation	Value	Valid
Eccentric height adjustment on brake lever		
M5 x 16 Lubricate thread, Optimoly TA	5 Nm	

Shift mechanism	Value	Valid
Peg to gearshift lever		
M6 x 20	10 Nm	
Selector rod to gearshift lever		
M6 x 22 Lubricate thread, Optimoly TA	8 Nm	

Rear wheel	Value	Valid
Rear quick-release axle in swinging arm		
M24 x 1.5 Lubricate the quick-release axle and thread, Optimoly TA	100 Nm	

Chassis and suspension adjustment data

Steering damper basic setting	10 clicks opened (from completely closed)
Steering damper adjustment range	18 clicks
Steering head angle basic setting	Steering head angle insert 0°
Steering head angle adjustment range	Steering head angle inserts +/- 0.5°; 0.0° and +/- 1°
Fork bridge offset basic setting	Fork bridge insert 30 mm
Fork bridge offset adjustment range	Fork bridge inserts 26/32 mm and 28/30 mm
Projection of fork tube in fork bridge, top (with cap)	15 mm, Basic setting
	5...25 mm, Adjustment range
Maximum fork-tube projection	max 23 mm (Fork bridge offset 26 mm and steering head angle 0°)
	max 25 mm (Fork bridge offset 26 mm and steering head angle +0.5°)
	max 25 mm (Fork bridge offset 26 mm and steering head angle +1°)
	max 19 mm (Fork bridge offset 26 mm and steering head angle -0.5°)
	max 15 mm (Fork bridge offset 26 mm and steering head angle -1°)

	max 25 mm (Fork bridge offset 28 mm and steering head angle 0°)
	max 25 mm (Fork bridge offset 28 mm and steering head angle +0.5°)
	max 25 mm (Fork bridge offset 28 mm and steering head angle +1°)
	max 21 mm (Fork bridge offset 28 mm and steering head angle -0.5°)
	max 17 mm (Fork bridge offset 28 mm and steering head angle -1°)
	max 25 mm (Fork bridge offset 30 mm and steering head angle 0°)
	max 25 mm (Fork bridge offset 30 mm and steering head angle +0.5°)
	max 25 mm (Fork bridge offset 30 mm and steering head angle +1°)
	max 23 mm (Fork bridge offset 30 mm and steering head angle -0.5°)
	max 19 mm (Fork bridge offset 30 mm and steering head angle -1°)
	max 25 mm (Fork bridge offset 32 mm and steering head angle 0°)

	max 25 mm (Fork bridge offset 32 mm and steering head angle +0.5°)
	Must not be installed! (Fork bridge offset **32 mm** and steering head angle **+1°**)
	max 25 mm (Fork bridge offset 32 mm and steering head angle -0.5°)
	max 21 mm (Fork bridge offset 32 mm and steering head angle -1°)
Front forks spring preload basic setting	Turn adjuster counter-clockwise to the limit position, then turn 5 mm (5 turns) clockwise
Front forks spring preload adjustment range	0...18 mm corresponds to 18 turns
Front forks rebound basic setting	Turn adjuster (R) to the limit position clockwise, then turn 20 clicks counter-clockwise
Front forks rebound adjustment range	1...26 clicks
Front forks compression stage basic setting	Turn adjuster (C) to the limit position clockwise, then turn 20 clicks counter-clockwise
Front forks compression stage adjustment range	1...26 clicks
Spring strut spring preload basic setting	Turn adjuster counter-clockwise to the limit position, then turn 1 mm (2 turns) clockwise
Spring strut spring preload adjustment range	0...8.5 mm corresponds to 17 turns

Spring strut rebound basic setting	Turn adjuster (R) to the limit position clockwise, then turn 12 clicks counter-clockwise
Spring strut rebound adjustment range	1...26 clicks
Spring strut compression stage basic setting	Turn adjuster (C) to the limit position clockwise, then turn 18 clicks counter-clockwise
Spring strut compression stage adjustment range	1...26 clicks
Projection of fork tube in fork bridge, top (with cap)	15 mm, Basic setting
	5...25 mm, Adjustment range
Tension strut length	113 mm, Basic setting
	108...118 mm, Adjustment range
Vehicle height, rear	0 mm (eye facing down) (Basic setting)
	0/-3 mm (Adjustment range)

Fuel

Recommended fuel grade	Petrol as per DIN EN 228 (max 5 % ethanol) min 98 ROZ/RON min 93 AKI
Usable fuel capacity	approx. 17.5 l
Fuel reserve	approx. 4 l

Engine oil

Engine oil, capacity	approx. 4.5 l, with filter change
Specification	SAE 5W-40, API SL / JASO MA2, Additives (e.g. molybdenum-based) are not permissible because they can attack coated components of the engine, BMW Motorrad recommends BMW Motorrad ADVANTEC Ultimate oil.

BMW recommends ADVANTEC ORIGINAL BMW ENGINE OIL

Engine

Location of engine number	Crankcase lower part right, behind the coolant pump
Engine type	104EZ
Engine design	Water/oil-cooled 4-cylinder four-stroke in-line engine, four titanium valves per cylinder, two overhead racing camshafts, milled oil sump, Pankl connecting rod, precision-balanced and lightened crankshaft
Displacement	999 cm^3
Cylinder bore	80 mm
Piston stroke	49.7 mm
Compression ratio	13.6
Nominal output	158 kW, at engine speed: 13900 min^{-1}
Torque	120 Nm, at engine speed: 10000 min^{-1}
Maximum engine speed	max 14300 min^{-1}, 1st gear
	max 14500 min^{-1}, 2nd - 6th gear
Idle speed	1500 min^{-1}, Engine at regular operating temperature

Clutch

Clutch type	Multi-plate oil-bath clutch, anti-hopping

Transmission

Gearbox type	Claw-shift 6-speed racing gearbox, integrated into engine block
Gearbox transmission ratios	1.652 (76:46 teeth), Primary transmission ratio 2.389 (43:18 teeth), 1st gear 2.000 (44:22 teeth), 2nd gear 1.727 (38:22 teeth), 3rd gear 1.545 (34:22 teeth), 4th gear 1.400 (35:25 teeth), 5th gear 1.292 (31:24 teeth), 6th gear

Rear-wheel drive

Type of final drive	Chain drive
Type of rear suspension	Suter Aluminium beam double-sided swinging arm
Number of teeth, rear-wheel drive (Pinion / sprocket)	16:43, Installed at the factory
	Supplied:
	15, 17, Pinion 41, 42, 44, 45, Sprocket

Frame

Frame type	CFRP frame in Monocoque design, with core and RTM design
Type plate location	Frame, front right at steering head

Chassis and suspension

Front wheel	
Type of front suspension	Öhlins FGR 300 WSBK Upside-down telescopic fork
Spring travel, front	130 mm, at wheel
Rear wheel	
Type of rear suspension	Suter Aluminium beam double-sided swinging arm
Type of final drive	Chain drive
Type of rear suspension	Öhlins TTX 36 GP central spring strut with adjustable spring base, adjustable rebound and compression stage.
Spring travel, rear	120 mm, at wheel

Brakes

Front wheel	
Type of front brake	Hydraulic radially actuated Brembo Racing twin disc brake, floating racing brake disc, 4-piston monoblock fixed caliper with titanium pistons
Brake-pad material, front	Sintered metal, mixture Z04
Brake disc thickness, front	6.75 mm, when new min 6.25 mm, Wear limit
Rear wheel	
Type of rear brake	Hydraulically actuated Brembo Racing single-disc brake, 4-piston fixed caliper with titanium pistons
Brake-pad material, rear	Sintered metal, mixture H38
Brake disc thickness, rear	4.0 mm, when new min 3.5 mm, Wear limit
Blow-by clearance of the footbrake lever	2 mm, Between eccentric and limit position

Wheels and tyres

Front wheel	
Front wheel type	Full-CFRP-wheel in braiding technology and RTM design
Front wheel rim size	3.50" x 17"
Permissible front-wheel imbalance	max 5 g
Balance weight for front wheel (One half of the weights must be attached to the left and the other half to the right of the wheel rim)	max 80 g
Tyre designation, front	120/70 ZR 17
Rear wheel	
Rear-wheel type	Full-CFRP-wheel in braiding technology and RTM design
Rear wheel rim size	6.00" x 17"
Permissible rear-wheel imbalance	max 45 g
Balance weight for the rear wheel (One half of the weights must be attached to the left and the other half to the right of the wheel rim)	max 80 g
Tyre designation, rear	200/60 ZR 17

Electrical system

Fuse	
Main fuse	40 A
Battery	
Battery type	Lithium ion battery
Battery rated voltage	12.8 V
Battery rated capacity	5 Ah

Dimensions

Length of motorcycle	2070 mm
Height of motorcycle	1193 mm, To windscreen at DIN unladen weight
Width of motorcycle	777 mm
Front-seat height	816 mm, Lowest position 831 mm, Middle position 846 mm, Top position
Rider's inside-leg arc, heel to heel	1829 mm, Lowest position 1859 mm, Middle position 1889 mm, Top position

Weights

Vehicle kerb weight	171 kg, DIN unladen weight, ready for road, 90% load of fuel

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 carry out reliably all maintenance and repair work on your BMW.
You can locate your nearest authorised BMW Motorrad dealership by visiting our website:
bmw-motorrad.com

WARNING

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

In order to help ensure that your BMW is always in optimum condition, BMW Motorrad recommends compliance with the maintenance intervals specified for your motorcycle. Have all maintenance and repair work 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.

Maintenance work

BMW pre-delivery check

Your authorised BMW Motorrad Retailer conducts the BMW pre-delivery check before handing over the vehicle to you.

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.

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:

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰
5 000 km		X					X	X	X	X	X	X					
10 000 km		X					X	X	X	X	X	X	X				
15 000 km		X					X	X	X	X	X	X					
12 months	X		X	X[a]	X[a]	X								X	X	X	X
24 months							X[b]	X[b]	X[b]	X[b]	X[b]	X[b]					

Maintenance schedule

1 BMW Service standard scope
2 Engine service
3 Engine-oil change, with filter
4 Checking clutch
5 Cleaning brake calipers
6 Replace air filter element
7 Maintenance of telescopic forks
8 Maintenance of steering damper
9 Maintenance of rear spring strut
10 Maintenance of handbrake fitting
11 Maintenance of front brake calipers
12 Maintenance of rear brake calipers
13 Replace steering tube
14 Changing the brake fluid, front
15 Changing the brake fluid, rear
16 Replacing the rubber grommets for the angular rate sensor
17 Checking the rubber grip for wear and positioning

a After every event and annually
b Every two years or every 5000 km (whichever comes first)

Maintenance confirmations

BMW Service standard scope

The repair tasks in the BMW Service standard scope are listed below. The actual scope of maintenance work applicable for your vehicle may vary.

- Performing vehicle test with BMW Motorrad diagnostic system
- Checking the steering-head bearing
- Checking coolant level
- Checking the fastener of the clutch lever fitting
- Checking the clutch cable and clutch-lever play
- Lubricating the clutch mechanism
- Checking front brake pads and brake discs for wear
- Checking the rear brake pads and brake disc for wear
- Checking and lubricating the chain drive
- Checking the condition of the tyres and whether they are damaged
- Performing vehicle test with BMW Motorrad diagnostic system
- Confirming the BMW service in the on-board literature

BMW pre-delivery check

carried out

at_____

_____

Stamp, signature

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

BMW Service
carried out

at_____
at km_____

Next service
at the latest
at_____
or, when reached earlier
at km_____

_____
Stamp, signature

Work performed

	Yes	No
BMW Service	☐	☐
Engine service (for maintenance)	☐	☐
Oil change, engine, with filter	☐	☐
Renewing air cleaner insert	☐	☐
Cleaning the brake calipers at the front and the brake calipers at the rear	☐	☐
Changing brake fluid, front brakes	☐	☐
Changing brake fluid, rear brakes	☐	☐
Replace steering tube (for maintenance)	☐	☐
Replacing the rubber grommets for the angular rate sensor (for maintenance)	☐	☐

Notes

Service confirmations

The table is used to verify maintenance and repair work as well as installed optional accessories and purchased special promotions.

Work performed	at km	Date

Work performed	at km	Date

W

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.

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Original rider's manual, printed in Germany.

Important data for pit stop:

Fuel	
Recommended fuel grade	Petrol as per DIN EN 228 (max 5 % ethanol) min 98 ROZ/RON min 93 AKI
Usable fuel capacity	approx. 17.5 l
Fuel reserve	approx. 4 l

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

BMW recommends ADVANTEC ORIGINAL BMW ENGINE OIL

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