

**690 Duke EU**  
**690 Duke AUS/UK**  
**690 Duke R EU**  
**690 Duke R AUS/UK**  
**690 Duke R MAL**

Art. no. 3213103en



**KTM**



# DEAR KTM CUSTOMER

Congratulations on your decision to purchase a KTM motorcycle. You are now the owner of a state-of-the-art sports motorcycle that will give you enormous pleasure if you service and maintain it accordingly.

We wish you a lot of enjoyment in riding this vehicle.

Enter the serial numbers of your vehicle below.

Chassis number (☛ p. 20)	Dealer's stamp
Engine number (☛ p. 22)	
Key number (☛ p. 21)	

The owner's manual contained the latest information for this model series at the time of going to print. Minor differences due to developments in design cannot be ruled out completely.

All specifications are non-binding. KTM Sportmotorcycle AG specifically reserves the right to modify or delete technical specifications, prices, colors, forms, materials, services, designs, equipment, etc., without prior notice and without specifying reasons, to adapt these to local conditions, as well as to stop production of a particular model without prior notice. KTM accepts no liability for delivery options, deviations from illustrations and descriptions, as well as misprints and other errors. The models portrayed partly contain special equipment that does not belong to the regular scope of supply.

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# DEAR KTM CUSTOMER



ISO 9001(12 100 6061)

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Issued by: TÜV Management Service

REG.NO. 12 100 6061

KTM-Sportmotorcycle AG  
5230 Mattighofen, Austria

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# 1 MEANS OF REPRESENTATION

## 1.1 Symbols used

The meaning of specific symbols is described below.



Indicates an expected reaction (e.g. of a work step or a function).



Indicates an unexpected reaction (e.g. of a work step or a function).



All work marked with this symbol requires specialist knowledge and technical understanding. In the interest of your own safety, have these jobs performed by an authorized KTM workshop. There, your motorcycle will be optimally cared for by specially trained experts using the specialist tools required.



Indicates a page reference (more information is provided on the specified page).

## 1.2 Formats used

The typographical formats used in this document are explained below.

**Specific name**

Identifies a proprietary name.

**Name®**

Identifies a protected name.

**Brand™**

Identifies a brand available on the open market.

### 2.1 Use definition - intended use

KTM sport motorcycles are designed and constructed to meet the normal demands of regular road operation but not for use on race courses or offroad.

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#### Info

The motorcycle is only authorized for operation on public roads in the homologated version.

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### 2.2 Safety advice

A number of safety instructions need to be followed to operate the vehicle safely. Therefore, read this manual carefully. The safety instructions are highlighted in the text and are referred to at the relevant passages.

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#### Info

The vehicle has various information and warning labels at prominent locations. Do not remove information/warning labels. If they are missing, you or others may not recognize dangers and may therefore be injured.

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### 2.3 Degrees of risk and symbols

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**Danger**

Identifies a danger that will immediately and invariably lead to fatal or serious permanent injury if the appropriate measures are not taken.

**Warning**

Identifies a danger that is likely to lead to fatal or serious injury if the appropriate measures are not taken.

**Caution**

Identifies a danger that may lead to minor injuries if the appropriate measures are not taken.

**Note**

Identifies a danger that will lead to considerable machine and material damage if the appropriate measures are not taken.

**Warning**

Identifies a danger that will lead to environmental damage if the appropriate measures are not taken.

---

### 2.4 Tampering warning

Tampering with the noise control system is prohibited. Federal law prohibits the following acts or the causing thereof:

- 1 The removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use, or
- 2 the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below:

- 1 Removal or puncturing of the main silencer, baffles, header pipes or any other components which conduct exhaust gases.
- 2 Removal or puncturing of parts of the intake system.
- 3 Lack of proper maintenance.
- 4 Replacing moving part of the vehicle, or parts of the exhaust or intake system, with parts other than those specified by the manufacturer.

### 2.5 Safe operation



#### **Danger**

**Danger of accidents** Danger arising from the rider's judgement being impaired.

- Do not operate the vehicle while under the influence of alcohol, drugs and certain medications or physically or mentally impaired.



#### **Danger**

**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and/or death.

- When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.



#### **Warning**

**Danger of burns** Some vehicle components become very hot when the vehicle is operated.

- Do not touch hot components such as exhaust system, radiator, engine, shock absorber, and the brake system. Allow these components to cool down before starting work on them.

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Only operate the vehicle when it is in perfect technical condition, in accordance with its intended use, and in a safe and environmentally compatible manner.

An appropriate driver's license is needed to ride the vehicle on public roads.

Have malfunctions that impair safety promptly eliminated by an authorized KTM workshop.

Adhere to the information and warning labels on the vehicle.

### 2.6 Protective clothing



#### Warning

**Risk of injury** Missing or poor protective clothing presents an increased safety risk.

- Wear protective clothing (helmet, boots, gloves, pants and jacket with protectors) every time you ride the vehicle. Always wear protective clothing that is in good condition and meets the legal requirements.

In the interest of your own safety, KTM recommends that you only operate the vehicle while wearing protective clothing.

### 2.7 Work rules

Special tools are necessary for certain tasks. The tools are not contained in the vehicle but can be ordered under the number in parentheses. E.g.: bearing puller (15112017000)

During assembly, non-reusable parts (e.g. self-locking screws and nuts, seals and seal rings, O-rings, pins, lock washers) must be replaced by new parts.

In some instances, a thread locker (e.g. **Loctite**®) is required. The manufacturer instructions for use must be followed.

After disassembly, clean the parts that are to be reused and check them for damage and wear. Change damaged or worn parts.

After you complete the repair or service work, check the operating safety of the vehicle.

### 2.8 Environment

If you use your motorcycle responsibly, you can ensure that problems and conflicts do not occur. To protect the future of the motorcycle sport, make sure that you use your motorcycle legally, display environmental consciousness, and respect the rights of others. When disposing of used oil, other operating and auxiliary fluids, and used components, comply with the laws and regulations of the respective country.

Because motorcycles are not subject to the EU regulations governing the disposal of used vehicles, there are no legal regulations that pertain to the disposal of an end-of-life motorcycle. Your authorized KTM dealer will be glad to advise you.

### 2.9 Owner's Manual

It is important that you read this Owner's Manual carefully and completely before making your first trip. The Owner's Manual contains useful information and many tips on how to operate, handle, and maintain your motorcycle. Only then will you find out how to customize the vehicle ideally for your own use and how you can protect yourself from injury.

Keep the Owner's Manual in an accessible place to enable you to refer to it as needed.

If you would like to know more about the vehicle or have questions on the material you read, please contact an authorized KTM dealer.

The Owner's Manual is an important component of the vehicle and should be handed over to the new owner if the vehicle is sold.

## 3.1 Guarantee, warranty

The work prescribed in the service schedule must be carried out by an authorized KTM workshop only and confirmed in the customer's Service & Warranty Booklet and in the **KTM dealer.net**; otherwise, all warranty claims will be void. No warranty claims can be considered for damage resulting from manipulations and/or alterations to the vehicle.

Additional information on the guarantee or warranty and the procedures involved can be found in the Service & Warranty Booklet.

## 3.2 Operating and auxiliary substances



### Warning

**Environmental hazard** Improper handling of fuel is a danger to the environment.

- Do not allow fuel to get into the ground water, the ground, or the sewage system.

Use operating and auxiliary substances (such as fuel and lubricants) as specified in the Owner's Manual.

## 3.3 Spare parts, accessories

For your own safety, only use spare parts and accessory products that are approved and/or recommended by KTM and have them installed by an authorized KTM workshop. KTM accepts no liability for other products and any resulting damage or loss.

Certain spare parts and accessory products are specified in parentheses in the descriptions. Your authorized KTM dealer will be glad to advise you.

The current **KTM PowerParts** for your vehicle can be found on the KTM website.

International KTM Website: <http://www.ktm.com>

## 3.4 Service

A prerequisite for perfect operation and prevention of premature wear is that the service, care, and tuning work on the engine and chassis is properly carried out as described in the Owner's Manual. Incorrect adjustment and tuning of the engine and chassis can lead to damage and breakage of components.

Use of the vehicle under difficult conditions, such as on sand or on wet and muddy surfaces, can lead to considerably more rapid wear of components such as the drive train, brake system, or suspension components. For this reason, it may be necessary to inspect or replace parts before the next scheduled service.

It is imperative that you adhere to the stipulated run-in times and service intervals. If you observe these exactly, you will ensure a much longer service life for your motorcycle.

### 3.5 Figures

The figures contained in the manual may depict special equipment.

In the interest of clarity, some components may be shown disassembled or may not be shown at all. It is not always necessary to disassemble the component to perform the activity in question. Please follow the instructions in the text.

### 3.6 Customer service

Your authorized KTM dealer will be happy to answer any questions you may have on your vehicle and KTM.

A list of authorized KTM dealers can be found on the KTM website.

International KTM Website: <http://www.ktm.com>



# 4 VIEW OF VEHICLE

## 4.1 View of vehicle, front left side (example)



# 4 VIEW OF VEHICLE

1	Clutch lever (☛ p. 25)
2	Seat
3	Passenger seat
4	Handrails (☛ p. 42)
5	Seat lock (☛ p. 41)
6	Engine number (☛ p. 22)
7	Shift lever (☛ p. 43)
8	Side stand (☛ p. 46)

# 4 VIEW OF VEHICLE

## 4.2 View of vehicle, rear right side (example)

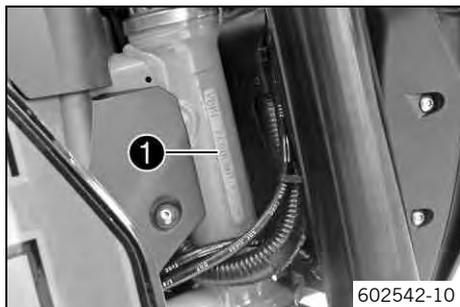


# 4 VIEW OF VEHICLE

1	Tool set (☛ p. 41)
1	<b>Map-Select</b> switch
2	Light switch (☛ p. 27)
2	Headlight flasher switch (☛ p. 28)
2	Turn signal switch (☛ p. 28)
2	Horn button (☛ p. 27)
3	Filler cap
4	Ignition/steering lock (☛ p. 30)
5	Emergency OFF switch (☛ p. 29)
5	Electric starter button (☛ p. 29)
6	Hand brake lever (☛ p. 25)
7	Chassis number (☛ p. 20)
8	Fuse box
9	Type label (☛ p. 20)
10	Passenger footrests (☛ p. 42)
11	Foot brake lever (☛ p. 45)
12	Level viewer, engine oil

# 5 SERIAL NUMBERS

## 5.1 Chassis number



The chassis number ❶ is stamped on the right side of the steering head.

## 5.2 Type label

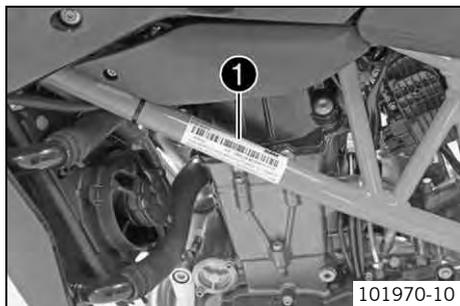


The type label ❶ is located on the right side of the frame.

# 5 SERIAL NUMBERS

(690 Duke AUS/UK, 690 Duke R AUS/UK)

The type label ❶ is located on the left side of the frame.



## 5.3 Key number

The key number ❶ can be found on the **KEYCODECARD**.



### Info

You need the key number to order a spare key. Keep the **KEYCODECARD** in a safe place.



## 5.4 Engine number



### (Duke)

The engine number ① is located on the left side of the engine under the engine sprocket.



### (Duke R)

The engine number ① is located on the left side of the engine under the engine sprocket.

## 5.5 Fork part number



The fork part number ❶ is stamped on the inner side of the fork stub.

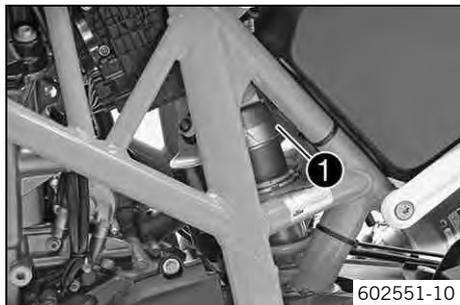
## 5.6 Shock absorber part number



(Duke)

The shock absorber part number ❶ is on the left side of the shock absorber.

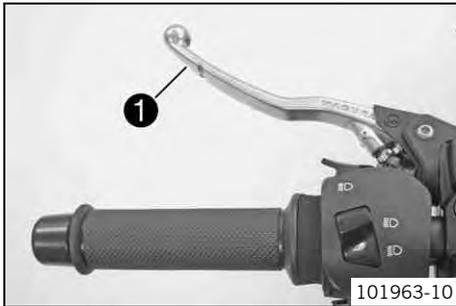
## 5 SERIAL NUMBERS



**(Duke R)**

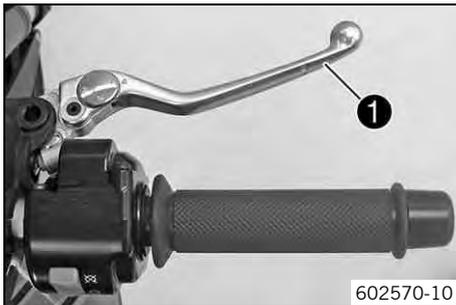
The shock absorber part number ❶ is found on the damper at the rear.

## 6.1 Clutch lever



The clutch lever ❶ is fitted on the left side of the handlebar. The clutch is hydraulically operated and self-adjusting.

## 6.2 Hand brake lever



**(Duke)**

The hand brake lever ❶ is fitted on the right side of the handlebar.

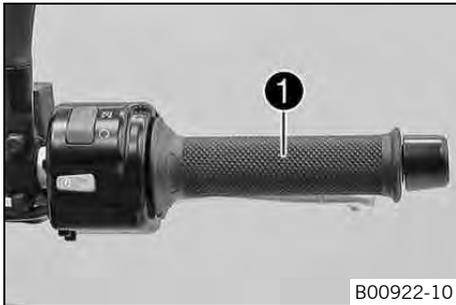
# 6 CONTROLS



## (Duke R)

The hand brake lever ❶ is fitted on the right side of the handlebar. The front brake is engaged using the hand brake lever.

## 6.3 Throttle grip



The throttle grip ❶ is fitted on the right side of the handlebar.

## 6.4 Horn button

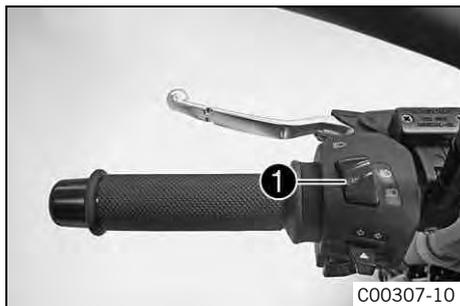


The horn button ❶ is fitted on the left side of the handlebar.

### Possible states

- Horn button ❶ in neutral position
- Horn button ❶ pressed – The horn is operated in this position.

## 6.5 Light switch



The light switch ❶ is fitted on the left side of the handlebar.

### Possible states

	Low beam on – Light switch is turned downwards. In this position, the low beam and tail light are switched on.
	High beam on – Light switch is turned upwards. In this position, the high beam and the tail light are switched on.

## 6.6 Headlight flasher switch



The headlight flasher switch ❶ is fitted on the left side of the handlebar.

### Possible states

- Headlight flasher switch in neutral position
- Headlight flasher switch pressed – In this position, the headlight flasher (high beam) is actuated.

## 6.7 Turn signal switch



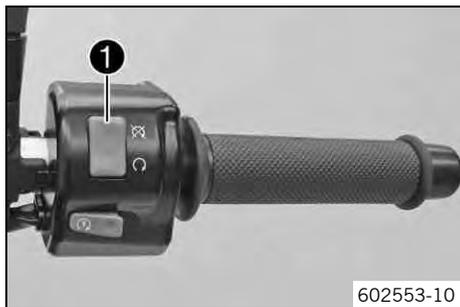
The turn signal switch ❶ is fitted on the left side of the handlebar.

### Possible states

	Turn signal off
	Left turn signal on – The turn signal switch is pressed to the left. The turn signal switch automatically returns to the central position after use.
	Right turn signal on – The turn signal switch is pressed to the right. The turn signal switch automatically returns to the central position after use.

To switch off the turn signal, press the turn signal switch towards the switch housing.

## 6.8 Emergency OFF switch

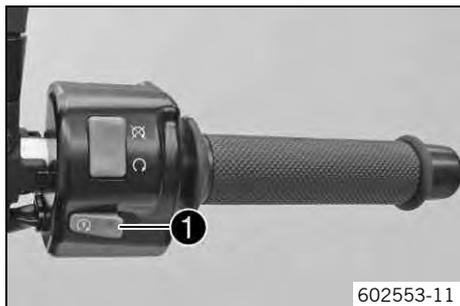


The emergency OFF switch ❶ is fitted on the right side of the handlebar.

### Possible states

	Emergency OFF switch off – In this position, the ignition circuit is interrupted, a running engine stops, and the engine cannot be started.
	Emergency OFF switch on – This position is necessary for operation as the ignition circuit is closed.

## 6.9 Electric starter button



The electric starter button ❶ is fitted on the right side of the handlebar.

### Possible states

- Electric starter button ❸ in basic position
- Electric starter button ❸ pressed – In this position, the electric starter is actuated.

## 6.10 Ignition/steering lock



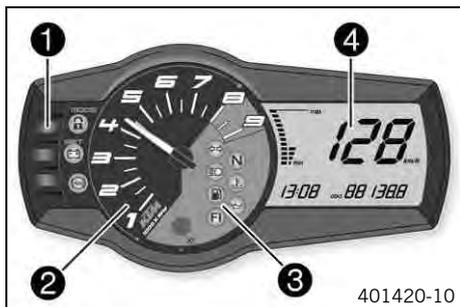
The ignition/steering lock ❶ is located in front of the upper triple clamp.

### Possible states

	<p>Ignition off – In this position, the ignition circuit is interrupted, a running engine stops, and a non-running engine will not start. The ignition key can be removed.</p>
	<p>Ignition on – In this position, the ignition circuit is closed and the engine can be started.</p>
	<p>Steering locked – In this position, the ignition circuit is interrupted and the steering locked. The ignition key can be removed.</p>

## 6.11 Combination instrument

### 6.11.1 Overview

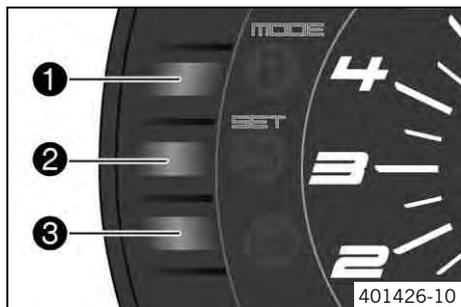


The combination instrument is attached in front of the handlebar.

The combination instrument is divided into 4 function areas.

- ❶ Function buttons (☞ p. 31)
- ❷ Tachometer (☞ p. 31)
- ❸ Indicator lamps (☞ p. 32)
- ❹ Display (☞ p. 33)

## 6.11.2 function buttons



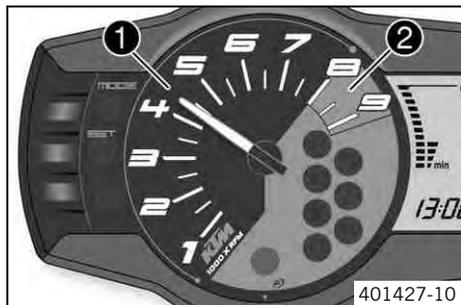
You can change the display mode with the **MODE** button ①.

Possible display modes are the odometer (**ODO**), trip master 1 (**TRIP 1**), trip master 2 (**TRIP 2**), and gear display (**GEAR**).

Press the **SET** button ② to reset the trip master 1 function (**TRIP 1**) and trip master 2 function (**TRIP 2**) to **0.0**.

The ABS can be switched off using button ③.

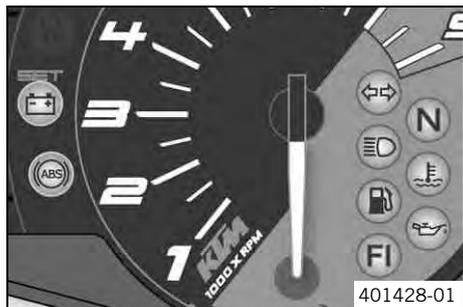
## 6.11.3 Tachometer



The tachometer ① shows the engine speed in revolutions per minute.

The orange marking ② marks the over-rev (excessive speed) range of the engine.

## 6.11.4 Combination instrument - indicator lamps



The indicator lamps offer additional information about the operating state of the motorcycle.

### Possible states

	The turn signal indicator light flashes green simultaneously with the turn signal – The turn signal is switched on.
	The idling speed indicator lamp lights up green – The transmission is shifted to idle.
	The high beam indicator lamp lights up blue – The high beam is switched on.
	The temperature warning lamp lights up red – The coolant temperature has reached a critical value.
	The low fuel warning lamp lights up orange – The fuel level has reached the reserve mark. The display switches to <b>TRIP F</b> .
	The oil pressure warning lamp lights up red – The oil pressure is too low.
	<b>FI</b> warning lamp ( <b>MIL</b> ) lights up/flashes yellow – The OBD (on-board diagnosis) has detected an emission- or safety-critical error.
	The battery warning lamp lights up red – The voltage in the vehicle system is too low.
	ABS warning lamp lights up/flashes yellow – Status or error messages relating to ABS (antilock brake system).

## 6.11.5 Display



When you switch on the ignition, all display segments light up for one second as a function check.



### LEnGth

Following the display function check, the **LEnGth** wheel circumference is shown for one second.



### Info

1870 mm corresponds to the circumference of the 17" front wheel with a series production tire.

The display then changes to the last selected mode.

## 6.11.6 Speed display



The speed **1** is shown in kilometers per hour **km/h** or in miles per hour **mph**.

## 6.11.7 Setting kilometers or miles

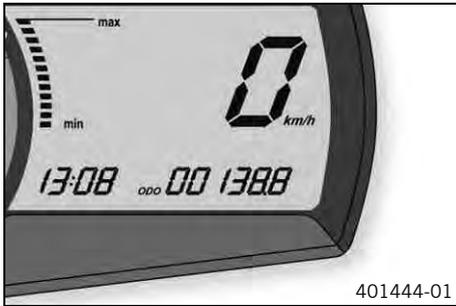


### Info

If you change the unit, the value **ODO** is retained and converted accordingly. Making the setting according to the country.

### Condition

The motorcycle is stationary.



- Switch on the ignition by turning the ignition key to the position  $\odot$ .
- Press the **MODE** button repeatedly until the **ODO** mode is active.
- Keep the **MODE** button pressed until the display mode changes from **km/h** to **mph** or from **mph** to **km/h**.

## 6.11.8 Time



The time is shown in area ① of the display.



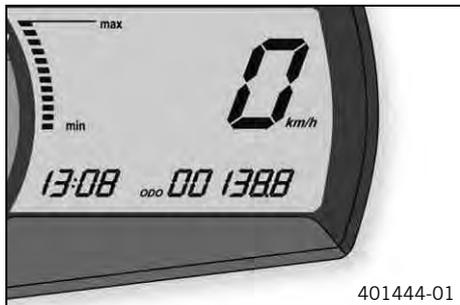
### Info

After reconnecting the battery or changing the fuse, the time must be reset.

## 6.11.9 Setting the clock

### Condition

The motorcycle is stationary.



- Switch on the ignition by turning the ignition key to the position  $\odot$ .
- Press the **MODE** button repeatedly until the **ODO** mode is active.
- Keep the **MODE** button and the **SET** button pressed simultaneously.
  - ✓ The time display begins to flash.
- Press the **MODE** button to set the hour.
- Press the **SET** button to set the minute.
- Keep the **MODE** button and the **SET** button pressed simultaneously.
  - ✓ The time is set.

## 6.11.10 ODO display



In the **ODO** display mode, the total distance traveled is shown in kilometers or miles.



### Info

This value is retained, even if the battery is disconnected and/or the fuse blows.

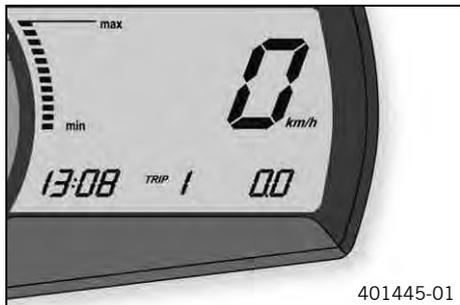
## 6.11.11 Setting/resetting display TRIP 1



### Info

The **TRIP 1** trip counter is always running and counts up to **999.9**.

The trip counter can be used to measure the distance covered during trips or between two refueling stops. After the value **999.9** is reached, the trip counter starts at **0.0** again.



- Switch on the ignition by turning the ignition key to the position  $\odot$ .
- Press the **MODE** button repeatedly until the **TRIP 1** mode is active.
- Keep the **SET** button pressed.
- ✓ The **TRIP 1** display is set to **0.0**.

## 6.11.12 Setting/resetting display TRIP 2



### Info

The **TRIP 2** trip counter is always running and counts up to **999.9**.

The trip counter can be used to measure the distance covered during trips or between two refueling stops. After the value **999.9** is reached, the trip counter starts at **0.0** again.



- Switch on the ignition by turning the ignition key to the position  $\odot$ .
- Press the **MODE** button repeatedly until the **TRIP 2** mode is active.
- Keep the **SET** button pressed.
- ✓ The **TRIP 2** display is set to **0.0**.

## 6.11.13 TRIP F display



If the fuel level drops to the reserve mark, the display automatically changes to **TRIP F** and starts to count from **0.0**, regardless of the previous display mode.



### Info

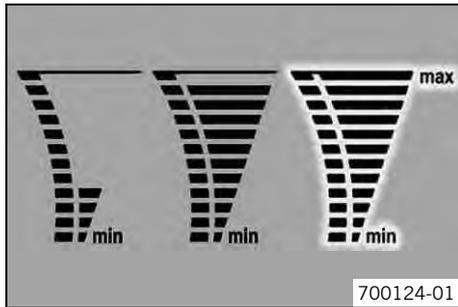
The low fuel warning lamp lights up in parallel to the **TRIP F** display.

## 6.11.14 GEAR display



In display mode **GEAR**, the gear currently engaged is displayed.

## 6.11.15 Coolant temperature indicator



The temperature display consists of 12 bars. The more bars that light up, the hotter the coolant. When the upper bar lights up, all bars in the display begin to flash and the temperature warning lamp lights up.

### Possible states

- Engine cold – Up to four bars light up.
- Engine warm – Five to eleven bars light up.
- Engine hot – All twelve bars flash.

## 6.12 Opening the filler cap



### Danger

**Fire hazard** Fuel is highly flammable.

- Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
- The fuel in the fuel tank expands when warm and may emerge if overfilled. Follow the instructions on refueling.



### Warning

**Danger of poisoning** Fuel is poisonous and a health hazard.

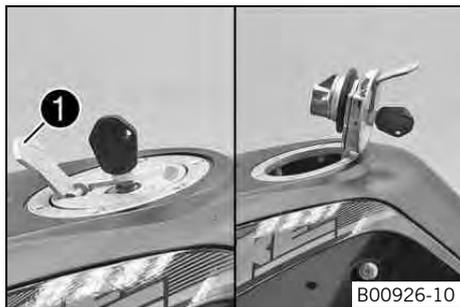
- Fuel must not come into contact with the skin, eyes, or clothing. Do not breathe in the fuel vapors. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If fuel is swallowed, contact a physician immediately. Change clothing that is contaminated with fuel. Store fuel properly in a suitable canister and keep away from children.



## Warning

**Environmental hazard** Improper handling of fuel is a danger to the environment.

- Do not allow fuel to get into the ground water, the ground, or the sewage system.



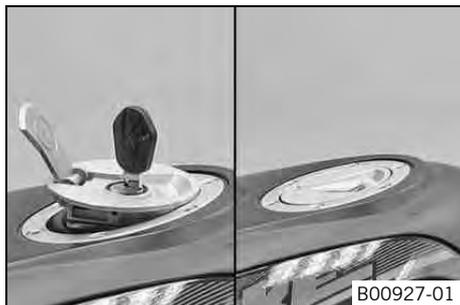
- Lift cover **1** of the filler cap and insert the ignition key in the lock.

## Note

**Danger of damage** Ignition key breakage.

- To take pressure off of the ignition key, push down on the filler cap. Damaged ignition keys must be replaced.
- Turn the ignition key 90° clockwise.
- Open the filler cap.

## 6.13 Closing the filler cap



- Fold down the filler cap.
- Turn the ignition key 90° clockwise.
- Press down the filler cap and turn back the ignition key until the lock locks.



## Warning

**Fire hazard** Fuel is highly flammable, poisonous and harmful to your health.

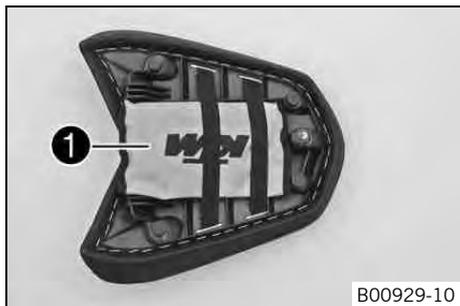
- After closing the filler cap, ensure that it is locked properly. Change clothing that has been contaminated with fuel. Immediately clean contaminated areas on the skin with soap and water.
- Remove the ignition key and close the cover.

## 6.14 Seat lock



The seat lock **1** is located on the left side of the vehicle. It can be locked with the ignition key.

## 6.15 Tool set



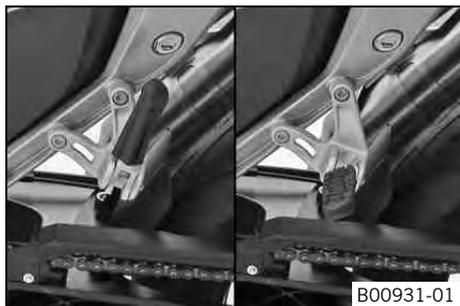
The tool set **1** is located under the passenger seat.

## 6.16 Handrails



The handrails ① are used for moving the motorcycle around.  
When you have a passenger, the passenger can hold on the handrails during the journey.

## 6.17 Passenger footrests

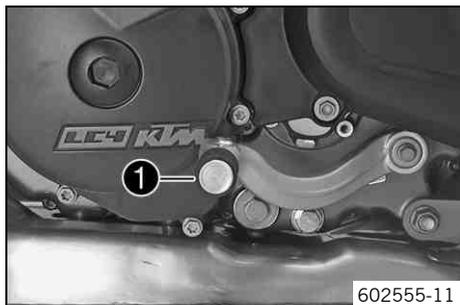


The passenger footrests can be folded up and down.

### Possible states

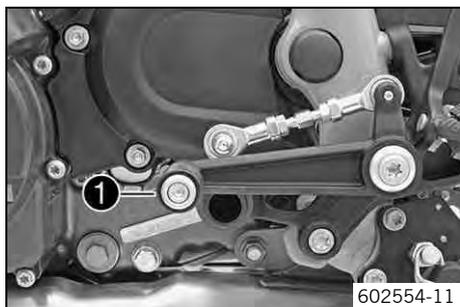
- Passenger footrests folded up – For operation without a passenger.
- Passenger footrests folded down – For operation with a passenger.

## 6.18 Shift lever



**(Duke)**

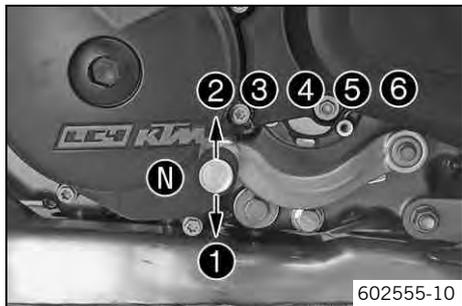
The shift lever **1** is mounted on the left side of the engine.



**(Duke R)**

The shift lever **1** is mounted on the left side of the engine.

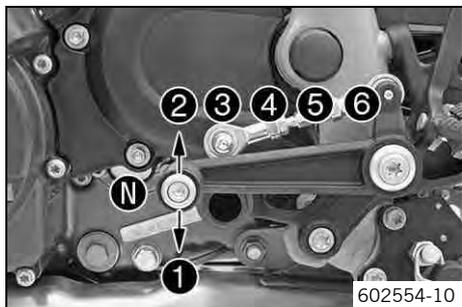
## 6 CONTROLS



### (Duke)

The gear positions can be seen in the figure.

The neutral or idle position is between the first and second gears.



### (Duke R)

The gear positions can be seen in the figure.

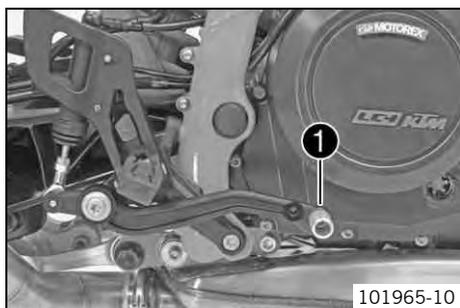
The neutral or idle position is between the first and second gears.

## 6.19 Foot brake lever



### (Duke)

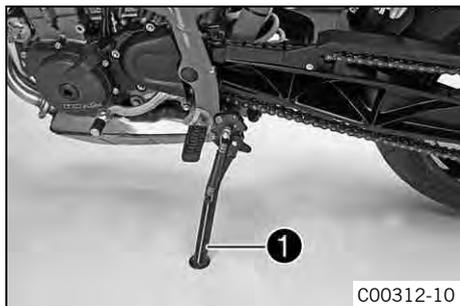
Foot brake lever ❶ is located in front of the right footrest.



### (Duke R)

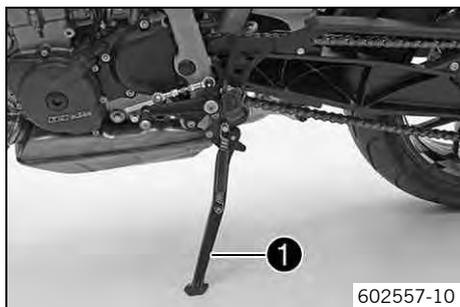
Foot brake lever ❶ is located in front of the right footrest.  
The rear brake is engaged with the foot brake lever.

## 6.20 Side stand



### (Duke)

The side stand ❶ is located on the left side of the vehicle.



### (Duke R)

The side stand ❶ is located on the left side of the vehicle.

The side stand is used for parking the motorcycle.



### Info

The side stand must be folded up during motorcycle use.

The side stand is coupled with the safety starting system – see the riding instructions.

### Possible states

- Side stand folded out – The vehicle can be supported on the side stand. The safety starting system is active.
- Side stand folded in – This position is mandatory when riding the motorcycle. The safety starting system is inactive.

## 7.1 Advice on first use



### **Danger**

**Danger of accidents** Danger arising from the rider's judgement being impaired.

- Do not operate the vehicle while under the influence of alcohol, drugs and certain medications or physically or mentally impaired.



### **Warning**

**Risk of injury** Missing or poor protective clothing presents an increased safety risk.

- Wear protective clothing (helmet, boots, gloves, pants and jacket with protectors) every time you ride the vehicle. Always wear protective clothing that is in good condition and meets the legal requirements.



### **Warning**

**Danger of crashing** Poor vehicle handling due to different tire tread patterns on front and rear wheels.

- The front and rear wheels must be fitted with tires with similar tread patterns to prevent loss of control over the vehicle.



### **Warning**

**Danger of accidents** Uncontrollable handling characteristic due to non-approved and/or non-recommended tires/wheels.

- Only tires/wheels approved by KTM and with the corresponding speed index should be used.



### **Warning**

**Danger of accidents** Reduced road grip with new tires.

- New tires have a smooth rolling surface and therefore cannot provide full road grip. The entire rolling surface must be roughened in the first 200 kilometers (124.3 miles) by moderate riding at alternating angles. The full grip levels are not achieved until the tires have been run in.



## Warning

**Danger of accidents** Failure of brake system.

- If the foot brake lever is not released, the brake linings drag continuously. The rear brake may fail due to overheating. Take your foot off the foot brake lever when you are not braking.
- 
- 



## Info

When using your vehicle, remember that others may feel disturbed by excessive noise.

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- Make sure that the pre-delivery inspection work has been carried out by an authorized KTM workshop.
  - ✓ You receive a delivery certificate and the service record at vehicle handover.
- Before your first trip, read the entire operating instructions carefully.
- Get to know the controls.
- Adjust the basic position of the clutch lever. (☞ p. 89)
- Adjust the basic position of the hand brake lever. (☞ p. 92)
- Adjust the basic position of the foot brake lever. ☞ (☞ p. 99)
- Get used to handling the motorcycle on a suitable piece of land before making a longer trip. Try also to ride as slowly as possible to get a better feel for the vehicle.
- Hold the handlebar firmly with both hands and keep your feet on the footrests when riding.
- Run the engine in. (☞ p. 48)

## 7.2 Running in the engine

- During the running-in phase, do not exceed the specified engine speed.

## Guideline

Maximum engine speed	
During the first: 1,000 km (620 mi)	6,000 rpm
After the first: 1,000 km (620 mi)	7,800 rpm

- Avoid fully opening the throttle!

## 7.3 Loading the vehicle



### Warning

**Danger of accidents** Unstable handling characteristics.

- Do not exceed the maximum permitted weight and axle loads. The overall weight consists of: motorcycle operational and with a full tank, driver and passenger with protective clothing and helmet, baggage.



### Warning

**Danger of accidents** Unstable handling characteristics due to incorrect mounting of suitcase and/or tank rucksack.

- Mount and secure suitcase and tank rucksack according to the manufacturer's instructions.



### Warning

**Danger of accidents** Unstable handling characteristics at high speed.

- Adapt your speed according to your payload. Ride more slowly if your motorcycle is loaded with cases or other baggage.  
Maximum speed with baggage 130 km/h (80.8 mph)



### Warning

**Danger of accidents** Risk of breakage of suitcase system.

- If you have fitted suitcases on your motorcycle, read the manufacturer's specifications concerning the maximum payload.



**Warning**

**Danger of accidents** Poor visibility for other road users due to slipped baggage.

- If the tail light is covered, you are less visible to traffic behind you, especially in the dark. Check that your baggage is fixed properly at regular intervals.



**Warning**

**Danger of accidents** Changed handling characteristics and longer stopping distance with excessive payload.

- Adapt your speed according to your payload.



**Warning**

**Danger of accidents** Unstable handling characteristics due to slipped baggage.

- Check the way your baggage is fixed regularly.



**Warning**

**Danger of burns** A hot exhaust system can burn baggage.

- Fasten your baggage in such a way that it cannot be burned or singed by the hot exhaust system.

- 
- If you carry any baggage, make sure it is fixed firmly as close as possible to the center of the vehicle and ensure even weight distribution between the front and rear wheels.
  - Do not exceed the overall maximum permitted weight and the axle loads.

Guideline

Maximum permissible overall weight	350 kg (772 lb.)
Maximum permissible front axle load	150 kg (331 lb.)
Maximum permissible rear axle load	220 kg (485 lb.)

## 8.1 Performing checks and vehicle care when preparing for use



### Info

Before each use, check the state and roadworthiness of the vehicle.  
Make sure that the vehicle is in perfect technical condition before use.

- Check the engine oil level. (☞ p. 148)
- Check the brake fluid level of the front brake. (☞ p. 94)
- Check the rear brake fluid level. (☞ p. 102)
- Check the front brake linings. (☞ p. 97)
- Check the rear brake linings. (☞ p. 105)
- Check the brake system function.
- Check the coolant level in the compensating tank. (☞ p. 140)
- Check the chain for dirt. (☞ p. 81)
- Check the chain tension. (☞ p. 83)
- Check the tire condition. (☞ p. 115)
- Check the tire pressure. (☞ p. 117)
- Check the settings of all controls and ensure that they can be operated smoothly.
- Check that the electrical equipment is functioning correctly.
- Check that baggage is correctly secured.
- Sit on the motorcycle and check the rear mirror setting.
- Check the fuel level.

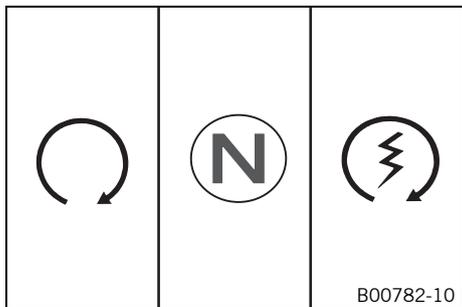
## 8.2 Starting

 **Danger**  
**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and/or death.

- When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

**Note**  
**Engine failure** High engine speeds in cold engines have a negative effect on the service life of the engine.

- Always warm up the engine at low engine speeds.



- Turn the emergency OFF switch to the position ○.
- Switch on the ignition by turning the ignition key to the position ○.
- ✓ After you switch on the ignition, you can hear the fuel pump working for about two seconds. The function check of the combination instrument is run at the same time.
- ✓ The ABS warning lamp lights up and goes back out after starting off.
- Shift gear to neutral.
- ✓ The green idling speed indicator lamp **N** lights up.
- Press the electric starter button Ⓢ.

## **i** Info

Do not press the electric starter button until the combination instrument function check is finished.

When starting, **DO NOT** open the throttle. If you open the throttle during the starting procedure, fuel is not injected by the engine management system and the engine cannot start.

Press the starter for a maximum of 5 seconds. Wait for a least 5 seconds before trying again.

This motorcycle is equipped with a safety starting system. You can only start the engine if the transmission is in neutral or if the clutch lever is pulled when a gear is engaged. If the side stand is folded out and you shift into gear and release the clutch lever, the engine stops.

- Take the weight off the side stand and swing it back up with your foot as far as it will go.

## **Switching off ABS**

KTM recommends riding with ABS at all times. However, situations may arise in which ABS is not advantageous.

### **Condition**

Vehicle stationary, engine running.

- Press the **1** button for 3 - 5 seconds.
  - ✓ The ABS warning lamp starts flashing; ABS is deactivated.



## 8.3 Starting off

- Pull the clutch lever, engage 1st gear, release the clutch lever slowly and simultaneously open the throttle carefully.

## 8.4 Shifting, riding



### Warning

**Danger of accidents** Abrupt load alterations can cause the vehicle to get out of control.

- Avoid abrupt load alterations and sudden braking actions, and adapt your speed to the road conditions.



### Warning

**Danger of accidents** If you change down at high engine speed, the rear wheel can lock up.

- Do not change into a low gear at high engine speed. The engine races and the rear wheel can lock up.



### Warning

**Danger of accidents** Malfunctions caused by incorrect ignition key position.

- Do not change the ignition key position during a journey.



### Warning

**Danger of accidents** Distraction from traffic activity by adjustments to the vehicle.

- Make all adjustments when the vehicle is at a standstill.



### Warning

**Risk of injury** Falling off of the passenger.

- The passenger must be seated properly on the passenger seat and hold on to the front rider or the grab handles. The feet must be positioned on the passenger footrests. Note the regulations governing the minimum age of passengers.



### Warning

**Danger of accidents** Danger of accidents caused by dangerous driving.

- Comply with traffic regulations and ride defensively and foresightedly to detect sources of danger early on.



## Warning

**Danger of accidents** Reduced road grip with cold tires.

- On every journey, take the first miles carefully at moderate speed until the tires reach operating temperature and optimal road grip is ensured.



## Warning

**Danger of accidents** Reduced road grip with new tires.

- New tires have a smooth rolling surface and therefore cannot provide full road grip. The entire rolling surface must be roughened in the first 200 kilometers (124.3 miles) by moderate riding at alternating angles. The full grip levels are not achieved until the tires have been run in.



## Warning

**Danger of accidents** Unstable handling characteristics.

- Do not exceed the maximum permitted weight and axle loads. The overall weight consists of: motorcycle operational and with a full tank, driver and passenger with protective clothing and helmet, baggage.



## Warning

**Danger of accidents** Unstable handling characteristics due to slipped baggage.

- Check the way your baggage is fixed regularly.



## Warning

**Danger of accidents** Lack of roadworthiness.

- After a fall, check the vehicle as usual before preparing for use.

## Note

**Engine failure** Unfiltered intake air has a negative effect on the service life of the engine.

- Never operate the vehicle without an air filter as dust and dirt will enter the engine and lead to increased wear.

## Note

**Engine failure** Overheating of engine.

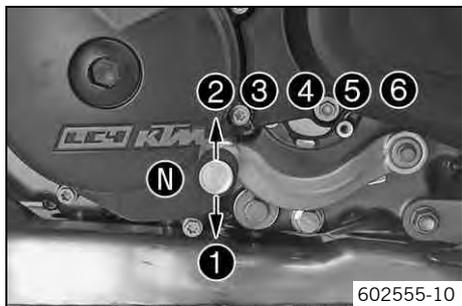
- If the coolant temperature warning lamp lights up, stop and switch off the engine. Allow the engine to cool down and check the coolant level in the radiator, and top up if necessary. If you continue with the coolant temperature warning lamp alight, you may have engine failure.
- 



## Info

If unusual noises arise during operation, stop immediately, park the vehicle properly, and contact an authorized KTM workshop.

---



## (Duke)

- When conditions allow (incline, road situation, etc.), you can shift into a higher gear.
  - Release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch, and open the throttle.
- 

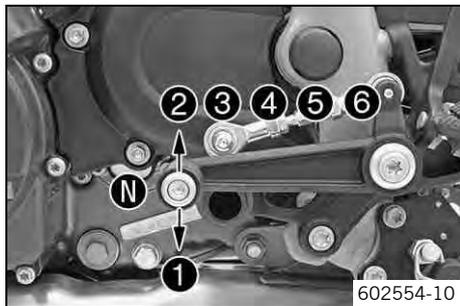


## Info

You can see the positions of the 6 forward gears in the figure. The neutral or idle position is between the first and second gears. First gear is used for starting off or for steep inclines.

The operating temperature is reached when 5 bars of the temperature indicator light up.

---



## (Duke R)

- When conditions allow (incline, road situation, etc.), you can shift into a higher gear.
- Release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch, and open the throttle.

---

### **i** Info

You can see the positions of the 6 forward gears in the figure. The neutral or idle position is between the first and second gears. First gear is used for starting off or for steep inclines.

The operating temperature is reached when 5 bars of the temperature indicator light up.

- 
- After reaching maximum speed by fully opening the throttle grip, turn the throttle back so it is  $\frac{3}{4}$  open. This will barely reduce the speed but fuel consumption will be considerably lower.
  - Accelerate only up to a speed suitable for the road surface and weather conditions. Particularly in bends, do not shift, and accelerate very carefully.
  - To shift down, brake if necessary and close the throttle at the same time.
  - Pull the clutch lever and shift into a lower gear, release the clutch lever slowly, and open the throttle or shift again.
  - If the engine stalls (e.g. at a crossroads), just pull the clutch lever and press the electric starter button. You do not have to shift into neutral.
  - Switch off the engine if you expect to be standing for a long time.
  - If the **FI** warning lamp (**MIL**) lights up during a trip, stop immediately. When you shift to neutral, the **FI** warning lamp (**MIL**) starts to flash.



## Info

From the flash rhythm you can deduce a two-digit number, the so-called blink code. The blink code tells you which component is affected by a fault. (Your authorized KTM workshop will be glad to help.)

## 8.5 Applying the brakes



### Warning

**Danger of accidents** Reduced braking efficiency due to a wet or dirty brake system.

- Clean or dry a dirty or wet brake system by riding and braking gently.



### Warning

**Danger of accidents** Reduced braking efficiency caused by spongy pressure point of front or rear brake.

- Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)



### Warning

**Danger of accidents** Failure of brake system.

- If the foot brake lever is not released, the brake linings drag continuously. The rear brake may fail due to overheating. Take your foot off the foot brake lever when you are not braking.



### Warning

**Danger of accidents** Longer stopping distance due to higher overall weight.

- Take the longer stopping distance into account when carrying a passenger and baggage.



### Warning

**Danger of accidents** Delayed brake action on salted roads.

- There may be salt deposits on the brake discs. In order to restore the normal braking efficiency, you will need to remove the deposits from the discs by carefully applying the brakes.

**Warning**

**Danger of accidents** Greater stopping distance due to ABS.

- Braking should be appropriate to the driving situation and the road conditions.

**Warning**

**Danger of accidents** Excessively forceful braking can cause the wheels to block.

- ABS must be switched on to be effective.

**Warning**

**Danger of accidents** Locking of the wheels due to braking action of the engine.

- Pull the clutch during emergency braking, full brake application and when braking on a slippery surface.

- 
- When braking, release the throttle and apply the front and rear brakes at the same time.

**Info**

When ABS is active, you can achieve maximum braking power even on low grip surfaces such as sandy, wet, or slippery terrain without locking of the tires.

**Warning**

**Danger of accidents** Road grip is reduced when braking with the motorcycle at an angle or on a laterally inclined surface.

- Braking should be completed before you enter into a bend.

- 
- Braking should always be completed before you go into a bend. Change down to a lower gear appropriate to your road speed.
  - On long downhill stretches, use the braking effect of the engine. Change down one or two gears, but do not overstress the engine. In this way, you have to apply the brakes far less frequently and the brake system does not overheat.

## 8.6 Stopping, parking



### Warning

**Risk of misappropriation** Usage by unauthorized persons.

- Never leave the vehicle while the engine is running. Secure the vehicle against use by unauthorized persons. If you leave the vehicle, lock the steering and remove the ignition key.



### Warning

**Danger of burns** Some vehicle components become very hot when the vehicle is operated.

- Do not touch hot components such as exhaust system, radiator, engine, shock absorber, and the brake system. Allow these components to cool down before starting work on them.

### Note

**Danger of damage** The parked vehicle may roll away or fall over.

- Always place the vehicle on a firm and even surface.

### Note

**Fire hazard** Some vehicle components become very hot when the vehicle is operated.

- Do not park the vehicle near flammable or explosive substances. Do not place objects on the vehicle while it is still warm from being run. Always let the vehicle cool first.

### Note

**Material damage** Damage to or destruction of components due to excessive load.

- The side stand is only designed for the weight of the motorcycle. Do not sit on the motorcycle when it is resting on the side stand. The side stand or the frame may become damaged and the motorcycle may fall over.

- 
- Brake the motorcycle.
  - Shift gear to neutral.

- Switch off the ignition by turning the ignition key to the position ☒.
- 



## Info

If the engine is switched off with the emergency OFF switch and the ignition remains switched on at the ignition lock, power continues to flow to most power consumers and the battery will discharge. You should therefore always switch off the engine with the ignition key - the emergency OFF switch is intended for emergencies only.

---

- Park the motorcycle on a firm surface.
- Swing the side stand forward with your foot as far as it will go and lean the vehicle on it.
- Lock the steering by turning the handlebar fully to the left, pressing down the ignition key to the position ☒ and turning it to the position ☑. To make the steering lock engage more easily, move the handlebar a little to the left and right. Remove the ignition key.

## 8.7 Transport

---

### Note

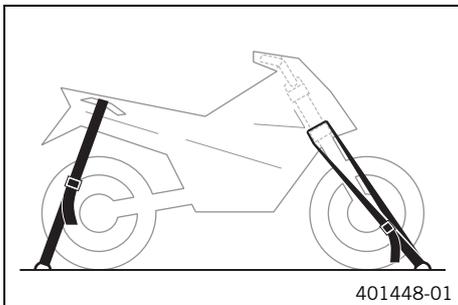
**Danger of damage** The parked vehicle may roll away or fall over.

- Always place the vehicle on a firm and even surface.

### Note

**Fire hazard** Some vehicle components become very hot when the vehicle is operated.

- Do not park the vehicle near flammable or explosive substances. Do not place objects on the vehicle while it is still warm from being run. Always let the vehicle cool first.
-



- Switch off the engine.
- Use tension belts or other suitable devices to secure the motorcycle against accidents or falling over.

## 8.8 Refueling



### **Danger**

**Fire hazard** Fuel is highly flammable.

- Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
- The fuel in the fuel tank expands when warm and may emerge if overfilled. Follow the instructions on refueling.



### **Warning**

**Danger of poisoning** Fuel is poisonous and a health hazard.

- Fuel must not come into contact with the skin, eyes, or clothing. Do not breathe in the fuel vapors. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If fuel is swallowed, contact a physician immediately. Change clothing that is contaminated with fuel.

### **Note**

**Material damage** Premature clogging of the fuel filter.

- In some countries and regions, the available fuel quality and cleanliness may not be sufficient. This will result in problems with the fuel system. (Your authorized KTM workshop will be glad to help.)

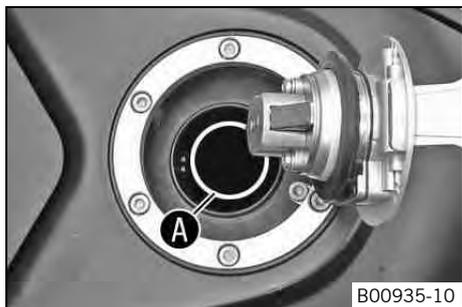
- Only refuel with clean fuel that meets the specified standards.



### Warning

**Environmental hazard** Improper handling of fuel is a danger to the environment.

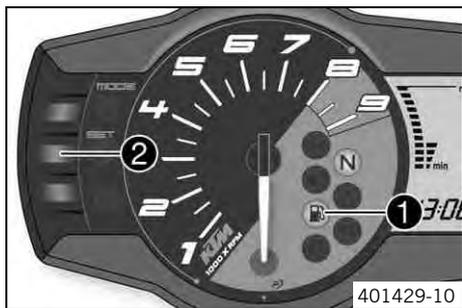
- Do not allow fuel to get into the ground water, the ground, or the sewage system.



- Switch off the engine.
- Open the filler cap. (☛ p. 39)
- Fill the fuel tank with fuel up to the lower edge **A** of the filler neck.

Total fuel tank capacity, approx.	13.8 l (3.65 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (☛ p. 187)
-----------------------------------	-------------------------	--

- Close the filler cap. (☛ p. 40)



- Press the **SET** button **2** for two seconds.
- ✓ The low fuel warning lamp **1** switches off. **TRIP F** is set to 0 and the previous display mode appears.



### Info

If you do not press the **SET** button **2**, the reset takes place automatically after about three minutes.

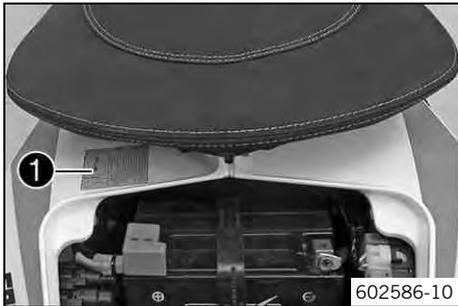
## 9.1 Service schedule

	Every 20,000 km (12,428 mi) or every 2 years	Every 10,000 km (6,214 mi) or annually	Once after 1,000 km (621.4 mi)
Check the functioning of the electrical equipment.	○	●	●
Read out the fault memory using the KTM diagnostics tool. 	○	●	●
Check the measured service values with the KTM diagnostics tool. 		●	●
Change the engine oil and filter, clean the oil screens.  (  p. 148)	○	●	●
Check the front brake linings. (  p. 97)	○	●	●
Check the rear brake linings. (  p. 105)	○	●	●
Check the brake discs. (  p. 93)	○	●	●
Check the brake lines for damage and leakage.	○	●	●
Check the rear brake fluid level. (  p. 102)	○	●	●
Check the free travel of the foot brake lever. (  p. 98)	○	●	●
Check the shock absorber and fork for leaks.	○	●	●
Check the swingarm bearing. 		●	●
Check the wheel bearing for play. 		●	●
Check the tire condition. (  p. 115)	○	●	●
Check the tire pressure. (  p. 117)	○	●	●
Check the chain, rear sprocket and engine sprocket. (  p. 87)		●	●
Check the chain tension. (  p. 83)	○	●	●
Grease all moving parts (e.g., side stand, hand lever, chain, ...) and check for smooth operation. 	○	●	●
Clean the dust boots of the fork legs.		●	●
Check the brake fluid level of the front brake. (  p. 94)	○	●	●

	Every 20,000 km (12,428 mi) or every 2 years	Every 10,000 km (6,214 mi) or annually	Once after 1,000 km (621.4 mi)
Check the steering head bearing play.	○	●	●
Change the spark plugs.			●
Check the valve clearance. 🛠️		●	●
Check all hoses (e.g. fuel, cooling, bleeder, drainage, etc.) and sleeves for cracking, leaks, and incorrect routing. 🛠️			●
Check the antifreeze and coolant level. (🔧 p. 137)	○	●	●
Check the cables for damage and routing without sharp bends. 🛠️		●	●
Change the air filter. Clean the air filter box. 🛠️		●	●
Check the fuel pressure. 🛠️		●	●
Check the CO adjustment with the KTM diagnostics tool. 🛠️		●	●
Check/rectify the fluid level of the hydraulic clutch. (🔧 p. 90)		●	●
Check the screws and nuts for tightness. 🛠️	○	●	●
Change the front brake fluid. 🛠️			●
Change the rear brake fluid. 🛠️			●
Check the headlight setting. (🔧 p. 135)	○	●	●
Check that the radiator fan is functioning properly. 🛠️	○	●	●
Final check: Check the vehicle for roadworthiness and take a test ride.	○	●	●
Read out the fault memory using the KTM diagnostics tool after a test ride. 🛠️	○	●	●
Make the service entry in <b>KTM DEALER.NET</b> and in the service record. 🛠️	○	●	●

- One-time interval
- Periodic interval

## 10.1 Fork/shock absorber (Duke R)



The fork and the shock absorber offer many options of adapting the chassis to your riding style and the payload.

### **i** Info

To help you adapt the vehicle, we have summarized our findings in Table 1. You can find the table on the subframe under the passenger seat.

These adjustments should be understood as a guideline and should always be the basis of your own personal chassis adaptation. Do not change the adjustments at random or by more than  $\pm 40\%$ , since otherwise the riding characteristics could deteriorate, particularly at high speeds.

## 10.2 Adjusting the compression damping of the fork (Duke R)

### **i** Info

The hydraulic compression damping determines the fork suspension behavior.



- Turn the white adjusting screw 1 all the way clockwise.

### **i** Info

Adjusting screw 1 is located at the upper end of the left fork leg.

The compression damping is located in the left fork leg **COMP** (white adjusting screw). The rebound damping is located in the right fork leg **REB** (red adjusting screw).

- Turn back counterclockwise by the number of clicks corresponding to the fork type.

## Guideline

Compression damping	
Comfort	17 clicks
Standard	12 clicks
Sport	7 clicks
Full payload	7 clicks



### Info

Turn clockwise to increase damping; turn counterclockwise to reduce damping.

## 10.3 Adjusting the rebound damping of the fork (Duke R)



### Info

The hydraulic rebound damping determines the fork suspension behavior.



- Turn the red adjusting screw **1** all the way clockwise.



### Info

Adjusting screw **1** is located at the upper end of the right fork leg. The rebound damping is located in the right fork leg **REB** (red adjusting screw). The compression damping is located in the left fork leg **COMP** (white adjusting screw).

- Turn back counterclockwise by the number of clicks corresponding to the fork type.

## Guideline

Rebound damping	
Comfort	17 clicks
Standard	12 clicks
Sport	7 clicks
Full payload	7 clicks



### Info

Turn clockwise to increase damping; turn counterclockwise to reduce damping.

## 10.4 Compression damping of the shock absorber

The compression damping of the shock absorber is divided into two ranges: high-speed and low-speed.

High-speed and low-speed refer to the compression speed of the rear wheel suspension and not to the vehicle speed.

The high-speed setting, for example, has an effect on the landing after a jump: the rear wheel suspension compresses more quickly.

The low-speed setting, for example, has an effect when riding over long ground swells: the rear wheel suspension compresses more slowly.

These two ranges can be adjusted separately, although the transition between high-speed and low-speed is gradual. Thus, changes in the high-speed range affect the compression damping in the low-speed range and vice versa.

## 10.5 Adjusting the high-speed compression damping of the shock absorber (Duke R)



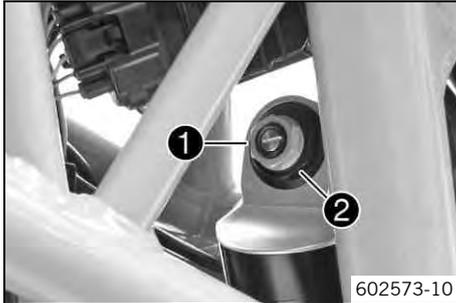
### Caution

**Danger of accidents** Disassembly of pressurized parts can lead to injury.

- The shock absorber is filled with high density nitrogen. Adhere to the description provided. (Your authorized KTM workshop will be glad to help.)

**Info**

The high-speed setting takes effect during the fast compression of the shock absorber.



- Turn adjusting screw ❶ all the way clockwise with a socket wrench.

**Info**

Do not loosen fitting ❷!

- Turn back counterclockwise by the number of turns corresponding to the shock absorber type.

**Guideline**

Compression damping, high-speed	
Comfort	2 turns
Standard	1.5 turns
Sport	1 turn
Full payload	1 turn

**Info**

Turn clockwise to increase damping; turn counterclockwise to reduce damping.

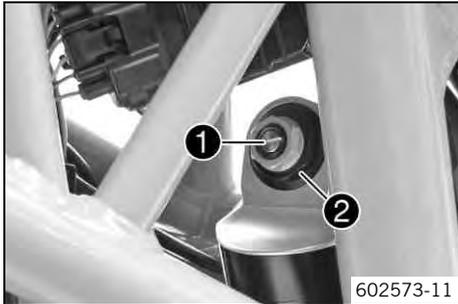
## 10.6 Adjusting the low-speed compression damping of the shock absorber (Duke R)

**Caution**

**Danger of accidents** Disassembly of pressurized parts can lead to injury.

- The shock absorber is filled with high density nitrogen. Adhere to the description provided. (Your authorized KTM workshop will be glad to help.)

**i Info**  
The low-speed setting takes effect during the slow to normal compression of the shock absorber.



- Turn adjusting screw **1** clockwise with a screwdriver up to the last perceptible click.

**i Info**  
Do not loosen fitting **2**!

- Turn back counterclockwise by the number of clicks corresponding to the shock absorber type.

**Guideline**

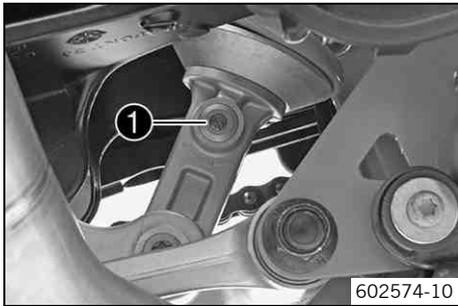
Compression damping, low-speed	
Comfort	20 clicks
Standard	15 clicks
Sport	10 clicks
Full payload	10 clicks

**i Info**  
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

## 10.7 Adjusting the rebound damping of the shock absorber (Duke R)

**! Caution**  
**Danger of accidents** Disassembly of pressurized parts can lead to injury.

- The shock absorber is filled with high density nitrogen. Adhere to the description provided. (Your authorized KTM workshop will be glad to help.)



- Turn adjusting screw ❶ clockwise up to the last perceptible click.
- Turn back counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

Rebound damping	
Comfort	20 clicks
Standard	15 clicks
Sport	10 clicks
Full payload	10 clicks

**i Info**  
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

## 10.8 Adjusting the spring preload of the shock absorber 🛠️

**⚠️ Warning**  
**Danger of accidents** Modifications to the suspension settings can seriously alter the vehicle's ride behavior.

- Following modifications, ride slowly at first to get the feel of the new ride behavior.

**i Info**  
The spring preload defines the initial situation of the spring process on the shock absorber. The best spring preload setting is achieved when it is set for the weight of the rider and that of any baggage and a passenger, thus ensuring an ideal compromise between maneuverability and stability.

**Preparatory work  
(Duke R)**

- Raise the motorcycle with the work stand.

- Remove the main silencer. 🛠️
- Remove the shock absorber. 🛠️



**Main work  
(Duke)**

- Adjust the spring preload by turning adjustment unit ①.

Guideline

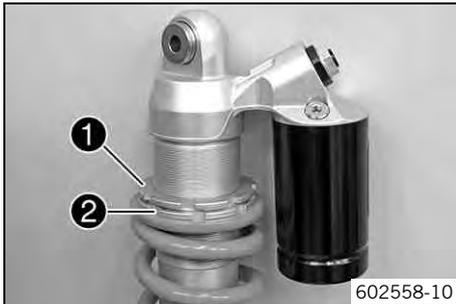
Spring preload	
Standard	4 clicks

Hook wrench (T106S)
---------------------



**Info**

The spring preload can be set to 10 different positions.



**(Duke R)**

- Release retaining ring ①.

Hook wrench (T106S)
---------------------

- Turn adjusting ring ② to adjust the spring preload.

Guideline

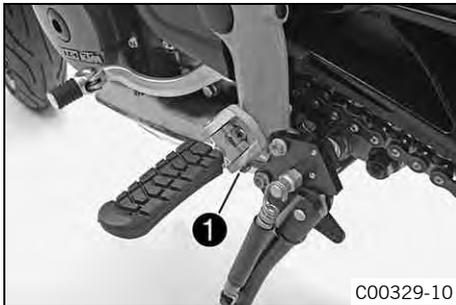
Spring preload	
Comfort	11 mm (0.43 in)
Standard	11 mm (0.43 in)
Sport	11 mm (0.43 in)
Full payload	11 mm (0.43 in)

- Tighten retaining ring ①.

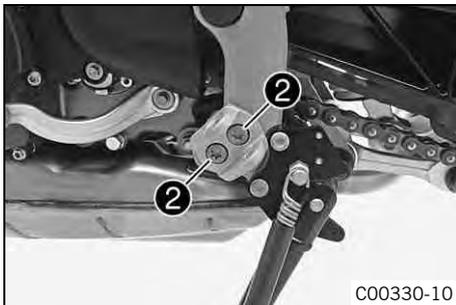
## Finishing work (Duke R)

- Install the shock absorber. 
- Install the main silencer. 
- Remove the motorcycle from the work stand.
- Install the footrest bracket.

### 10.9 Adjusting the footrests

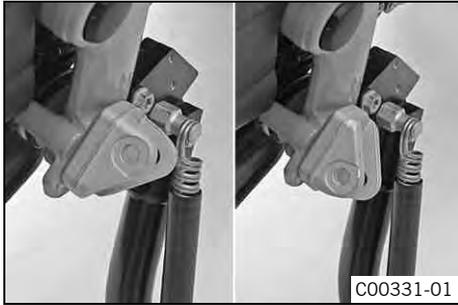


- Remove lock ring **1**.
- Remove the pin of the rider footrest. Take off the rider footrest with the spring.

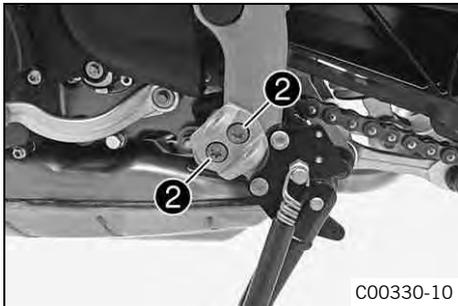


- Remove screws **2**.

# 10 TUNING THE CHASSIS



- Adjust the footrest bracket to the desired position.



- Mount and tighten screws ②.

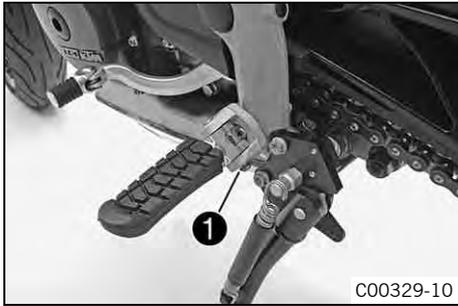
Guideline

Screw, front footrest bracket	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
-------------------------------	----	------------------------	---------------



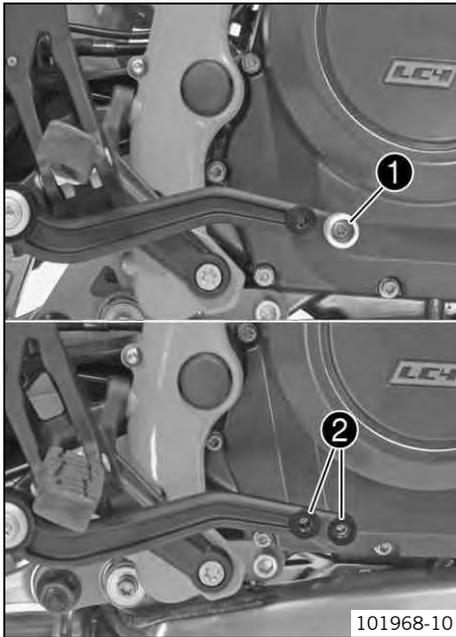
- Mount the rider footrest with the spring and pin.

# 10 TUNING THE CHASSIS



- Mount lock ring ①.
- Repeat the operations on the opposite side.

## 10.10 Adjusting the foot brake lever stub (Duke R)



- Remove screw ❶ along with the foot brake lever stub.
- Position foot brake lever stub along with screw ❶ in the desired drilled hole ❷.

Guideline

Standard	Front drilled hole
----------	--------------------

- Tighten the screw.

Guideline

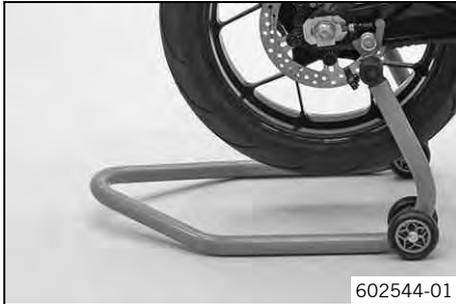
Screw, foot brake lever stub	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
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## 11.1 Raising the motorcycle with the rear wheel stand

### Note

**Danger of damage** The parked vehicle may roll away or fall over.

- Always place the vehicle on a firm and even surface.



- Mount the support of the wheel stand.
- Insert the adapter in the rear wheel stand.

Adapter (61029055120)
-----------------------

Rear wheel stand (61029055400)
--------------------------------

- Stand the motorcycle upright, align the lifting gear with the swingarm and the adapters, and lift the motorcycle.

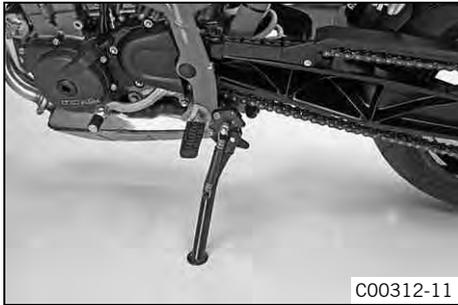
## 11.2 Taking the motorcycle off of the rear wheel stand

### Note

**Danger of damage** The parked vehicle may roll away or fall over.

- Always place the vehicle on a firm and even surface.

# 11 SERVICE WORK ON THE CHASSIS



- Secure the motorcycle against falling over.
- Remove the rear wheel stand and lean the vehicle on the side stand.

## 11.3 Raising the motorcycle with the front wheel stand

### Note

**Danger of damage** The parked vehicle may roll away or fall over.

- Always place the vehicle on a firm and even surface.



### Preparatory work

- Raise the motorcycle with the rear wheel stand. (🔧 p. 77)

### Main work

- Move the handlebar to the straight-ahead position. Attach the lifting gear to the steering stem.

Adapter (61029955620)
Front wheel stand (61029055500)

**i Info**  
Always raise the rear of the motorcycle first.

- Raise the front of the motorcycle.

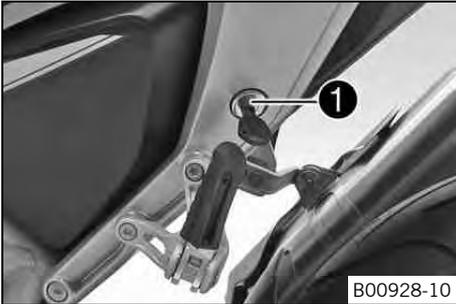
## 11.4 Taking the motorcycle off of the front wheel stand

### Note

**Danger of damage** The parked vehicle may roll away or fall over.

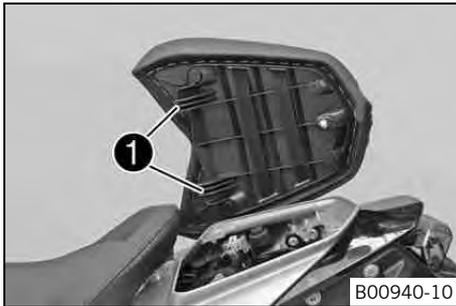
- Always place the vehicle on a firm and even surface.
- Secure the motorcycle against falling over.
- Remove the front wheel stand.

## 11.5 Removing the passenger seat



- Insert the ignition key in seat lock **1** and turn it clockwise.
- Raise the rear of the passenger seat, push it towards the rear, and remove it upward.
- Remove the ignition key from the seat lock.

## 11.6 Mounting the passenger seat



- Hook catches ❶ of the passenger seat onto the storage compartment, lower the rear, and simultaneously push forward.
- Press down the passenger seat until it clicks into place.



### Warning

**Danger of accidents** The passenger seat can come loose from the anchoring if it is not mounted correctly.

- After mounting the passenger seat, check that it is locked correctly by pulling up.
- 
- Finally, check that the passenger seat is correctly mounted.

## 11.7 Removing the passenger seat cover (Duke R)



- Insert the ignition key in seat lock ❶ and turn it clockwise.
- Raise the rear of the passenger seat cover, push it toward the rear, and remove it upward.
- Remove the ignition key from the seat lock.

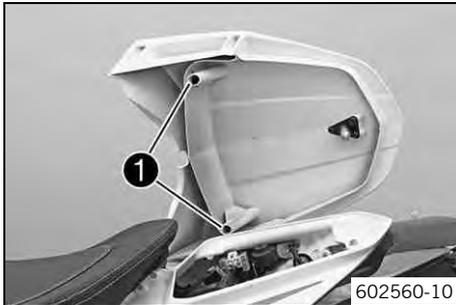
## 11.8 Mounting the passenger seat cover (Duke R)



### Warning

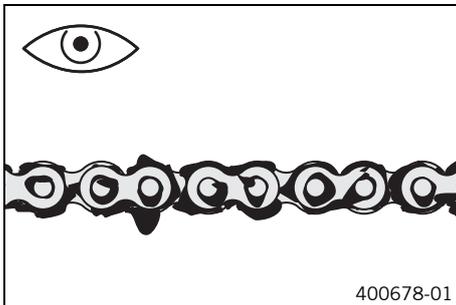
**Danger of accidents** Accident risk caused by the presence of a passenger.

- If the passenger seat cover is mounted, the vehicle is not suitable for transporting a passenger. Do not ride with a passenger.



- Hook catches **1** of the passenger seat cover onto the storage compartment, lower the rear, and simultaneously push forward.
- Press down the passenger seat cover until it clicks into place.
- Finally, check that the passenger seat cover is correctly mounted.

## 11.9 Checking the chain for dirt



- Check the chain for heavy soiling.
  - » If the chain is very dirty:
    - Clean the chain. (🔧 p. 82)

## 11.10 Cleaning the chain



### Warning

**Danger of accidents** Oil or grease on the tires reduces their grip.

- Remove oil and grease with a suitable cleaning material.



### Warning

**Danger of accidents** Reduced braking efficiency due to oil or grease on the brake discs.

- Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.



### Warning

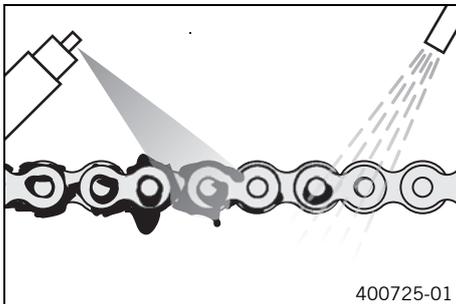
**Environmental hazard** Hazardous substances cause environmental damage.

- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.



### Info

The service life of the chain depends largely on its maintenance.



- Clean the chain regularly.
- Rinse off loose dirt with a soft jet of water.
- Remove old grease remains with chain cleaner.

Chain cleaner (☛ p. 189)

- After drying, apply chain spray.

Chain lube for road use (☛ p. 189)

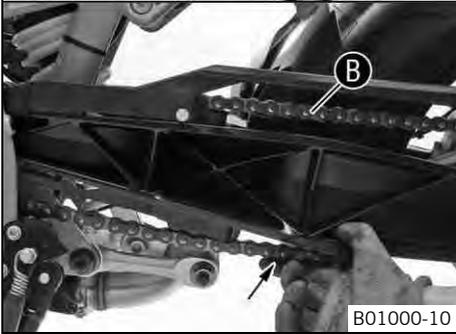
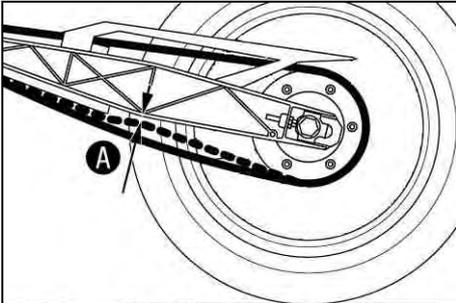
## 11.11 Checking the chain tension



### **Warning**

**Danger of accidents** Danger caused by incorrect chain tension.

- If the chain is too taut, the components of the secondary power transmission (chain, engine sprocket, rear sprocket, bearings in the transmission and in the rear wheel) will be under additional load. In addition to premature wear, this can cause the chain or the countershaft of the transmission to break in extreme cases. If the chain is too loose, however, it may fall off the engine sprocket or rear sprocket and block the rear wheel or damage the engine. Ensure that the chain tension is correct and adjust it if necessary.



- Lean the motorcycle on the side stand.
- Shift gear to neutral.
- Push the chain upwards near the vertical rib of the swingarm and measure the chain tension **A**.

## **i** Info

The upper chain section **B** must be taut.

Chain wear is not always even. Repeat this measurement at different chain positions.

Chain tension	5 mm (0.2 in)
---------------	---------------

- » If the chain tension does not meet specifications:
  - Adjust the chain tension. (🔧 p. 85)

## 11.12 Adjusting the chain tension



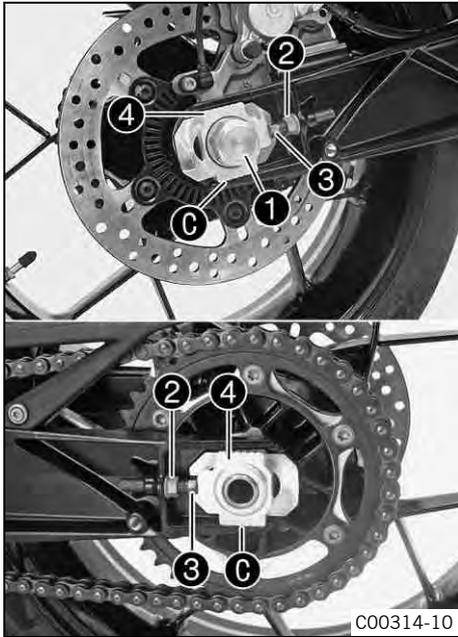
### Warning

**Danger of accidents** Danger caused by incorrect chain tension.

- If the chain is too taut, the components of the secondary power transmission (chain, engine sprocket, rear sprocket, bearings in the transmission and in the rear wheel) will be under additional load. In addition to premature wear, this can cause the chain or the countershaft of the transmission to break in extreme cases. If the chain is too loose, however, it may fall off the engine sprocket or rear sprocket and block the rear wheel or damage the engine. Ensure that the chain tension is correct and adjust it if necessary.

### Preparatory work

- Check the chain tension. (👉 p. 83)



C00314-10

### Main work

- Loosen nut ①.
- Loosen nuts ②.
- Adjust the chain tension by turning adjusting screws ③ on the left and right.

### Guideline

Chain tension	5 mm (0.2 in)
Turn the left and right adjusting screws ③ so that the markings on the left and right chain adjusters ④ are in the same position relative to the reference marks ⑤. The rear wheel is then correctly aligned.	

### **i** Info

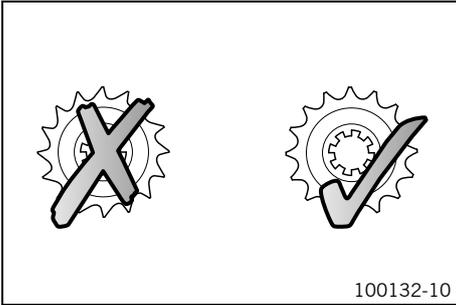
The upper chain section must be taut.  
Chain wear is not always even. Repeat this measurement at different chain positions.

- Tighten nuts ②.
- Make sure that the chain adjusters ④ are installed correctly on adjusting screws ③.
- Tighten nut ①.

### Guideline

Nut, rear wheel spindle	M25x1.5	90 Nm (66.4 lbf ft)
-------------------------	---------	------------------------

## 11.13 Checking the chain, rear sprocket and engine sprocket

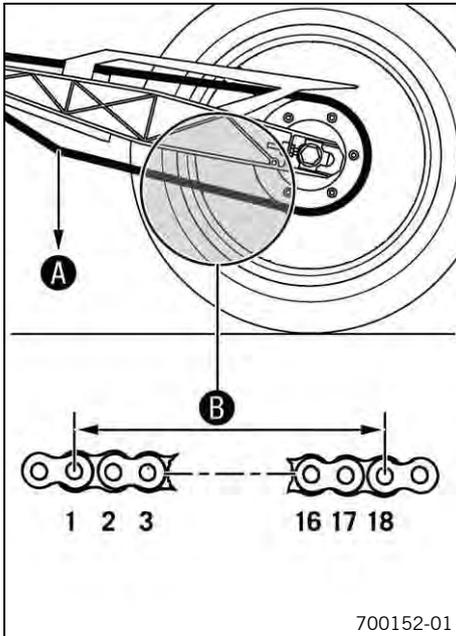


- Check the rear sprocket and engine sprocket for wear.
  - » If the rear sprocket and engine sprocket are worn:
    - Change the power set. 



### Info

The engine sprocket, rear sprocket and chain should always be replaced together.



- Shift gear to neutral.
- Pull the lower chain section with specified weight **A**.

Guideline

Weight of chain wear measurement	15 kg (33 lb.)
----------------------------------	----------------

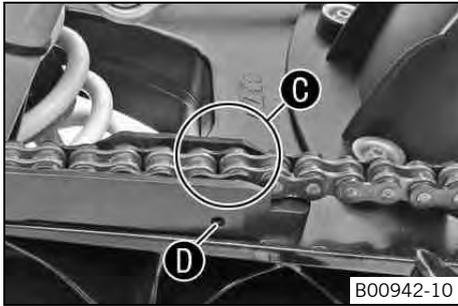
- Measure the distance **B** of 18 chain links in the lower chain section.

**i Info**  
Chain wear is not always even. Repeat this measurement at different chain positions.

Maximum distance <b>B</b> at the longest chain section	272 mm (10.71 in)
--	-------------------

- » If the distance **B** is greater than the specified measurement:
  - Replace the chain.

**i Info**  
When the chain is replaced, the rear sprocket and engine sprocket should also be changed.  
New chains wear out faster on old, worn sprockets.  
For safety reasons, the chain has no chain joint.



- Check the chain sliding guard for wear.
  - » If drill hole **D** becomes visible on the chain sliding guard in area **C**:
    - Replace the chain sliding guard. 🛠️
- Check that the chain sliding guard is firmly seated.
  - » If the chain sliding guard is loose:
    - Tighten the chain sliding guard.

Guideline

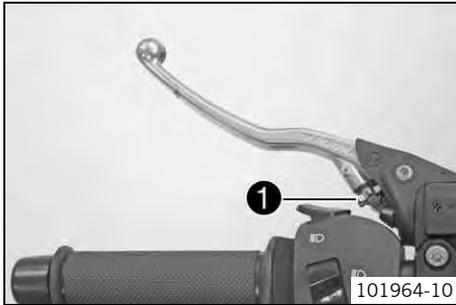
Screw, chain sliding guard	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
----------------------------	----	-----------------------	---------------

## 11.14 Adjusting the basic position of the clutch lever



**Info**

Turn the adjusting screw clockwise to increase the distance between the clutch lever and the handlebar.  
 Turn the adjusting screw counterclockwise to decrease the distance between the clutch lever and the handlebar.  
 The range of adjustment is limited.  
 Turn the adjusting screw by hand only, and do not apply force.  
 Do not make any adjustments while riding!



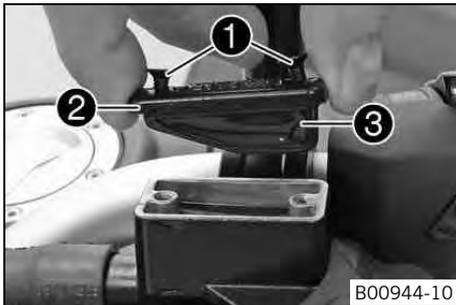
- Adjust the basic position of the clutch lever to your hand size by turning adjusting screw ❶.

## 11.15 Checking/rectifying the fluid level of the hydraulic clutch



### Info

The fluid level rises with increasing wear of the clutch facing discs.  
Do not use brake fluid.



- Move the clutch fluid reservoir mounted on the handlebar to a horizontal position.
- Remove screws ❶.
- Remove cover ❷ with membrane ❸.
- Check the fluid level.

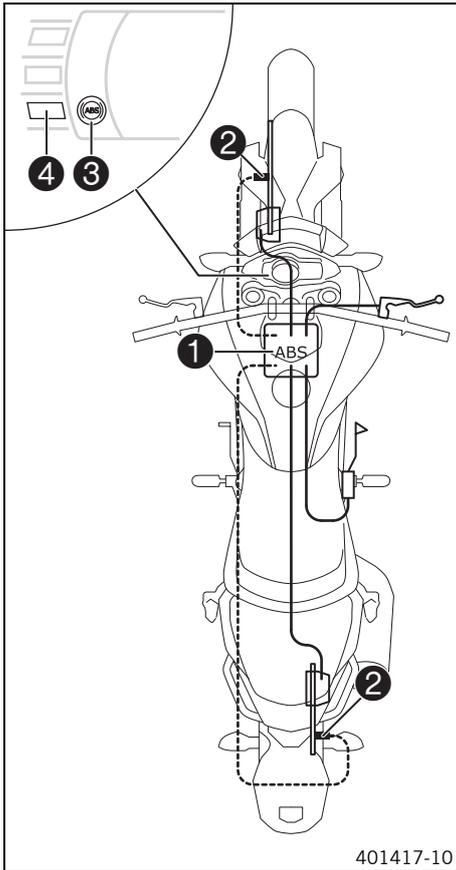
Fluid level below container rim	4 mm (0.16 in)
---------------------------------	----------------

- » If the coolant level does not meet specifications:
  - Correct the fluid level of the hydraulic clutch.

Hydraulic fluid (15) (☛ p. 187)
---------------------------------

- Position the cover with the membrane. Mount and tighten the screws.

## 12.1 ABS/antilock brake system



The ABS unit **1**, which consists of a hydraulic unit, ABS control unit, and return pump, is installed under the seat. A wheel speed sensor **2** is located at the front and rear wheels.



### Warning

**Danger of accidents** Functional limitations of the ABS

- The rear wheel may only be spun with the front brake applied (burn out) if the ABS is switched off.
- If the vehicle has been modified, such as shortened or lengthened spring deflections, different rim diameters, different tires, the wrong tire air pressure, different brake linings, etc., the ABS will not function optimally. Optimal functioning of the ABS is only ensured if the brake system only contains spare parts and tires that have been approved and/or recommended by KTM.
- Service work and repairs must be performed properly. (Your authorized KTM workshop will be glad to help.)

The ABS is a safety system that prevents locking of the wheels when driving straight ahead without the influence of lateral forces.



### Warning

**Danger of accidents** Vehicle rollover

- It is not always possible to prevent vehicle rollover in extreme riding situations (e. g. luggage loaded with a high center of gravity, varying road surfaces, steep descents, full braking without disengaging the gear). Adapt your riding style to the road conditions and your riding ability.

The ABS operates with two independent brake circuits (front and rear brakes). During normal operation, the brake system operates like a conventional brake system without ABS. When the ABS control unit detects a locking tendency in a wheel, ABS begins regulating the brake pressure. The regulating process causes a slight pulsing of the hand and foot brake levers.

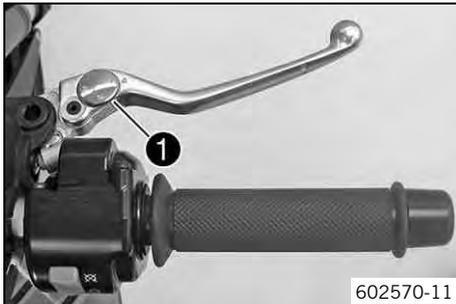
ABS warning lamp ③ must light up after the ignition is switched on and go out after starting off. If it does not go out after starting off or if it lights up while riding, this indicates a fault in the ABS system. In this case, the ABS is no longer enabled and the wheels may lock during braking. The brake system itself stays functional; only ABS control is not available.

The ABS warning lamp may also light up if the rotating speeds of the front and rear wheels differ greatly under extreme riding conditions, for example when making wheelies or if the rear wheel spins. This causes the ABS to switch off.

To reenale the ABS, the vehicle must be stopped and the ignition switched off. The ABS is reenaled when the vehicle is switched on again. The ABS warning lamp goes out when you start off.

Button ④ can be used to switch ABS off manually (see Starting).

## 12.2 Adjusting the basic position of the hand brake lever



(Duke)

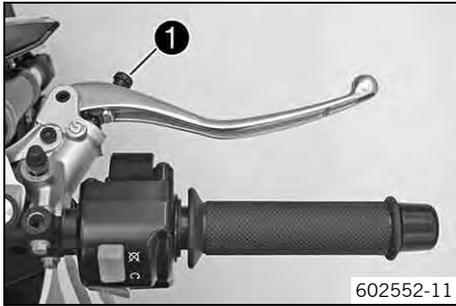
- Adjust the basic position of the hand brake lever to your hand size by turning adjusting wheel ①.

---

### Info

Pull the hand brake lever forward and turn the adjusting wheel.  
Do not make any adjustments while riding.

---



602552-11

**(Duke R)**

- Adjust the basic position of the hand brake lever to your hand size by turning adjusting wheel ①.



**Info**

Pull the hand brake lever forward and turn the adjusting wheel. Do not make any adjustments while riding.

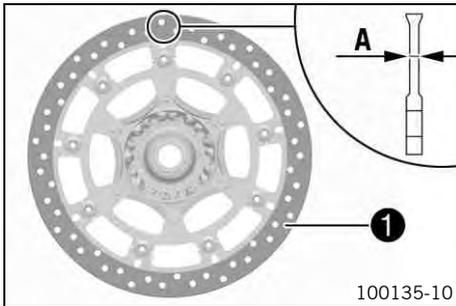
## 12.3 Checking the brake discs



**Warning**

**Danger of accidents** Reduced braking efficiency due to worn brake disc(s).

- Change the worn brake disc(s) without delay. (Your authorized KTM workshop will be glad to help.)



100135-10

- Check the thickness of the front and rear brake discs in several places to ensure that it conforms to measurement ①.



**Info**

Wear reduces the thickness of the brake disc at the contact surface ① of the brake disc.

Brake discs - wear limit	
Front	4.2 mm (0.165 in)
Rear	4.5 mm (0.177 in)

- » If the brake disc thickness is less than the specified value:

- Replace the brake disc.
- Check the front and rear brake discs for damage, cracks, and deformation.
  - » If damage, cracks, or deformation are visible on the brake disc:
    - Replace the brake disc.

## 12.4 Checking the brake fluid level of the front brake



### Warning

**Danger of accidents** Brake system failure.

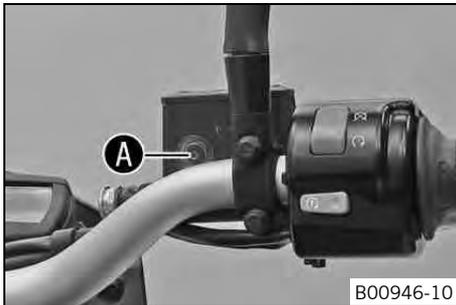
- If the brake fluid level drops below the specified marking or the specified value, this is an indication that the brake system is leaking or that the brake linings are completely worn down. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)



### Warning

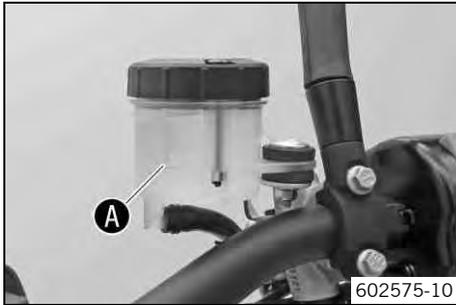
**Danger of accidents** Reduced braking efficiency due to old brake fluid.

- Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)



### (Duke)

- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Check the brake fluid level in the viewer.
  - » If the brake fluid has dropped below marking **A**:
    - Add front brake fluid. 🐾 (👉 p. 95)



## (Duke R)

- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Check the brake fluid level in the viewer.
  - » If the brake fluid has dropped below marking **A**:
    - Add front brake fluid. 🛠️ (🔧 p. 95)

## 12.5 Adding front brake fluid 🛠️



### Warning

**Danger of accidents** Brake system failure.

- If the brake fluid level drops below the specified marking or the specified value, this is an indication that the brake system is leaking or that the brake linings are completely worn down. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)



### Warning

**Skin irritation** Brake fluid can cause skin irritation on contact.

- Avoid contact with skin and eyes, and keep out of the reach of children.
- Wear suitable protective clothing and goggles.
- If brake fluid comes into contact with the eyes, flush the eyes thoroughly with water and consult a physician immediately.



### Warning

**Danger of accidents** Reduced braking efficiency due to old brake fluid.

- Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)



## Warning

**Environmental hazard** Hazardous substances cause environmental damage.

- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.



## Info

Never use DOT 5 brake fluid! It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.

Avoid contact between brake fluid and painted parts. Brake fluid attacks paint!  
Use only clean brake fluid from a sealed container.

## Preparatory work

- Check the front brake linings. (👉 p. 97)

## Main work (Duke)

- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Remove screws ①.
- Remove cover ② with membrane ③.
- Add brake fluid to level A.

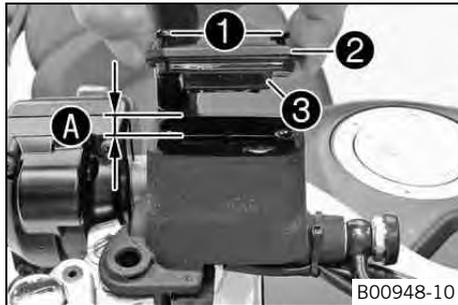
### Guideline

Level A (brake fluid level below container rim)

5 mm (0.2 in)

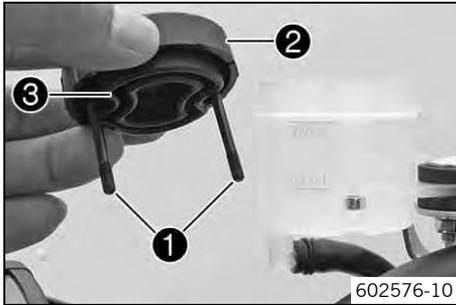
Brake fluid DOT 4 / DOT 5.1 (👉 p. 185)

- Position the cover with the membrane. Mount and tighten the screws.



## Info

Clean up overflowed or spilt brake fluid immediately with water.



## (Duke R)

- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Remove screws **1**.
- Remove cover **2** with membrane **3**.
- Add brake fluid to the **MAX** mark.

Brake fluid DOT 4 / DOT 5.1 (☞ p. 185)

- Position the cover with the membrane. Mount and tighten the screws.

## Info

Clean up overflowed or spilt brake fluid immediately with water.

## 12.6 Checking the front brake linings



### Warning

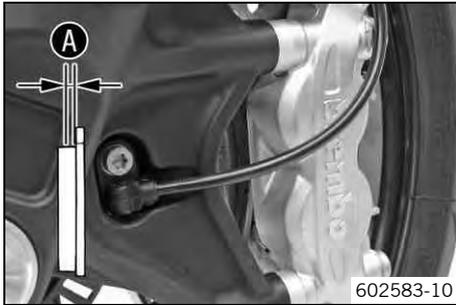
**Danger of accidents** Reduced braking efficiency caused by worn brake linings.

- Change worn brake linings immediately. (Your authorized KTM workshop will be glad to help.)

### Note

**Danger of accidents** Reduced braking efficiency caused by damaged brake discs.

- If the brake linings are not changed in time, the steel brake lining carriers grind on the brake disc. The braking effect is greatly reduced and the brake discs are destroyed. Check the brake linings regularly.



**(Duke)**

- Check the brake linings for minimum thickness **A**.

Minimum thickness <b>A</b>	≥ 1 mm (≥ 0.04 in)
----------------------------	--------------------

- » If the minimum thickness is less than specified:
  - Change the front brake linings. 
- Check the brake linings for damage and cracking.
  - » If there is damage or cracking:
    - Change the front brake linings. 



**(Duke R)**

- Check the brake linings for minimum thickness **A**.

Minimum thickness <b>A</b>	≥ 1 mm (≥ 0.04 in)
----------------------------	--------------------

- » If the minimum thickness is less than specified:
  - Change the front brake linings. 
- Check the brake linings for damage and cracking.
  - » If there is damage or cracking:
    - Change the front brake linings. 

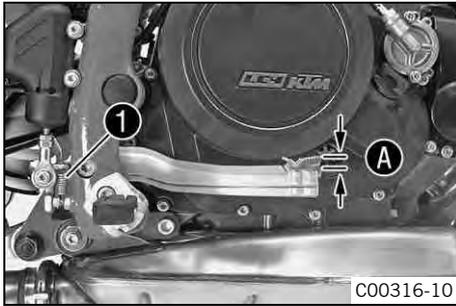
## 12.7 Checking the free travel of foot brake lever



**Warning**

**Danger of accidents** Brake system failure.

- If there is no free travel on the foot brake lever, pressure builds up on the rear brake circuit. The rear brake can fail due to overheating. Adjust the free travel on foot brake lever according to specifications.



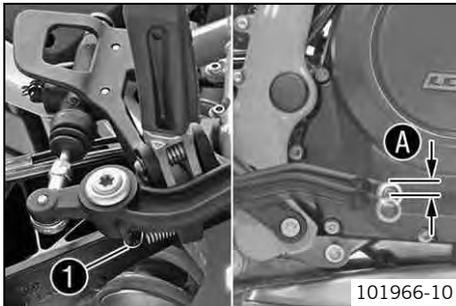
**(Duke)**

- Disconnect spring ①.
- Move the foot brake lever back and forth between the end stop and the contact to the foot brake cylinder piston and check free travel A.

Guideline

Free travel at foot brake lever	3... 5 mm (0.12... 0.2 in)
---------------------------------	----------------------------

- » If the free travel does not equal the specification:
  - Adjust the basic position of the foot brake lever. 🛠️ (📄 p. 99)
- Attach spring ①.



**(Duke R)**

- Disconnect spring ①.
- Move the foot brake lever back and forth between the end stop and the contact to the foot brake cylinder piston and check free travel A.

Guideline

Free travel at foot brake lever	3... 5 mm (0.12... 0.2 in)
---------------------------------	----------------------------

- » If the free travel does not equal the specification:
  - Adjust the basic position of the foot brake lever. 🛠️ (📄 p. 99)
- Attach spring ①.

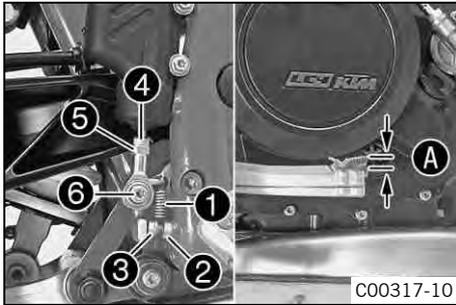
**12.8 Adjusting the basic position of the foot brake lever 🛠️**



**Warning**

**Danger of accidents** Brake system failure.

- If there is no free travel on the foot brake lever, pressure builds up on the rear brake circuit. The rear brake can fail due to overheating. Adjust the free travel on foot brake lever according to specifications.



**(Duke)**

- Disconnect spring ①.
- Remove screw ⑥.
- Loosen nut ④ and turn it back with ball joint ⑤ until the maximum amount of free travel is reached.
- To adjust the basic position of the foot brake lever to individual requirements, loosen nut ② and turn screw ③ accordingly.



**Info**

The range of adjustment is limited.

- Turn ball joint ⑤ as required until free travel A is reached. If necessary, adjust the basic position of the foot brake lever.

Guideline

Free travel at foot brake lever	3... 5 mm (0.12... 0.2 in)	
---------------------------------	----------------------------	--

- Hold screw ③ and tighten nut ②.

Guideline

Remaining nuts, chassis	M6	10 Nm (7.4 lbf ft)
-------------------------	----	--------------------

- Hold ball joint ⑤ and tighten nut ④.

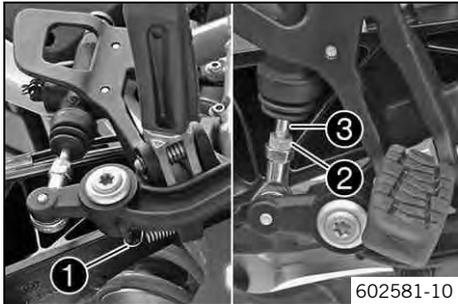
Guideline

Nut, push rod, foot brake lever	M6	6 Nm (4.4 lbf ft)
---------------------------------	----	-------------------

- Mount and tighten screw ⑥.

Guideline

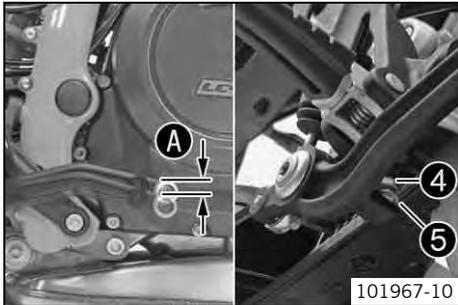
Screw, ball joint of push rod on foot brake cylinder	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
--	----	--------------------	----------------------



- Attach spring ①.

(Duke R)

- Disconnect spring ①.
- Loosen nut ② and screw in push rod ③ until you have maximum free travel.



- To adjust the basic position of the foot brake lever to individual requirements, loosen nut ④ and turn screw ⑤ accordingly.



**Info**

The range of adjustment is limited.

- Turn push rod ③ accordingly until you have free travel ①. If necessary, adjust the basic position of the foot brake lever.

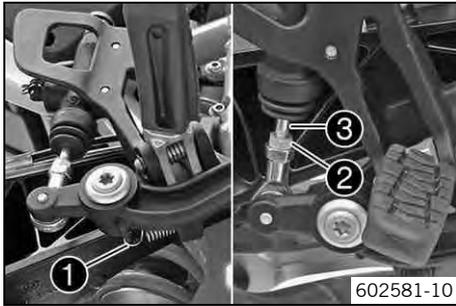
Guideline

Free travel at foot brake lever	3... 5 mm (0.12... 0.2 in)
---------------------------------	----------------------------

- Hold screw ④ and tighten nut ⑤.

Guideline

Remaining nuts, chassis	M6	10 Nm (7.4 lbf ft)
-------------------------	----	--------------------



- Hold push rod **3** and tighten nut **2**.

Guideline

Nut, push rod, foot brake lever	M6	6 Nm (4.4 lbf ft)
---------------------------------	----	-------------------

- Attach spring **1**.

## 12.9 Checking rear brake fluid level



### Warning

**Danger of accidents** Failure of the brake system.

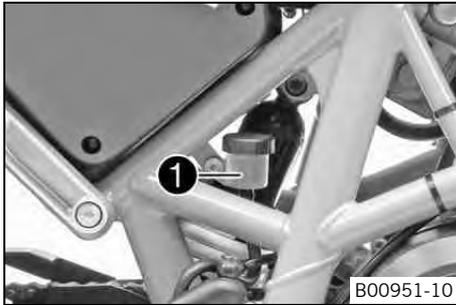
- If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)



### Warning

**Danger of accidents** Reduced braking efficiency due to old brake fluid.

- Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)



- Stand the vehicle upright.
- Check the brake fluid level in the brake fluid reservoir.
  - » If the fluid level reaches the **MIN** marking ❶:
    - Add rear brake fluid. 🛠️ (📄 p. 103)

## 12.10 Adding rear brake fluid 🛠️



### Warning

**Danger of accidents** Failure of the brake system.

- If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)



### Warning

**Skin irritation** Brake fluid can cause skin irritation on contact.

- Avoid contact with skin and eyes, and keep out of the reach of children.
- Wear suitable protective clothing and goggles.
- If brake fluid comes into contact with the eyes, flush the eyes thoroughly with water and consult a physician immediately.



### Warning

**Danger of accidents** Reduced braking efficiency due to old brake fluid.

- Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)



## Warning

**Environmental hazard** Hazardous substances cause environmental damage.

- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.



## Info

Never use DOT 5 brake fluid! It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.

Avoid contact between brake fluid and painted parts. Brake fluid attacks paint!

Use only clean brake fluid from a sealed container.

## Preparatory work

- Check the rear brake linings. (☛ p. 105)

## Main work

- Stand the vehicle upright.
- Remove screw cap ❶ with the washer and membrane ❷.
- Add brake fluid to the **MAX** mark.

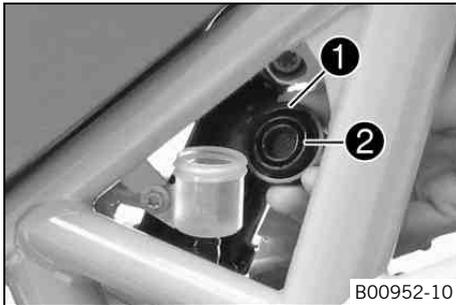
Brake fluid DOT 4 / DOT 5.1 (☛ p. 185)

- Mount the screw cap with the washer and membrane.



## Info

Clean up overflowed or spilt brake fluid immediately with water.



## 12.11 Checking the rear brake linings



### Warning

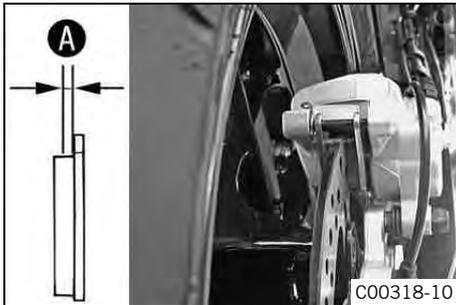
**Danger of accidents** Reduced braking efficiency caused by worn brake linings.

- Change worn brake linings immediately. (Your authorized KTM workshop will be glad to help.)

### Note

**Danger of accidents** Reduced braking efficiency caused by damaged brake discs.

- If the brake linings are not changed in time, the steel brake lining carriers grind on the brake disc. The braking effect is greatly reduced and the brake discs are destroyed. Check the brake linings regularly.



- Check the brake linings for minimum thickness **A**.

Minimum thickness <b>A</b>	$\geq 1 \text{ mm } (\geq 0.04 \text{ in})$
----------------------------	---

» If the minimum thickness is less than specified:

- Change the rear brake linings. 

- Check the brake linings for damage and cracking.

» If there is wear or tearing:

- Change the rear brake linings. 

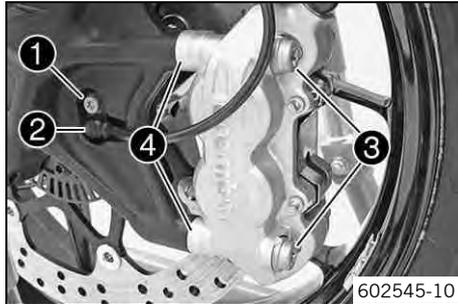
## 13.1 Removing the front wheel 🛠️

### Preparatory work

- Raise the motorcycle with the rear wheel stand. (🔧 p. 77)
- Raise the motorcycle with the front wheel stand. (🔧 p. 78)

### Main work (Duke)

- Remove screw ❶ and pull wheel speed sensor ❷ out of the hole.
- Remove screws ❸ and spacers ❹.
- Press back the brake linings with a light lateral tilting of the brake caliper on the brake disc. Pull the brake caliper carefully back from the brake disc and hang it to one side.

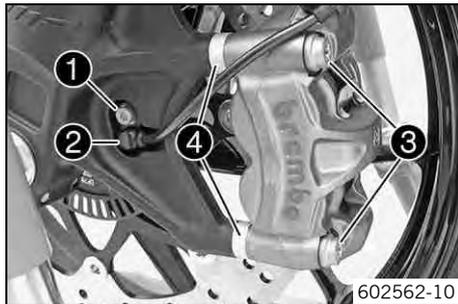


#### Info

Do not pull the hand brake lever while the brake caliper is removed.

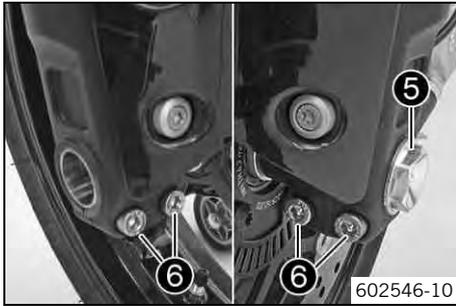
### (Duke R)

- Remove screw ❶ and pull wheel speed sensor ❷ out of the hole.
- Remove screws ❸ and spacers ❹.
- Press back the brake linings with a light lateral tilting of the brake caliper on the brake disc. Pull the brake caliper carefully back from the brake disc and hang it to one side.



#### Info

Do not pull the hand brake lever while the brake caliper is removed.



- Loosen screws 5 and 6.
- Unscrew screw 5 about six turns and press your hand on the screw to push the wheel spindle out of the axle clamp. Remove screw 5.



### Warning

**Danger of accidents** Reduced braking effect caused by damaged brake discs.

- Always lay the wheel down in such a way that the brake discs are not damaged.
- 
- Holding the front wheel, withdraw the wheel spindle. Take the front wheel out of the fork.

## 13.2 Installing the front wheel 🛠️



### Warning

**Danger of accidents** Reduced braking efficiency due to oil or grease on the brake discs.

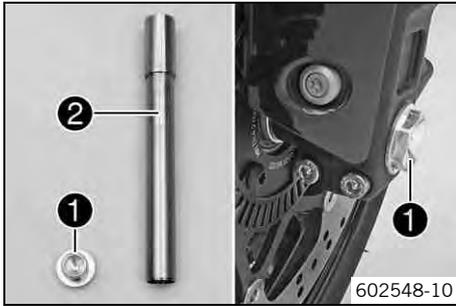
- Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.



- Check the wheel bearing for damage and wear.
  - » If the wheel bearing is damaged or worn:
    - Replace the wheel bearing. 🛠️
- Clean, grease, and mount the left and right spacers and the shaft seal rings.

Long-life grease (🛠️ p. 189)

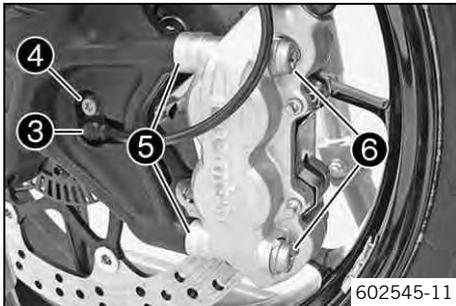
# 13 WHEELS, TIRES



- Clean screw ① and wheel spindle ②.
- Lift the front wheel into the fork, position it, and insert the wheel spindle.
  - ✓ The arrow on the spoke points in the direction of motion.
- Mount and tighten screw ①.

Guideline

Screw, front wheel spindle	M24x1.5	45 Nm (33.2 lbf ft)
----------------------------	---------	------------------------



(Duke)

- Insert wheel speed sensor ③ into the hole. Mount and tighten screw ④.

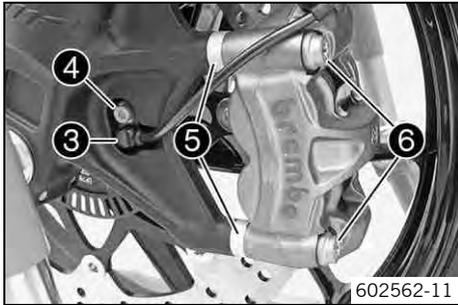
Guideline

Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	--------------------

- Position the brake caliper and check that the brake linings are seated correctly.
- Position spacers ⑤. Mount screws ⑥ but do not tighten yet.
- Operate the hand brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point. Fix the hand brake lever in the activated position.
  - ✓ The brake calipers straighten.
- Tighten screws ⑥.

Guideline

Screw, front brake caliper	M10x1.25	45 Nm (33.2 lbf ft)	<b>Loctite® 243™</b>
----------------------------	----------	------------------------	----------------------



**(Duke R)**

- Insert wheel speed sensor **3** into the hole. Mount and tighten screw **4**.

Guideline

Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	--------------------

- Position the brake caliper and check that the brake linings are seated correctly.
- Position spacers **5**. Mount screws **6** but do not tighten yet.
- Operate the hand brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point. Fix the hand brake lever in the activated position.
- ✓ The brake calipers straighten.
- Tighten screws **6**.

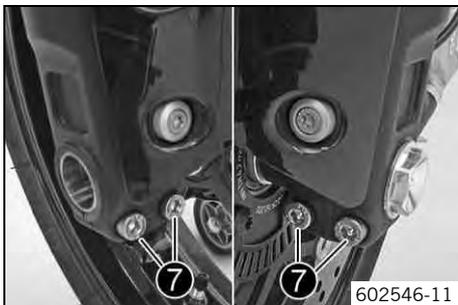
Guideline

Screw, front brake caliper	M10x1.25	45 Nm (33.2 lbf ft)	<b>Loctite® 243™</b>
----------------------------	----------	------------------------	----------------------

- Remove the fixation of the hand brake lever.
- Take the motorcycle off of the front wheel stand. (☛ p. 79)
- Take the motorcycle off of the rear wheel stand. (☛ p. 77)
- Pull the front brake and compress the fork forcefully a few times.
- ✓ The fork legs straighten.
- Tighten screws **7**.

Guideline

Screw, fork stub	M8	15 Nm (11.1 lbf ft)
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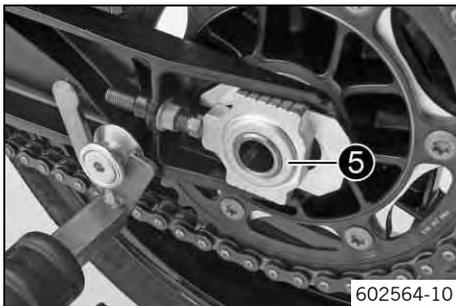
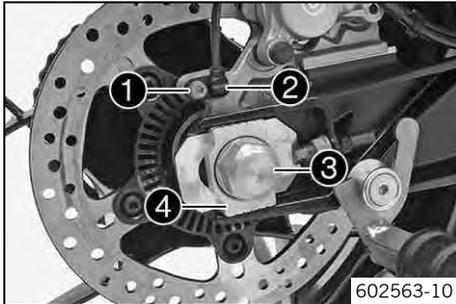
## 13.3 Removing the rear wheel

### Preparatory work

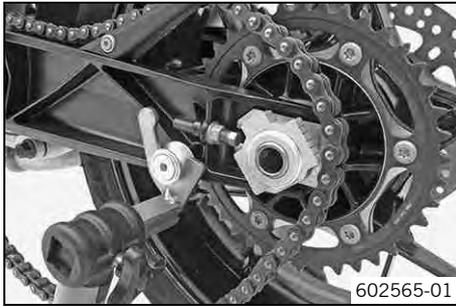
- Raise the motorcycle with the rear wheel stand. ( p. 77)

### Main work

- Remove screw **1** and pull wheel speed sensor **2** out of the hole.
- Remove nut **3**. Remove chain adjuster **4**.



- Pull out wheel spindle **5** to the point where the chain adjuster is no longer in contact with the adjusting screw.



- Push the rear wheel forward as far as possible and take the chain off the rear sprocket.
- Withdraw the wheel spindle.
- Pull the rear wheel back until the brake caliper support is suspended freely between the brake disc and rim.



### Warning

**Danger of accidents** Reduced braking efficiency due to damaged brake discs.

- Always lay down the wheel in such a way that the brake discs are not damaged.

- Take the rear wheel carefully out of the swingarm without damaging the rim and/or brake disc.



### Info

Do not operate the foot brake when the rear wheel is removed.

## 13.4 Installing the rear wheel



### Warning

**Danger of accidents** Reduced braking efficiency due to oil or grease on the brake discs.

- Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.



### Warning

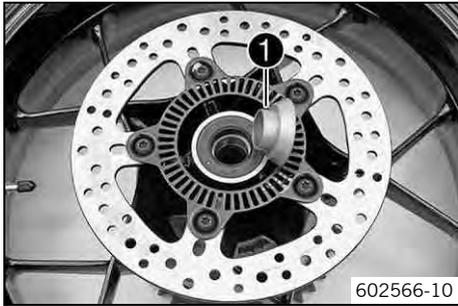
**Danger of accidents** No braking effect when operating the rear brake.

- After installing the rear wheel, always operate the foot brake until the pressure point is reached.

### Main work

- Check the rear hub rubber dampers.  (  p. 114)

# 13 WHEELS, TIRES



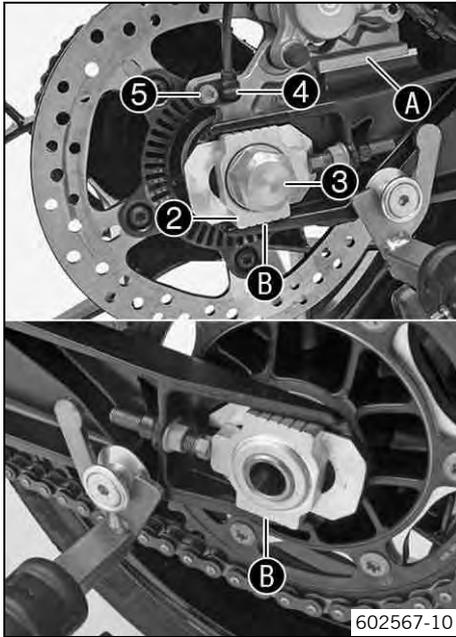
- Check the wheel bearing for damage and wear.
  - » If the wheel bearing is damaged or worn:
    - Replace the wheel bearing. 🛠️
- Remove bushing ❶. Clean and grease the mating surfaces of the bushings and the shaft seal rings.

Long-life grease (🛠️ p. 189)

- Install the bushing.
- Clean and grease the thread of the wheel spindle and nut.

Long-life grease (🛠️ p. 189)

- Clean the fixing locations on the brake caliper support and swingarm.



- Engage the counter bearing of the brake caliper support **A** and swingarm. Carefully lift the rear wheel into the swingarm and engage the brake disc. Lay the chain on the rear sprocket and mount the wheel spindle.
- Mount chain adjuster **2** and nut **3**.

**i Info**

Mount the left and right chain adjusters in the same position.

- Push the rear wheel forward so that the chain adjusters are in contact with the adjusting screws, and tighten the nut.

**Guideline**

In order for the rear wheel to be correctly aligned, the markings on the left and right chain adjusters must be in the same position relative to the reference marks **B**.

Nut, rear wheel spindle	M25x1.5	90 Nm (66.4 lbf ft)
-------------------------	---------	------------------------

- Insert wheel speed sensor **4** into the hole. Mount and tighten screw **5**.

**Guideline**

Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
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- Operate the foot brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.

**Finishing work**

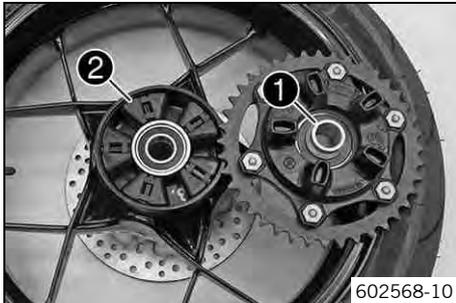
- Take the motorcycle off of the rear wheel stand. (🔧 p. 77)
- Check the chain tension. (🔧 p. 83)

## 13.5 Checking the rear hub rubber dampers 🛠️



### Info

The engine power is transmitted from the rear sprocket to the rear wheel via 6 rubber dampers. They eventually wear out during operation. If the rubber dampers are not changed in time, the rear sprocket carrier and the rear hub will be damaged.

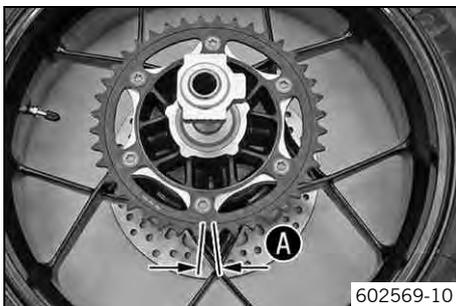


### Preparatory work

- Raise the motorcycle with the rear wheel stand. (🔧 p. 77)
- Remove the rear wheel. 🛠️ (🔧 p. 110)

### Main work

- Check bearing ①.
  - » If the bearing is damaged or worn:
    - Replace the bearings. 🛠️
- Check rubber dampers ② of the rear hub for damage and wear.
  - » If the rubber dampers of the rear hub are damaged or worn:
    - Change all rubber dampers in the rear hub.



- Lay the rear wheel on a workbench with the rear sprocket facing upwards and insert the wheel spindle in the hub.
- To check play ①, hold the rear wheel tight and try to rotate the rear sprocket with your hand.



### Info

Measure the play on the outside of the rear sprocket.

Play in rubber dampers, rear wheel

≤ 5 mm (≤ 0.2 in)

- » If play **A** is larger than the specified value:
  - Change all rubber dampers in the rear hub.

### Finishing work

- Install the rear wheel.  (🔧 p. 111)
- Take the motorcycle off of the rear wheel stand. (🔧 p. 77)
- Check the chain tension. (🔧 p. 83)

## 13.6 Checking the tire condition



### Warning

**Danger of accidents** Uncontrollable vehicle handling in the event of a flat tire.

- In the interest of safety, replace damaged or worn tires immediately. (Your authorized KTM workshop will be glad to help.)



### Warning

**Danger of crashing** Poor vehicle handling due to different tire tread patterns on front and rear wheels.

- The front and rear wheels must be fitted with tires with similar tread patterns to prevent loss of control over the vehicle.



### Warning

**Danger of accidents** Uncontrollable handling characteristic due to non-approved and/or non-recommended tires/wheels.

- Only tires/wheels approved by KTM and with the corresponding speed index should be used.



### Warning

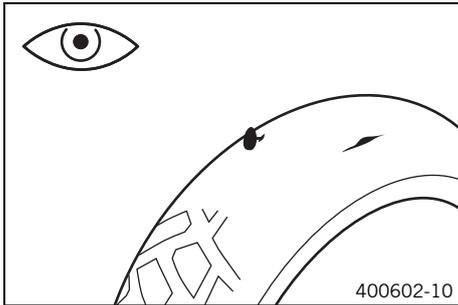
**Danger of accidents** Reduced road grip with new tires.

- New tires have a smooth rolling surface and therefore cannot provide full road grip. The entire rolling surface must be roughened in the first 200 kilometers (124.3 miles) by moderate riding at alternating angles. The full grip levels are not achieved until the tires have been run in.



## Info

The type, condition and air pressure of the tires all have a major impact on the riding behavior of the motorcycle. Worn tires have a negative effect on riding behavior, especially on wet surfaces.



- Check the front and rear tires for cuts, run-in objects and other damage.
  - » If the tires exhibit cuts, run-in objects or other damage:
    - Change the tires.
- Check the depth of the tread.



## Info

Note local national regulations concerning the minimum tread depth.

Minimum tread depth	$\geq 2 \text{ mm } (\geq 0.08 \text{ in})$
---------------------	---

- » If the tread depth is less than the minimum permissible depth:
  - Change the tires.
- Check the age of the tires.



## Info

The tire's date of manufacture is usually part of the tire markings and is indicated by the last four digits of the **DOT** marking. The first two digits refer to the week of manufacture and last two digits refer to the year of manufacture. KTM recommends that the tires are changed regardless of the actual wear, at the latest after 5 years.

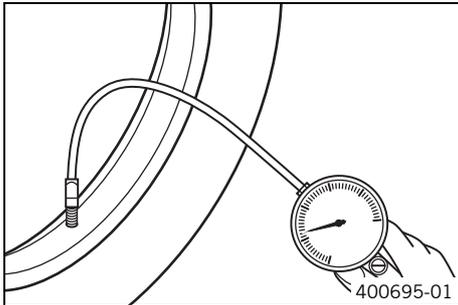
- » If a tire is more than 5 years old:
  - Change the tires.

## 13.7 Checking the tire pressure



### Info

Low tire pressure leads to abnormal wear and overheating of the tire.  
Correct tire pressure ensures optimal riding comfort and maximum tire service life.



- Remove the protection cap.
- Check the tire pressure when the tires are cold.

Tire air pressure, solo	
Front	2.0 bar (29 psi)
Rear	2.0 bar (29 psi)

Tire air pressure with passenger / fully loaded	
Front	2.0 bar (29 psi)
Rear	2.2 bar (32 psi)

- » If the tire pressure does not meet specifications:
  - Correct the tire pressure.
- Mount the protection cap.

## 14.1 Removing the battery ↩



### Warning

**Risk of injury** Battery acid and battery gases cause serious chemical burns.

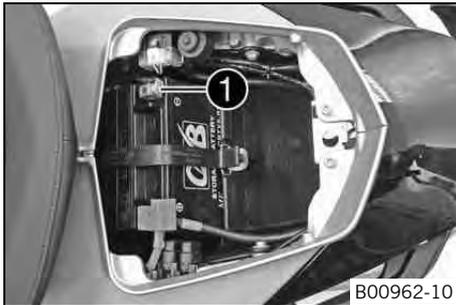
- Keep batteries out of the reach of children.
- Wear suitable protective clothing and goggles.
- Avoid contact with battery acid and battery gases.
- Keep sparks and open flames away from the battery. Only charge in well-ventilated rooms.
- In the event of skin contact, rinse with large amounts of water. If battery acid gets in the eyes, rinse with water for at least 15 minutes and contact a physician.

### Preparatory work

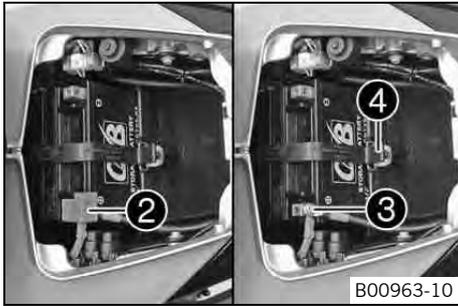
- Switch off all power consumers and switch off the engine.
- Remove the passenger seat. (↩ p. 79)

### Main work

- Disconnect the negative cable **1** of the battery.



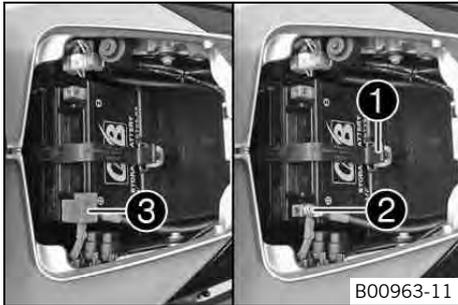
B00962-10



B00963-10

- Remove positive terminal cover ②.
- Disconnect the positive cable ③ of the battery.
- Detach rubber band ④.
- Pull the battery up and out of the battery holder.

## 14.2 Installing the battery 🛠️



B00963-11

### Main work

- Position the battery in the battery holder.



### Info

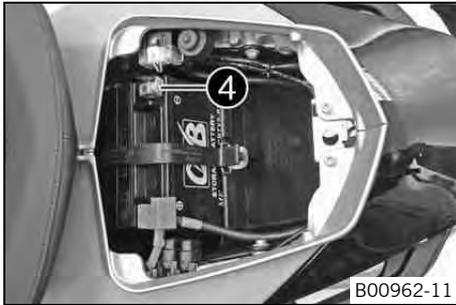
The terminals of the battery must face in the direction of travel.

- Attach rubber band ①.
- Reconnect the positive cable ② of the battery.

### Guideline

Screw, battery terminal	M6	2 Nm (1.5 lbf ft)
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- Position positive terminal cover ③.



- Connect the negative cable ④ of the battery.

Guideline

Screw, battery terminal	M6	2 Nm (1.5 lbf ft)
-------------------------	----	-------------------

### Finishing work

- Mount the passenger seat. (☛ p. 80)
- Set the clock. (☛ p. 35)

## 14.3 Recharging the battery 🛡️



### Warning

**Risk of injury** Battery acid and battery gases cause serious chemical burns.

- Keep batteries out of the reach of children.
- Wear suitable protective clothing and goggles.
- Avoid contact with battery acid and battery gases.
- Keep sparks and open flames away from the battery. Only charge in well-ventilated rooms.
- In the event of skin contact, rinse with large amounts of water. If battery acid gets in the eyes, rinse with water for at least 15 minutes and contact a physician.



### Warning

**Environmental hazard** The battery contains elements that are harmful to the environment.

- Do not discard batteries with the household waste. Dispose of faulty batteries in an environmentally compatible manner. Give the battery to your authorized KTM dealer or dispose of it at a collection point for used batteries.



## Warning

**Environmental hazard** Hazardous substances cause environmental damage.

- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.
- 



## Info

Even when there is no load on the battery, it discharges steadily.

The charge state and the type of charge are very important for the service life of the battery.

Rapid recharging with a high charging current shortens the battery's service life.

If the charging current, charging voltage, and charging time are exceeded, electrolyte escapes through the safety valves. This reduces the battery capacity.

If the battery is depleted from starting the vehicle repeatedly, the battery must be charged immediately.

If the battery is left in a discharged state for an extended period, it will become over-discharged and sulfate, destroying the battery.

The battery is maintenance-free, i.e., the acid level does not have to be checked.

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## Preparatory work

- Switch off all power consumers and switch off the engine.
- Remove the passenger seat. (☛ p. 79)
- Disconnect the negative cable of the battery to avoid damage to the motorcycle's electronics.



### Main work

- Connect the battery charger to the battery. Switch on the battery charger.

Battery charger (58429074000)
-------------------------------

You can also use the battery charger to test the rest potential and start potential of the battery, and to test the alternator. With this device, you cannot overcharge the battery.



### Info

Never remove lid ①.

- Switch off the charger after charging. Disconnect the battery.

### Guideline

The charge current, charge voltage, and charge time must not be exceeded.	
Charge the battery regularly when the motorcycle is not in use	3 months

### Finishing work

- Mount the passenger seat. (🔧 p. 80)
- Set the clock. (🔧 p. 35)

## 14.4 Changing the main fuse



### Warning

**Fire hazard** The electrical system can be overloaded if the wrong fuses are used.

- Use only fuses with the prescribed amperage. Never by-pass or repair fuses.



### Info

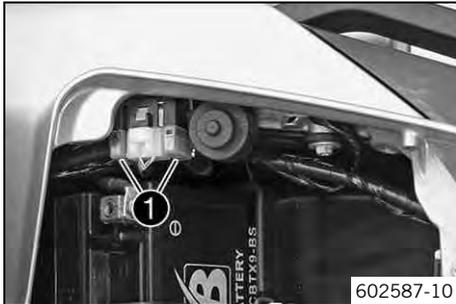
The main fuse protects all power consumers of the vehicle. The main fuse is under the passenger seat.

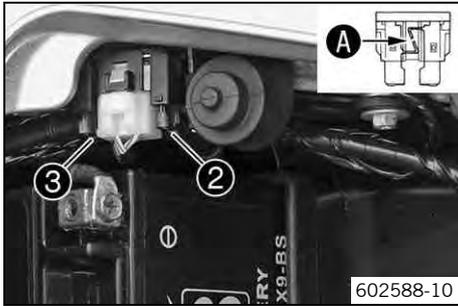
### Preparatory work

- Switch off all power consumers and switch off the engine.
- Remove the passenger seat. (↖ p. 79)

### Main work

- Remove protection covers ❶.





- Remove the faulty main fuse ②.



### Info

A defective fuse is indicated by a burned-out fuse wire **A**.  
A reserve fuse **3** is located in the starter relay.

- Install a new main fuse.

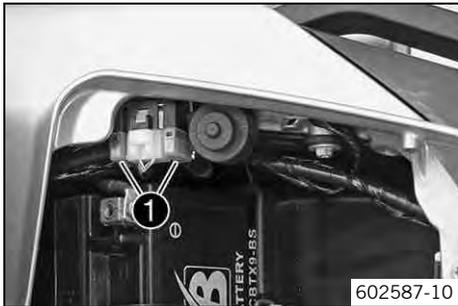
Fuse (58011109130) (☞ p. 176)



### Tip

Insert a new replacement fuse into the starter relay to have it available when needed.

- Attach the protection covers ①.



### Finishing work

- Mount the passenger seat. (☞ p. 80)
- Set the clock. (☞ p. 35)

## 14.5 Changing the ABS fuses



### Warning

**Fire hazard** The electrical system can be overloaded if the wrong fuses are used.

- Use only fuses with the prescribed amperage. Never by-pass or repair fuses.



### Info

Two fuses for the ABS are located under the passenger seat. These fuses protect the return pump and the hydraulic unit of the ABS. The third fuse, which protects the ABS control unit, is located in the fuse box.



### Preparatory work

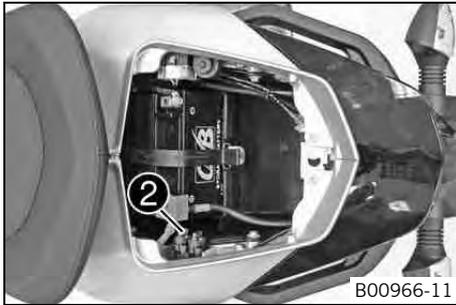
- Switch off all power consumers and switch off the engine.
- Remove the passenger seat. (☛ p. 79)

### To change the fuse of the ABS hydraulic unit:

- Take off the protection cover and remove fuse ①.
- Insert a new fuse.

Fuse (58011109115) (☛ p. 176)

- Mount the protection cover.



### To change the fuse of the ABS return pump:

- Take off the protection cover and remove fuse ②.
- Insert a new fuse.

Fuse (58011109125) (☛ p. 176)

- Mount the protection cover.

### Finishing work

- Mount the passenger seat. (☛ p. 80)

## 14.6 Changing the fuses of individual power consumers



### Info

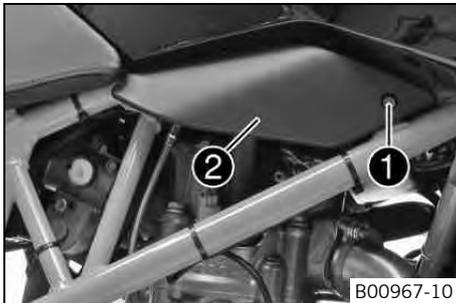
The fuse box containing the fuses of individual power consumers is located on the right under the fuel tank.

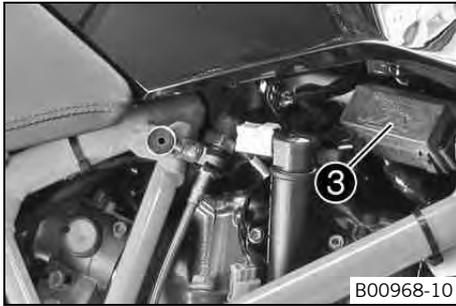
### Preparatory work

- Switch off all power consumers and switch off the engine.

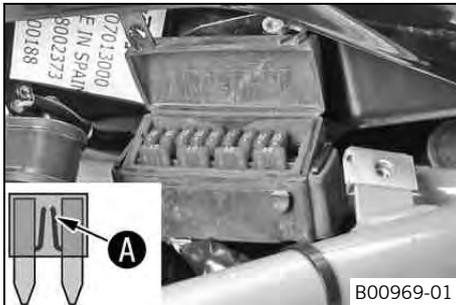
### Main work

- Remove screw ①.
- Take off cover ②.





- Open fuse box cover ③.



- Remove the defective fuse.

### Guideline

Fuse <b>1</b> - 10 A - ignition, combination instrument, clock, EFI control unit, alarm system (optional)
Fuse <b>2</b> - 10 A - ignition, combination instrument, EFI control unit
Fuse <b>3</b> - 10 A - fuel pump
Fuse <b>4</b> - 10 A - radiator fan
Fuse <b>5</b> - 10 A - horn, brake light, turn signal, alarm system (optional)
Fuse <b>6</b> - 15 A - high beam, low beam, parking light, tail light, license plate lamp
Fuse <b>7</b> - 10 A - for auxiliary equipment (permanent positive)
Fuse <b>8</b> - 10 A - for auxiliary equipment (accessories connected with ignition switch)
Fuse <b>9</b> - 10 A - ABS
Fuse <b>10</b> - not used
Fuse <b>SPARE</b> - 10 A/15 A - spare fuses

### **i** Info

A defective fuse is indicated by a burned-out fuse wire **A**.



**Warning**

**Fire hazard** The electrical system can be overloaded if the wrong fuses are used.

- Use only fuses with the prescribed amperage. Never by-pass or repair fuses.

- Use spare fuses with the correct rating only.

Fuse (75011088010) (☛ p. 176)
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Fuse (75011088015) (☛ p. 176)
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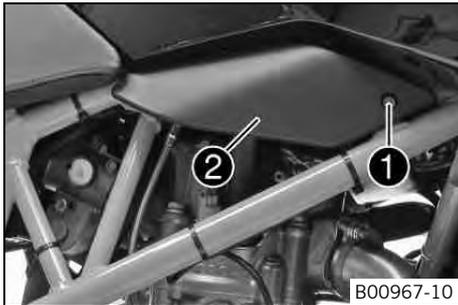
**Tip**

Replace the spare fuse in the fuse box so that it is available if needed.

- Check that the power consumer is functioning properly.
- Close the fuse box cover.
- Position cover ②.
- Mount and tighten screw ①.

Guideline

Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
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## 14.7 Removing the headlight mask with the headlight

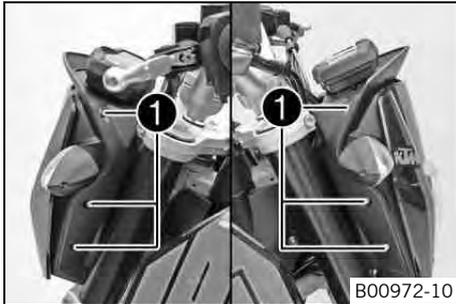
### Preparatory work

- Switch off all power consumers and switch off the engine.

### Main work

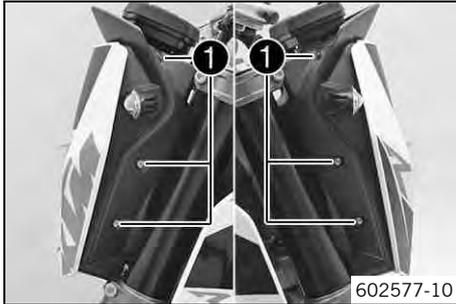
#### (Duke)

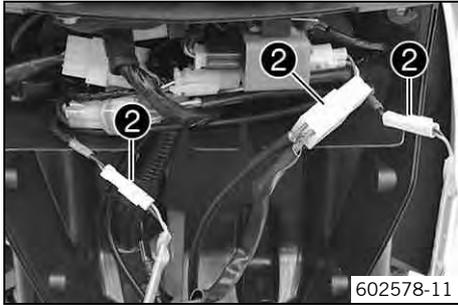
- Remove screws ①.



#### (Duke R)

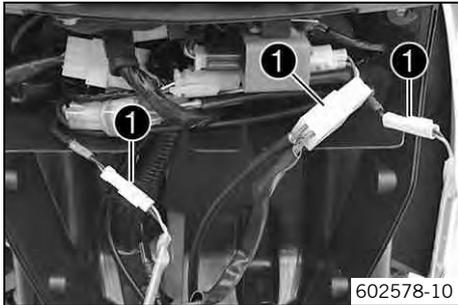
- Remove screws ①.





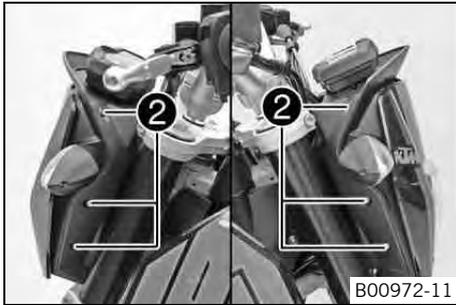
- Fold the headlight mask forward.
- Disconnect plug ②.
- Set down the headlight mask.

## 14.8 Refitting the headlight mask with the headlight



### Main work

- Plug in connector ①.



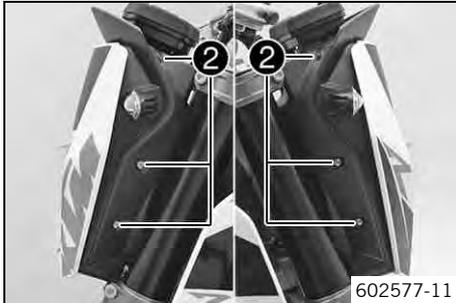
**(Duke)**

- Position the headlight mask.
- Mount and tighten screws **2**.

Guideline

Screw, headlight	EJOT	2 Nm (1.5 lbf ft)
Remaining screws, chassis	M5	5 Nm (3.7 lbf ft)

- Check that the lighting is functioning properly.



**(Duke R)**

- Position the headlight mask.
- Mount and tighten screws **2**.

Guideline

Screw, headlight	EJOT	2 Nm (1.5 lbf ft)
Remaining screws, chassis	M5	5 Nm (3.7 lbf ft)

- Check that the lighting is functioning properly.

**Finishing work**

- Check the headlight setting. (🔧 p. 135)

## 14.9 Changing the headlight bulb

**Note**

**Damage to reflector** Reduced brightness.

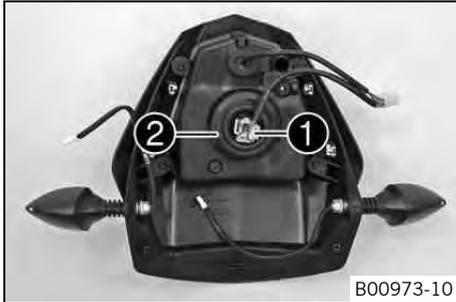
- Grease on the lamp will evaporate due to the heat and be deposited on the reflector. Clean the lamp and keep it free of grease before mounting.

## Preparatory work

- Switch off all power consumers and switch off the engine.
- Remove the headlight mask with the headlight. (☛ p. 129)

## Main work

- Disconnect connector ❶.
- Take off protection cap ❷.



- Detach retaining clamp ❸.
- Remove bulb ❹.
- Position the new bulb in the headlight housing.

Headlight (H4 / socket P43t) (☛ p. 176)

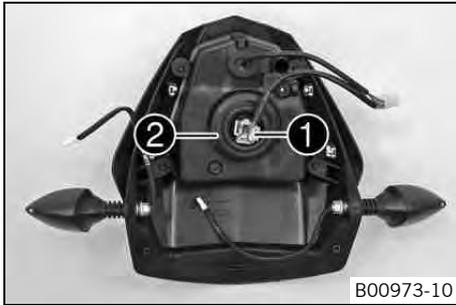


### Info

Insert the headlight bulb so that the catches latch into the recesses.

- Attach retaining clamp ❸.





- Mount protection cap ②.
- Plug in connector ①.

### Finishing work

- Refit the headlight mask with the headlight. (☛ p. 130)
- Check the headlight setting. (☛ p. 135)

## 14.10 Changing the parking light bulb

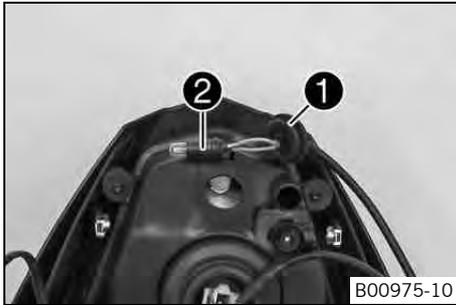
### Note

**Damage to reflector** Reduced brightness.

- Grease on the lamp will evaporate due to the heat and be deposited on the reflector. Clean the lamp and keep it free of grease before mounting.

### Preparatory work

- Switch off all power consumers and switch off the engine.
- Remove the headlight mask with the headlight. (☛ p. 129)



## Main work

- Pull cable sleeve ① and the socket of parking light ② carefully out of the housing.
- Remove the bulb.
- Position a new light bulb in the socket.

Parking light (W5W / socket W2.1x9.5d) (☛ p. 176)

- Carefully position socket ② with the bulb in the housing.
- Mount cable sleeve ①.

## Finishing work

- Refit the headlight mask with the headlight. (☛ p. 130)
- Check the headlight setting. (☛ p. 135)

### 14.11 Changing the turn signal bulb (Duke)

#### Note

**Damage to reflector** Reduced brightness.

- Grease on the lamp will evaporate due to the heat and be deposited on the reflector. Clean the lamp and keep it free of grease before mounting.



B00981-10

- Remove the screw on the rear of the turn signal housing.
- Remove turn signal glass ①.
- Press the bulb carefully into the socket, turn it counterclockwise by about 30°, and pull it out of the socket.



**Info**

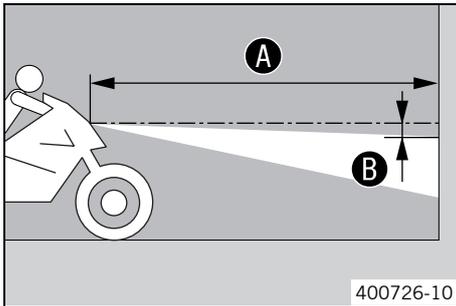
Do not touch the reflector with your fingers, and keep it free from grease.

- Press the new bulb carefully into the socket and turn it clockwise all the way.

Turn signal (RY10W / socket BAU15s) (☛ p. 176)

- Position the turn signal glass.
- Insert the screw and turn it counterclockwise first until it engages in the thread with a light jerk. Tighten the screw slightly.
- Check that the turn signal system is functioning properly.

## 14.12 Checking the headlight setting



400726-10

- Position the vehicle upright on a horizontal surface in front of a light wall and make a mark at the height of the center of the low beam headlight.
- Make another mark at a distance ② under the first mark.

Guideline

Distance ②	5 cm (2 in)
------------	-------------

- Position the vehicle vertically at a distance ① in front of the wall and switch on the low beam.

Guideline

Distance ①	5 m (16 ft)
------------	-------------

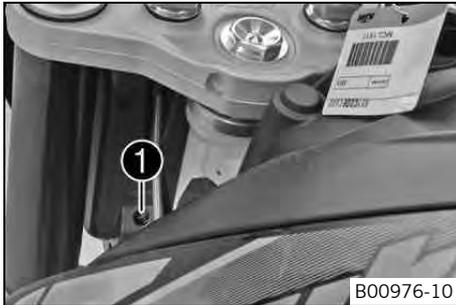
- The rider, with luggage and passenger if applicable, now mounts the motorcycle.

- Check the headlight setting.

The light-dark boundary must lie exactly on the lower mark when the motorcycle is ready to operate with the rider mounted along with any luggage and a passenger if applicable.

- » If the boundary between light and dark does not meet specifications:
  - Adjust the headlight range. (☛ p. 136)

## 14.13 Adjusting the headlight range



### Preparatory work

- Check the headlight setting. (☛ p. 135)

### Main work

- Adjust the beam distance of the headlight by turning screw ①.

### Guideline

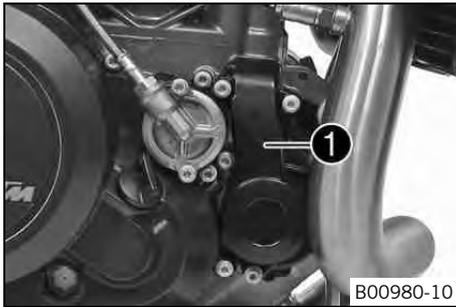
For a motorcycle with rider, and with luggage and a passenger if applicable, the light/dark boundary must be exactly on the lower mark (applied in: Checking the headlight setting).

### **i** Info

Turn counterclockwise to increase the headlight range; turn clockwise to reduce the headlight range.

If you have a payload, you may have to correct the headlight range.

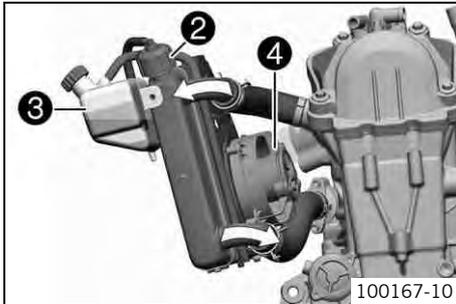
## 15.1 Cooling system



The water pump ❶ in the engine forces the coolant to flow.

The pressure in the cooling system resulting from heat is regulated by a valve in the radiator cap ❷. The heat expansion causes the surplus coolant to flow into the compensating tank ❸. When the temperature falls, this surplus coolant is sucked back into the cooling system. This permits the specified coolant temperature without causing any malfunctions.

125 °C (257 °F)



Cooling takes place by means of the air stream and a radiator fan ❹, which is controlled by a thermostwitch.

The lower the speed, the less the cooling effect. Dirty cooling fins also reduce the cooling effect.

## 15.2 Checking the antifreeze and coolant level



### Warning

**Danger of scalding** During motorcycle operation, the coolant gets very hot and is under pressure.

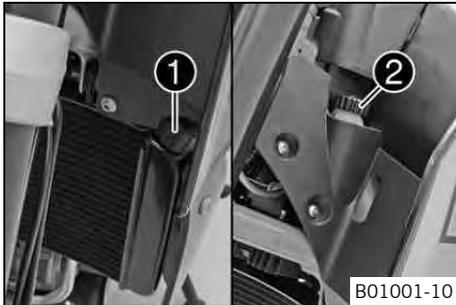
- Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.



## Warning

**Danger of poisoning** Coolant is poisonous and a health hazard.

- Coolant must not come into contact with the skin, eyes, or clothing. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If coolant is swallowed, contact a physician immediately. Change clothing that is contaminated with coolant. Keep coolant out of reach of children.



## Condition

The engine is cold.

## Preparatory work

- Stand the motorcycle upright on a horizontal surface.

## Main work

- Remove radiator cap **1** and plug **2** from the compensating tank.
- Check the coolant antifreeze.

-25... -45 °C (-13... -49 °F)

» If the coolant antifreeze does not meet specifications:

- Correct the coolant antifreeze.

- Check the coolant level in the compensating tank.

The coolant level must be at marking **MIN**.

» If the coolant in the compensating tank is not at the required level, but the tank is not empty:

- Add coolant to the **MIN** marking.

## Alternative 1

Coolant (☛ p. 185)

## Alternative 2

Coolant (mixed ready to use) (☛ p. 185)

- » If there is no coolant in the compensating tank:
  - Check the cooling system for leaks. 

**Info**

Do not start up the motorcycle!

- Fill/bleed the cooling system.  ( p. 142)
- Mount cap **2** of the compensating tank.
- Check the coolant level in the radiator.

The radiator must be completely filled.

- » If the coolant level does not meet specifications:
  - Correct the coolant level and find out the cause of the loss.

**Alternative 1**

Coolant ( p. 185)

**Alternative 2**

Coolant (mixed ready to use) ( p. 185)

- » If you had to add more coolant than the specified amount:
  - > 0.50 l (> 0.53 qt.)
    - Fill/bleed the cooling system.  ( p. 142)
- Mount radiator cap **1**.

## 15.3 Checking the coolant level in the compensating tank



### Warning

**Danger of scalding** During motorcycle operation, the coolant gets very hot and is under pressure.

- Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.



### Warning

**Danger of poisoning** Coolant is poisonous and a health hazard.

- Coolant must not come into contact with the skin, eyes, or clothing. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If coolant is swallowed, contact a physician immediately. Change clothing that is contaminated with coolant. Keep coolant out of reach of children.

### Condition

The engine is cold.

The radiator is completely full.

### Preparatory work

- Park the motorcycle on a horizontal surface.

### Main work

- Check the coolant level in the compensating tank ①.

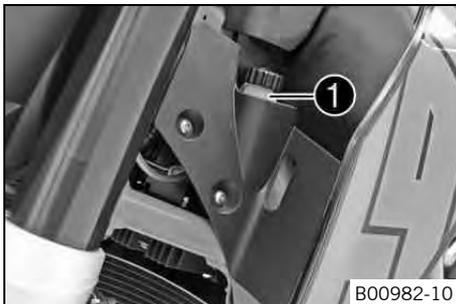
The coolant level must be at marking **MIN**.

- » If the coolant in the compensating tank is not at the required level, but the tank is not empty:

- Remove the compensating tank cap.
- Add coolant to the **MIN** marking.

### Alternative 1

Coolant (☞ p. 185)



## Alternative 2

Coolant (mixed ready to use) (🔧 p. 185)

- Mount the cap of the compensating tank.
- » If there is no coolant in the compensating tank:
  - Check the cooling system for leaks. 🛠️



### Info

Do not start up the motorcycle!

- Fill/bleed the cooling system. 🛠️ (🔧 p. 142)

## 15.4 Draining the coolant 🛠️



### Warning

**Danger of scalding** During motorcycle operation, the coolant gets very hot and is under pressure.

- Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.



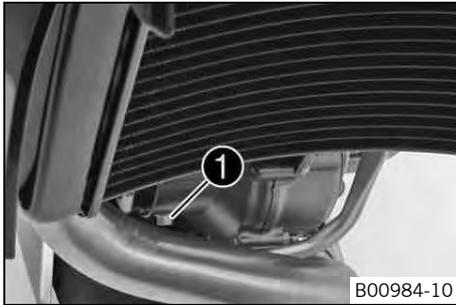
### Warning

**Danger of poisoning** Coolant is poisonous and a health hazard.

- Coolant must not come into contact with the skin, eyes, or clothing. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If coolant is swallowed, contact a physician immediately. Change clothing that is contaminated with coolant. Keep coolant out of reach of children.

### Condition

The engine is cold.



- Stand the motorcycle upright.
- Place a suitable container under the engine.
- Remove screw ①. Remove the radiator cap.
- Completely drain the coolant.
- Mount screw ① with a new seal ring and tighten it.

Guideline

Plug, drain hole of water pump	M10x1	15 Nm (11.1 lbf ft)
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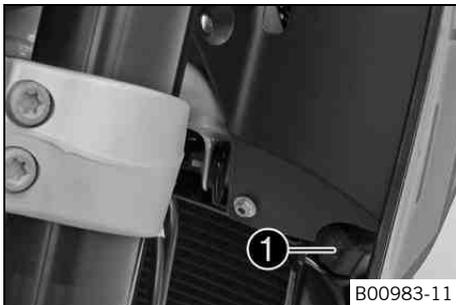
## 15.5 Filling/bleeding the cooling system 🛠️



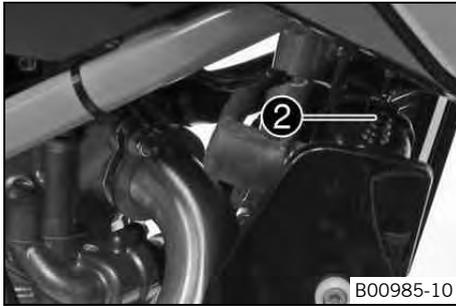
### Warning

**Danger of poisoning** Coolant is poisonous and a health hazard.

- Coolant must not come into contact with the skin, eyes, or clothing. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If coolant is swallowed, contact a physician immediately. Change clothing that is contaminated with coolant. Keep coolant out of reach of children.



- Remove radiator cap ①.



- Remove bleeder screw ②.
- Tilt the vehicle slightly to the right.
- Pour in coolant until it emerges without bubbles at the vent hole, and then mount and tighten bleeder screw ② immediately.

### Alternative 1

Coolant (☛ p. 185)

### Alternative 2

Coolant (mixed ready to use) (☛ p. 185)

- Fill the radiator completely with coolant. Mount radiator cap ①.
- Lean the vehicle on the side stand.
- Check the coolant level in the compensating tank. (☛ p. 140)

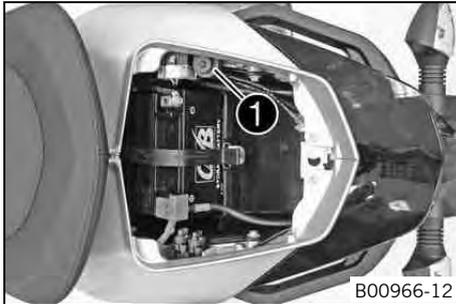


### Danger

**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and/or death.

- When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.
- 
- Start the engine and run it until the 5th bar of the temperature indicator lights up.
  - Stop the engine and allow it to cool down.
  - When the engine is cool, check the coolant level in the radiator and, if necessary, add coolant.
  - Check the coolant level in the compensating tank. (☛ p. 140)

## 16.1 Setting the engine characteristics



B00966-12

### Preparatory work

- Switch off the ignition by turning the ignition key to the position ☒.
- Remove the passenger seat. (☛ p. 79)

### Main work

- Pull off the **Map-Select** switch with holder ❶ from the retaining bracket.
- Pull the **Map-Select** switch out of the holder.



B00971-10

- Turn the adjusting wheel until the desired number is aligned with marking ❷.

### Set the Map-Select switch to Soft.

- Set the adjusting wheel to position 1.
  - ✓ Soft – Homologated performance with very gentle response

### Set the Map-Select switch to Advanced.

- Set the adjusting wheel to position 2.
  - ✓ Advanced – Homologated performance with very direct response

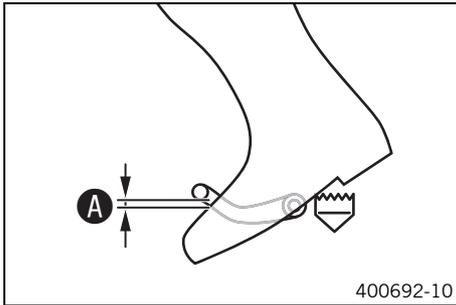
### Set the Map-Select switch to Standard.

- Set the adjusting wheel to position 3, 4, 5, 6, 7, 8, 9 or 0.
  - ✓ Standard – Homologated performance with balanced response
- Position the **Map-Select** switch in the holder.
- Push the **Map-Select** switch with the holder into the retaining bracket.

## Finishing work

- Mount the passenger seat. (🔧 p. 80)

### 16.2 Checking the basic position of the shift lever

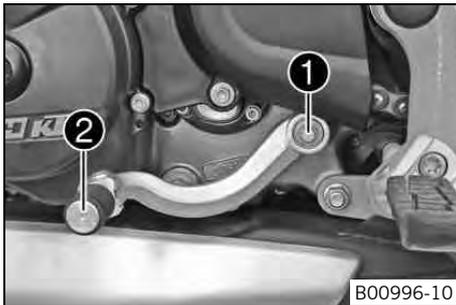


- Sit on the vehicle in the riding position and determine distance **A** between the upper edge of your boot and the shift lever.

Distance between shift lever and upper edge of boot	10... 20 mm (0.39... 0.79 in)
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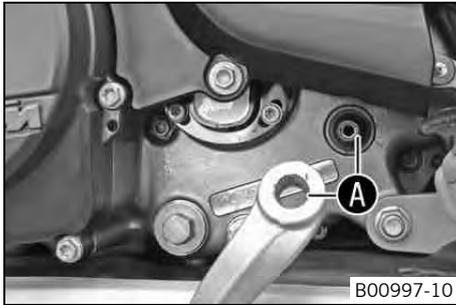
- » If the distance does not meet specifications:
  - Adjust the basic position of the shift lever. 🔧 (🔧 p. 145)

### 16.3 Adjusting the basic position of the shift lever 🔧



#### (Duke)

- Remove screw **1** and take off shift lever **2**.



B00997-10

- Clean gear teeth **A** of the shift lever and shift shaft.
- Mount the shift lever on the shift shaft in the required position and engage the gearing.



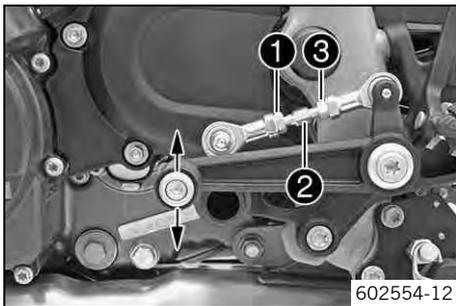
**Info**

The range of adjustment is limited.  
The shift lever must not come into contact with any other vehicle components during the shift procedure.

- Mount and tighten the screw.

Guideline

Screw, shift lever	M6	14 Nm (10.3 lbf ft)	Loctite® 243™
--------------------	----	------------------------	---------------



602554-12

**(Duke R)**

- Loosen nut **1**, holding the threaded rod **2**.



**Info**

Nut **1** has a left-handed thread.

- Loosen nut **3**, holding the threaded rod **2**.
- Turn threaded rod **2** to adjust the shift lever.



**Info**

The range of adjustment is limited.  
The shift lever must not come into contact with any other vehicle components during the shift procedure.

- Tighten nut **3**, holding the threaded rod **2**.

Guideline

Shift rods, nut	M6	6 Nm (4.4 lbf ft)
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# 16 TUNING THE ENGINE

- Tighten nut ❶, holding the threaded rod ❷.

Guideline

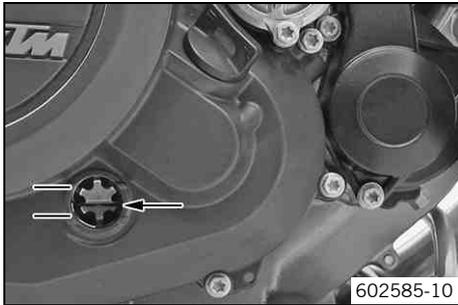
Shift rods, nut	M6LH	6 Nm (4.4 lbf ft)
-----------------	------	-------------------

## 17.1 Checking the engine oil level



### Info

The engine oil level must be checked at normal engine operating temperature.



### Condition

The engine is at operating temperature.

- Stand the motorcycle upright on a horizontal surface.
- Check the engine oil level.



### Info

After switching off the engine, wait one minute before checking the level.

The engine oil must be between the lower and upper edge of the oil level viewer.

- » If the engine oil level is not at the specified level:
  - Add the engine oil. (🔧 p. 153)

## 17.2 Changing the engine oil and filter, cleaning the oil screens 🛠️



### Warning

**Danger of scalding** Engine oil and gear oil get very hot when the motorcycle is ridden.

- Wear appropriate protective clothing and safety gloves. In case of burns, rinse immediately with lukewarm water.



### Warning

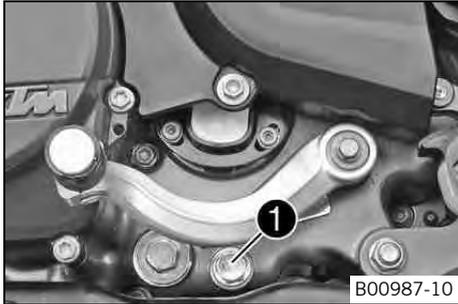
**Environmental hazard** Hazardous substances cause environmental damage.

- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.



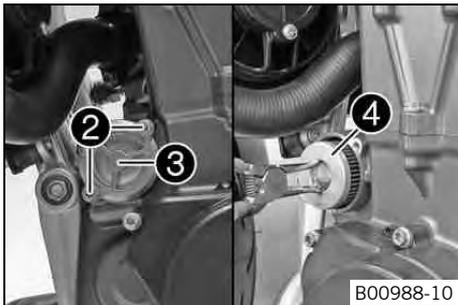
## Info

Drain the engine oil only when the engine is warm.



## Main work

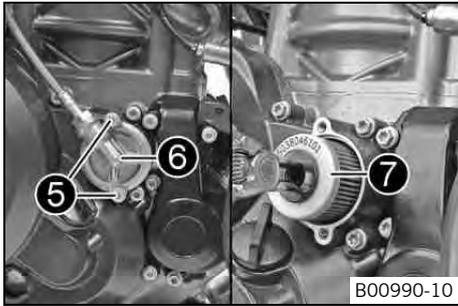
- Stand the motorcycle on its side stand on a horizontal surface.
- Place a suitable container under the engine.
- Remove the oil drain plug **1** with the magnet and seal ring.
- Completely drain the engine oil.
- Thoroughly clean the oil drain plug with a magnet.



- Remove screws **2**. Remove the oil filter cover **3** with the O-ring.
- Pull oil filter **4** out of the oil filter housing.

Circlip pliers reverse (51012011000)

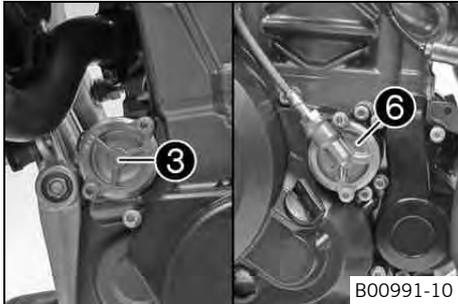
- Completely drain the engine oil.
- Thoroughly clean the parts and sealing area.



- Remove screws **5**. Remove the oil filter cover **6** with the O-ring.
- Pull oil filter **7** out of the oil filter housing.

Circlip pliers reverse (51012011000)
--------------------------------------

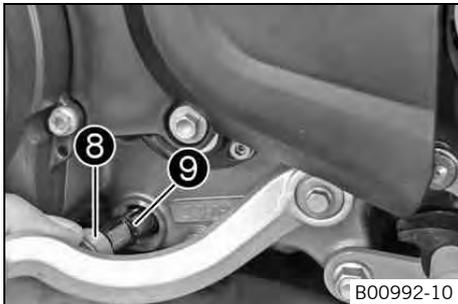
- Completely drain the engine oil.
- Thoroughly clean the parts and sealing area.



- Insert the oil filter.
- Oil the O-rings of the oil filter covers. Mount oil filter covers **3** and **6**.
- Mount and tighten the screws.

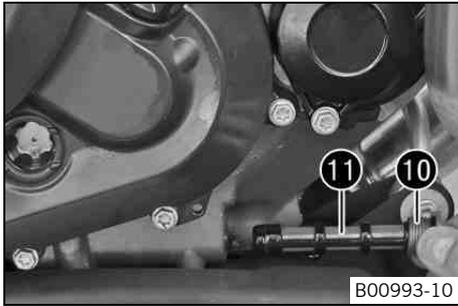
Guideline

Screw, oil filter cover	M5x16	6 Nm (4.4 lbf ft)
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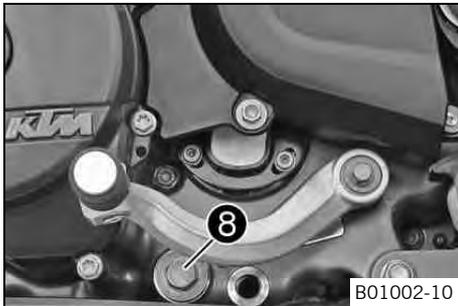


- Remove screw plug **8** with oil screen **9** and the O-rings.
- Completely drain the remaining engine oil.
- Thoroughly clean the parts and sealing area.

# 17 SERVICE WORK ON THE ENGINE



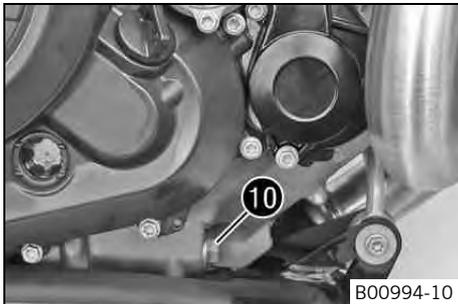
- Remove screw plug 10 with oil screen 11 and the O-rings.
- Completely drain the remaining engine oil.
- Thoroughly clean the parts and sealing area.



- Position the oil screen with the O-rings.
- Mount and tighten screw plug 8 with the O-ring.

Guideline

Plug, oil screen	M20x1.5	15 Nm (11.1 lbf ft)
------------------	---------	------------------------



- Position the oil screen with the O-rings.
- Mount and tighten screw plug 10 with the O-ring.

Guideline

Plug, oil screen	M20x1.5	15 Nm (11.1 lbf ft)
------------------	---------	------------------------

- Mount and tighten the oil drain plug with magnet and seal ring.

Guideline

Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)
----------------------------	---------	------------------------



**Info**

Too little engine oil or poor-quality engine oil results in premature wear to the engine.

- Remove the oil filler plug **12** with the O-ring from the clutch cover and fill up with engine oil.

Engine oil	1.70 l (1.8 qt.)	Engine oil (SAE 10W/60) (00062010035) (☛ p. 186)
		Alternative engine oil Engine oil (SAE 10W/50) (☛ p. 186)

- Install and tighten the oil filler plug with the O-ring.



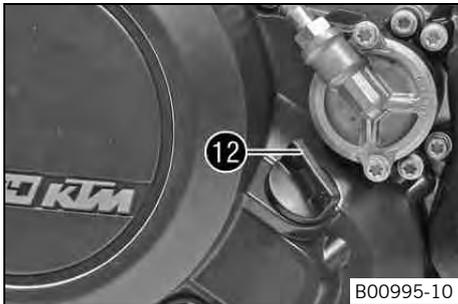
**Danger**

**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and/or death.

- When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.
- Start the engine and check that it is oil-tight.

**Finishing work**

- Check the engine oil level. (☛ p. 148)

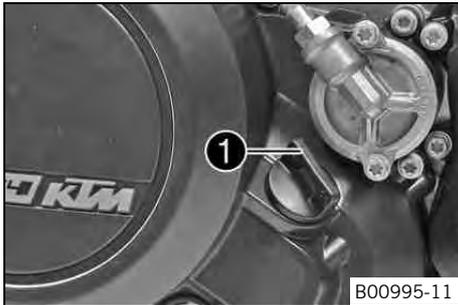


## 17.3 Adding engine oil



### Info

Too little engine oil or poor-quality engine oil results in premature wear to the engine.



### Main work

- Remove the oil filler plug **1** with the O-ring from the clutch cover and fill up with engine oil.

Engine oil (SAE 10W/60) (00062010035) (☞ p. 186)
--

Engine oil (SAE 10W/50) (☞ p. 186)
------------------------------------



### Info

For optimal performance of the engine oil, do not mix different types of engine oil.

If appropriate, change the engine oil.

- Install and tighten the oil filler plug **1** with the O-ring.



### Danger

**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and/or death.

- When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

- Start the engine and check that it is oil-tight.

### Finishing work

- Check the engine oil level. (☞ p. 148)

## 18.1 Cleaning the motorcycle

### Note

**Material damage** Damage and destruction of components by high-pressure cleaning equipment.

- When cleaning the vehicle with a pressure cleaner, do not point the water jet directly onto electrical components, connectors, cables, bearings, etc. Maintain a minimum distance of 60 cm between the nozzle of the pressure cleaner and the component. Excessive pressure can cause malfunctions or destroy these parts.



### Warning

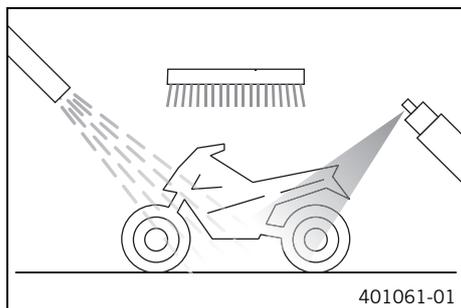
**Environmental hazard** Hazardous substances cause environmental damage.

- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.



### Info

If you clean the motorcycle regularly, its value and appearance will be maintained over a long period. Avoid direct sunshine on the motorcycle during cleaning.



- Seal the exhaust system to keep water out.
- First remove coarse dirt particles with a gentle spray of water.
- Spray very dirty areas with a normal motorcycle cleaner and then clean with a brush.

Motorcycle cleaner (☛ p. 189)



### Info

Use warm water containing normal motorcycle cleaner and a soft sponge. Never apply motorcycle cleaner to a dry vehicle; always rinse the vehicle with water first.

If the vehicle was operated in road salt, clean it with cold water. Warm water enhances the corrosive effects of salt.

- After rinsing the motorcycle with a gentle spray of water, allow it to dry thoroughly.
- Remove the closure of the exhaust system.



**Warning**

**Danger of accidents** Reduced braking efficiency due to a wet or dirty brake system.

- Clean or dry a dirty or wet brake system by riding and braking gently.

- After cleaning, ride the vehicle a short distance until the engine warms up.



**Info**

The heat produced causes water at inaccessible locations in the engine and on the brake system to evaporate.

- After the motorcycle has cooled off, lubricate all moving parts and bearings.
- Clean the chain. (☛ p. 82)
- Treat bare metal parts (except for brake discs and exhaust system) with anti-corrosion materials.

Preserving materials for paints, metal and rubber (☛ p. 190)

- Treat all painted parts with a mild paint polish.

Perfect Finish and high gloss polish for paints (☛ p. 190)



**Info**

Do not polish parts that were matte when delivered as this would strongly impair the material quality.

- Treat all plastic parts and powder-coated parts with a mild cleaning and care agent.

Special cleaner for glossy and matte paint finishes, metal and plastic surfaces (☛ p. 190)

- Lubricate the ignition/steering lock.

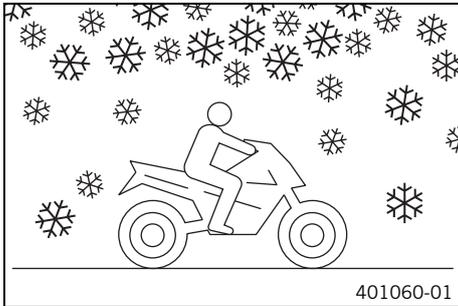
Universal oil spray (☛ p. 190)

## 18.2 Checks and maintenance steps for winter operation

### **i** Info

If you use the motorcycle in winter, you must expect salt on the roads. You should therefore take precautions against aggressive road salt.

If the vehicle was operated in road salt, clean it with cold water after riding. Warm water would enhance the corrosive effects of salt.



- Clean the motorcycle. (☛ p. 154)
- Clean the brake system.

### **i** Info

After **EVERY** trip on salted roads, thoroughly wash the brake calipers and brake linings with cold water and dry carefully. This should be done after the parts are cooled down and while they are installed.

After use on salted roads, clean the motorcycle thoroughly with cold water and dry it properly.

- Treat the engine, the swingarm, and all other bare or galvanized parts (except brake discs) with a wax-based anti-corrosion substance.

### **i** Info

To prevent serious reduction of the braking efficiency, make sure no anti-corrosion substance gets on to the brake discs.

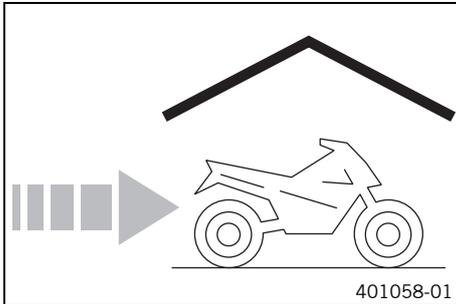
- Clean the chain. (☛ p. 82)

## 19.1 Storage

### **i** Info

If you want to garage the motorcycle for a longer period, take the following actions.

Before storing the motorcycle, check all parts for function and wear. If service, repairs or replacements are necessary, you should do this during the storage period (less workshop overload). In this way, you can avoid long workshop waiting times at the start of the new season.



- When refueling for the last time before taking the motorcycle out of service, add fuel additive.

Fuel additive (☞ p. 189)
--------------------------

- Refuel. (☞ p. 62)
- Clean the motorcycle. (☞ p. 154)
- Change the engine oil and filter, clean the oil screens. 🛠️ (☞ p. 148)
- Check the antifreeze and coolant level. (☞ p. 137)
- Check the tire pressure. (☞ p. 117)
- Remove the battery. 🛠️ (☞ p. 118)
- Recharge the battery. 🛠️ (☞ p. 120)

### Guideline

Storage temperature of battery without direct sunshine.	0... 35 °C (32... 95 °F)
---	--------------------------

- Store the vehicle in a dry location that is not subject to large fluctuations in temperature.

### **i** Info

KTM recommends jacking up the motorcycle.

- Raise the motorcycle with the rear wheel stand. (🔧 p. 77)
- Raise the motorcycle with the front wheel stand. (🔧 p. 78)
- Cover the motorcycle with a porous sheet or blanket.

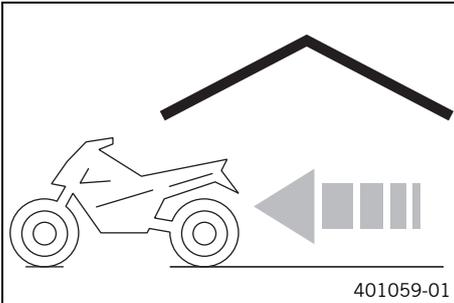


## Info

Do not use non-porous materials since they prevent humidity from escaping, thus causing corrosion.

Avoid running the engine for a short time only. Since the engine cannot warm up properly, the water vapor produced during combustion condenses and causes valves and exhaust system to rust.

## 19.2 Preparing for use after storage



- Take the motorcycle off of the front wheel stand. (🔧 p. 79)
- Take the motorcycle off of the rear wheel stand. (🔧 p. 77)
- Recharge the battery. 🔌 (🔧 p. 120)
- Install the battery. 🔌 (🔧 p. 119)
- Set the clock. (🔧 p. 35)
- Perform checks and vehicle care when preparing for use. (🔧 p. 51)
- Take a test ride.

Faults	Possible cause	Action
Engine does not crank when the electric starter button is pressed	Operating error	– Carry out the start procedure. (☛ p. 52)
	Battery is discharged	– Recharge the battery. 🛠️ (☛ p. 120)
	Fuse <b>1</b> , <b>2</b> or <b>3</b> blown	– Change the fuses of individual power consumers. (☛ p. 126)
	Main fuse burned out	– Change the main fuse. (☛ p. 123)
	No ground connection present	– Check the ground connection.
Engine turns only if the clutch lever is drawn	The vehicle is in gear	– Shift gear to neutral.
	The vehicle is in gear and the side stand is folded out	– Shift gear to neutral.
Engine turns but does not start	Operating error	– Carry out the start procedure. (☛ p. 52)
	Fuse <b>3</b> blown	– Change the fuses of individual power consumers. (☛ p. 126)
	Coupling of fuel hose connection not connected	– Reconnect coupling of fuel hose connection.
	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool. 🛠️
	Throttle opened while starting	– When starting, <b>DO NOT</b> open the throttle – Carry out the start procedure. (☛ p. 52)
Engine has too little power	Air filter is very dirty	– Remove the air filter. 🛠️ – Install the air filter. 🛠️
	Fuel filter is very dirty	– Check the fuel pressure. 🛠️
	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool. 🛠️
	<b>Map-Select</b> switch incorrectly adjusted	– Set the engine characteristics. (☛ p. 144)

Faults	Possible cause	Action
Engine overheats	Too little coolant in cooling system	<ul style="list-style-type: none"> <li>– Check the cooling system for leakage.</li> <li>– Check the coolant level in the compensating tank. (☞ p. 140)</li> </ul>
	Radiator fins very dirty	– Clean radiator fins.
	Foam formation in cooling system	<ul style="list-style-type: none"> <li>– Drain the coolant. 🛠️ (☞ p. 141)</li> <li>– Fill/bleed the cooling system. 🛠️ (☞ p. 142)</li> </ul>
	Buckled or damaged radiator hose	– Change the radiator hose. 🛠️
	Thermostat is faulty	– Check the thermostat. 🛠️
	Fuse <b>4</b> blown	– Change the fuses of individual power consumers. (☞ p. 126)
	Defect in radiator fan system	– Check the radiator fan system. 🛠️
<b>FI</b> warning lamp ( <b>MIL</b> ) lights/flashes	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool. 🛠️
<b>N</b> The idle indicator lamp does not light up when the transmission is in neutral	Gear position sensor not programmed	– Read out the fault memory using the KTM diagnostics tool. 🛠️
Engine dies during the trip	Lack of fuel	– Refuel. (☞ p. 62)
	Fuse <b>1</b> , <b>2</b> or <b>3</b> blown	– Change the fuses of individual power consumers. (☞ p. 126)
The ABS warning lamp lights up	ABS fuse is blown	– Change the ABS fuses. (☞ p. 125)
	Large difference in wheel speeds of the front and rear wheels	– Stop the vehicle, switch off the ignition, and start it again.
	Malfunction in ABS	– Read out the ABS fault memory using the KTM diagnostics tool. 🛠️
High oil consumption	Engine vent hose bent	– Route the vent hose without bends or change it if necessary.

Faults	Possible cause	Action
High oil consumption	Engine oil level too high	– Check the engine oil level. (☞ p. 148)
	Engine oil too thin (low viscosity)	– Change the engine oil and filter, clean the oil screens. 🛠️ (☞ p. 148)
Headlight and parking light are not functioning	Fuse <b>6</b> blown	– Change the fuses of individual power consumers. (☞ p. 126)
Turn signal, brake light, and horn are not functional	Fuse <b>5</b> blown	– Change the fuses of individual power consumers. (☞ p. 126)
Time is not (correctly) displayed	Fuse <b>1</b> blown	– Change the fuses of individual power consumers. (☞ p. 126)
		– Set the clock. (☞ p. 35)
Battery discharged	Ignition not switched off when vehicle was parked	– Recharge the battery. 🛠️ (☞ p. 120)
	Battery is not charged by alternator	– Check the charging voltage. 🛠️ – Check the quiescent current. 🛠️
Combination instrument shows nothing on the display	Fuse <b>1</b> or <b>2</b> blown	– Change the fuses of individual power consumers. (☞ p. 126) – Set the clock. (☞ p. 35)

<b>Blink code of FI warning lamp (MIL)</b>	 02 <b>FI</b> warning lamp (MIL) flashes 2x short
<b>Error level condition</b>	Crankshaft position sensor - circuit fault
<b>Blink code of FI warning lamp (MIL)</b>	 09 <b>FI</b> warning lamp (MIL) flashes 9x short
<b>Error level condition</b>	Manifold absolute pressure sensor cylinder 1 - input signal too low
	Manifold absolute pressure sensor cylinder 1 - input signal too high
<b>Blink code of FI warning lamp (MIL)</b>	 12 <b>FI</b> warning lamp (MIL) flashes 1x long, 2x short
<b>Error level condition</b>	Engine coolant temperature sensor - input signal too low
	Engine coolant temperature sensor - input signal too high
<b>Blink code of FI warning lamp (MIL)</b>	 13 <b>FI</b> warning lamp (MIL) flashes 1x long, 3x short
<b>Error level condition</b>	Intake air temperature sensor - input signal too low
	Intake air temperature sensor - input signal too high
<b>Blink code of FI warning lamp (MIL)</b>	 14 <b>FI</b> warning lamp (MIL) flashes 1x long, 4x short
<b>Error level condition</b>	Ambient air pressure sensor - input signal too low
	Ambient air pressure sensor - input signal too high

<b>Blink code of FI warning lamp (MIL)</b>	 15 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 1x long, 5x short
<b>Error level condition</b>	Rollover sensor - input signal too low Rollover sensor - input signal too high
<b>Blink code of FI warning lamp (MIL)</b>	 17 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 1x long, 7x short
<b>Error level condition</b>	Lambda sensor cylinder 1, sensor 1 - circuit fault
<b>Blink code of FI warning lamp (MIL)</b>	 22 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 2x long, 2x short
<b>Error level condition</b>	Gear position sensor - circuit fault
<b>Blink code of FI warning lamp (MIL)</b>	 24 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 2x long, 4x short
<b>Error level condition</b>	System voltage - circuit fault
<b>Blink code of FI warning lamp (MIL)</b>	 25 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 2x long, 5x short
<b>Error level condition</b>	Side stand switch - circuit fault

<b>Blink code of FI warning lamp (MIL)</b>	 27 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 2x long, 7x short
<b>Error level condition</b>	Accelerator position sensor circuit fault - accelerator position sensor voltage
<b>Blink code of FI warning lamp (MIL)</b>	 33 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 3x long, 3x short
<b>Error level condition</b>	Injector cylinder 1 - circuit fault
<b>Blink code of FI warning lamp (MIL)</b>	 37 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 3x long, 7x short
<b>Error level condition</b>	Ignition coil 1, cylinder 1 - circuit fault
<b>Blink code of FI warning lamp (MIL)</b>	 39 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 3x long, 9x short
<b>Error level condition</b>	Ignition coil 2, cylinder 1 - circuit fault
<b>Blink code of FI warning lamp (MIL)</b>	 41 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 4x long, 1x short
<b>Error level condition</b>	Fuel pump relay - short circuit to ground or open circuit
	Fuel pump relay - input signal too high

<b>Blink code of FI warning lamp (MIL)</b>	<div style="text-align: center;"><b>FI</b></div> 45 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 4x long, 5x short
<b>Error level condition</b>	Lambda sensor heater cylinder 1, sensor 1 - short circuit to ground or open circuit
	Lambda sensor heater cylinder 1, sensor 1 - input signal too high
<b>Blink code of FI warning lamp (MIL)</b>	<div style="text-align: center;"><b>FI</b></div> 65 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 6x long, 5x short
<b>Error level condition</b>	E <sup>2</sup> PROM error
<b>Blink code of FI warning lamp (MIL)</b>	<div style="text-align: center;"><b>FI</b></div> 82 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 8x long, 2x short
<b>Error level condition</b>	Throttle position sensor circuit A - input signal too high
	Throttle position sensor circuit A - input signal too low
<b>Blink code of FI warning lamp (MIL)</b>	<div style="text-align: center;"><b>FI</b></div> 83 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 8x long, 3x short
<b>Error level condition</b>	Throttle position sensor circuit B - input signal too low
	Throttle position sensor circuit B - input signal too high
<b>Blink code of FI warning lamp (MIL)</b>	<div style="text-align: center;"><b>FI</b></div> 84 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 8x long, 4x short
<b>Error level condition</b>	Throttle position sensor circuit A and B - plausibility fault

<b>Blink code of FI warning lamp (MIL)</b>	 85 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 8x long, 5x short
<b>Error level condition</b>	Accelerator position sensor circuit A - input signal too low Accelerator position sensor circuit A - input signal too high
<b>Blink code of FI warning lamp (MIL)</b>	 86 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 8x long, 6x short
<b>Error level condition</b>	Accelerator position sensor circuit B - input signal too high
<b>Blink code of FI warning lamp (MIL)</b>	 87 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 8x long, 7x short
<b>Error level condition</b>	Accelerator position sensor circuit A and B - plausibility fault
<b>Blink code of FI warning lamp (MIL)</b>	 88 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 8x long, 8x short
<b>Error level condition</b>	DBW throttle valve - stuck open
<b>Blink code of FI warning lamp (MIL)</b>	 89 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 8x long, 9x short
<b>Error level condition</b>	DBW return spring - stuck open

<b>Blink code of FI warning lamp (MIL)</b>	 90 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 9x long
<b>Error level condition</b>	DBW internal power relay - inactive DBW internal power relay - active
<b>Blink code of FI warning lamp (MIL)</b>	 92 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 9x long, 2x short
<b>Error level condition</b>	DBW throttle actuator control IC - stuck open
<b>Blink code of FI warning lamp (MIL)</b>	 93 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 9x long, 3x short
<b>Error level condition</b>	CPU mutual - surveillance error
<b>Blink code of FI warning lamp (MIL)</b>	 94 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 9x long, 4x short
<b>Error level condition</b>	DBW stop function system error - stop function A system error
<b>Blink code of FI warning lamp (MIL)</b>	 95 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 9x long, 5x short
<b>Error level condition</b>	DBW stop function system error - stop function B system error

# 21 BLINK CODE

<b>Blink code of FI warning lamp (MIL)</b>	 96 <b>FI</b> warning lamp ( <b>MIL</b> ) flashes 9x long, 6x short
<b>Error level condition</b>	System voltage - input voltage too low
	System voltage - input signal too high

## 22.1 Engine

Design	1-cylinder 4-stroke engine, water-cooled
Displacement	690 cm <sup>3</sup> (42.11 cu in)
Stroke	84.5 mm (3.327 in)
Bore	102 mm (4.02 in)
Compression ratio	12.6:1
Control	OHC, 4 valves controlled via rocker arm, chain drive
Valve diameter, intake	40 mm (1.57 in)
Valve diameter, exhaust	34 mm (1.34 in)
Valve play, cold	0.07... 0.13 mm (0.0028... 0.0051 in)
Crankshaft bearing	2 roller bearings
Conrod bearing	Needle bearing
Piston pin bearing	Piston pin with <b>DLC</b> coating
Pistons	Forged light alloy
Piston rings	1 L-ring, 1 tapered compression piston ring, 1 oil scraper ring
Engine lubrication	Semi-dry sump lubrication system with two rotor pumps
Primary transmission	36:79
Clutch	<b>APTCTM</b> antihopping clutch in oil bath/hydraulically operated
Transmission	6-gear, claw shifted
Transmission ratio	
1st gear	14:35
2nd gear	16:28
3rd gear	21:28
4th gear	21:23

5th gear	23:22
6th gear	23:20
Mixture preparation	Electronic fuel injection
Ignition	Contactless controlled fully electronic ignition with digital ignition adjustment
Alternator	12 V, 224 W
Spark plug	
Inside spark plug	NGK LKAR8BI-9
Outside spark plug	NGK LMAR7A-9
Spark plug electrode gap	0.9 mm (0.035 in)
Cooling	Water cooling, permanent circulation of coolant by water pump
Idle speed	1,550... 1,650 rpm
Starting aid	Electric starter, automatic decompressor

## 22.2 Engine tightening torques

Screw, membrane fixation	M3	2 Nm (1.5 lbf ft)	Loctite® 243™
Hose clamp, intake flange	M4	2.5 Nm (1.84 lbf ft)	–
Oil nozzle for conrod bearing lubrication	M4	2 Nm (1.5 lbf ft)	Loctite® 243™
Locking screw for bearing	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Remaining screws, engine	M5	6 Nm (4.4 lbf ft)	–
Screw, breather cover on valve cover	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, clutch spring	M5x25	6 Nm (4.4 lbf ft)	–
Screw, cover plate for oil return line	M5	6 Nm (4.4 lbf ft)	–
Screw, gear position sensor	M5x16	5 Nm (3.7 lbf ft)	Loctite® 243™

## 22 TECHNICAL DATA

Screw, oil filter cover	M5x16	6 Nm (4.4 lbf ft)	–
Screw, oil pump cover, top	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Chain securing guide	M6	5 Nm (3.7 lbf ft)	–
Cylinder head screw	M6x25	10 Nm (7.4 lbf ft)	Loctite® 243™
Plug, vacuum connection	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Remaining screws, engine	M6	10 Nm (7.4 lbf ft)	–
Screw, alternator cover	M6x25	10 Nm (7.4 lbf ft)	–
Screw, alternator cover (chain shaft through-hole)	M6x25	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, autodecompression	M6	3... 4 Nm (2.2... 3 lbf ft)	Loctite® 243™
Screw, axial lock of camshaft	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, clutch cover	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch slave cylinder	M6x20	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, clutch slave cylinder	M6x35	10 Nm (7.4 lbf ft)	–
Screw, crankshaft position sensor	M6x16	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, cylinder	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, engine case	M6	10 Nm (7.4 lbf ft)	–
Screw, ignition coil	M6	10 Nm (7.4 lbf ft)	–
Screw, locking lever	M6x20	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, oil pump cover, bottom	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, rocker arm shaft	M6x30	12 Nm (8.9 lbf ft)	–
Screw, shift drum locating	M6x30	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, shift lever	M6	14 Nm (10.3 lbf ft)	Loctite® 243™
Screw, starter motor	M6x20	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, stator	M6	10 Nm (7.4 lbf ft)	Loctite® 243™

## 22 TECHNICAL DATA

Screw, thermostat case	M6x20	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, timing chain guide rail	M6x30	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, timing chain tensioning rail	M6x30	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, valve cover	M6	10 Nm (7.4 lbf ft)	–
Screw, water pump cover	M6x30	10 Nm (7.4 lbf ft)	–
Screw, water pump impeller	M6x15	10 Nm (7.4 lbf ft)	Loctite® 243™
Oil jet, piston cooling	M6x0.75	4 Nm (3 lbf ft)	Loctite® 243™
Screw plug, crankshaft clamp	M8	20 Nm (14.8 lbf ft)	–
Stud, exhaust flange	M8	10 Nm (7.4 lbf ft)	Loctite® 243™
Cylinder head screw	M10	Tightening sequence: Tighten diagonally, beginning with the rear screw on the timing chain shaft. Step 1 15 Nm (11.1 lbf ft) Step 2 30 Nm (22.1 lbf ft) Step 3 45 Nm (33.2 lbf ft) Step 4 60 Nm (44.3 lbf ft)	Lubricated with engine oil
Oil line for oil pressure sensor	M10x1	10 Nm (7.4 lbf ft)	–
Oil pressure sensor	M10x1	10 Nm (7.4 lbf ft)	–
Plug, drain hole of water pump	M10x1	15 Nm (11.1 lbf ft)	–
Screw plug, oil channel	M10x1	15 Nm (11.1 lbf ft)	Loctite® 243™
Screw plug, oil channel, for oil radiator	M10x1	15 Nm (11.1 lbf ft)	–

Screw, unlocking of timing chain tensioner	M10x1	10 Nm (7.4 lbf ft)	–
Spark plug outside	M10x1	11 Nm (8.1 lbf ft)	–
Spark plug inside	M12x1.25	18 Nm (13.3 lbf ft)	–
Coolant temperature sensor on cylinder head	M12x1.5	12 Nm (8.9 lbf ft)	–
Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)	–
Oil pressure regulator valve plug	M12x1.5	20 Nm (14.8 lbf ft)	–
Screw plug, oil channel	M14x1.5	15 Nm (11.1 lbf ft)	<b>Loctite® 243™</b>
Engine case stud	M16x1.5	25 Nm (18.4 lbf ft)	<b>Loctite® 243™</b>
Rotor nut	M18x1.5	100 Nm (73.8 lbf ft)	–
Nut, engine sprocket	M20x1.5	80 Nm (59 lbf ft)	<b>Loctite® 243™</b>
Nut, inner clutch hub	M20x1.5	100 Nm (73.8 lbf ft)	<b>Loctite® 243™</b>
Nut, primary gear	M20LHx1.5	90 Nm (66.4 lbf ft)	<b>Loctite® 243™</b>
Plug, oil screen	M20x1.5	15 Nm (11.1 lbf ft)	–
Plug, timing chain tensioner	M20x1.5	25 Nm (18.4 lbf ft)	–
Plug, oil thermostat	M24x1.5	15 Nm (11.1 lbf ft)	–
Screw in alternator cover	M24x1.5	8 Nm (5.9 lbf ft)	–

## 22.3 Capacities

### 22.3.1 Engine oil

Engine oil	1.70 l (1.8 qt.)	Engine oil (SAE 10W/60) (00062010035) (☞ p. 186)	
		Alternative engine oil	Engine oil (SAE 10W/50) (☞ p. 186)

## 22.3.2 Coolant

Coolant	1.20 l (1.27 qt.)	Coolant (☛ p. 185)
		Coolant (mixed ready to use) (☛ p. 185)

## 22.3.3 Fuel

Total fuel tank capacity, approx.	13.8 l (3.65 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (☛ p. 187)
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## 22.4 Chassis

Frame	Lattice frame made of chrome molybdenum steel tubing, powder-coated	
Fork (Duke)	<b>WP Suspension</b> Up Side Down 4357	
Fork (Duke R)	<b>WP Suspension</b> 4357 ROTA SPLIT	
Shock absorber (Duke)	<b>WP Suspension</b> 4618 with <b>Pro-Lever</b> linkage	
Shock absorber (Duke R)	<b>WP Suspension</b> 4618 with <b>Pro-Lever</b> deflector	
Suspension travel (Duke)		
Front	135 mm (5.31 in)	
Rear	135 mm (5.31 in)	
Suspension travel (Duke R)		
Front	150 mm (5.91 in)	
Rear	150 mm (5.91 in)	
Brake system		
Front	Disc brake with radially screwed four-piston brake caliper, floating brake disc	
Rear	Disc brake with single-piston brake caliper, floating	

Brake discs - diameter	
Front	320 mm (12.6 in)
Rear	240 mm (9.45 in)
Brake discs - wear limit	
Front	4.2 mm (0.165 in)
Rear	4.5 mm (0.177 in)
Tire air pressure, solo	
Front	2.0 bar (29 psi)
Rear	2.0 bar (29 psi)
Tire air pressure with passenger / fully loaded	
Front	2.0 bar (29 psi)
Rear	2.2 bar (32 psi)
Secondary drive ratio	16:40
Chain	5/8 x 1/4" (520) X-ring
Steering head angle	63.5°
Wheelbase (Duke)	1,447±15 mm (56.97±0.59 in)
Wheelbase (Duke R)	1,451±15 mm (57.13±0.59 in)
Seat height unloaded (Duke)	835 mm (32.87 in)
Seat height unloaded (Duke R)	865 mm (34.06 in)
Ground clearance unloaded (Duke)	175 mm (6.89 in)
Ground clearance unloaded (Duke R)	190 mm (7.48 in)
Weight without fuel, approx.	150 kg (331 lb.)
Maximum permissible front axle load	150 kg (331 lb.)
Maximum permissible rear axle load	220 kg (485 lb.)
Maximum permissible overall weight	350 kg (772 lb.)

Battery	CBTX9-BS	Battery voltage: 12 V Nominal capacity: 8 Ah Maintenance-free
Fuse	58011109115	15 A
Fuse	58011109125	25 A
Fuse	58011109130	30 A
Fuse	75011088015	15 A
Fuse	75011088010	10 A

## 22.5 Electrical system

Headlight	H4 / socket P43t	12 V 60/55 W
Parking light	W5W / socket W2.1x9.5d	12 V 5 W
Instrument lights and indicator lamps	LED	
Turn signal (Duke)	RY10W / socket BAU15s	12 V 10 W
Turn signal (Duke R)	LED	
Brake/tail light	LED	
License plate lamp	LED	

## 22.6 Tires

Front tires	Rear tires
<b>120/70 ZR 17 M/C 58W TL</b> Michelin Pilot Power	<b>160/60 ZR 17 M/C 69W TL</b> Michelin Pilot Power
Additional information is available in the Service section under: <a href="http://www.ktm.com">http://www.ktm.com</a>	

## 22.7 Fork

### 22.7.1 Duke

Fork part number	05.18.7L.19
Fork	<b>WP Suspension</b> Up Side Down 4357
Spring rate	
Medium (standard)	6.0 N/mm (34.3 lb/in)
Fork length	816 mm (32.13 in)
Fork oil per fork leg	480 ml (16.23 fl. oz.)
	Fork oil (SAE 4) (48601166S1) (☛ p. 187)

### 22.7.2 Duke R

Fork part number	05.18.8M.11
Fork	<b>WP Suspension</b> 4357 ROTA SPLIT
Compression damping	
Comfort	17 clicks
Standard	12 clicks
Sport	7 clicks

Full payload	7 clicks	
Rebound damping		
Comfort	17 clicks	
Standard	12 clicks	
Sport	7 clicks	
Full payload	7 clicks	
Spring length with preload spacer(s)	303 mm (11.93 in)	
Spring rate		
Medium (standard)	6.5 N/mm (37.1 lb/in)	
Air chamber length	80±20 mm (3.15±0.79 in)	
Fork length	831 mm (32.72 in)	
Fork oil per fork leg	534 ml (18.05 fl. oz.)	Fork oil (SAE 4) (48601166S1) (☛ p. 187)

## 22.8 Shock absorber

### 22.8.1 Duke

Shock absorber part number	01.18.7N.19	
Shock absorber	<b>WP Suspension 4618 with Pro-Lever linkage</b>	
Spring preload		
Standard	4 clicks	
Static sag	20 mm (0.79 in)	
Riding sag	45 mm (1.77 in)	
Fitted length	364 mm (14.33 in)	

## 22.8.2 Duke R

Shock absorber part number	15.18.7M.11
Shock absorber	<b>WP Suspension</b> 4618 with <b>Pro-Lever</b> deflector
Compression damping, high-speed	
Comfort	2 turns
Standard	1.5 turns
Sport	1 turn
Full payload	1 turn
Compression damping, low-speed	
Comfort	20 clicks
Standard	15 clicks
Sport	10 clicks
Full payload	10 clicks
Rebound damping	
Comfort	20 clicks
Standard	15 clicks
Sport	10 clicks
Full payload	10 clicks
Spring preload	
Comfort	11 mm (0.43 in)
Standard	11 mm (0.43 in)
Sport	11 mm (0.43 in)
Full payload	11 mm (0.43 in)
Spring rate	

Soft	70 N/mm (400 lb/in)
Medium (standard)	75 N/mm (428 lb/in)
Spring length	185 mm (7.28 in)
Gas pressure	10 bar (145 psi)
Static sag	25 mm (0.98 in)
Riding sag	60... 65 mm (2.36... 2.56 in)
Fitted length	370 mm (14.57 in)
Shock absorber fluid	Shock absorber oil (SAE 2.5) (50180342S1) (☛ p. 187)

## 22.9 Chassis tightening torques

Screw, combination instrument	EJOT	1 Nm (0.7 lbf ft)	–
Screw, headlight	EJOT	2 Nm (1.5 lbf ft)	–
Screw, headlight mask	EJOT	1 Nm (0.7 lbf ft)	–
Screw, side stand switch	M4	2 Nm (1.5 lbf ft)	<b>Loctite® 243™</b>
Remaining screws, chassis	M5	5 Nm (3.7 lbf ft)	–
Retaining clamp, brake line	M5	3 Nm (2.2 lbf ft)	–
Screw, air filter box	M5	3 Nm (2.2 lbf ft)	–
Screw, cable on starter motor	M5	3 Nm (2.2 lbf ft)	–
Screw, foot brake lever stub (Duke)	M5	6 Nm (4.4 lbf ft)	<b>Loctite® 243™</b>
Screw, fuel level sensor	M5	3 Nm (2.2 lbf ft)	–
Screw, fuel pump	M5	4 Nm (3 lbf ft)	–
Screw, heat guard	M5	5 Nm (3.7 lbf ft)	<b>Loctite® 243™</b>
Screw, light switch mount and emergency OFF switch	M5	3.5 Nm (2.58 lbf ft)	–

Screw, plastic clamp of brake line on fork leg	M5	2 Nm (1.5 lbf ft)	–
Screw, pressure regulator	M5	4 Nm (3 lbf ft)	–
Bolt, headlight mask	M6	6.3 Nm (4.65 lbf ft)	<b>Loctite® 243™</b>
Chain guard	M6	4 Nm (3 lbf ft)	<b>Loctite® 243™</b>
Double-sided grub screw	M6	6 Nm (4.4 lbf ft)	<b>Loctite® 243™</b>
Nut, push rod, foot brake lever	M6	6 Nm (4.4 lbf ft)	–
Remaining nuts, chassis	M6	10 Nm (7.4 lbf ft)	–
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)	–
Screw, ball joint of push rod on foot brake cylinder	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, battery terminal	M6	2 Nm (1.5 lbf ft)	–
Screw, brake fluid reservoir of rear brake	M6	5 Nm (3.7 lbf ft)	–
Screw, chain sliding guard	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, control unit holder	M6	3 Nm (2.2 lbf ft)	–
Screw, exhaust pipe clamp	M6	8 Nm (5.9 lbf ft)	Copper paste
Screw, foot brake cylinder	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, foot brake lever stub (Duke R)	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, fuel spoiler	M6	3 Nm (2.2 lbf ft)	–
Screw, lower radiator bracket	M6	5 Nm (3.7 lbf ft)	–
Screw, magnetic holder on side stand	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, seat lock	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 222™</b>
Screw, tail light cover	M6	8 Nm (5.9 lbf ft)	–
Screw, voltage regulator	M6	8 Nm (5.9 lbf ft)	–
Shift rods, nut	M6	6 Nm (4.4 lbf ft)	–

Shift rods, nut	M6LH	6 Nm (4.4 lbf ft)	–
Main silencer holder (Duke R)	M8x40	25 Nm (18.4 lbf ft)	–
Main silencer holder (Duke R)	M8x60	25 Nm (18.4 lbf ft)	–
Nut, manifold on cylinder head	M8	20 Nm (14.8 lbf ft)	Copper paste
Nut, rear sprocket screw	M8	35 Nm (25.8 lbf ft)	<b>Loctite® 2701™</b>
Remaining nuts, chassis	M8	25 Nm (18.4 lbf ft)	–
Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)	–
Screw, bottom triple clamp	M8	12 Nm (8.9 lbf ft)	–
Screw, exhaust system	M8	25 Nm (18.4 lbf ft)	–
Screw, footrest bracket, rear	M8x30	25 Nm (18.4 lbf ft)	<b>Loctite® 243™</b>
Screw, footrest bracket, rear	M8x50	25 Nm (18.4 lbf ft)	<b>Loctite® 243™</b>
Screw, footrest bracket, rear	M8x20	Countersunk screw 25 Nm (18.4 lbf ft)	<b>Loctite® 243™</b>
Screw, footrest bracket, rear	M8x45	Countersunk screw 25 Nm (18.4 lbf ft)	<b>Loctite® 243™</b>
Screw, fork stub	M8	15 Nm (11.1 lbf ft)	–
Screw, front brake disc	M8	30 Nm (22.1 lbf ft)	<b>Loctite® 243™</b>
Screw, front footrest bracket	M8	25 Nm (18.4 lbf ft)	<b>Loctite® 243™</b>
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)	–
Screw, handrail	M8x30	Countersunk screw 18 Nm (13.3 lbf ft)	<b>Loctite® 243™</b>
Screw, handrail, cover	M8x20	18 Nm (13.3 lbf ft)	<b>Loctite® 243™</b>
Screw, ignition lock (tamper-proof screw)	M8		<b>Loctite® 243™</b>
Screw, license plate holder	M8	18 Nm (13.3 lbf ft)	<b>Loctite® 243™</b>

Screw, linkage bracket, front engine fixing arm	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
Screw, main silencer clamp (Duke R)	M8	15 Nm (11.1 lbf ft)	–
Screw, main silencer fixation	M8	25 Nm (18.4 lbf ft)	–
Screw, rear brake disc	M8	30 Nm (22.1 lbf ft)	Loctite® 243™
Screw, side stand bracket	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
Screw, spring holder on side stand bracket	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
Screw, top triple clamp	M8	17 Nm (12.5 lbf ft)	–
Engine carrying screw	M10	45 Nm (33.2 lbf ft)	Loctite® 243™
Remaining nuts, chassis	M10	45 Nm (33.2 lbf ft)	–
Remaining screws, chassis	M10	45 Nm (33.2 lbf ft)	–
Screw, foot brake lever	M10	25 Nm (18.4 lbf ft)	–
Screw, handlebar support	M10	20 Nm (14.8 lbf ft)	–
Screw, side stand	M10	35 Nm (25.8 lbf ft)	Loctite® 243™
Screw, subframe	M10	45 Nm (33.2 lbf ft)	Loctite® 243™
Banjo bolt, brake line	M10x1	22 Nm (16.2 lbf ft)	–
Banjo bolt, pressure modulator	M10x1	20 Nm (14.8 lbf ft)	–
Screw, bottom shock absorber	M10x1.25	50 Nm (36.9 lbf ft)	Loctite® 243™
Screw, front brake caliper	M10x1.25	45 Nm (33.2 lbf ft)	Loctite® 243™
Screw, top shock absorber	M10x1.25	50 Nm (36.9 lbf ft)	Loctite® 243™
Lambda sensor	M12x1.25	25 Nm (18.4 lbf ft)	–
Nut, frame to linkage lever	M14x1.5	100 Nm (73.8 lbf ft)	–
Nut, linkage lever on swingarm	M14x1.5	100 Nm (73.8 lbf ft)	–
Nut, linkage lever to rocker arm	M14x1.5	100 Nm (73.8 lbf ft)	–

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Nut, swingarm pivot	M16x1.5	100 Nm (73.8 lbf ft)	–
Screw, steering head	M20x1.5	40 Nm (29.5 lbf ft)	–
Adjusting ring of swingarm bearing	M24x1.5	25 Nm (18.4 lbf ft)	–
Screw, front wheel spindle	M24x1.5	45 Nm (33.2 lbf ft)	–
Nut, rear wheel spindle	M25x1.5	90 Nm (66.4 lbf ft)	–
Nut, steering head	M28x1	12 Nm (8.9 lbf ft)	–

## Brake fluid DOT 4 / DOT 5.1

### Standard/classification

- DOT

### Guideline

- Use only brake fluid that complies with the specified standard (see specifications on the container) and that possesses the corresponding properties.

### Recommended supplier

#### Castrol

- RESPONSE BRAKE FLUID SUPER DOT 4

#### Motorex®

- Brake Fluid DOT 5.1

## Coolant

### Guideline

- Use only suitable coolant (even in countries with high temperatures). Using inferior antifreeze can result in corrosion and foaming.
- Use only coolant based on ethylene glycol.

### Mixture ratio

Antifreeze protection: -25... -45 °C (-13... -49 °F)	50 % corrosion inhibitor/antifreeze 50 % distilled water
--	---

## Coolant (mixed ready to use)

Antifreeze	-40 °C (-40 °F)
------------	-----------------

### Recommended supplier

#### Motorex®

- COOLANT M5.0

## Engine oil (SAE 10W/60) (00062010035)

### Standard/classification

- JASO T903 MA (☛ p. 191)
- SAE (☛ p. 191) (SAE 10W/60)
- KTM LC4 2007+

### Guideline

- Use only engine oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties.

Synthetic engine oil

### Recommended supplier

#### Motorex®

- **Cross Power 4T**

## Engine oil (SAE 10W/50)

### Standard/classification

- JASO T903 MA (☛ p. 191)
- SAE (☛ p. 191) (SAE 10W/50)

### Guideline

- Use only engine oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties.

Fully synthetic engine oil

### Recommended supplier

#### Motorex®

- **Power Synt 4T**

## Fork oil (SAE 4) (48601166S1)

### Standard/classification

- SAE (☛ p. 191) (SAE 4)

### Guideline

- Use only oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties.

## Hydraulic fluid (15)

### Standard/classification

- ISO VG (15)

### Guideline

- Use only hydraulic oil that complies with the specified standard (see specifications on the container) and that possesses the corresponding properties.

### Recommended supplier

#### Motorex®

- Hydraulic Fluid 75

## Shock absorber oil (SAE 2.5) (50180342S1)

### Standard/classification

- SAE (☛ p. 191) (SAE 2.5)

### Guideline

- Use only oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties.

## Super unleaded (ROZ 95/RON 95/PON 91)

### Standard/classification

- DIN EN 228 (ROZ 95/RON 95/PON 91)

## Guideline

- Only use unleaded super fuel that matches or is equivalent to the specified fuel grade.
  - Fuel with an ethanol content of up to 10 % (E10 fuel) is safe to use.
- 



## Info

Do **not** use fuel containing methanol (e. g. M15, M85, M100) or more than 10 % ethanol (e. g. E15, E25, E85, E100).

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## Chain cleaner

Recommended supplier

Motorex®

- Chain Clean

## Chain lube for road use

Guideline

Recommended supplier

Motorex®

- Chainlube Road

## Fuel additive

Recommended supplier

Motorex®

- Fuel Stabilizer

## Long-life grease

Recommended supplier

Motorex®

- Bike Grease 2000

## Motorcycle cleaner

Recommended supplier

Motorex®

- Moto Clean

## Perfect Finish and high gloss polish for paints

Recommended supplier

Motorex®

- Moto Polish & Shine

## Preserving materials for paints, metal and rubber

Recommended supplier

Motorex®

- Moto Protect

## Special cleaner for glossy and matte paint finishes, metal and plastic surfaces

Recommended supplier

Motorex®

- Quick Cleaner

## Universal oil spray

Recommended supplier

Motorex®

- Joker 440 Synthetic

## JASO T903 MA

Different technical development directions required a new specification for 4-stroke motorcycles – the JASO T903 MA Standard. Earlier, engine oils from the automobile industry were used for 4-stroke motorcycles because there was no separate motorcycle specification. Whereas long service intervals are demanded for automobile engines, high performance at high engine speeds are in the foreground for motorcycle engines. In most motorcycles, the gearbox and the clutch are lubricated with the same oil as the engine. The JASO MA Standard meets these special requirements.

## SAE

The SAE viscosity classes were defined by the Society of Automotive Engineers and are used for classifying oils according to their viscosity. The viscosity describes only one property of oil and says nothing about quality.

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3213103en

11/2013



**KTM-Sportmotorcycle AG**  
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<http://www.ktm.com>



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