OWNER'S MANUAL 2022

READY TO RACE

# 250 SX-F FACTORY EDITION

ART. NO. 3214415EN



# DEAR KTM CUSTOMER

Congratulations on your decision to purchase a KTM motorcycle. You are now the owner of a state-of-the-art sports vehicle which, with appropriate care, will bring you pleasure for a long time to come.

We wish you good and safe riding at all times!

Enter the serial numbers of your vehicle below.

| | |
|---|---|
| Vehicle identification number (📖 p. 12) | Dealer's stamp |
| Engine number (📖 p. 12) | |

The Owner's Manual contained the latest information for this model series at the time of publication. However, minor differences due to further developments in design cannot be ruled out completely.

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This document is valid for the following models:

250 SX-F FACTORY EDITION US (F8103V6)

3214415en

09/2023

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## 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). |
|  | Indicates work that requires expert knowledge and technical understanding. In the interest of your own safety, have these jobs performed by an authorized KTM workshop! Your motorcycle will be cared for there to the highest degree by specially trained experts using the special tools required. |
|  | Indicates a page reference (more information is provided on the specified page). |
|  | Indicates information with more details or tips. |
|  | Indicates the result of a testing step. |
|  | Indicates the end of an activity, including potential reworking. |

## 1.2 Formats used

The typographical formats used in this document are explained below.

| | |
|---|---|
| **Proprietary name** | Indicates a proprietary name. |
| **Name®** | Indicates a protected name. |
| **Brand™** | Indicates a brand available on the open market. |
| **Underlined terms** | Refer to technical details of the vehicle or indicate technical terms, which are explained in the glossary. |

# 2 SAFETY ADVICE

## 2.1 Use definition – intended use

This vehicle has been designed and built to withstand the normal stresses and strains of racing. This vehicle complies with the currently valid regulations and categories of the top international motorsports organizations.

**Info**
Only operate this vehicle in closed-off areas remote from public road traffic.

## 2.2 Misuse

The vehicle must only be used as intended.
Dangers can arise for people, property and the environment through use not as intended.
Any use of the vehicle beyond the intended and defined use constitutes misuse.
Misuse also includes the use of operating and auxiliary fluids which do not meet the required specification for the respective use.

## 2.3 Safety advice

A number of safety instructions need to be followed to operate the product described safely. Therefore read this instruction and all further instructions included carefully. The safety instructions are highlighted in the text and are referred to at the relevant passages.

**Info**
Various information and warning labels are attached in prominent locations on the product described. Do not remove any information or warning labels. If they are missing, you or others may not recognize dangers and may therefore be injured.

## 2.4 Degrees of risk and symbols

**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.

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

## 2.5 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 servicing, 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 silencers, 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 parts of the vehicle, or parts of the exhaust system or intake system, with parts other than those specified by the manufacturer.

## 2.6 Safe operation

**Danger**

**Danger of accidents** A rider who is not fit to ride poses a danger to him or herself and others.

– Do not operate the vehicle if you are not fit to ride due to alcohol, drugs or medication.

– Do not operate the vehicle if you are physically or mentally impaired.

**Danger**

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

– Always make sure there is sufficient ventilation when running the engine.

– Use effective exhaust extraction when starting or running the engine in an enclosed space.

**Warning**

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

– Do not touch any parts such as the exhaust system, radiator, engine, damper, or brake system before the vehicle parts have cooled down.

– Let the vehicle parts cool down before you perform any work on the vehicle.

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.
The vehicle should only be used by trained persons.
Have malfunctions that impair safety promptly eliminated by an authorized KTM workshop.
Adhere to the information and warning labels on the vehicle.

## 2.7 Protective clothing

**Warning**

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

– Wear appropriate protective clothing such as helmet, boots, gloves as well as trousers and a jacket with protectors on all rides.

– Always wear protective clothing that is in good condition and meets the legal regulations.

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

## 2.8 Work rules

Unless specified otherwise, the ignition must be turned off during all work (models with ignition lock, models with transponder key) or the motor must be at a standstill (models without ignition lock or transponder key).
Special tools are necessary for certain tasks. The tools are not a component of the vehicle, but can be ordered using the number in parentheses. Example: bearing puller (15112017000)
Unless otherwise noted, normal conditions apply to all tasks and descriptions.

| | |
|---|---|
| Ambient temperature | 20 °C (68 °F) |
| Ambient air pressure | 1,013 mbar (14.69 psi) |
| Relative air humidity | 60 ± 5 % |

During assembly, use new parts to replace parts which cannot be reused (e.g. self-locking screws and nuts, expansion screws, seals, sealing rings, O-rings, pins, and lock washers).
In the case of certain screws, a screw adhesive (e.g. **Loctite®**) is required. Observe the manufacturer's instructions.
If thread locker (e.g., **Precote®**) has already been applied to a new part, do not apply any additional thread locker.
After disassembly, clean the parts that are to be reused and check them for damage and wear. Change damaged or worn parts.
After completing a repair or service work, check the operating safety of the vehicle.

## 2.9 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.

## 2.10 Owner's Manual

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 service your motorcycle. This is the only way to find out how best to customize the vehicle for your own use and how you can protect yourself from injury.

**Tip**
Store the Owner's Manual on your terminal device, for example, so that you can read it whenever you need to.

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. If the vehicle is sold, the Owner's Manual must be downloaded again by the new owner.
The Owner's Manual can be downloaded several times using the QR code or the link on the delivery certificate.

The Owner's Manual is also available for download from your authorized KTM dealer and on the KTM website. A printed copy can also be ordered from your authorized KTM dealer.
International KTM Website: KTM.COM

## 3.1 Manufacturer warranty, implied warranty

The work prescribed in the service schedule must only be carried out in an authorized KTM workshop and confirmed in the **KTM Dealer.net**, as otherwise all warranty claims will be void. Damage or secondary damage caused by tampering with and/or conversions on the vehicle are not covered by the manufacturer warranty.

## 3.2 Fuel, auxiliary substances

**Note**

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

– Do not allow fuel to enter the groundwater, the soil, or the sewage system.

Use fuels and auxiliary substances in accordance with the Owner's Manual and specification.

## 3.3 Spare parts, technical 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 latest news **KTM PowerParts** on your vehicle can be found on the KTM website.
International KTM Website: 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. An incorrect suspension setting can lead to damage and breakage of chassis components.
Use of the vehicle under difficult conditions, such as on sand or on wet, dusty and muddy surfaces, can result in significantly increased wear of components, such as the drive train, brake system, air filter 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.
The relevant mileage or time interval is whichever occurs first.

## 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.

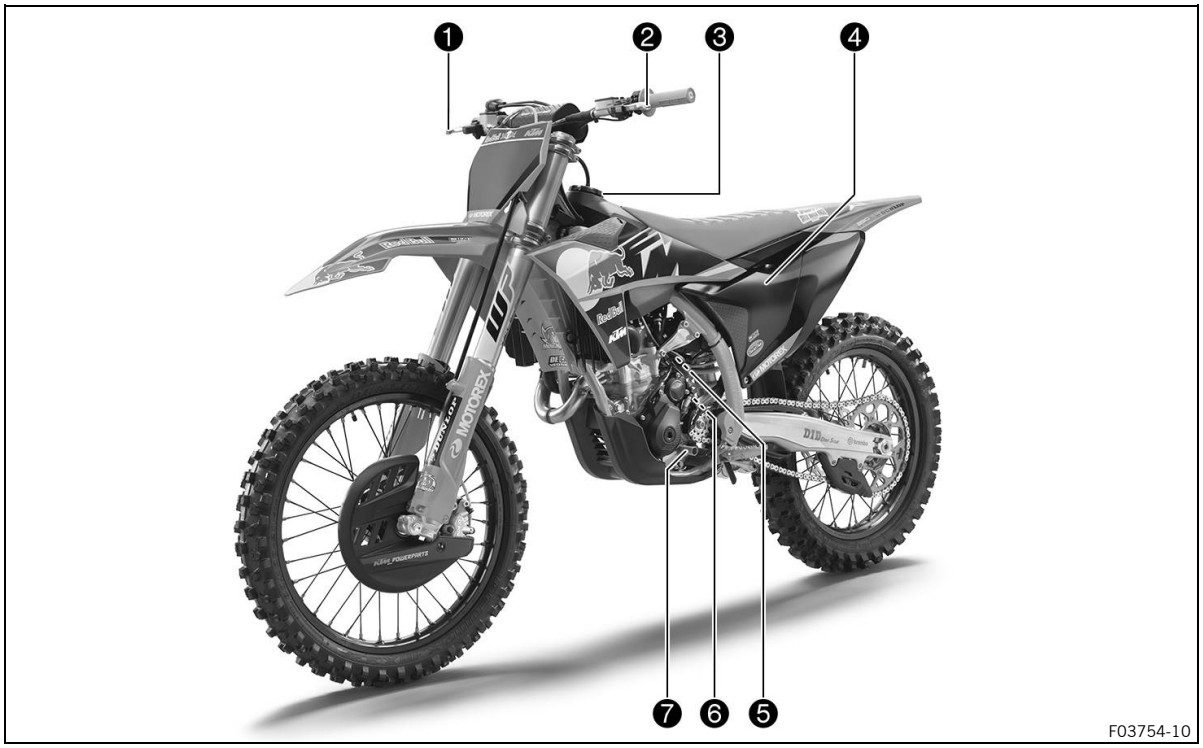
## 3.6 Customer service

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: KTM.COM

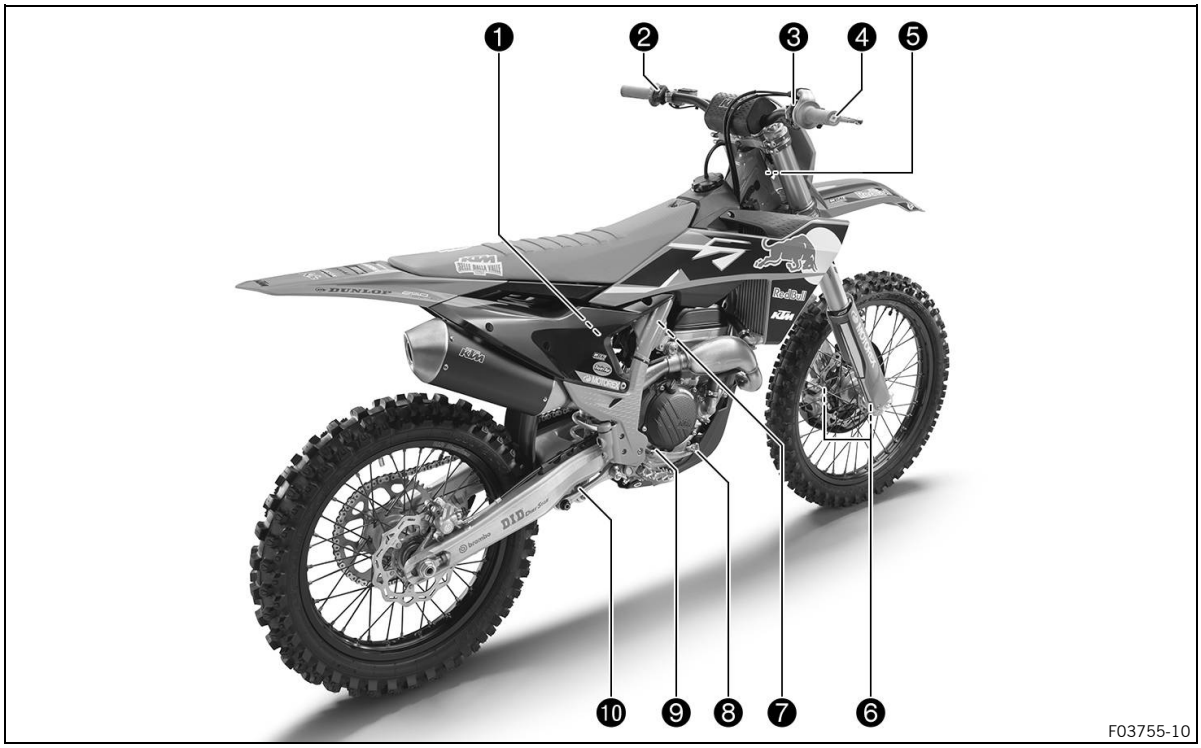
# 4 VIEW OF VEHICLE

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




1. Hand brake lever (p. 14)
2. Clutch lever (p. 14)
3. Fuel tank filler cap
4. Air filter box cover
5. Cold start button (p. 17)
6. Engine number (p. 12)
7. Shift lever (p. 18)

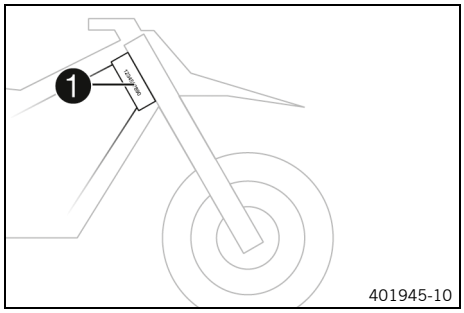
## 4.2 View of vehicle, rear right (example)




1. Shock absorber compression adjuster
2. Combination switch (📖 p. 15)
3. Stop button (📖 p. 14)
3. Start button (📖 p. 15)
4. Throttle grip (📖 p. 14)
5. Vehicle identification number (📖 p. 12)
5. Steering head label (📖 p. 12)
6. Fork article number (📖 p. 12)
7. Idle speed adjusting screw (📖 p. 18)
8. Foot brake lever (📖 p. 19)
9. Engine oil level viewer
10. Shock absorber rebound adjuster

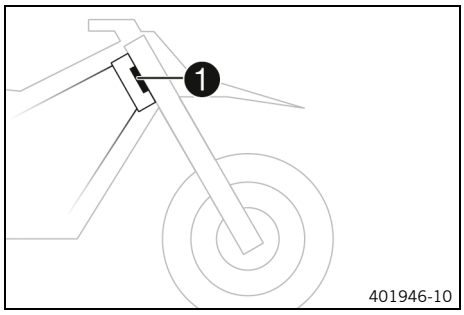
# 5 SERIAL NUMBERS

## 5.1 Vehicle identification number



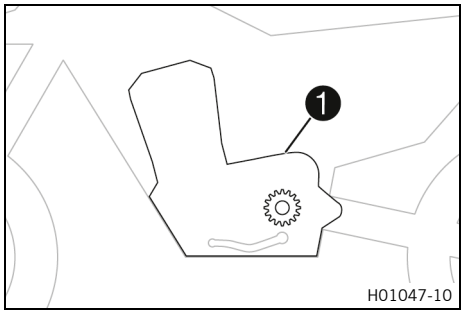

The vehicle identification number ❶ is stamped on the right side of the steering head.

## 5.2 Steering head label



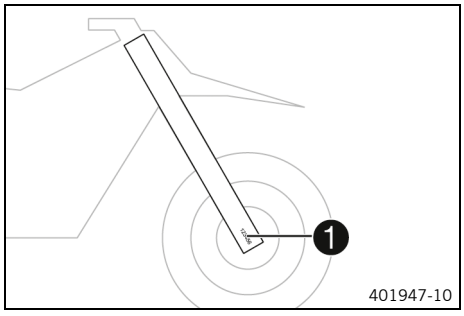

The steering head label ❶ is attached to the front of the steering head.

## 5.3 Engine number



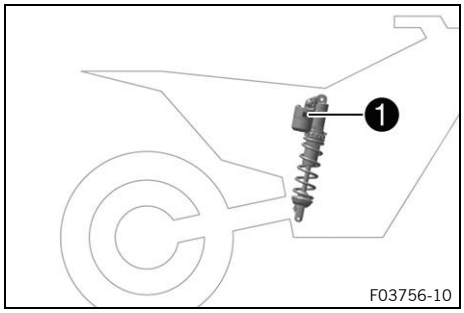

Engine number ❶ is located on the left side of the engine over the engine sprocket.

## 5.4 Fork article number



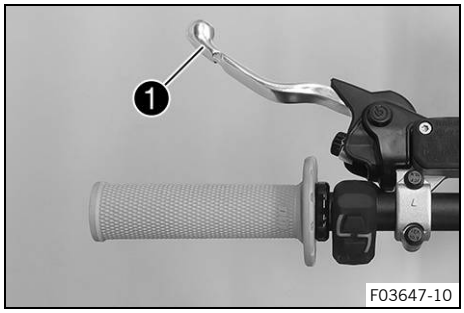

The fork article number ❶ is stamped on the inside of the axle clamp.

## 5.5 Shock absorber article number



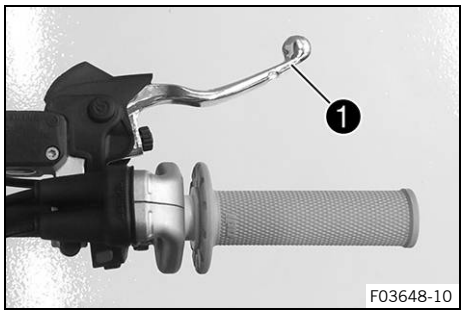

The shock absorber article number ❶ is stamped on the top of the shock absorber.

## 6.1 Clutch lever



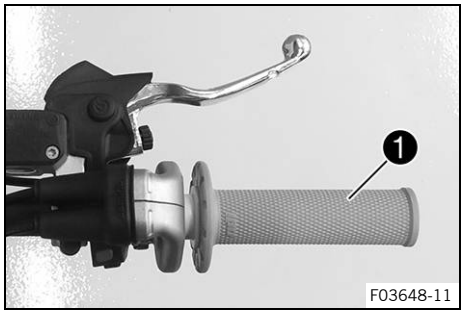

The clutch lever ❶ is fitted on the left side of the handlebar. The clutch is hydraulically operated and self-adjusting.

## 6.2 Hand brake lever



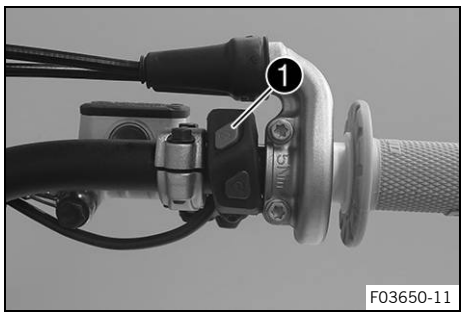

Hand brake lever ❶ is fitted on the right side of the handlebar. The front brake is engaged using the hand brake lever.

## 6.3 Throttle grip




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

## 6.4 Stop button

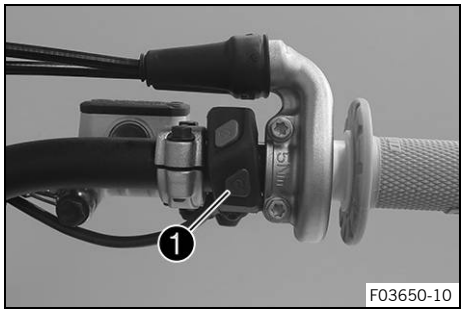



The stop button ❶ is located on the right side of the handlebar.

**Possible states**

- The stop button ⊠ is in the basic position – In this position, the ignition circuit is closed and the engine can be started.
- Stop button ⊠ pressed – In this position, the ignition circuit is interrupted, a running engine stops, and a non-running engine will not start.

## 6.5 Start button

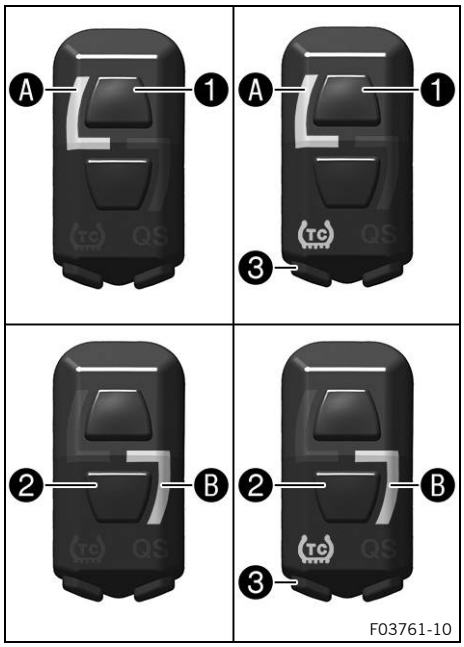



Start button ❶ is fitted on the right side of the handlebar.

**Possible states**

- The start button ⓚ is in the basic position
- The start button ⓚ is pressed – In this position, the starter motor is actuated.

## 6.6 Combination switch




The combination switch is fitted on the left side of the handlebar.

**Possible states**

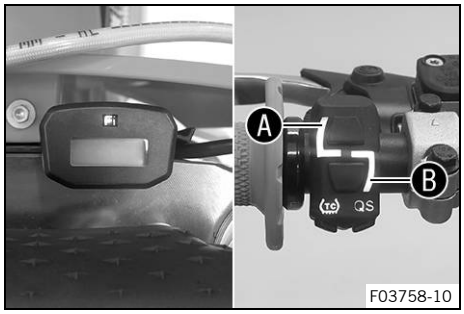
| | |
|---|---|
| **1** | STANDARD – STANDARD mapping is activated when the indicator lamp Ⓐ lights up. |
| **1 TC** | STANDARD with TC – STANDARD mapping with traction control is activated when the indicator lamp Ⓐ and the TC indicator lamp light up. |
| **2** | ADVANCED – ADVANCED mapping is activated when the indicator lamp Ⓑ lights up. |
| **2 TC** | ADVANCED with TC – ADVANCED mapping with traction control is activated when the indicator lamp Ⓑ and the TC indicator lamp light up. |

The engine characteristic can be changed using button ❶ and button ❷ on the combination switch.

Traction control can be activated using the TC button ❸ on the combination switch.

Launch control and the quickshifter can also be activated using the combination switch.

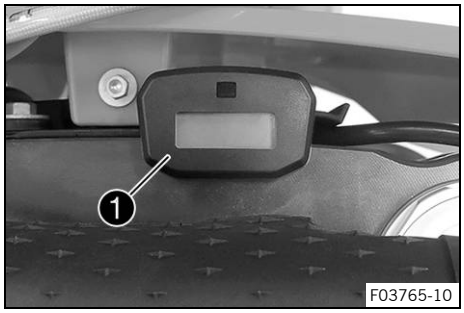
## 6.7 Overview of indicator lights




**Possible states**

| | |
|---|---|
| Fi | Malfunction indicator lamp lights up/flashes orange – The OBD has detected a malfunction in the vehicle electronics. The malfunction indicator lamp also lights up if traction control is activated and the speed limiter intervenes. |
| TC | TC indicator lamp lights up orange – **TC** is enabled or is currently intervening. The TC indicator lamp flashes if launch control is activated. |
| QS | QS indicator lamp lights up blue – The quickshifter is activated. The QS indicator lamp flashes when the quickshifter is being programmed. |
| | Indicator lamp Ⓐ lights up white – STANDARD mapping is activated. |
| | Indicator lamp Ⓑ lights up green – ADVANCED mapping is activated. |

## 6.8 Combination instrument




The combination instrument ❶ is attached in front of the handlebar.
The combination instrument shows the total number of operating hours of the engine.
The operating hour counter begins counting when the engine is started and stops when the engine is switched off.

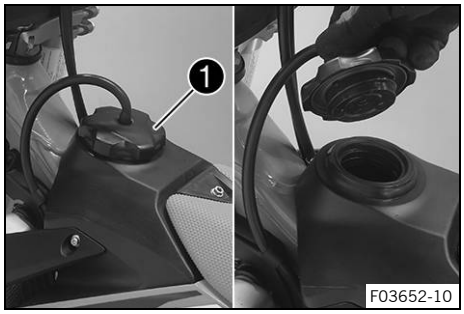
**Info**
Nothing can be cleared or adjusted on the combination instrument.
As soon as the diagnostics tool is connected, the service hour counter starts running.
Before longer diagnostic sessions, unplug the service hour counter behind the start number plate.

## 6.9 Opening the fuel tank filler cap

**Danger**
**Fire hazard** Fuel is highly flammable.
The fuel in the fuel tank expands when warm and can escape if overfilled.
– Do not fuel the vehicle in the vicinity of open flames or lit cigarettes.
– Switch off the engine for refueling.
– Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
– If any fuel is spilled, wipe it off immediately.
– Observe the specifications for refueling.

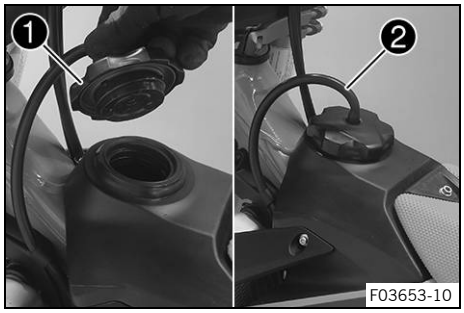
**Warning**
**Danger of poisoning** Fuel is harmful to health.
– Avoid skin, eye and clothing contact with fuel.
– Immediately consult a doctor if you swallow fuel.
– Do not inhale fuel vapors.
– Rinse the affected area immediately with plenty of water in the event of contact with the skin.
– Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
– Change your clothing if fuel spills on them.
– Keep fuels correctly in a suitable canister, and out of the reach of children.

**Note**
**Environmental hazard** Improper handling of fuel is a danger to the environment.
– Do not allow fuel to enter the groundwater, the soil, or the sewage system.




– Turn fuel tank filler cap ❶ counterclockwise and lift it off.

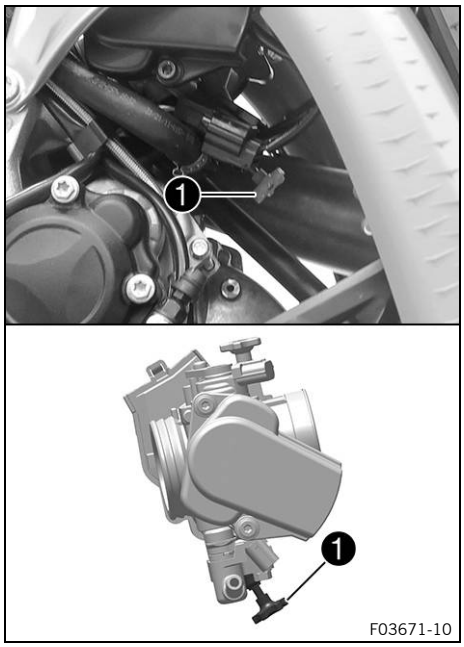
## 6.10 Closing the fuel tank filler cap




– Mount fuel tank filler cap ❶ and turn it clockwise until the fuel tank is tightly closed.

**Info**
Route fuel tank breather hose ❷ without kinks.

## 6.11 Cold start button



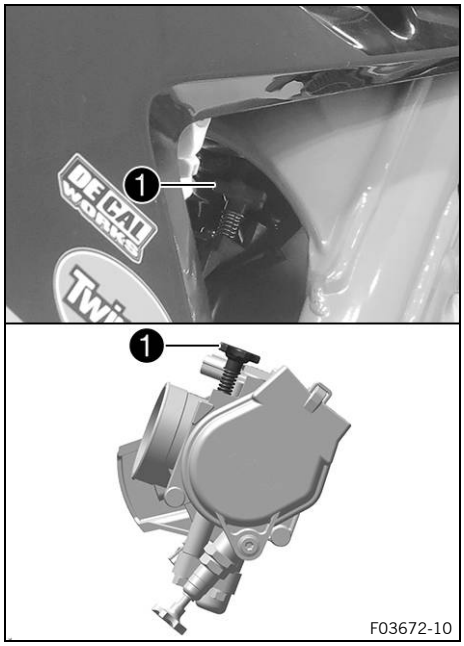

The cold start button ❶ is fitted to the bottom of the throttle valve body.
The electronic fuel injection system extends the injection time if the engine is cold and the ambient temperature is low. To help the engine burn the increased fuel quantity, it must be supplied with additional oxygen by pushing the cold start button.
After briefly opening up the throttle and then releasing the throttle grip again, or turning the throttle grip towards the front, the cold start button returns to its original position.

**Info**
Check whether the cold start button has returned to its basic position.

**Possible states**

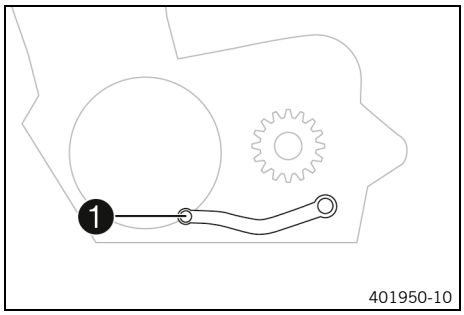
- The cold start button is activated – The cold start button is pushed in all the way.
- The cold start button is deactivated – The cold start button is in its basic position.

## 6.12 Idle speed adjusting screw

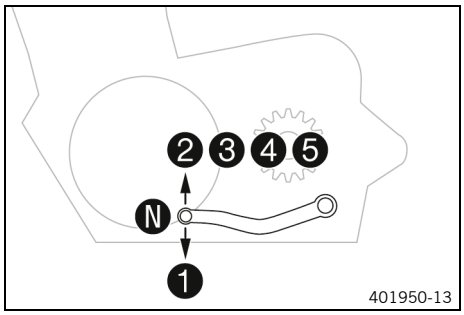



The idle setting of the throttle valve body substantially influences the vehicle's starting behavior, a stable idle speed, and the vehicle's response when the throttle is opened.
An engine with a correctly set idle speed is easier to start than an engine with the idle speed set incorrectly.
The idle speed is adjusted using the idle speed adjusting screw ❶.
Increase the idle speed by turning the idle speed adjusting screw clockwise.
Decrease the idle speed by turning the idle speed adjusting screw counterclockwise.

## 6.13 Shift lever

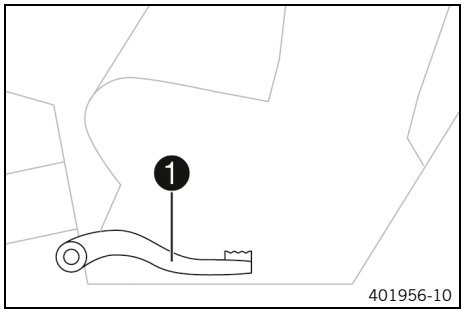



Shift lever ❶ is mounted on the left side of the engine.



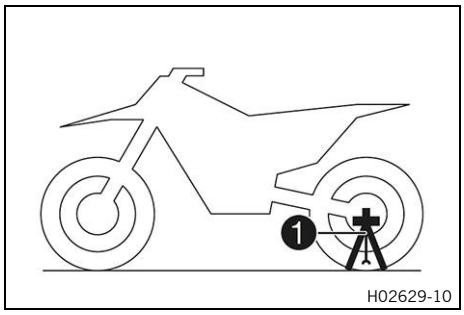

The gear positions can be seen in the photograph.
The neutral or idle position is between the first and second gears.

## 6.14 Foot brake lever




Foot brake lever ❶ is located in front of the right footrest.
The foot brake lever is used to activate the rear brake.

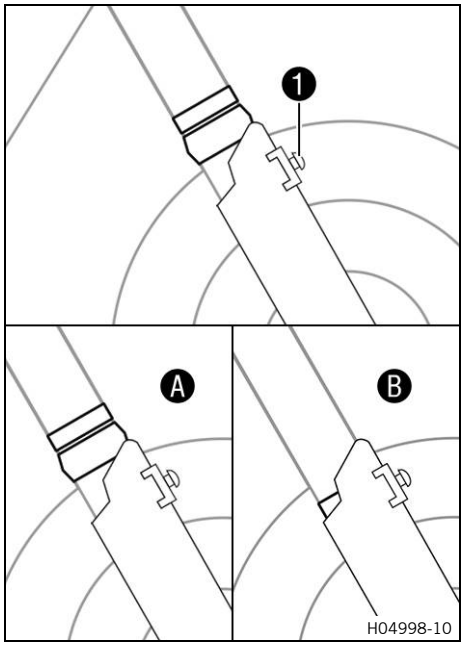
## 6.15 Plug-in stand




The support for plug-in stand ❶ is the left side of the wheel spindle.
The plug-in stand is used to park the motorcycle.
The plug-in stand is used as a fork locker when transporting the motorcycle.

**Info**
Remove the plug-in stand before riding.
The tool can be attached to the plug-in stand holders.

## 6.16 Factory Start




The Factory Start ❶ is mounted on the right fork protector.

**Possible states**

- Ⓐ Factory Start is deactivated – The fork is in the normal operating mode.
- Ⓑ Factory Start is activated – The fork is compressed and the front of the motorcycle is lowered.

Activating the Factory Start lowers the front of the motorcycle, which then causes the front wheel to lift off the ground when accelerating.
When the fork compresses for the first time, the Factory Start lock button is released automatically. From this point on, the fork operates as if the Factory Start were deactivated or not installed.

## 7.1 Advice on preparing for first use

**Danger**

**Danger of accidents** A rider who is not fit to ride poses a danger to him or herself and others.

– Do not operate the vehicle if you are not fit to ride due to alcohol, drugs or medication.
– Do not operate the vehicle if you are physically or mentally impaired.

**Warning**

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

– Wear appropriate protective clothing such as helmet, boots, gloves as well as trousers and a jacket with protectors on all rides.
– Always wear protective clothing that is in good condition and meets the legal regulations.

**Warning**

**Danger of crashing** Different tire tread patterns on the front and rear wheel impair the handling characteristic.

Different tire tread patterns can make the vehicle significantly more difficult to control.

– Make sure that only tires with a similar tire tread pattern are fitted to the front and rear wheel.

**Warning**

**Danger of accidents** An unadapted riding style impairs the handling characteristic.

– Adapt your riding speed to the road conditions and your riding ability.

**Warning**

**Danger of accidents** The vehicle is not designed to carry passengers.

– Do not ride with a passenger.

**Warning**

**Danger of accidents** The brake system fails in the event of overheating.

If the foot brake lever is not released, the brake linings drag continuously.

– Take your foot off the foot brake lever if you do not want to brake.

**Warning**

**Danger of accidents** Total weight and axle loads influence the handling characteristic.

– Do not exceed the maximum permissible overall weight or the axle loads.

**Warning**

**Risk of injury** People who act without authorization may not be familiar with the vehicle.

– Do not leave the vehicle unattended if the engine is running.
– Protect the vehicle against access by unauthorized persons.

**Info**

When using the motorcycle, remember that others may be disturbed by excessive noise.

– Ensure that the pre-sales inspection work has been carried out by an authorized KTM workshop.
  ✓ You will receive a delivery certificate when the vehicle is handed over.
– Read the entire Owner's Manual before riding for the first time.
– Get to know the controls.
– Adjust the basic position of the clutch lever. (📖 p. 78)
– Adjust the basic position of the hand brake lever. (📖 p. 81)

– Adjust the basic position of the foot brake lever. 🔧 (📖 p. 88)
– Adjust the basic position of the shift lever. 🔧 (📖 p. 116)
– Get used to the handling characteristic of the motorcycle on suitable terrain before undertaking a more challenging ride.

**Info**
This vehicle is not approved for use on public roads.
When off road, it is recommended that you are accompanied by another person on another vehicle so that you can help each other.

– Also, ride as slowly as possible and in a standing position to get a better feel for the motorcycle.
– Do not undertake any off-road trips that exceed your ability and experience.
– Hold the handlebar firmly with both hands and keep your feet on the footrests when riding.
– Do not carry the luggage.
– Do not exceed the maximum permissible weight and maximum permissible axle loads.
Guideline

| | |
|---|---|
| Maximum permissible overall weight | 335 kg (739 lb.) |
| Maximum permissible front axle load | 145 kg (320 lb.) |
| Maximum permissible rear axle load | 190 kg (419 lb.) |

– Run the engine in. (📖 p. 21)

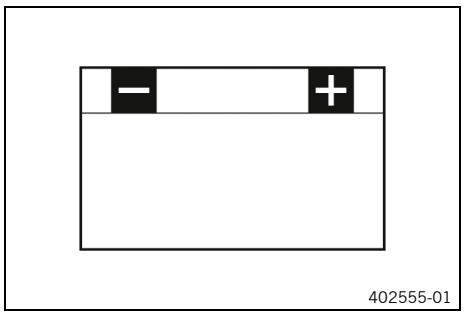
## 7.2 Running in the engine

– Do not exceed the specified engine speed and load during the running-in time.
Guideline

| | |
|---|---|
| Maximum engine speed | |
| During the first operating hour | 7,000 rpm |
| Maximum engine performance | |
| During the first 3 operating hours | ≤ 75 % |

– Avoid fully opening the throttle.

## 7.3 Starting power of lithium-ion batteries at low temperatures




Lithium-ion batteries are far lighter than lead batteries, have a low self-discharge rate, and have more starting power at temperatures over 6 °C (43 °F).
Several attempts to start may be required. Press the start button for 5 seconds, and wait 15 seconds between attempts. At low temperatures, wait for 30 seconds. The pauses are necessary so that the heat created can distribute through the lithium-ion battery and the lithium-ion battery is not damaged.
The starting power increases as the battery warms up.
Always make sure the lithium-ion battery is charged to that there is enough power to spare for starting at low temperatures.
After 6 unsuccessful starting attempts, do not try again, and check the vehicle for other malfunctions instead.

## 7.4 Preparing the vehicle for difficult operating conditions

**Info**
Use of the vehicle under difficult conditions, such as on sand or on wet and muddy surfaces, can result in significantly increased 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.

– Clean the air filter and air filter box. (p. 65)

**Info**
Check the air filter approx. every 30 minutes.

– Prepare air filter box cover for securing. (p. 66)
– Check the electrical connector for humidity and corrosion and to ensure it is firmly seated.
  » If humidity, corrosion, or damage is found:
    – Clean and dry the connector, or change it if necessary.

**Difficult operating conditions are:**
– Rides on dry sand. (p. 22)
– Rides on wet sand. (p. 23)
– Rides on wet and muddy circuits. (p. 23)
– Rides at high temperatures or slow riding. (p. 24)
– Riding at low temperatures and in snow. (p. 24)

## 7.5 Preparing the vehicle for rides on dry sand

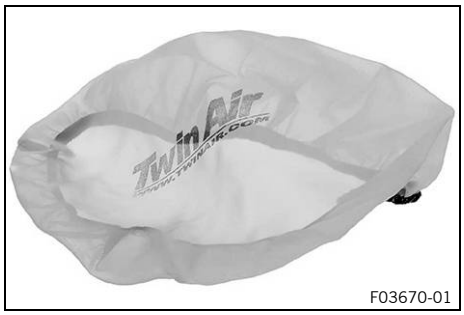


F03669-01

– Mount the air filter dust cover.

| Air filter dust cover (A46006920000) |
|---|

**Info**
Observe the fitting instructions for **KTM PowerParts**.



F03670-01

– Mount the air filter sand cover.

| Air filter sand cover (A46006922000) |
|---|

**Info**
Observe the fitting instructions for **KTM PowerParts**.


600868-01

– Clean the chain.

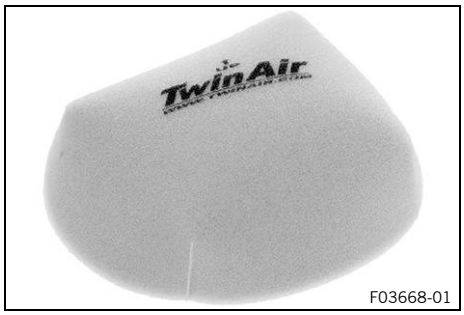
Chain cleaner (p. 140)

– Mount the steel sprocket.
– Grease the chain.

Universal oil spray (p. 141)

– Clean the radiator fins.
– Straighten the bent radiator fins carefully.

## 7.6 Preparing the vehicle for rides on wet sand



F03668-01

– Mount the air filter rain cover.

Air filter rain cover (A46006921000)

**Info**
Observe the fitting instructions for **KTM PowerParts**.


600868-01

– Clean the chain.

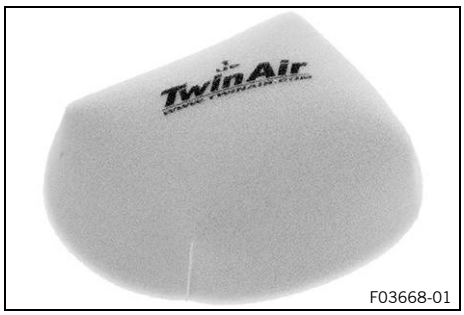
Chain cleaner (p. 140)

– Mount the steel sprocket.
– Grease the chain.

Universal oil spray (p. 141)

– Clean the radiator fins.
– Straighten the bent radiator fins carefully.

## 7.7 Preparing the vehicle for rides on wet and muddy circuits



F03668-01

– Mount the air filter rain cover.

Air filter rain cover (A46006921000)

**Info**
Observe the fitting instructions for **KTM PowerParts**.


600868-01

– Mount the steel sprocket.
– Clean the motorcycle. (📖 p. 122)
– Straighten the bent radiator fins carefully.

## 7.8 Preparing vehicle for high temperatures or slow riding


600868-01

– Adjust the secondary drive to the road conditions.

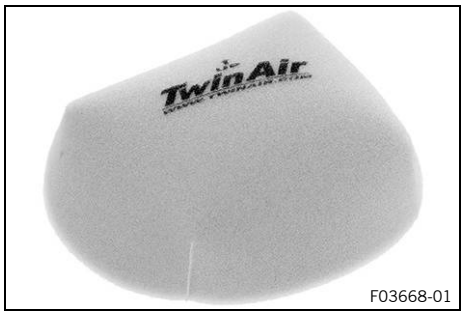
**Info**
The engine oil heats up quickly when the clutch is operated frequently due to an excessively high secondary ratio.

– Clean the chain.

Chain cleaner (📖 p. 140)

– Clean the radiator fins.
– Straighten bent radiator fins carefully.
– Check the coolant level. (📖 p. 107)

## 7.9 Preparing the vehicle for low temperatures or snow



F03668-01

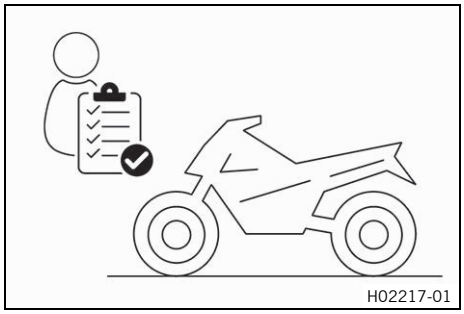
– Mount the air filter rain cover.

Air filter rain cover (A46006921000)

**Info**
Observe the fitting instructions for **KTM PowerParts**.

## 8.1 Checks and maintenance measures when preparing for use

**Info**
Before every trip, check the condition of the vehicle and ensure that it is safe to operate.
The vehicle must be in perfect technical condition when it is being operated.


H02217-01

- Check that the electrical system is functioning properly.
- Check the engine oil level. (p. 118)
- Check the front brake fluid level. (p. 82)
- Check the rear brake fluid level. (p. 88)
- Check that the brake linings of the front brake are secured. (p. 84)
- Check that the brake linings of the rear brake are secured. (p. 91)
- Check the function, condition, and free travel of the brake system.
- Check the coolant level. (p. 107)
- Check for chain dirt accumulation. (p. 71)
- Check the chain, rear sprocket, engine sprocket, and chain guide. (p. 74)
- Check the chain tension. (p. 72)
- Check the tire condition. (p. 98)
- Check the tire pressure. (p. 98)
- Check the spoke tension. (p. 99)

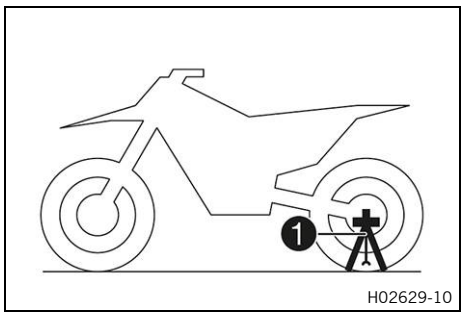
**Info**
The spoke tension must be checked regularly as incorrect spoke tension will strongly impair riding safety.

- Clean the dust boots of the fork legs. (p. 48)
- Bleed the fork legs. (p. 47)
- Check the air filter and clean if necessary.
- Check the settings of all controls and ensure that they can be operated smoothly.
- Check all screws, nuts, and hose clips regularly for tightness.
- Check the fuel level.

## 8.2 Starting the vehicle

**Danger**
**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and death.
- Always make sure there is sufficient ventilation when running the engine.
- Use effective exhaust extraction when starting or running the engine in an enclosed space.

**Note**
**Engine damage** High revving speed with a cold engine negatively impacts the lifespan of the engine.
- Always run the engine warm at a low speed.

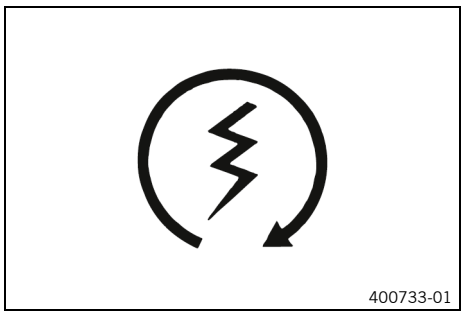



– Remove plug-in stand ❶.
– Shift the transmission into neutral.

**Condition**

Ambient temperature: < 20 °C (< 68 °F)

– Push the cold start button in all the way.




– Press start button Ⓢ.

**Info**

Press the start button for a maximum of 5 seconds.
Wait for 15 seconds before a further attempt at starting.
At low temperatures, wait for 30 seconds.
At temperatures below 6 °C (43 °F), several attempts at starting may be necessary to warm-up the lithium-ion battery and thereby increase the starting power.
After 6 unsuccessful starting attempts, do not try again, and check the vehicle for other malfunctions instead.
During the starting process, the malfunction indicator lamp lights up.

## 8.3 Activating launch control

**Info**

The launch control helps the rider to generate optimum motorcycle acceleration at the beginning of a race. The maximum speed of the engine with the throttle valve fully opened (full throttle) is reduced. After the start, it is gradually increased up to the maximum engine speed. The clutch must be operated exactly as it would be without launch control activated.

**Condition**

The motorcycle is stationary.
The engine is running at idle speed.
The transmission is in neutral.




– Press and hold the TC button ❶ and the QS button ❷ simultaneously.
  ✔ The TC indicator lamp and the QS indicator lamp flash when launch control is activated.

**Info**

The launch control is deactivated automatically for a few seconds after the vehicle has started.

Launch control is also deactivated in the following cases: if the throttle valve is closed more than 1/3 of the way after full throttle, and/or if there is no start within 3 minutes.

For safety reasons, the engine must be switched off for at least 10 seconds before the launch control can be activated again, regardless of whether the vehicle has been started or not.

If the engine has already been running for some time, the engine must first be restarted before the launch control can be activated.

## 8.4 Activating traction control

**Info**

The traction control reduces excessive slip on the rear wheel in favor of more control and propulsion, particularly in wet conditions.

When traction control is switched off, the rear wheel may spin more during high acceleration and on surfaces with low grip.

Traction control can be switched on or off during the ride.

The setting most recently selected is activated again when restarting.




– Press the TC button ❶ to switch traction control on or off.

Guideline

| | |
|---|---|
| Engine speed | ≤ 4,000 rpm |

✔ The TC indicator lamp lights up when traction control is activated.

## 8.5 Activating the Factory Start

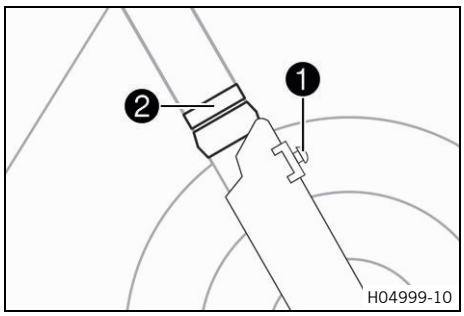
**Warning**

**Danger of accidents** The Factory Start actuator may freeze up in cold weather.

If the actuator freezes while Factory Start is activated, the fork will not decompress fully.

The greatly reduced suspension travel impairs the handling characteristic.

– Check that the actuator moves easily before activating the Factory Start.
– Activate the Factory Start shortly before starting.

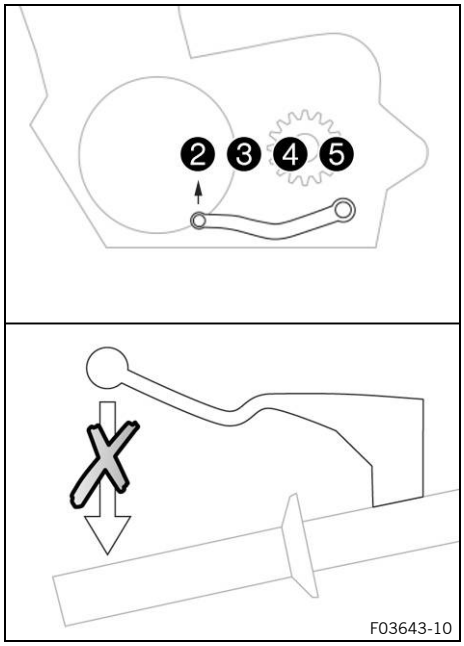



– Check lock button ❶ to ensure it can move easily.
– Bend over the handlebars while sitting on the motorcycle. Grip the rim and compress the fork. Press lock button ❶ and decompress slowly until the lock button engages in lock ring ❷.
  ✔ When the fork compresses for the first time, the lock button is released automatically.

## 8.6 Starting off

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

## 8.7 Quickshifter




When the quickshifter is activated, you can shift up without actuating the clutch.

**Info**
The quickshifter is not activated when shifting up from first to second gear, and the clutch lever must be used when shifting up instead.
Even if the quickshifter is activated, you need to use the clutch lever to shift down.

Because there is no need to close the throttle grip, uninterrupted gear shifts are possible.
The quickshifter uses the shifter shaft position to check whether or not a shift should be initiated, and sends a corresponding signal to the engine control.
If the quickshifter is deactivated, the clutch needs to be actuated in the normal way for each shift.

## 8.8 Activating the quickshifter




– Press the QS button ❶ to switch the quickshifter on or off.
  ✔ The QS indicator lamp lights up when the quickshifter is activated.

**Info**
The quickshifter is not activated when shifting up from first to second gear, and the clutch lever must be used when shifting up instead.
Even if the quickshifter is activated, you need to use the clutch lever to shift down.

## 8.9 Shifting, riding

**Warning**

**Danger of accidents** If you change down at high engine speed, the rear wheel blocks and the engine races.

– Do not change into a low gear at high engine speed.

**Info**

If unusual noises occur while riding, stop immediately, switch off the engine and contact an authorized KTM workshop.

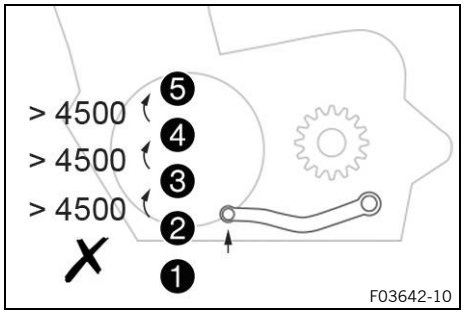
First-gear is used for starting off and for steep inclines.

– Shift into a higher gear when conditions allow (incline, road situation, etc.). To do so, release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch lever and open the throttle.
– If the cold start button was pushed while starting, open the throttle briefly and release the throttle grip or turn the throttle grip forward.
  ✔ The cold start button goes to the basic position.
– After reaching maximum speed by fully opening the throttle grip, turn the throttle back so it is ¾ open. This will barely reduce the speed, but fuel consumption will be considerably lower.
– Only open the throttle as much as the engine can handle – abrupt throttle grip opening increases fuel consumption.
– To shift down, apply the brakes and close the throttle at the same time.
– Pull the clutch lever and shift into a lower gear, release the clutch lever slowly, and either open the throttle or shift again.
– Switch off the engine if you are likely to be running at idle speed or stationary for a long time.

  Guideline

| ≥ 1 min |
|---|

– Avoid frequent or lengthy slipping of the clutch. This causes the engine oil, engine and cooling system to heat up.
– Ride at a low engine speed instead of at a high engine speed with a slipping clutch.




**Condition**

Quickshifter activated.

– If the quickshifter is activated, you can shift up in the engine speed range shown without pulling the clutch lever.

**Info**

The quickshifter is not activated when shifting up from first to second gear, and the clutch lever must be used when shifting up instead.

The minimum engine speed before shifting up in revolutions per minute is shown in the figure.

Pull the shift lever to the stop quickly without changing the throttle twist grip position.

Even if the quickshifter is activated, you need to use the clutch lever to shift down.

If the shifting performance of the quickshifter starts to decrease, it must be reprogrammed.

## 8.10 Applying the brakes

**Warning**

**Danger of accidents** Excessively forceful application of the brakes blocks the wheels.

– Adjust application of the brakes to the respective riding situation and riding surface conditions.

**Warning**

**Danger of accidents** A spongy pressure point on the front or rear brake reduces braking efficiency.

– Check the brake system and do not continue riding until the problem is eliminated. (Your authorized KTM workshop will be glad to help.)

**Warning**

**Danger of accidents** Moisture and dirt impair the brake system.

– Brake carefully several times to dry out and remove dirt from the brake linings and the brake discs.

– On sandy, wet, or slippery surfaces, use mostly the rear brake.
– Always finish braking before you go into a bend. Shift down to a lower gear appropriate to your speed.
– Use the braking effect of the engine on long downhill stretches. Shift back one or two gears, but do not over-rev the engine when doing so. This means that significantly less braking is required and the brake system does not overheat.

## 8.11 Stopping, parking

**Warning**

**Risk of injury** People who act without authorization may not be familiar with the vehicle.

– Do not leave the vehicle unattended if the engine is running.
– Protect the vehicle against access by unauthorized persons.

**Warning**

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

– Do not touch any parts such as the exhaust system, radiator, engine, damper, or brake system before the vehicle parts have cooled down.
– Let the vehicle parts cool down before you perform any work on the vehicle.

**Note**

**Material damage** The vehicle may be damaged by incorrect procedure when parking.

Significant damage may be caused if the vehicle rolls away or falls over.
The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Ensure that nobody sits on the vehicle when the vehicle is parked on a stand.

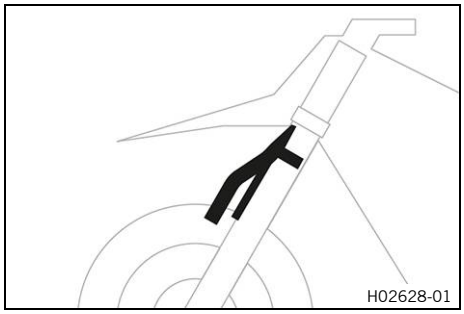
**Note**
**Fire hazard** Hot vehicle components pose a fire hazard and explosion risk.
– Do not park the vehicle near to materials which are highly flammable or explosive.
– Allow the vehicle to cool down before covering it.

– Apply the brakes on the motorcycle.
– Shift the transmission to the neutral position.
– Press and hold the stop button ⊠ while the engine is idling until the engine stops.
– Park the motorcycle on firm ground.

## 8.12 Transporting

**Note**
**Danger of damage** The parked vehicle can roll away or fall over.
– Park the vehicle on a firm and level surface.

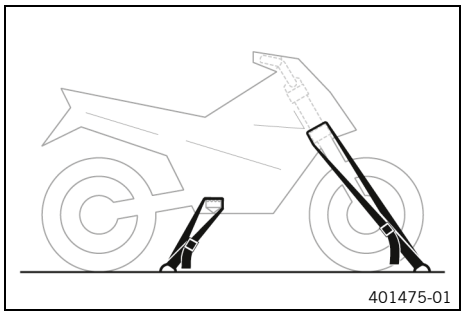
**Note**
**Fire hazard** Hot vehicle components pose a fire hazard and explosion risk.
– Do not park the vehicle near to materials which are highly flammable or explosive.
– Allow the vehicle to cool down before covering it.


H02628-01

– Switch off the engine.
– Mount plug-in stand on the fork legs.

| Plug-in stand (A46029094000) |
|---|

**Info**
The plug-in stand is included.
Make sure the brake line runs in front of the plug-in stand and does not become wedged.


401475-01

– Use tension belts or other suitable devices to secure the motorcycle against falling over or rolling away.

**Info**
Only tighten the tension belts to the point that the plug-in stand is firmly in contact with the fender and the tires.
Pay attention to the alignment of the plug-in stand to the fender.

## 8.13 Refueling

**Danger**

**Fire hazard** Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

– Do not fuel the vehicle in the vicinity of open flames or lit cigarettes.
– Switch off the engine for refueling.
– Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
– If any fuel is spilled, wipe it off immediately.
– Observe the specifications for refueling.

**Warning**

**Danger of poisoning** Fuel is harmful to health.

– Avoid skin, eye and clothing contact with fuel.
– Immediately consult a doctor if you swallow fuel.
– Do not inhale fuel vapors.
– Rinse the affected area immediately with plenty of water in the event of contact with the skin.
– Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
– Change your clothing if fuel spills on them.

**Note**

**Material damage** Inadequate fuel quality causes the fuel filter to quickly become clogged.

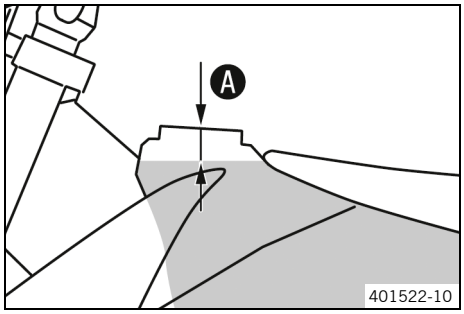
In some countries and regions, the available fuel quality and cleanliness may not be sufficient. This will result in problems with the fuel system.

– Refuel only with clean fuel that meets the specified standards. (Your authorized KTM workshop will be glad to help.)

**Note**

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

– Do not allow fuel to enter the groundwater, the soil, or the sewage system.




– Switch off the engine.
– Open the fuel tank filler cap. (p. 16)
– Fill the fuel tank with fuel up to level A.

Guideline

| | |
|---|---|
| Dimension A | 35 mm (1.38 in) |

| | |
|---|---|
| Super unleaded (ROZ 95) (p. 139) | 7.2 l (1.9 US gal) |

– Close the fuel tank filler cap. (p. 17)

## 9.1 Additional information

Any further work that results from the service work must be ordered separately and invoiced separately.
Different service intervals may apply in your country, depending on the local operating conditions.
If the vehicle is used in particularly harsh conditions such as heavy rain, mud, sand, snow, extreme temperatures, frequent full load etc., shorter service intervals than those in the table may be necessary.
Individual service intervals and scopes may change in the course of technical developments. The most up-to-date service schedule can always be found on KTM Dealer.net. Your authorized KTM dealer will be happy to advise you.

## 9.2 Service schedule

| | After 1 operating hour | Every 15 operating hours | Every 45 operating hours | Every 90 operating hours | every 24 months |
|---|---|---|---|---|---|
| Read out the fault memory using the KTM diagnostics tool. 🔧 | ○ | ● | ● | ● | ● |
| Program the gear position sensor. 🔧 | | ● | ● | ● | |
| Check that the electrical system is functioning properly. | ○ | ● | ● | ● | |
| Check and charge the 12-V battery. 🔧 | ○ | ● | ● | ● | ● |
| Check that the brake linings of the front brake are secured. (📖 p. 84) | ○ | ● | ● | ● | ● |
| Check that the brake linings of the rear brake are secured. (📖 p. 91) | ○ | ● | ● | ● | ● |
| Check the brake discs. (📖 p. 81) | ○ | ● | ● | ● | ● |
| Check the brake lines for damage and tightness. | ○ | ● | ● | ● | ● |
| Check the front brake fluid level. (📖 p. 82) | ○ | ● | ● | | |
| Change the front brake fluid. 🔧 | | | | ● | ● |
| Check the rear brake fluid level. (📖 p. 88) | ○ | ● | ● | | |
| Change the rear brake fluid. 🔧 | | | | ● | ● |
| Check/correct the fluid level of hydraulic clutch. (📖 p. 78) | | | ● | | |
| Change the hydraulic clutch fluid. 🔧 (📖 p. 79) | | | | ● | ● |
| Check the free travel of the hand brake lever. (📖 p. 81) | ○ | ● | ● | ● | ● |
| Check the free travel of the foot brake lever. (📖 p. 87) | ○ | ● | ● | ● | ● |
| Check the idle speed. 🔧 | ○ | ● | ● | ● | ● |
| Change the engine oil and oil filter, clean the oil screen. 🔧 (📖 p. 118) | ○ | ● | ● | ● | ● |
| Check all hoses (e.g. fuel, cooling, bleeder, drainage hoses, etc.) and sleeves for cracking, tightness, and correct routing. 🔧 | ○ | ● | ● | ● | ● |
| Check the cables for damage and for routing without kinks. 🔧 | | ● | ● | ● | ● |
| Check that the throttle cables are undamaged, routed without kinks, and set correctly. 🔧 | | ● | ● | ● | ● |
| Check the frame. 🔧 (📖 p. 76) | | ● | ● | ● | |
| Check the link fork. 🔧 (📖 p. 76) | | ● | ● | ● | |
| Check the fork bearing for play. 🔧 | | | ● | ● | |
| Check the shock absorber heim joint for play. 🔧 | | | ● | ● | |
| Check the shock absorber linkage. 🔧 | | ● | ● | ● | |
| Check the tire condition. (📖 p. 98) | | ● | ● | ● | ● |
| Check the tire pressure. (📖 p. 98) | | ● | ● | ● | ● |
| Check the wheel bearing for play. 🔧 | | ● | ● | ● | |
| Check the wheel hubs. 🔧 | | ● | ● | ● | |

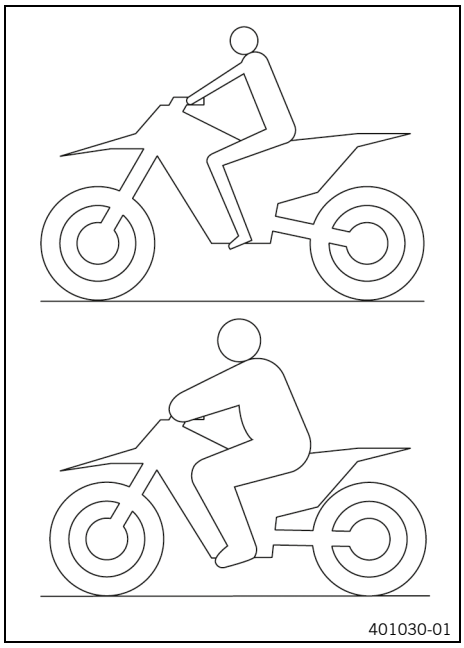
| | After 1 operating hour | Every 15 operating hours | Every 45 operating hours | Every 90 operating hours | every 24 months |
|---|---|---|---|---|---|
| Check the rim run-out. 🔧 | ○ | ● | ● | ● | |
| Check the spoke tension. (📖 p. 99) | ○ | ● | ● | ● | |
| Check the chain, rear sprocket, engine sprocket, and chain guide. (📖 p. 74) | ○ | ● | ● | ● | |
| Check the chain tension. (📖 p. 72) | ○ | ● | ● | ● | ● |
| Grease all moving parts (e.g., hand lever, chain,...) and check for smooth operation. 🔧 | ○ | ● | ● | ● | ● |
| Change the spark plug and spark plug connector. 🔧 | | | ● | ● | |
| Check the valve clearance. 🔧 | ○ | | ● | ● | |
| Change the fuel filter. 🔧 | | | | ● | ● |
| Check the clutch. 🔧 | | ● | ● | ● | |
| Clean the air filter and air filter box. 🔧 (📖 p. 65) | | ● | ● | ● | ● |
| Check the funnel in the inlet sleeve in the air filter box. 🔧 | | ● | ● | ● | ● |
| Change the glass fiber yarn filling of the main silencer. 🔧 (📖 p. 67) | | | ● | ● | |
| Service the fork. 🔧 | | | ● | ● | |
| Perform the shock absorber service. 🔧 | | | ● | ● | |
| Check all screws, nuts, and hose clips for a tight fit. 🔧 | ○ | ● | ● | ● | ● |
| Change the fuel screen. 🔧 (📖 p. 117) | ○ | ● | ● | ● | ● |
| Check the fuel pressure. 🔧 | ○ | | ● | ● | ● |
| Check the antifreeze and coolant level. (📖 p. 106) | | | ● | ● | |
| Check the coolant level. (📖 p. 107) | ○ | ● | | | |
| Change the coolant. (📖 p. 109) | | | | | ● |
| Check the steering head bearing play. (📖 p. 55) | ○ | ● | | | |
| Lubricate the steering head bearing. 🔧 (📖 p. 56) | | | ● | ● | ● |
| Perform minor engine service including removing and installing the engine. (Change the piston, check/measure the cylinder. Check the cylinder head. Check the camshafts and valve train system components. Check the timing assembly. Change the radial shaft seal rings and water pump gasket. Change the intake flange. Change inlet sleeve. 🔧 | | | ● | ● | |
| Perform major engine service, engine is removed. (Change valves, valve springs, valve spring seats, and valve spring retainer. Change the connecting rod, conrod bearing and crank pin. Check the transmission and the shift mechanism. Check the oil pressure control valve. Change the suction pump. Check the force pump and lubrication system. Change the timing chain. Change all engine bearings and all gaskets. Change the freewheel.) 🔧 | | | | ● | |
| Final check: check vehicle for operating safety. 🔧 | ○ | ● | ● | ● | ● |
| Take a test ride. 🔧 | ○ | ● | ● | ● | ● |
| Read out the error memory after the test ride using the KTM diagnostics tool. 🔧 | ○ | ● | ● | ● | ● |
| Make a service entry in **KTM Dealer.net**. 🔧 | ○ | ● | ● | ● | ● |

○ One-time interval

● Periodic interval

## 10.1 Checking the basic chassis setting with rider's weight

**Info**
When adjusting the basic chassis setting, first adjust the shock absorber and then the fork.


401030-01

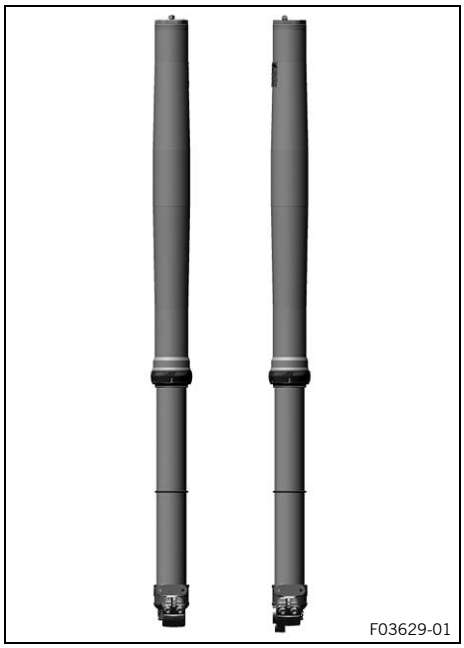
- For optimal motorcycle riding characteristics and to avoid damage to forks, shock absorbers, link fork and frame, the basic settings of the suspension components must match the rider's weight.
- As delivered, KTM offroad motorcycles are adjusted for an average rider's weight (with full protective clothing).

  Guideline

| | |
|---|---|
| Standard rider weight | 75 ... 85 kg (165 ... 187 lb.) |

- If the rider's weight is above or below this range, the basic setting of the suspension components must be adjusted accordingly.
- Small weight differences can be compensated by adjusting the spring pretension of the shock absorber, but in the case of large weight differences, the springs must be replaced.

## 10.2 Air suspension XACT


F03629-01

Air suspension **WP XACT** is used in the fork.
In this system, suspension is located in the left fork leg and damping in the right fork leg.
As fork springs are no longer required, a significant weight advantage is achieved when compared to conventional forks. The response on slightly uneven surfaces is significantly improved.
In normal driving mode, suspension is provided exclusively by an air cushion. A steel spring is located in the left fork leg as an end stop.

**Info**
If the fork is frequently overloaded, then the air pressure in the fork must be increased to avoid damage to the fork and frame.

The air pressure in the fork can be quickly adjusted to the rider's weight, surface conditions and the rider's preference using a fork airpump. The fork does not have to be dismantled. The time consuming mounting of harder or softer fork springs is not required.
If the air chamber loses air due to a damaged seal, the fork will still not sag. In this case the air is retained in the fork. The suspension travel is maintained as far as possible. The damping becomes harder and the riding comfort reduces.
As with a conventional fork, the damping can be adjusted in rebound and compression stages.
The rebound adjuster is located at the lower end of the right fork leg.

The compression adjuster is located at the upper end of the right fork leg.

## 10.3 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 compression adjuster has an effect, for example, when landing after a jump: the rear wheel suspension compresses quickly.
The low-speed compression adjuster has an effect, for example, when riding over long ground swells: the rear wheel suspension compresses slowly.
These two ranges can be adjusted separately, although the transition between high-speed and low-speed is gradual. Thus, modifications in the high-speed range affect the compression damping in the low-speed range and vice versa.

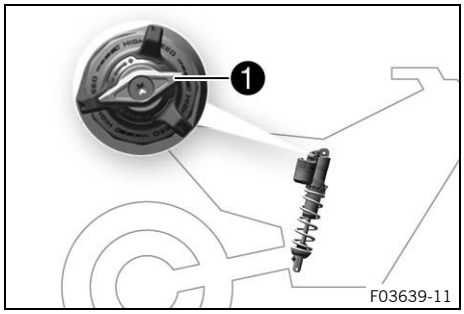
## 10.4 Adjusting the low-speed compression damping of the shock absorber

**Caution**
**Risk of injury** Parts of the shock absorber will move around if the shock absorber is detached incorrectly.

The shock absorber is filled with highly compressed nitrogen.

– Please follow the description provided. (Your authorized KTM workshop will be glad to help.)

**Info**
The effect of the low-speed compression adjuster can be seen in slow to normal compression of the shock absorber.




– Turn adjuster ❶ clockwise all the way to the stop.
– Turn counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

| Lowspeed compression damping | |
|---|---|
| Comfort | 17 clicks |
| Standard | 15 clicks |
| Sport | 13 clicks |

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

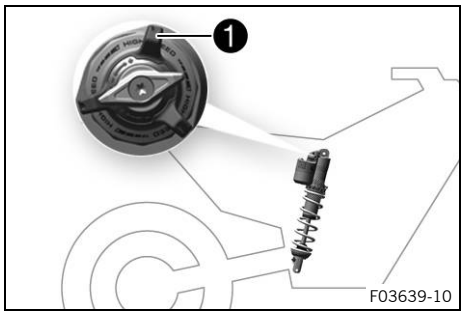
## 10.5 Adjusting the high-speed compression damping of the shock absorber

**Caution**
**Risk of injury** Parts of the shock absorber will move around if the shock absorber is detached incorrectly.

The shock absorber is filled with highly compressed nitrogen.

– Please follow the description provided. (Your authorized KTM workshop will be glad to help.)

**Info**
The effect of the high speed compression adjuster can be seen in the fast compression of the shock absorber.




– Turn adjuster ❶ clockwise all the way to the stop.
– Turn counterclockwise by the number of turns corresponding to the shock absorber type.

Guideline

| Highspeed compression damping | |
|---|---|
| Comfort | 2 turns |
| Standard | 1.5 turns |
| Sport | 1 turn |

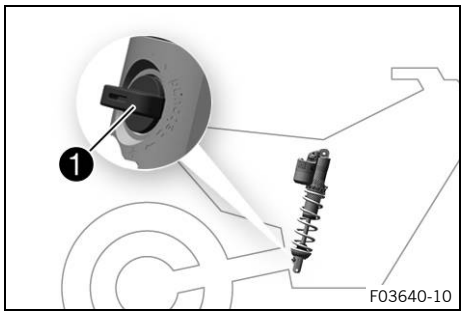
**Info**
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

## 10.6 Adjusting the rebound damping of the shock absorber

**Caution**
**Risk of injury** Parts of the shock absorber will move around if the shock absorber is detached incorrectly.

The shock absorber is filled with highly compressed nitrogen.

– Please follow the description provided. (Your authorized KTM workshop will be glad to help.)



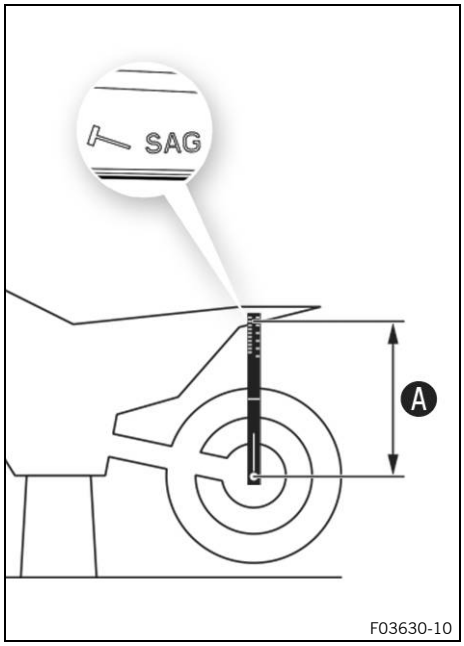

– Turn adjuster ❶ clockwise up to the last perceptible click.
– Turn counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

| Rebound damping | |
|---|---|
| Comfort | 17 clicks |
| Standard | 15 clicks |
| Sport | 13 clicks |

**Info**
Turn clockwise to increase the damping; turn counterclockwise to reduce damping when the shock absorber rebounds.

## 10.7 Measuring the dimension of the rear wheel unloaded




**Preparatory work**

– Raise the motorcycle with a lift stand. (📖 p. 47)

**Main work**

– Position the sag gage in the rear axle and measure the distance to marking **SAG** on the rear fender.

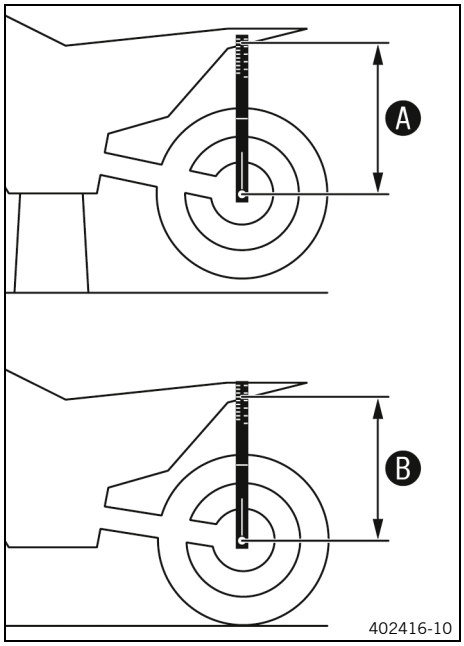
| Sag gauge (00029090200) |
|---|

– Note the value as dimension **A**.

**Finishing work**

– Remove the motorcycle from the lift stand. (📖 p. 47)

## 10.8 Checking the static sag of the shock absorber




– Measure dimension **A** of rear wheel unloaded. (📖 p. 38)
– Hold the motorcycle upright with aid of an assistant.
– Measure the distance again between the rear axle and marking **SAG** on the rear fender using the sag gage.
– Note the value as dimension **B**.

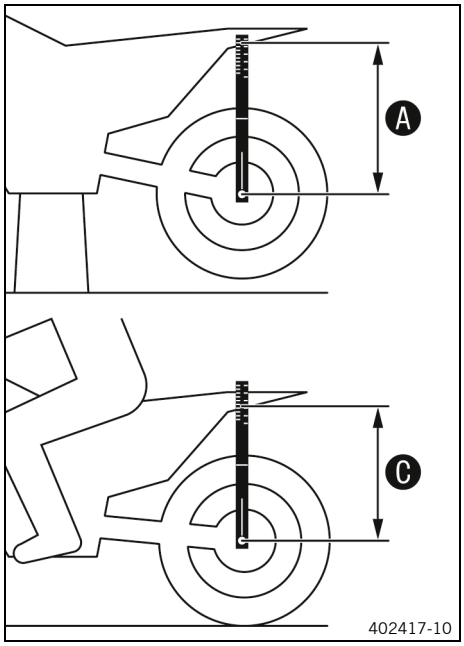
**Info**
The static sag is the difference between measurements **A** and **B**.

– Check the static sag.

| Static sag | 35 mm (1.38 in) |
|---|---|

» If the static sag is less or more than the specified value:
– Adjust the spring preload of the shock absorber. 🔧 (📖 p. 39)

## 10.9 Checking the riding sag of the shock absorber




– Measure dimension A of rear wheel unloaded. (📖 p. 38)
– With another person holding the motorcycle, the rider, wearing full protective clothing, sits on the seat in a normal sitting position (feet on footrests) and bounces up and down a few times.
  ✔ The rear wheel suspension levels out.
– Another person again measures the distance between the rear axle and marking **SAG** on the rear fender using the sag gage.
– Note the value as dimension C.

**Info**
The riding sag is the difference between measurements A and C.

– Check riding sag.

| | |
|---|---|
| Riding sag | 105 mm (4.13 in) |

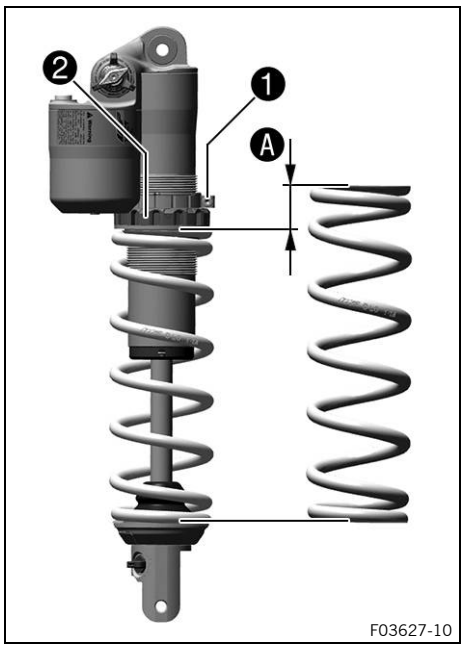
» If the riding sag differs from the specified measurement:
  – Adjust the riding sag. 🔧 (📖 p. 40)

## 10.10 Adjusting the spring preload of the shock absorber 🔧

**Caution**
**Risk of injury** Parts of the shock absorber will move around if the shock absorber is detached incorrectly.
The shock absorber is filled with highly compressed nitrogen.
– Please follow the description provided. (Your authorized KTM workshop will be glad to help.)

**Info**
Note the current adjustment before changing the spring preload - e.g. measure the spring length.

**Preparatory work**
– Remove main silencer. (📖 p. 67)
– Raise the motorcycle with a lift stand. (📖 p. 47)
– Remove the shock absorber. 🔧 (📖 p. 58)
– After removing the shock absorber, clean it thoroughly.




**Main work**

– Loosen screw ❶.

– Turn adjusting ring ❷ until the spring is no longer under tension.

| Hook wrench (90129051000) |
|---|

**Info**
If the spring cannot be fully released, the spring must be removed to accurately measure the spring length.

– Measure the total spring length while the spring is not under tension.

– Tension the spring by turning adjusting ring ❷ to specified dimension Ⓐ.

Guideline

| | |
|---|---|
| Spring preload | 8 mm (0.31 in) |

**Info**
Depending on the static sag and/or the riding sag, it may be necessary to increase or decrease the spring preload.

– Tighten bolt ❶.

Guideline

| | | |
|---|---|---|
| Screw, shock absorber adjusting ring | M5 | 5 Nm (3.7 lbf ft) |

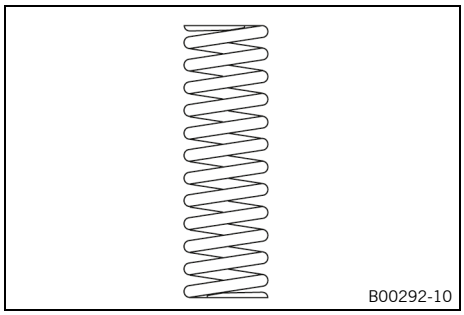
**Finishing work**

– Install the shock absorber. 🔧 (📖 p. 59)
– Check the free travel of the foot brake lever. (📖 p. 87)
– Remove the motorcycle from the lift stand. (📖 p. 47)
– Install the main silencer. (📖 p. 67)

## 10.11 Adjusting the riding sag 🔧

**Preparatory work**

– Remove main silencer. (📖 p. 67)
– Raise the motorcycle with a lift stand. (📖 p. 47)
– Remove the shock absorber. 🔧 (📖 p. 58)
– After removing the shock absorber, clean it thoroughly.




**Main work**

– Choose and mount a suitable spring.

Guideline

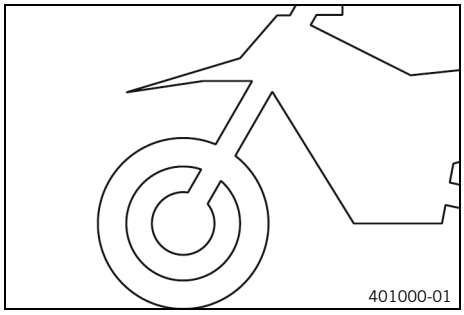
| Spring rate | |
|---|---|
| Weight of rider: 65 … 75 kg (143 … 165 lb.) | 39 N/mm (223 lb/in) |
| Weight of rider: 75 … 85 kg (165 … 187 lb.) | 42 N/mm (240 lb/in) |
| Weight of rider: 85 … 95 kg (187 … 209 lb.) | 45 N/mm (257 lb/in) |

**Info**
The spring rate is shown on the outside of the spring.

**Finishing work**
- Install the shock absorber. (p. 59)
- Check the free travel of the foot brake lever. (p. 87)
- Install the main silencer. (p. 67)
- Check the static sag of the shock absorber. (p. 38)
- Check the riding sag of the shock absorber. (p. 39)
- Adjust the rebound damping of the shock absorber. (p. 37)
- Remove the motorcycle from the lift stand. (p. 47)

## 10.12 Checking the basic setting of the fork

**Info**
For various reasons, no exact riding sag can be determined for the fork.




- Smaller differences in the rider's weight can be compensated for by the fork air pressure.
- However, if the fork frequently bottoms out (hard end stop on compression), the fork air pressure must be increased, within the specified values, to avoid damage to the fork and frame.
- If the fork feels unusually hard after extended periods of operation, the fork legs need to be bled.

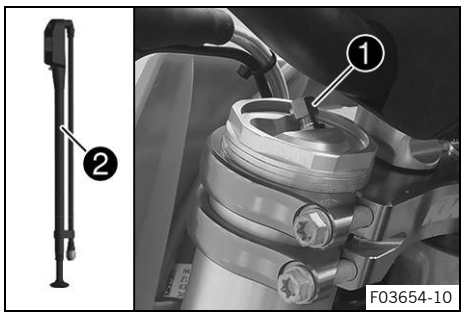
## 10.13 Adjusting the fork air pressure

**Warning**
**Danger of accidents** Modifications to the suspension setting may seriously alter the handling characteristic.

Modifications which are not coordinated with others to the suspension setting may cause a serious deterioration in the handling characteristic and overload components.
- Only make adjustments within the recommended range.
- Ride slowly to start with after making adjustments to get the feel of the new handling characteristic.

**Info**
Check or adjust the air pressure under the same conditions at the earliest 5 minutes after switching off the engine.
The air suspension is located in the left fork leg. The pressure and rebound damping is located in the right fork leg.

**Preparatory work**
- Raise the motorcycle with a lift stand. (p. 47)




**Main work**

– Remove protection cap ❶.

– Push together fork airpump ❷ fully.

| Fork airpump (79412966100) |
|---|

**Info**
The fork airpump is included as part of the motorcycle's accessory pack.

– Connect the fork airpump to the left fork leg.

✔ The fork airpump indicator switches on automatically.

✔ A little air escapes from the fork leg when connecting.

**Info**
This is due to the volume of the hose and not due to a defect in the fork airpump or the fork.
Read the accompanying **KTM PowerParts** instructions.

– Adjust the air pressure as specified.

Guideline

| | |
|---|---|
| Air pressure | 10.7 bar (155 psi) |
| Gradual changing of the air pressure in steps of | 0.2 bar (3 psi) |
| Minimum air pressure | 7 bar (102 psi) |
| Maximum air pressure | 12 bar (174 psi) |

**Info**
Never adjust the air pressure to a value outside the stated range.

– Disconnect the fork airpump from the left fork leg.

✔ When disconnecting, excess pressure will escape from the hose – the fork leg itself does not lose any air.

✔ The fork airpump indicator switches off automatically after 80 seconds.

– Mount the protection cap.

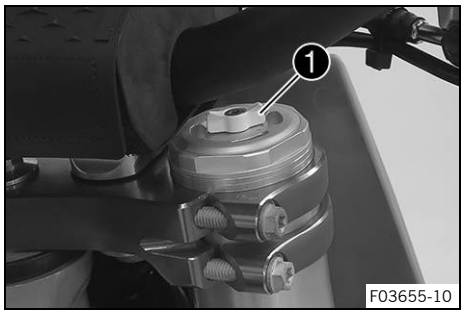
**Info**
Only mount the protection cap by hand.

**Finishing work**

– Remove the motorcycle from the lift stand. (📖 p. 47)

## 10.14 Adjusting the compression damping of the fork

**Info**
The hydraulic compression damping determines the fork suspension behavior.




– Turn adjuster ❶ clockwise all the way to the stop.

**Info**
Adjuster ❶ is located at the upper end of the right fork leg.

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

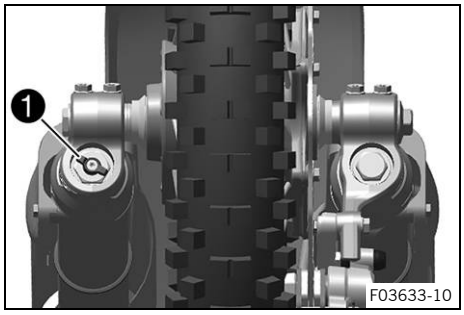
Guideline

| Compression damping | |
|---|---|
| Comfort | 17 clicks |
| Standard | 12 clicks |
| Sport | 7 clicks |

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

## 10.15 Adjusting the rebound damping of the fork

**Info**
The hydraulic rebound damping determines the fork suspension behavior.




– Turn adjuster ❶ clockwise all the way to the stop.

**Info**
Adjuster ❶ is located at the lower end of the right fork leg.

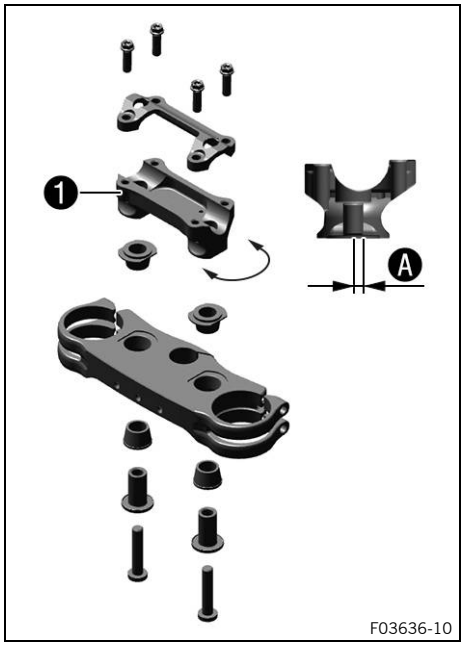
– Turn counterclockwise by the number of clicks corresponding to the fork type.

Guideline

| Rebound damping | |
|---|---|
| Comfort | 23 clicks |
| Standard | 18 clicks |
| Sport | 13 clicks |

**Info**
Turn clockwise to increase the damping; turn counterclockwise to reduce damping when the shock absorber rebounds.

## 10.16 Handlebar position




The holes on the handlebar support ❶ are placed at a distance of Ⓐ from the center.

| | |
|---|---|
| Hole distance A | 3.5 mm (0.138 in) |

The handlebar can be mounted in 2 different positions. This allows the handlebar to be mounted in the most comfortable position for the rider.

**Info**
In addition, the handlebar can be mounted rigidly or on a rubber bearing.

## 10.17 Adjusting the handlebar position

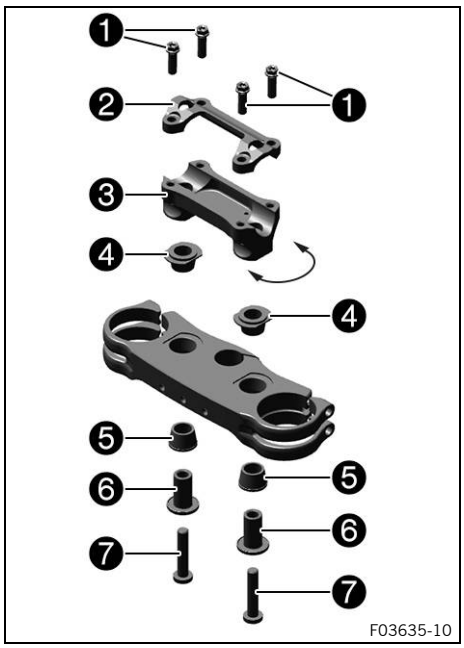
**Warning**
**Danger of accidents** A repaired handlebar poses a safety risk.

If the handlebar is bent or straightened, the material becomes fatigued. The handlebar may break as a result.

– Change the handlebar if the handlebar is damaged or bent.

**Info**
The handlebar can be mounted rigidly or on a rubber bearing.

**Preparatory work**
– Take off the handlebar cushion.




**Main work**

– Remove screws ❶. Take off handlebar clamp ❷. Take off the handlebar and lay it to one side.

**Info**
Cover the components to protect them against damage. Do not kink the cables and lines.

– Remove the screws ❼ and bushing ❻. Take off handlebar support ❸.

**Adjusting the handlebar position with the handlebar clamp in the rubber bearing**

– Position the rubber bushings ❹ and ❺.
– Place the handlebar support in the required position.

**Info**
The handlebar support is longer and higher on one side.

– Mount and tighten the screws ❼ with bushing ❻.

Guideline

| | | |
|---|---|---|
| Screw, handlebar support | M10 | 40 Nm (29.5 lbf ft)<br>**Loctite®243™** |

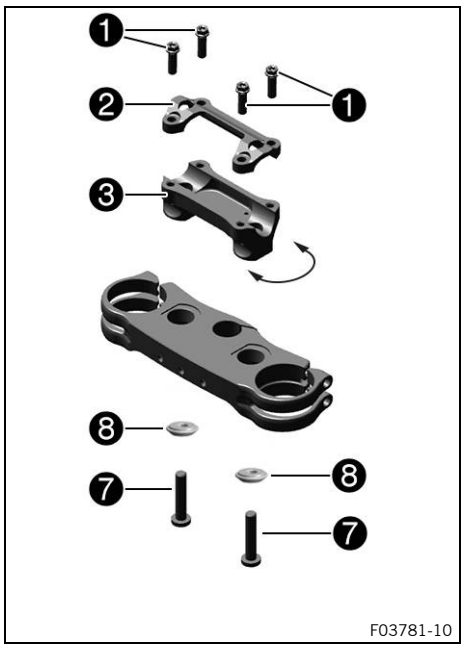
– Position the handlebar.

**Info**
Make sure the cables and wiring are positioned correctly.

– Position handlebar clamp ❷.
– Mount screws ❶, but do not tighten yet.
– First bolt the handlebar clamp with screws ❶ onto the longer, higher side of the handlebar supports so that both parts touch.
– Tighten screws ❶ evenly.

Guideline

| | | |
|---|---|---|
| Screw, handlebar clamp | M8 | 20 Nm<br>(14.8 lbf ft) |




**Adjusting the handlebar position with the handlebar clamp**

– Place the handlebar support in the required position.

**Info**
The handlebar support is longer and higher on one side.

– Mount and tighten the screws ❼ with the bushings ❽.

Guideline

| | | |
|---|---|---|
| Screw, handlebar support | M10 | 40 Nm (29.5 lbf ft) **Loctite®243™** |

| |
|---|
| Rigid handlebar support bushing (A46001038010) |

✔ The conical side of bushing faces downwards.

– Position the handlebar.

**Info**
Make sure the cables and wiring are positioned correctly.

– Position handlebar clamp ❷.
– Mount screws ❶, but do not tighten yet.
– First bolt the handlebar clamp with screws ❶ onto the longer, higher side of the handlebar supports so that both parts touch.
– Tighten screws ❶ evenly.

Guideline

| | | |
|---|---|---|
| Screw, handlebar clamp | M8 | 20 Nm (14.8 lbf ft) |

**Finishing work**

– Mount the handlebar cushion.

## 11.1 Raising the motorcycle with a lift stand

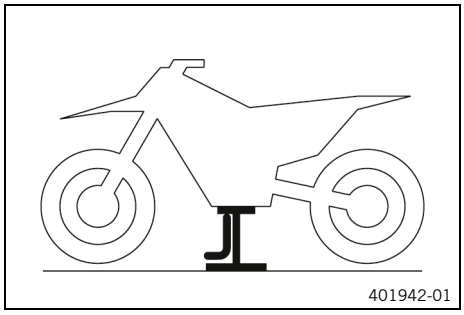
**Note**

**Material damage** The vehicle may be damaged by incorrect procedure when parking.

Significant damage may be caused if the vehicle rolls away or falls over.

The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Ensure that nobody sits on the vehicle when the vehicle is parked on a stand.


401942-01

– Remove the plug-in stand and lift up the motorcycle by the motor guard underneath the engine.

| Lift stand (78129955100) |
|---|

✔ Neither wheel is in contact with the ground.

– Secure the motorcycle against falling over.

## 11.2 Removing the motorcycle from the lift stand

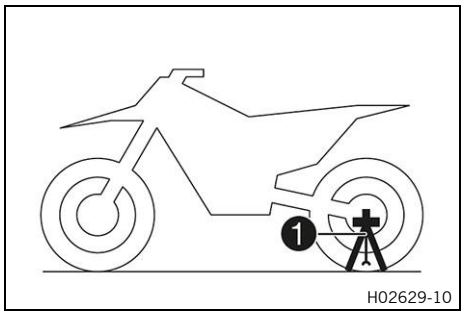
**Note**

**Material damage** The vehicle may be damaged by incorrect procedure when parking.

Significant damage may be caused if the vehicle rolls away or falls over.

The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Ensure that nobody sits on the vehicle when the vehicle is parked on a stand.



H02629-10

– Remove the motorcycle from the lift stand.
– Remove the lift stand.
– To park the motorcycle, insert plug-in stand ❶ into the left side of the wheel spindle.

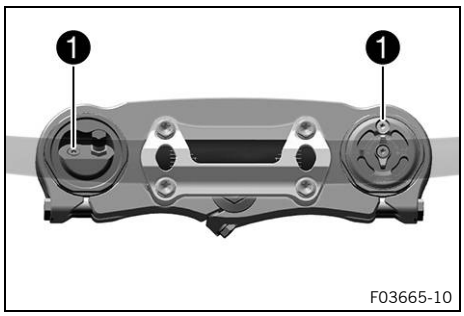
| Plug-in stand (A46029094000) |
|---|

**Info**
The plug-in stand is included.
Remove the plug-in stand before riding.

## 11.3 Bleeding the fork legs

**Preparatory work**

– Raise the motorcycle with a lift stand. (📖 p. 47)




**Main work**

– Release bleeder screws ❶.

✔ Any excess pressure escapes from the interior of the fork.

– Tighten the bleeder screws.

**Finishing work**

– Remove the motorcycle from the lift stand. (📖 p. 47)

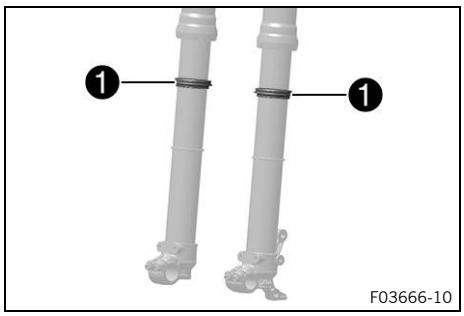
## 11.4 Cleaning the dust boots of the fork legs

**Preparatory work**

– Raise the motorcycle with a lift stand. (📖 p. 47)

– Remove the front wheel. 🔧 (📖 p. 94)

– Remove the fork protector. (📖 p. 49)




**Main work**

– Push dust boots ❶ of both fork legs downward.

**Info**

The dust boots remove dust and coarse dirt particles from the inside fork tubes. Over time, dirt can accumulate behind the dust boots. If this dirt is not removed, the oil seals behind can start to leak.

**Warning**

**Danger of accidents** Oil or grease on the brake discs reduces the braking effect.

– Always keep the brake discs free of oil and grease.

– Clean the brake discs with brake cleaner when necessary.

– Clean and oil the dust boots and inner fork tubes of both fork legs.

| Universal oil spray (📖 p. 141) |
|---|

– Press the dust boots back into their installation position.

– Remove excess oil.

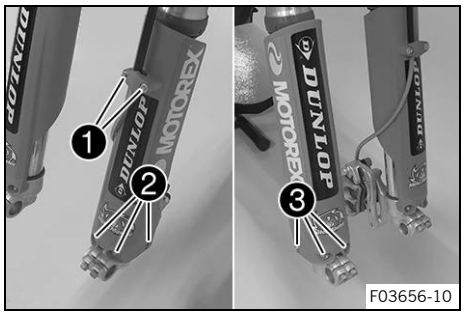
**Finishing work**

– Install the fork protector. (📖 p. 49)

– Install the front wheel. 🔧 (📖 p. 95)

– Remove the motorcycle from the lift stand. (📖 p. 47)

## 11.5 Removing the fork protector



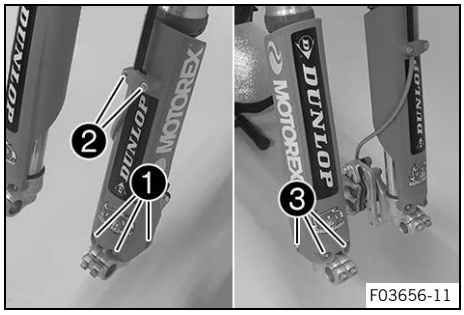

**Preparatory work**

– Raise the motorcycle with a lift stand. (📖 p. 47)
– Remove the front wheel. 🔧 (📖 p. 94)

**Main work**

– Remove screws ❶ and take off the clamp.
– Remove screws ❷ and take off the left fork protector.
– Remove screws ❸ and take off the right fork protector.

## 11.6 Installing the fork protector




**Main work**

– Position the fork protector on left fork leg. Mount and tighten screws ❶.

  Guideline

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

– Position the brake line and the clamp. Mount and tighten screws ❷.
– Position the fork protector on the right fork leg. Mount and tighten screws ❸.

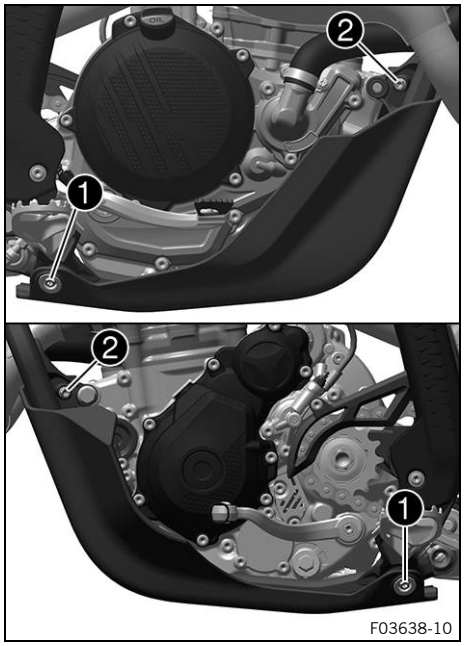
  Guideline

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

**Finishing work**

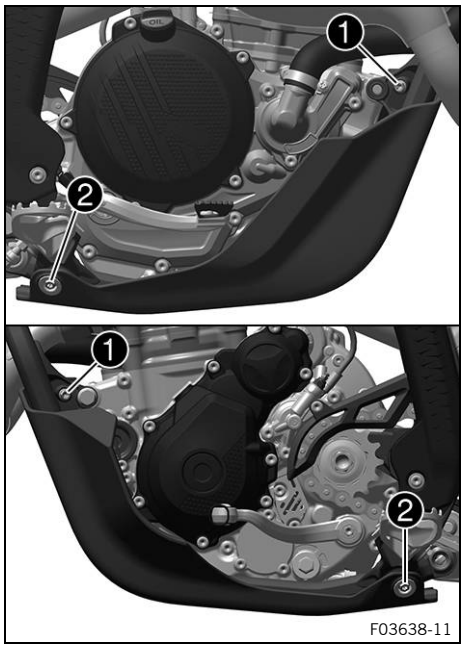
– Install the front wheel. 🔧 (📖 p. 95)

## 11.7 Removing the engine guard




– Remove screws ❶ with the bushings.
– Remove screws ❷. Take off the engine guard.

## 11.8 Installing the engine guard




– Position the engine guard on the frame.
– Mount screws ❶, but do not tighten yet.

Guideline

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

– Mount screws ❷ with bushings, but do not tighten yet.

Guideline

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

✔ The engine guard is directed evenly toward the front.
– Tighten all the screws of the engine guard.

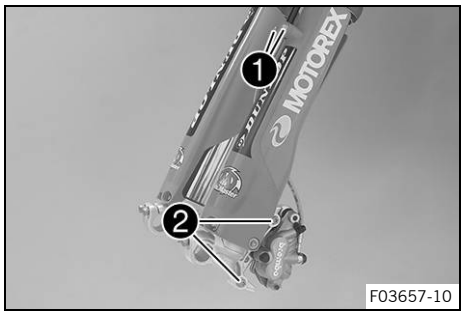
Guideline

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

## 11.9 Removing the fork legs

**Preparatory work**

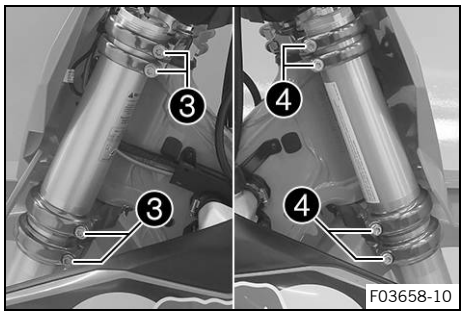
– Raise the motorcycle with a lift stand. (p. 47)
– Remove the front wheel. (p. 94)




**Main work**

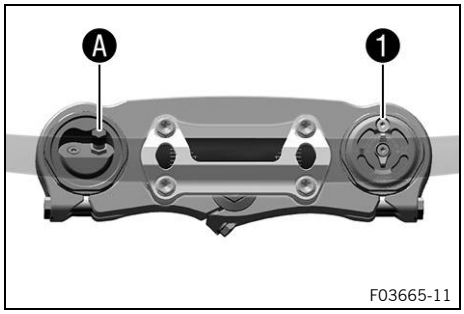
– Remove screws 1 and take off the clamp.
– Remove screws 2 and take off the brake caliper.
– Allow the brake caliper and the brake line to hang loosely to the side.

**Info**
Do not actuate the hand brake lever when the front wheel is removed.




– Loosen screws 3. Remove the left fork leg.
– Loosen screws 4. Remove the right fork leg.

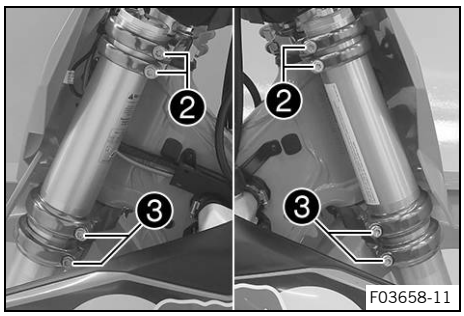
## 11.10 Installing the fork legs




**Main work**

– Position the fork legs.
  ✓ Air bleeder screw 1 of the right fork leg is positioned to the front.
  ✓ Valve A of the left fork leg faces the front.

**Info**
Grooves are milled into the side of the upper end of the fork legs. The second milled groove (from the top) must be flush with the upper edge of the upper triple clamp. The air suspension is located in the left fork leg. The pressure and rebound damping is located in the right fork leg.




– Tighten screws 2.

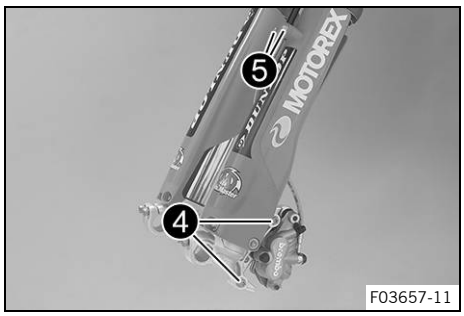
Guideline

| | | |
|---|---|---|
| Screw, top triple clamp | M8 | 17 Nm (12.5 lbf ft) |

– Tighten screws 3.

Guideline

| | | |
|---|---|---|
| Screw, bottom triple clamp | M8 | 12 Nm (8.9 lbf ft) |




– Position the brake caliper. Mount and tighten screws ❹.

Guideline

| | | |
|---|---|---|
| Screw, front brake caliper | M8 | 25 Nm (18.4 lbf ft) **Loctite®243™** |

– Position the brake line and the clamp. Mount and tighten screws ❺.

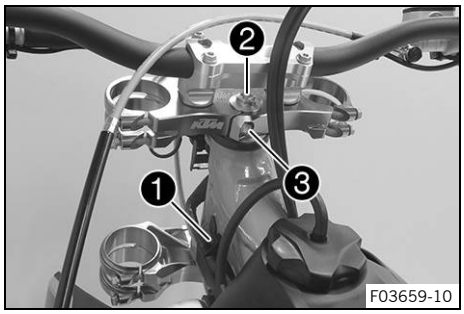
**Finishing work**

– Install the front wheel. (p. 95)

## 11.11 Removing the lower triple clamp

**Preparatory work**

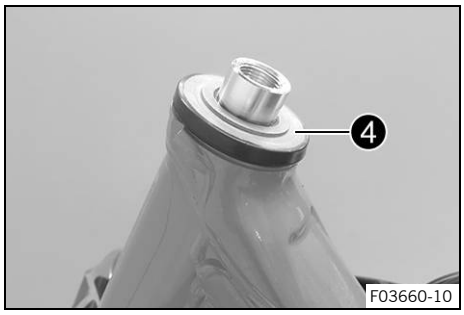
– Raise the motorcycle with a lift stand. (p. 47)
– Remove the front wheel. (p. 94)
– Remove the fork legs. (p. 51)
– Remove the start number plate. (p. 56)
– Remove front fender. (p. 57)
– Take off the handlebar cushion.




**Main work**

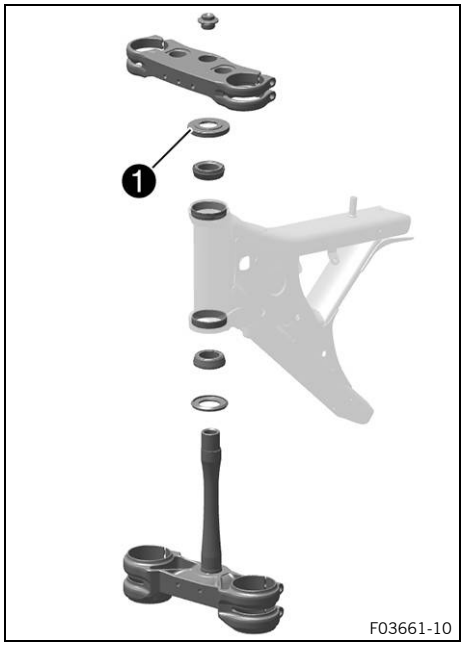
– Remove screw ❶. Detach the wiring harness.
– Remove screw ❷.
– Remove screw ❸.
– Take off the upper triple clamp with the handlebar and place to one side.

**Info**
Cover the components to protect them against damage. Do not kink the cables and lines.




– Remove the steering head seal ❹.
– Remove the lower triple clamp and steering stem.
– Remove the upper steering head bearing.

## 11.12 Installing the lower triple clamp



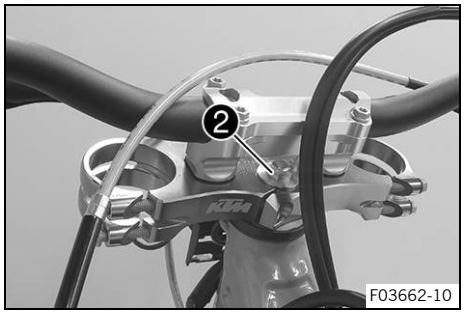

**Main work**

– Clean the bearing and sealing elements, check for damage, and grease.

| |
|---|
| High viscosity grease (p. 140) |

– Insert the lower triple clamp with the steering stem. Mount upper steering head bearing.

– Push on the steering head seal ❶.

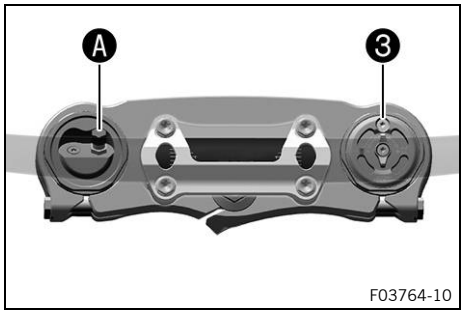



– Position the upper triple clamp and handlebar.

– Mount screw ❷, but do not tighten it yet.

Guideline

| | | |
|---|---|---|
| Screw, top steering head | M20x1.5 | 12 Nm (8.9 lbf ft) |




– Position the fork legs.

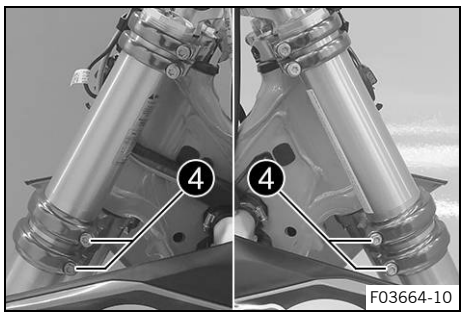
✓ Air bleeder screw ❸ of the right fork leg is positioned to the front.

✓ Valve Ⓐ of the left fork leg faces the front.

**Info**

Grooves are milled into the side of the upper end of the fork legs. The second milled groove (from the top) must be flush with the upper edge of the upper triple clamp.

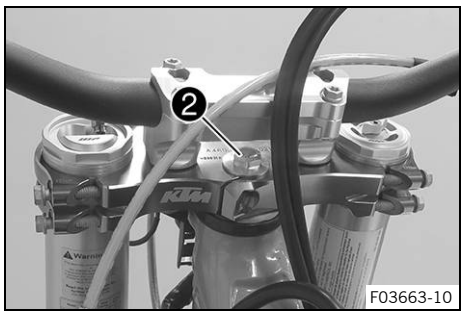
The air suspension is located in the left fork leg. The pressure and rebound damping is located in the right fork leg.




– Tighten screws ❹.

Guideline

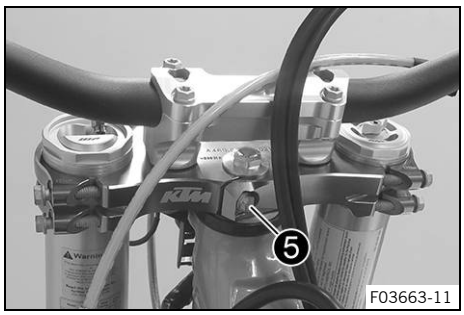
| | | |
|---|---|---|
| Screw, bottom triple clamp | M8 | 12 Nm (8.9 lbf ft) |




– Tighten screw ❷.

Guideline

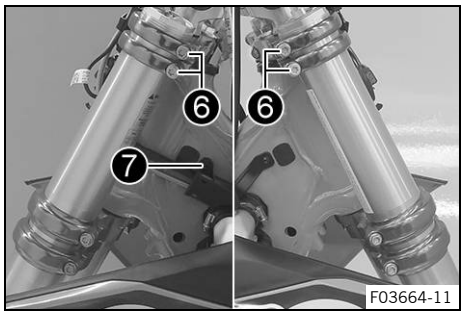
| | | |
|---|---|---|
| Screw, top steering head | M20x1.5 | 12 Nm (8.9 lbf ft) |




– Mount and tighten screw ❺.

Guideline

| | | |
|---|---|---|
| Screw, top steering stem | M8 | 20 Nm (14.8 lbf ft)<br>**Loctite®243™** |

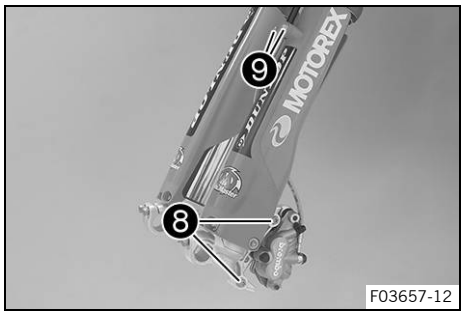



– Using a plastic hammer, tap lightly on the upper triple clamp to avoid stresses.
– Tighten screws ❻.

Guideline

| | | |
|---|---|---|
| Screw, top triple clamp | M8 | 17 Nm (12.5 lbf ft) |

– Secure the wiring harness with cable holder on the left. Mount and tighten screw ❼.




– Position the brake caliper. Mount and tighten screws ❽.

Guideline

| | | |
|---|---|---|
| Screw, front brake caliper | M8 | 25 Nm (18.4 lbf ft)<br>**Loctite®243™** |

– Position the brake line and the clamp. Mount and tighten screws ❾.

**Finishing work**

– Install front fender. (📖 p. 58)
– Mount the handlebar cushion.

– Install the start number plate. (📖 p. 57)
– Install the front wheel. 🔧 (📖 p. 95)
– Check that the wiring harness, throttle cables, and brake and clutch lines can move freely and are routed correctly.
– Check the steering head bearing play. (📖 p. 55)
– Remove the motorcycle from the lift stand. (📖 p. 47)

## 11.13 Checking the steering head bearing play

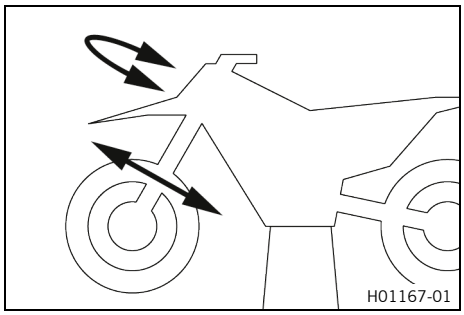
**Warning**

**Danger of accidents** Incorrect steering head bearing play impairs the handling characteristic and damages components.

– Correct incorrect steering head bearing play immediately. (Your authorized KTM workshop will be glad to help.)

**Info**

If the vehicle is operated for a lengthy period with play in the steering head bearing, the bearings and the bearing seats in the frame can become damaged over time.




**Preparatory work**

– Raise the motorcycle with a lift stand. (📖 p. 47)

**Main work**

– Move the handlebar to the straight-ahead position. Move the fork legs to and fro in the direction of travel.

| |
|---|
| Play should not be detectable on the steering head bearing. |

» If there is detectable play:
– Adjust the steering head bearing play. 🔧 (📖 p. 55)

– Move the handlebar to and fro over the entire steering range.

| |
|---|
| It must be possible to move the handlebar easily over the entire steering range. There should be no detectable detent positions. |

» If detent positions are detected:
– Adjust the steering head bearing play. 🔧 (📖 p. 55)
– Check the steering head bearing and adjust if necessary.

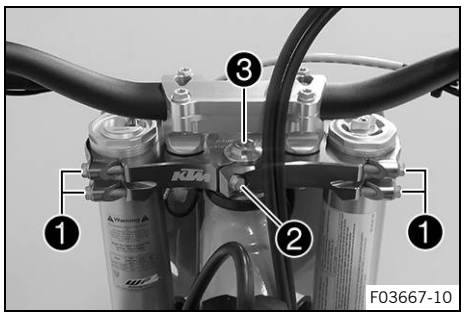
**Finishing work**

– Remove the motorcycle from the lift stand. (📖 p. 47)

## 11.14 Adjusting the steering head bearing play 🔧

**Preparatory work**

– Raise the motorcycle with a lift stand. (📖 p. 47)
– Take off the handlebar cushion.




**Main work**

– Loosen screws ❶.
– Remove screw ❷.
– Loosen and retighten screw ❸.

Guideline

| | | |
|---|---|---|
| Screw, top steering head | M20x1.5 | 12 Nm (8.9 lbf ft) |

– Using a plastic hammer, tap lightly on the upper triple clamp to avoid stresses.
– Mount and tighten screw ❷.

Guideline

| | | |
|---|---|---|
| Screw, top steering stem | M8 | 20 Nm (14.8 lbf ft)<br>**Loctite®243™** |

– Tighten screws ❶.

Guideline

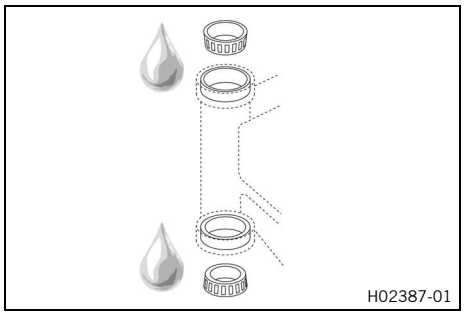
| | | |
|---|---|---|
| Screw, top triple clamp | M8 | 17 Nm (12.5 lbf ft) |

– Check the steering head bearing play. (📖 p. 55)

**Finishing work**

– Mount the handlebar cushion.
– Remove the motorcycle from the lift stand. (📖 p. 47)

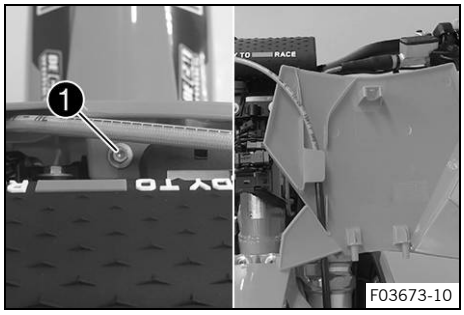
## 11.15 Lubricating the steering head bearing




– Remove the lower triple clamp. (📖 p. 52)
– Install the lower triple clamp. (📖 p. 53)

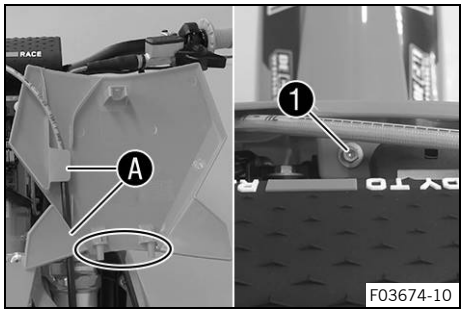
**Info**
The steering head bearing is cleaned and lubricated in the course of removal and installation of the lower triple clamp.

## 11.16 Removing the start number plate




– Remove screw ❶.
– Unhook the start number plate from the brake line and remove it.

## 11.17 Installing the start number plate

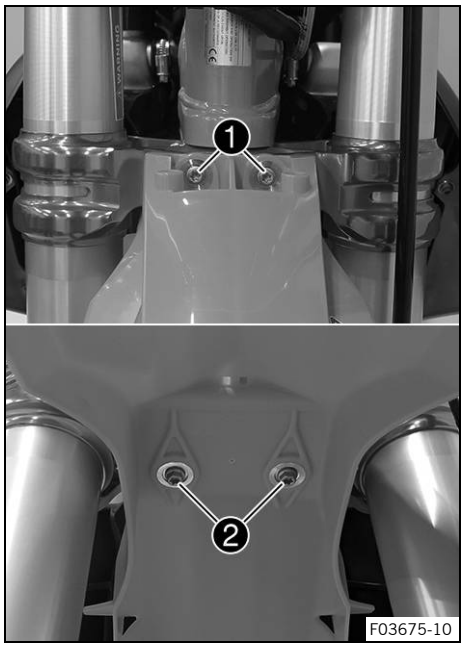



– Position the brake line in holders Ⓐ on the start number plate.
– Position the start number plate. Mount and tighten screw ❶.
  ✔ The holding lugs engage in the fender.

## 11.18 Removing front fender

**Preparatory work**

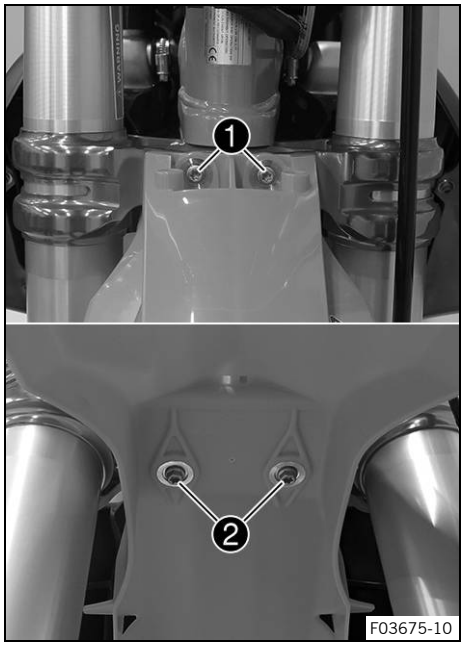
– Remove the start number plate. (📖 p. 56)




**Main work**

– Remove screws ❶ and ❷. Take off the front fender.

## 11.19 Installing front fender




**Main work**

– Position front fender. Mount and tighten screws ❶ and ❷.

Guideline

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

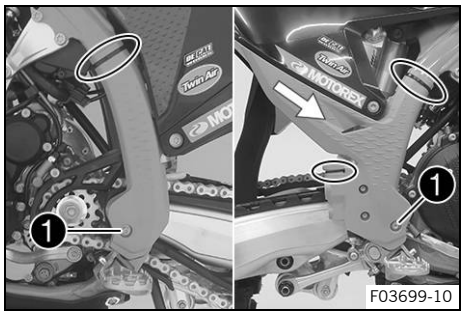
**Finishing work**

– Install the start number plate. (📖 p. 57)

## 11.20 Removing the shock absorber

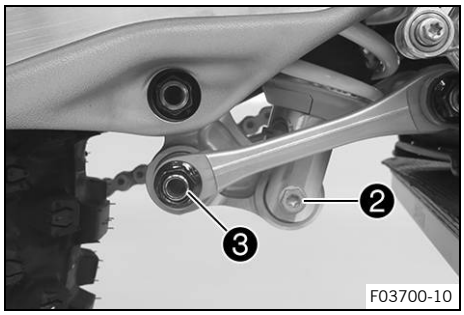
**Preparatory work**

– Remove main silencer. (📖 p. 67)
– Raise the motorcycle with a lift stand. (📖 p. 47)



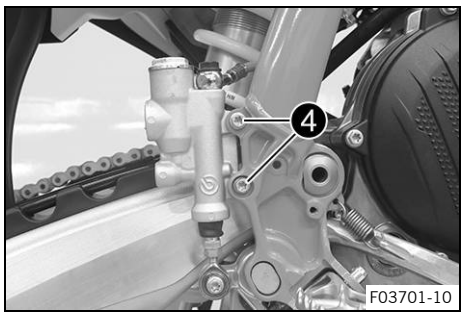

**Main work**

– Remove the cable ties.
– Remove screws ❶ with the washers.
– Take off the left frame protector.
– Push the right frame protector to the front and take off at the bottom.

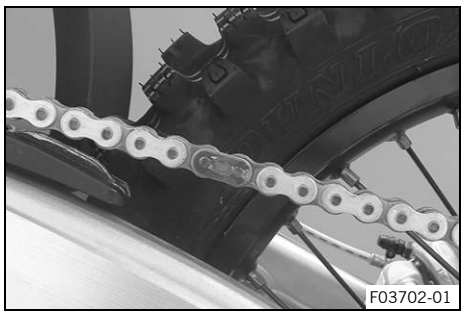



– Remove screw ❷.
– Remove fitting ❸.

**Info**
Raise the swingarm slightly to be able to remove the screws more easily.

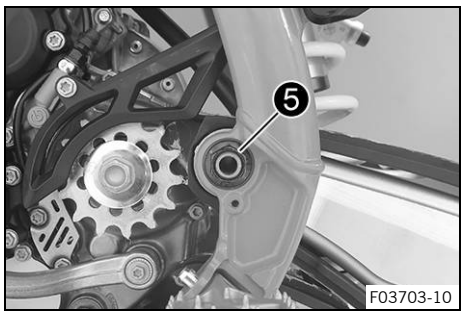



– Remove screws ❹.
– Pull off foot brake cylinder from the push rod.

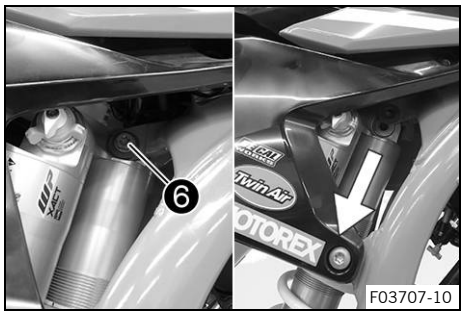



– Remove the connecting link of the chain.
– Take off the chain.

**Info**
Cover the components to protect them against damage.

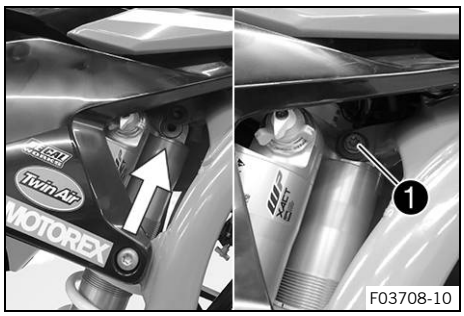



– Remove nut ❺ and the swingarm pivot.
– Push the link fork back and secure it against falling over.




– Hold the shock absorber and remove screw ❻.
– Remove the shock absorber carefully at the bottom.

## 11.21 Installing the shock absorber

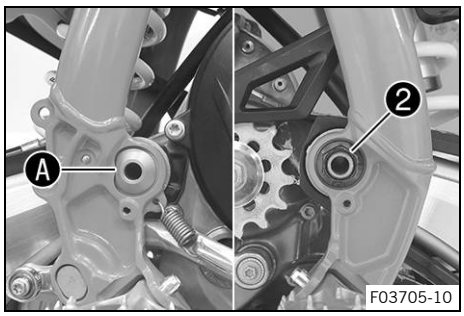



**Main work**

– Carefully position the shock absorber into the vehicle from the bottom.
– Mount and tighten screw ❶.

Guideline

| | | |
|---|---|---|
| Screw, top shock absorber | M10 | 60 Nm (44.3 lbf ft)<br>**Loctite®2701™** |



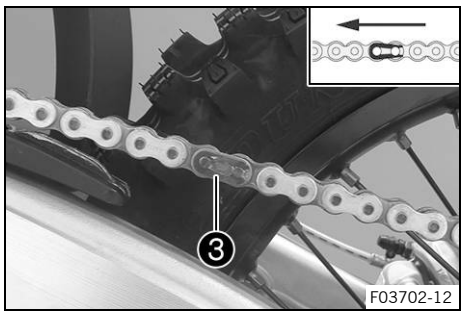

– Position the link fork and mount the swingarm pivot.

**Info**
Pay attention to flat area Ⓐ.

– Mount and tighten nut ❷.

Guideline

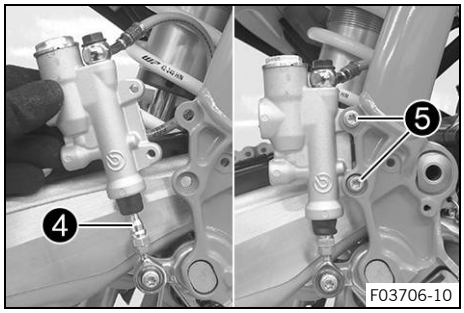
| | | |
|---|---|---|
| Nut, fork pivot | M16x1.5 | 100 Nm (73.8 lbf ft) |




– Mount the chain.
– Connect the chain with connecting link ❸.

Guideline

| |
|---|
| The closed side of the chain joint lock must face in the direction of travel. |




– Position the foot brake cylinder.

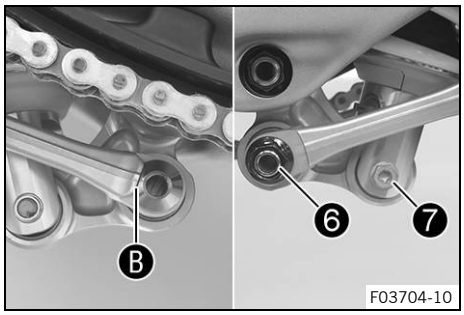
✔ Push rod ❹ engages in the foot brake cylinder.

**Info**
Ensure that the dust boot is correctly seated.

– Mount and tighten screws ❺.

Guideline

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




– Position the angle lever and linkage lever.
– Mount and tighten fitting ❻.

Guideline

| | | |
|---|---|---|
| Nut, linkage lever on angle lever | M16x1.5 | 60 Nm (44.3 lbf ft) |

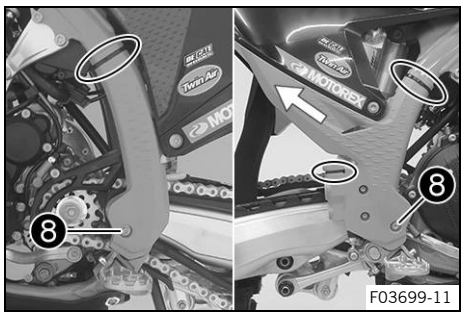
**Info**
Pay attention to flat area Ⓑ.

– Mount and tighten screw ❼.

Guideline

| | | |
|---|---|---|
| Screw, bottom shock absorber | M10 | 60 Nm (44.3 lbf ft) **Loctite®2701™** |

**Info**
Raise the link fork slightly to be able to mount the screw more easily.




– Position the left frame protector.
– Insert the right frame protector from below and push it to the rear.
– Mount and tighten screws ❽ with the washers.

Guideline

| | | |
|---|---|---|
| Screw, frame protector | M5 | 3 Nm (2.2 lbf ft) |

– Mount the new cable ties.

**Finishing work**

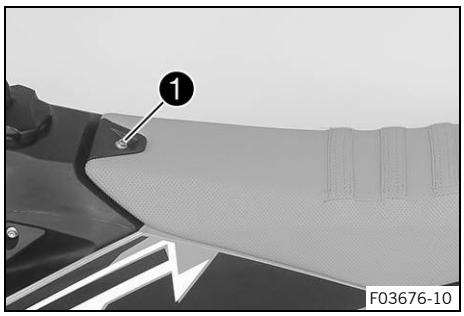
– Check the free travel of the foot brake lever. (📖 p. 87)
– Remove the motorcycle from the lift stand. (📖 p. 47)
– Install the main silencer. (📖 p. 67)

## 11.22 Removing the seat

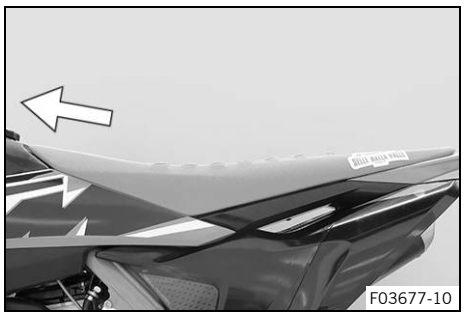
**Caution**

**Danger of burns** The voltage regulator gets very hot when the vehicle is operated.

– Allow the voltage regulator to cool down before performing any work.

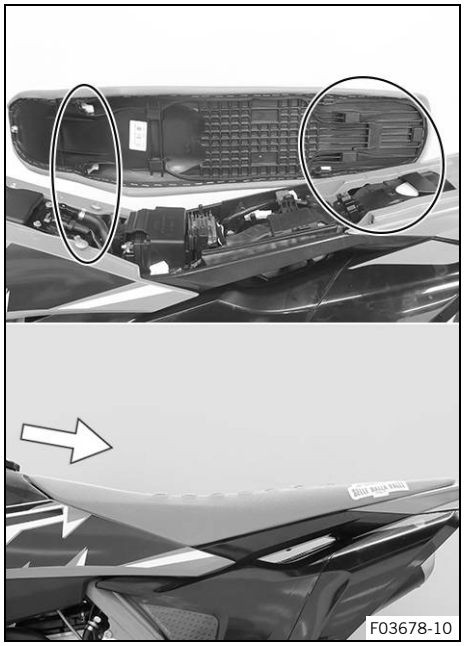



– Remove screw ❶.




– Pull seat toward the fuel tank and lift it off.

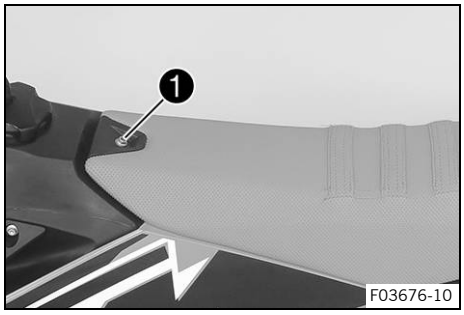
## 11.23 Mounting the seat




– Attach the seat to the collar bushings at the front and simultaneously push it back.

✔ The holding lugs engage in the recesses at the back.

– Make sure the seat is latched in place correctly.




– Mount and tighten screw ❶.

Guideline

| | | |
|---|---|---|
| Screw, seat fixing | M6 | 8 Nm (5.9 lbf ft) |

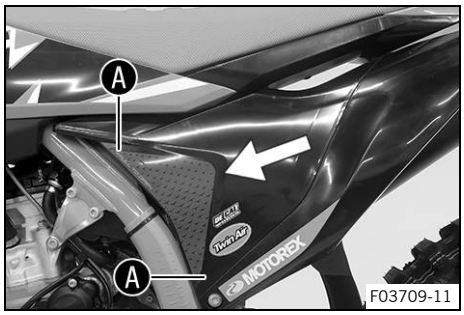
## 11.24 Removing the air filter box cover



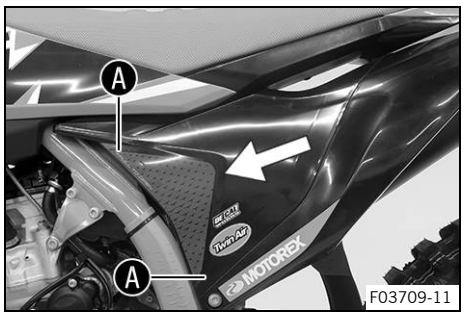

**Condition**

The air filter box cover is secured.

– Remove screw ❶.




– Pull off the air filter box cover in area Ⓐ and push it sideways and forward. Take off the air filter box cover.

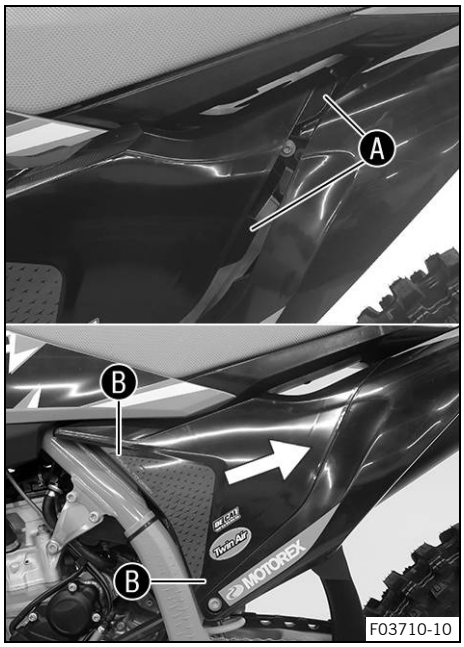



**Condition**

The air filter box cover is not secured.

– Pull off the air filter box cover in area Ⓐ and push it sideways and forward. Take off the air filter box cover.

## 11.25 Installing the air filter box cover




**Condition**

The air filter box cover is secured.

– Insert the air filter box cover in area Ⓐ and clip it into area Ⓑ.

**Info**

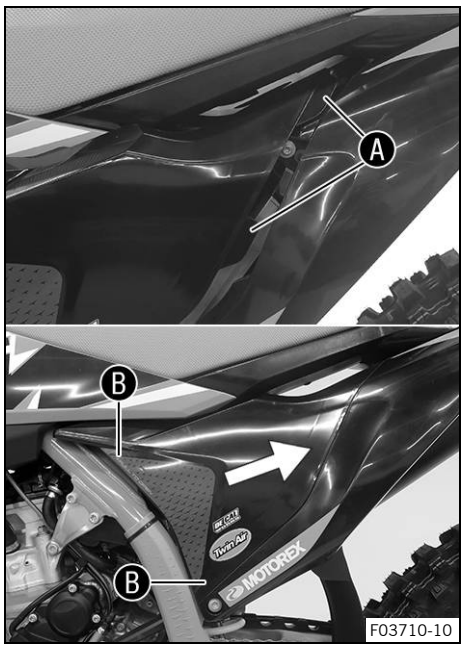
An air filter box cover with openings for greater airflow and a more direct response is included.




– Mount and tighten screw ❶.

Guideline

| | | |
|---|---|---|
| Screw, air filter box cover | **EJOT PT®** K60x20-Z | 3 Nm (2.2 lbf ft) |




**Condition**

The air filter box cover is not secured.

– Insert the air filter box cover in area Ⓐ and clip it into area Ⓑ.

**Info**
An air filter box cover with openings for greater airflow and a more direct response is included.

## 11.26 Removing the air filter

**Note**

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

Dust and dirt will enter the engine without an air filter.

– Only operate the vehicle if it is equipped with an air filter.

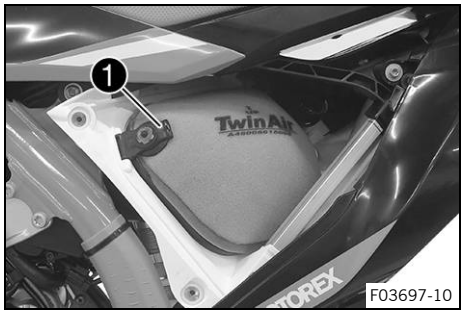
**Note**

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

– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Preparatory work**

– Remove the air filter box cover. (p. 62)




**Main work**

– Detach retaining tab ❶.
– Remove air filter with air filter support.
– Remove air filter from air filter support.

## 11.27 Cleaning the air filter and air filter box

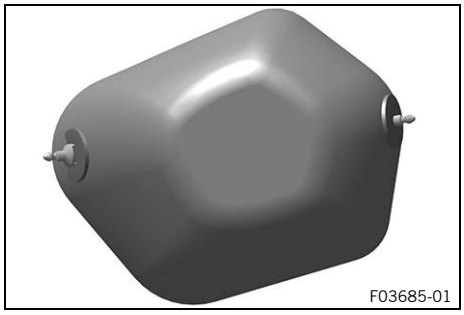
**Note**

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

– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Info**

Do not clean the air filter with fuel or petroleum since these substances attack the foam.


F03685-01

**Preparatory work**

– Remove the air filter box cover. (p. 62)
– Remove the air filter. (p. 64)

**Main work**

– Wash the air filter thoroughly in special cleaning liquid and allow it to dry properly.

| Air filter cleaner (p. 140) |
|---|

**Info**

Only press the air filter to dry it, never wring it out.

– Oil the dry air filter with a high-grade air filter oil.

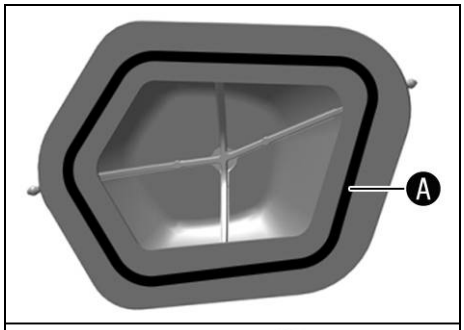
| Oil for foam air filter (p. 140) |
|---|

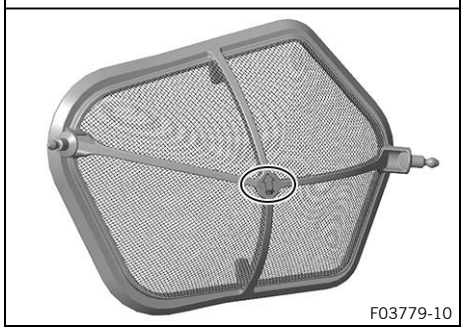
– Clean the air filter box.
– Clean the intake flange and check it for damage and tightness.

**Finishing work**

– Install the air filter. (p. 66)
– Install the air filter box cover. (p. 63)

## 11.28 Installing the air filter



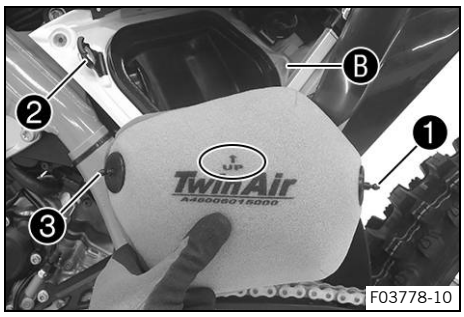

**Main work**

– Mount the clean air filter on the air filter support.

> **Info**
> The marking on the air filter support must face upwards.

– Grease the air filter in area A.

| Long-life grease (📖 p. 140) |
|---|




– Insert air filter and position retaining pin 1 in bushing B.
  ✔ The air filter is correctly positioned.

> **Info**
> The marking on the air filter must face upwards.

– Insert retaining tab 2.
  ✔ Retaining pin 3 is secured by retaining tab 2.

> **Info**
> If the air filter is not mounted correctly, dust and dirt may enter the engine and result in damage.

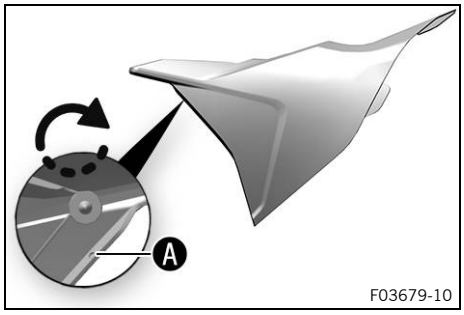
**Finishing work**

– Install the air filter box cover. (📖 p. 63)

## 11.29 Preparing air filter box cover for securing

**Preparatory work**

– Remove the air filter box cover. (📖 p. 62)




**Main work**

– Drill a hole at marking A.

Guideline

| Diameter | 6 mm (0.24 in) |
|---|---|

**Finishing work**

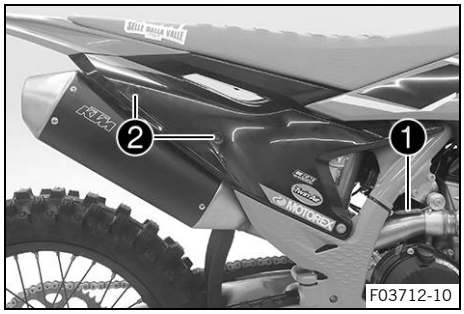
– Install the air filter box cover. (p. 63)

## 11.30 Removing the main silencer

**Warning**

**Danger of burns** The exhaust system gets hot when the vehicle is driven.

– Allow the exhaust system to cool down before performing any work on the vehicle.

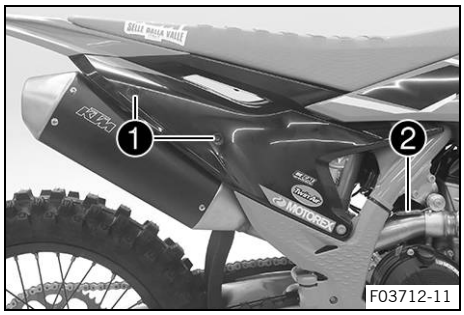



– Detach spring ❶.

| Spring hook (50305017000C1) |
|---|

– Remove screws ❷ with the washers and take off the main silencer.

## 11.31 Installing the main silencer




– Position the main silencer.
– Mount screws ❶ with washers, but do not tighten yet.
– Attach spring ❷.

| Spring hook (50305017000C1) |
|---|

– Tighten screws ❶.

Guideline

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

## 11.32 Changing the glass fiber yarn filling of the main silencer

**Warning**

**Danger of burns** The exhaust system gets hot when the vehicle is driven.

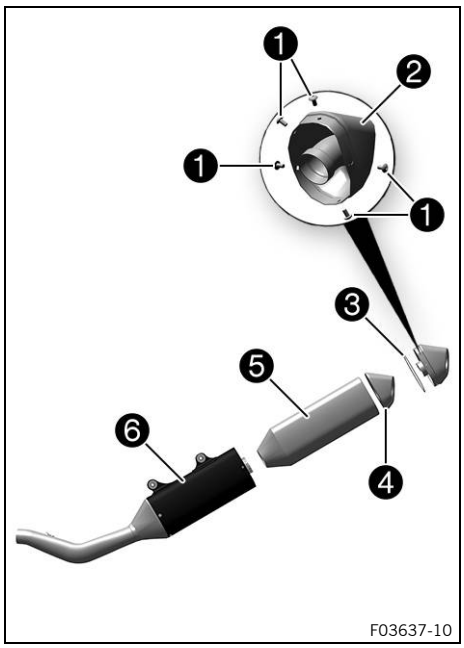
– Allow the exhaust system to cool down before performing any work on the vehicle.

**Info**

Over time, the fibers of the glass fiber yarn filling escape and the damper "burns" out.
Not only is the noise level higher, but the performance characteristics change.

**Preparatory work**

– Remove main silencer. (p. 67)




**Main work**

- Remove the screws ❶ on the main silencer.
- Take off silencer cap ❷ and O-ring ❸.
- Pull glass fiber yarn filling ❹ out of the silencer cap.
- Pull glass fiber yarn filling ❺ from the inner tube.
- Clean the parts that need to be reinstalled and check for damage.
- Mount new glass fiber yarn filling ❺ on the inner tube.
- Position new glass fiber yarn filling ❹ in the silencer cap.
- Insert O-ring and silencer cap into outer tube ❻.
- Mount and tighten screws ❶.

  Guideline

| | | |
|---|---|---|
| Screws on main silencer | M5 | 7 Nm (5.2 lbf ft) |

**Finishing work**

- Install the main silencer. (📖 p. 67)

## 11.33 Removing the fuel tank

**Danger**

**Fire hazard** Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

- Do not fuel the vehicle in the vicinity of open flames or lit cigarettes.
- Switch off the engine for refueling.
- Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
- If any fuel is spilled, wipe it off immediately.
- Observe the specifications for refueling.

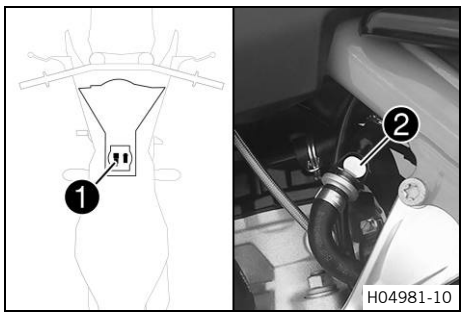
**Warning**

**Danger of poisoning** Fuel is harmful to health.

- Avoid skin, eye and clothing contact with fuel.
- Immediately consult a doctor if you swallow fuel.
- Do not inhale fuel vapors.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
- Change your clothing if fuel spills on them.
- Keep fuels correctly in a suitable canister, and out of the reach of children.

**Preparatory work**

- Remove the seat. (📖 p. 61)

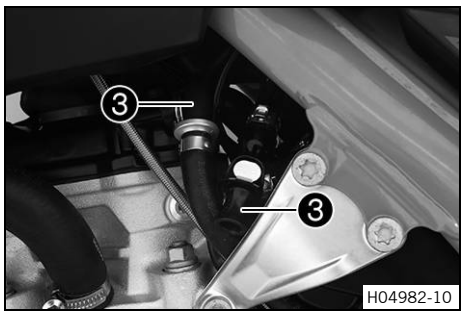



**Main work**

– Unplug fuel pump connector ❶.

– Clean quick release coupling ❷ thoroughly with compressed air.

**Info**
Under no circumstances should dirt enter into the fuel line. Dirt in the fuel line clogs the injection valve!



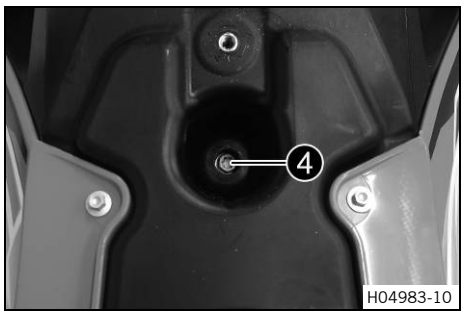

– Disconnect the quick release coupling.

**Info**
Remaining fuel may flow out of the fuel hose.

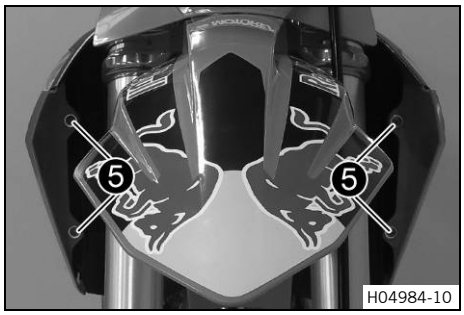
– Mount wash cap set ❸.

| Wash cap set (81212016100) |
|---|

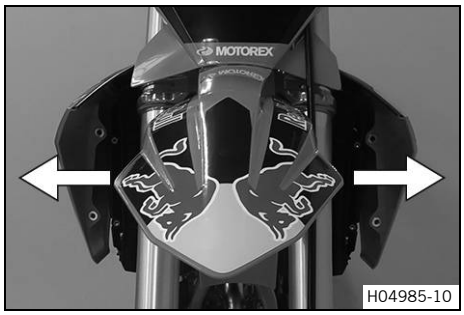
– Pull the fuel tank breather hose off the fuel tank lid.




– Remove screw ❹ with the rubber bushing.




– Remove screws ❺ with the collar bushings.




– Pull both spoilers laterally off the radiator and lift off the fuel tank.

## 11.34 Installing the fuel tank

**Danger**

**Fire hazard** Fuel is highly flammable.

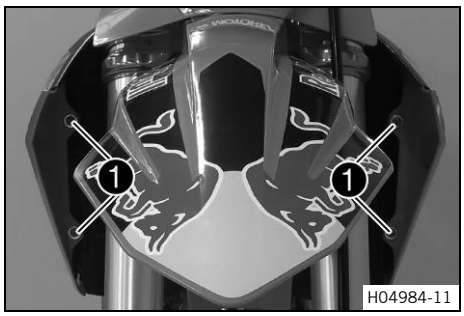
The fuel in the fuel tank expands when warm and can escape if overfilled.

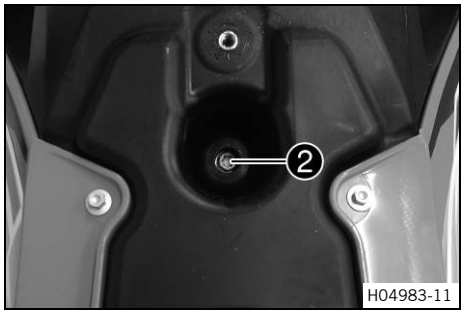
- Do not fuel the vehicle in the vicinity of open flames or lit cigarettes.
- Switch off the engine for refueling.
- Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
- If any fuel is spilled, wipe it off immediately.
- Observe the specifications for refueling.

**Warning**

**Danger of poisoning** Fuel is harmful to health.

- Avoid skin, eye and clothing contact with fuel.
- Immediately consult a doctor if you swallow fuel.
- Do not inhale fuel vapors.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
- Change your clothing if fuel spills on them.




**Main work**

- Check the throttle cable routing. (p. 76)
- Position the fuel tank and fit the two spoilers laterally to the radiator.
- Make sure that no cables or throttle cables are trapped or damaged.
- Attach the fuel tank breather hose to the fuel tank lid.
- Mount and tighten screws ❶ with the collar bushings.

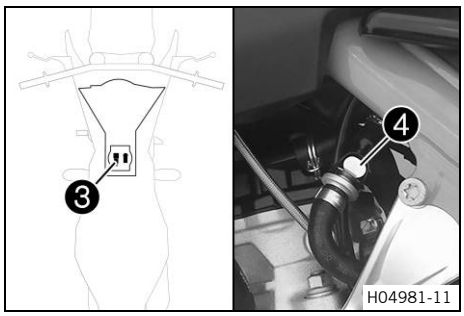
  Guideline

| | | |
|---|---|---|
| Screw, fuel tank spoiler on radiator | M6 | 6 Nm (4.4 lbf ft) |

- Mount and tighten screw ❷ with the rubber bushing.

  Guideline

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




– Plug in fuel pump connector ❸.
– Remove the wash cap set. Clean the quick release coupling thoroughly with compressed air.

**Info**
Under no circumstances should dirt enter into the fuel line. Dirt in the fuel line clogs the injection valve!

– Spray silicone spray onto a lint-free cleaning cloth and lightly lubricate the O-ring of the quick-release coupling.

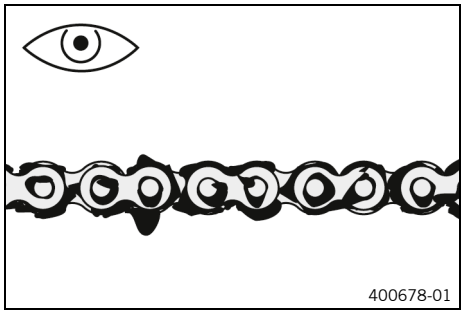
| Silicone spray (📖 p. 141) |
|---|

– Join quick release coupling ❹.

**Info**
Route the cable and fuel line at a safe distance from the exhaust system.

**Finishing work**
– Mount the seat. (📖 p. 62)

## 11.35 Checking for chain dirt accumulation




– Check the chain for coarse dirt accumulation.
  » If the chain is very dirty:
    – Clean the chain. (📖 p. 71)

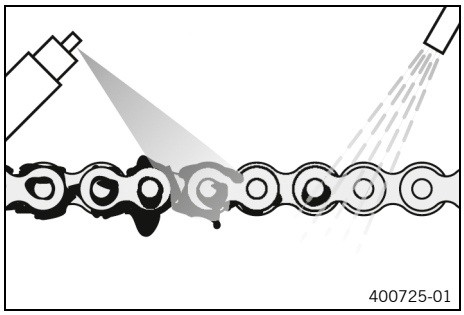
## 11.36 Cleaning the chain

**Warning**
**Danger of accidents** Lubricants on the tires reduces the road grip.
– Remove lubricants from the tires using a suitable cleaning agent.

**Warning**
**Danger of accidents** Oil or grease on the brake discs reduces the braking effect.
– Always keep the brake discs free of oil and grease.
– Clean the brake discs with brake cleaner when necessary.

**Note**
**Environmental hazard** Hazardous substances cause environmental damage.
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

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




**Preparatory work**

– Raise the motorcycle with a lift stand. (p. 47)

**Main work**

– Rinse off loose dirt with a soft jet of water.
– Remove old grease residue with chain cleaner.

| Chain cleaner (p. 140) |
|---|

– After drying, apply chain spray.

| Off-road chain spray (p. 140) |
|---|

**Finishing work**

– Remove the motorcycle from the lift stand. (p. 47)

## 11.37 Checking the chain tension

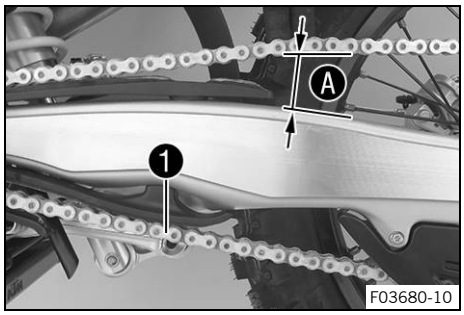
**Warning**

**Danger of accidents** Incorrect chain tension damages components and results in accidents.

If the chain is tensioned too much, the chain, engine sprocket, rear sprocket, transmission and rear wheel bearings wear more quickly. Some components may break if overloaded.

If the chain is too loose, the chain may fall off the engine sprocket or the rear sprocket. As a result, the rear wheel locks or the engine will be damaged.

– Check the chain tension regularly.
– Set the chain tension in accordance with the specification.




**Preparatory work**

– Raise the motorcycle with a lift stand. (p. 47)

**Main work**

– Pull the chain at the end of the chain sliding piece upward to measure chain tension Ⓐ.

**Info**

Lower chain section ❶ must be taut.
Chain wear is not always even, so you should repeat this measurement at different chain positions.

| | |
|---|---|
| Chain tension | 58 … 61 mm (2.28 … 2.4 in) |

» If the chain tension does not meet the specification:
– Adjust the chain tension. (p. 73)

**Finishing work**

– Remove the motorcycle from the lift stand. (p. 47)

## 11.38 Adjusting the chain tension

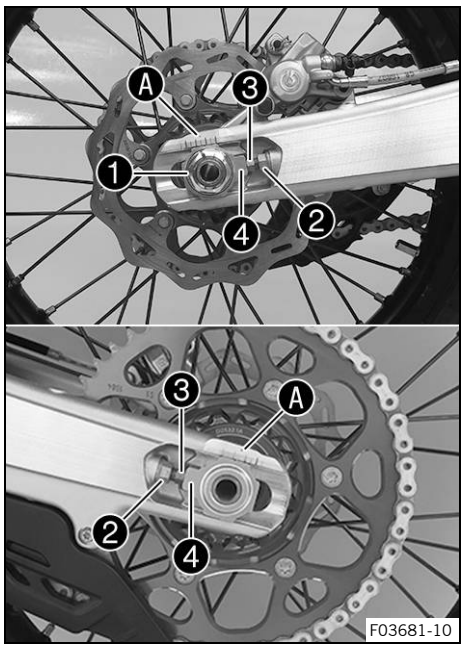
**Warning**

**Danger of accidents** Incorrect chain tension damages components and results in accidents.

If the chain is tensioned too much, the chain, engine sprocket, rear sprocket, transmission and rear wheel bearings wear more quickly. Some components may break if overloaded.

If the chain is too loose, the chain may fall off the engine sprocket or the rear sprocket. As a result, the rear wheel locks or the engine will be damaged.

- Check the chain tension regularly.
- Set the chain tension in accordance with the specification.




**Preparatory work**

- Raise the motorcycle with a lift stand. (p. 47)
- Check the chain tension. (p. 72)

**Main work**

- Loosen nut ❶.
- Loosen nuts ❷.
- Adjust the chain tension by turning adjusting screws ❸ left and right.

  Guideline

| | |
|---|---|
| Chain tension | 58 … 61 mm (2.28 … 2.4 in) |
| Turn adjusting screws ❸ on the left and right so that the markings on the left and right chain adjusters are in the same position relative to reference marks Ⓐ. The rear wheel is then correctly aligned. | |

- Tighten nuts ❷.
- Make sure that chain adjusters ❹ are fitted correctly on adjusting screws ❸.
- Tighten nut ❶.

  Guideline

| | | |
|---|---|---|
| Nut, rear wheel spindle | M22x1.5 | 80 Nm (59 lbf ft) |

**Info**

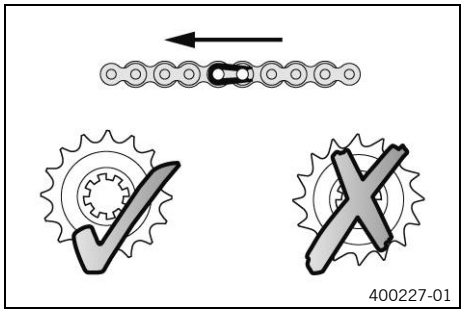
The wide adjustment range of the chain adjusters (32 mm (1.26 in)) enables different secondary ratios with the same chain length.

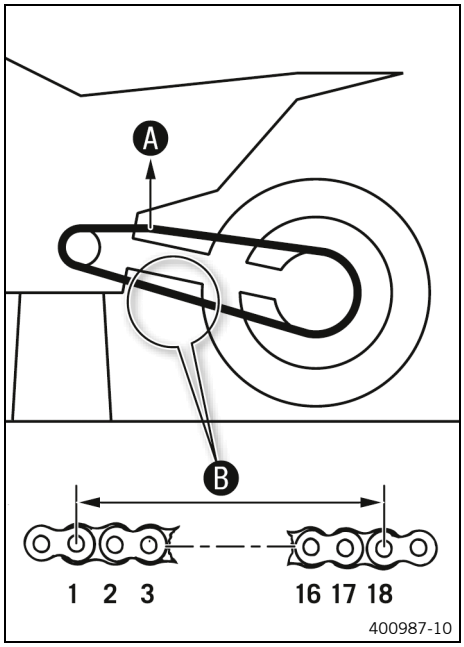
Chain adjusters ❹ can be turned by 180°.

**Finishing work**

- Remove the motorcycle from the lift stand. (p. 47)

## 11.39 Checking the chain, rear sprocket, engine sprocket, and chain guide




**Preparatory work**

– Raise the motorcycle with a lift stand. (📖 p. 47)

**Main work**

– Shift the transmission into neutral.
– Check the chain, rear sprocket and engine sprocket for wear.
  » If the chain, rear sprocket or engine sprocket is worn:
    – Change the drivetrain kit. 🔧

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

– Pull on the top section of the chain with the specified weight Ⓐ.

  Guideline

| | |
|---|---|
| Weight, chain wear measurement | 10 … 15 kg (22 … 33 lb.) |

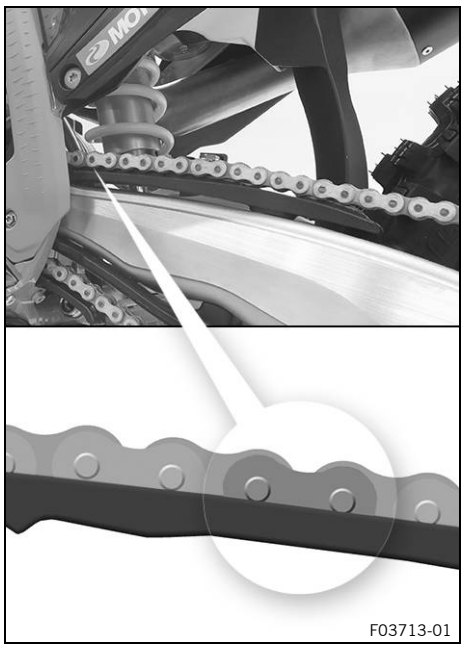
– Measure distance Ⓑ of 18 chain rollers in the lower chain section.

**Info**
Chain wear is not always even, so you should repeat this measurement at different chain positions.

| | |
|---|---|
| Maximum distance Ⓑ from 18 chain rollers at the longest chain section | 272 mm (10.71 in) |

  » If distance Ⓑ is greater than the specified measurement:
    – Change the drivetrain kit. 🔧

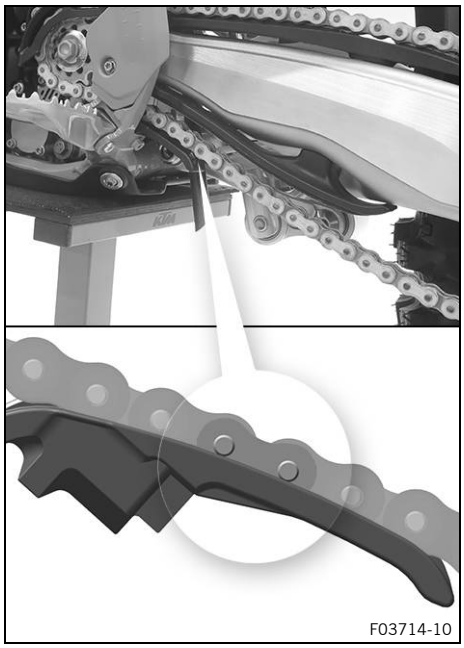
**Info**
When a new chain is mounted, the rear sprocket and the engine sprocket should also be changed.
New chains wear out faster on an old, worn rear sprocket or engine sprocket.


F03713-01

– Check the chain sliding guard for wear.
  » If the lower edge of the chain pins is in line with, or below, the chain sliding guard:
    – Change the chain sliding guard.
– Check that the chain sliding guard is firmly seated.
  » If the chain sliding guard is loose:
    – Tighten screws on the chain sliding guard.

    Guideline

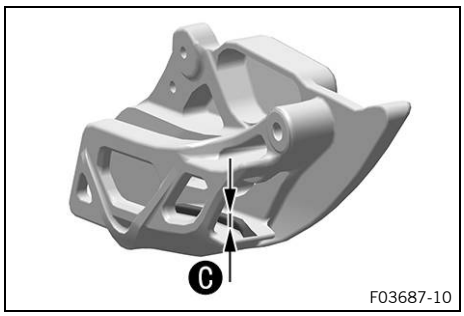
| | | |
|---|---|---|
| Screw, chain sliding guard on link fork | M6 | 6 Nm (4.4 lbf ft) |


F03714-10

– Check the chain sliding piece for wear.
  » If the lower edge of the chain pins is in line with or below the chain sliding piece:
    – Change the chain sliding piece.
– Check that the chain sliding piece is firmly seated.
  » If the chain sliding piece is loose:
    – Tighten screw on the chain sliding piece.

    Guideline

| | | |
|---|---|---|
| Screw, chain sliding piece | M8 | 15 Nm (11.1 lbf ft) |



F03687-10

– Check the chain guide with a slide gage for dimension C.

| | |
|---|---|
| Minimum thickness C of the chain guide | 6 mm (0.24 in) |

  » If the measured value is less than the specified value:
    – Change the chain guide.


F03682-01

– Check that the chain guide is firmly seated.
  » If the chain guide is loose:
    – Tighten the screws on the chain guide.

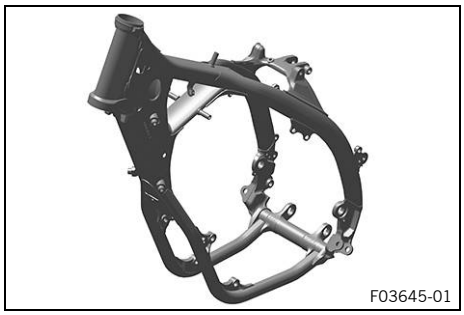
    Guideline

| | | |
|---|---|---|
| Screw, chain guide on link fork at the rear | M6x16 | 10 Nm (7.4 lbf ft) |
| Screw, chain guide on link fork at the front | M6x45 | 10 Nm (7.4 lbf ft) |

**Finishing work**

– Remove the motorcycle from the lift stand. (📖 p. 47)

## 11.40 Checking the frame

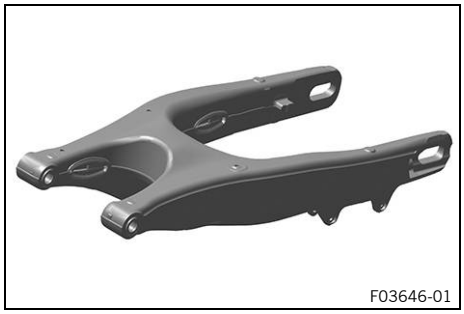

F03645-01

– Check the frame for damage, cracks, and deformation.
  » If the frame shows signs of damage, cracks, or deformation:
    – Change the frame.

    Guideline

    Repairs on the frame are not permitted.

## 11.41 Checking the link fork


F03646-01

– Check the link fork for damage, cracks, and deformation.
  » If the link fork shows signs of damage, cracks, or deformation:
    – Change the link fork.

    Guideline

    Repairs on the link fork are not permitted.

## 11.42 Checking the throttle cable routing

**Warning**

**Danger of accidents** The throttle cable can become kinked, trapped or blocked if it is not routed correctly.

If the throttle cable is kinked, trapped or blocked, the speed can no longer be controlled.

– Make sure that the throttle cable routing and the play in throttle cable complies with the specification.

**Preparatory work**

– Remove the seat. (📖 p. 61)
– Remove the fuel tank. (📖 p. 68)




**Main work**

– Check the throttle cable routing.

| |
|---|
| Both throttle cables must be routed, side by side, on the back of the handlebars and above the fuel tank bracket, to the throttle valve body. Both throttle cables must be secured behind the rubber strap of the fuel tank support. |

» If the throttle cable is not routed as specified:

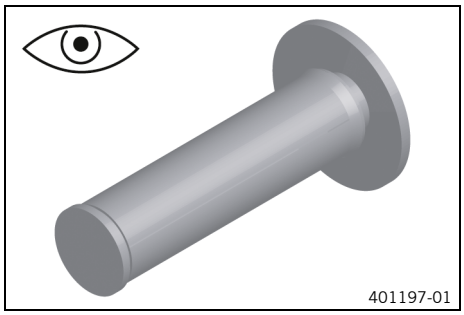
– Correct the throttle cable routing.

**Finishing work**

– Install the fuel tank. (p. 70)

– Mount the seat. (p. 62)

## 11.43 Checking the rubber grips




– Check the rubber grips on the handlebar for damage, wear, and looseness.

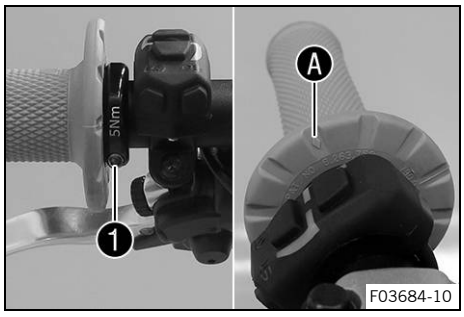
**Info**

The rubber grips are vulcanized onto a sleeve on the left and onto the handle tube of the throttle grip on the right. The left sleeve is clamped onto the handlebar.

The rubber grip can only be replaced with the sleeve or the throttle tube.

» If a rubber grip is damaged or worn:

– Change the rubber grip.




– Check that screw 1 is firmly seated.

Guideline

| | | |
|---|---|---|
| Screw, fixed grip | M4 | 5 Nm (3.7 lbf ft)<br>**Loctite®243™** |

| |
|---|
| Diamond A must be positioned visibly as shown in the figure. |

## 11.44 Programming the quickshifter

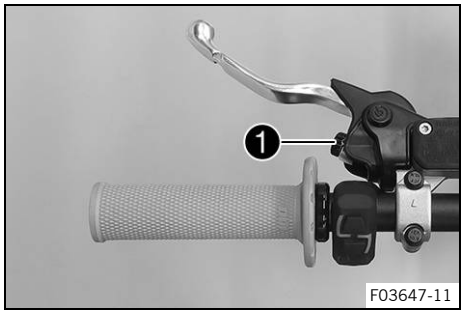
**Info**
If the shifting performance of the quickshifter starts to decrease, it must be reprogrammed.




– Carry out start procedure. (📖 p. 25)
– Press and hold the QS button ❶ for at least 10 seconds.
  ✔ The QS indicator lamp flashes.
– Pull the clutch lever, engage first-gear and hold the shift lever all the way down.
– Briefly press the QS button ❶.
  ✔ The QS indicator lamp lights up blue, the teaching procedure was successful.

**Info**
If the quickshifter cannot be activated, the teaching procedure was unsuccessful and must be repeated.

## 11.45 Adjusting the basic position of the clutch lever



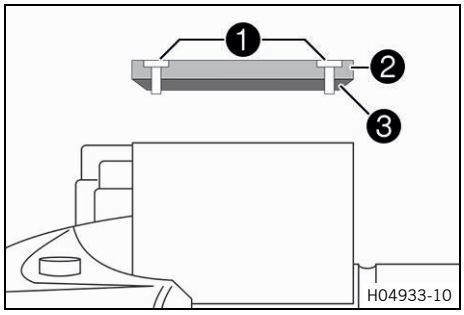

– Adjust the basic position of the clutch lever to your hand size by turning adjusting screw ❶.

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

## 11.46 Checking/correcting the fluid level of hydraulic clutch

**Warning**
**Skin irritation** Brake fluid is a harmful substance.
– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes or clothing.
– Consult a doctor immediately if brake fluid has been swallowed.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

**Info**
The fluid level rises with increasing wear of the clutch facing discs.
Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.




– Move the hydraulic clutch fluid reservoir mounted on the handlebar into a horizontal position.
– Remove screws ❶.
– Take off cover ❷ with membrane ❸.
– Check the fluid level.

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

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

Brake fluid DOT 4 / DOT 5.1 (📖 p. 138)

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

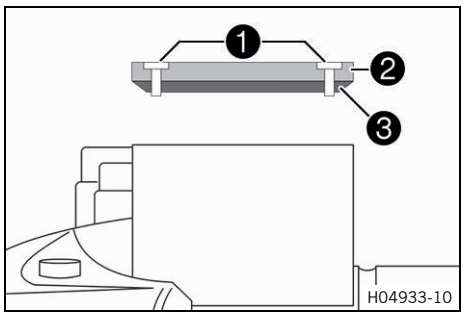
**Info**
Use water to immediately clean up any brake fluid that has overflowed or spilled.

## 11.47 Changing the hydraulic clutch fluid

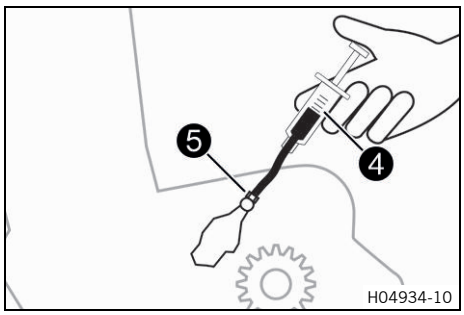
**Warning**
**Skin irritation** Brake fluid is a harmful substance.
– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes or clothing.
– Consult a doctor immediately if brake fluid has been swallowed.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

**Note**
**Environmental hazard** Hazardous substances cause environmental damage.
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Info**
The fluid level rises with increasing wear of the clutch facing discs.
Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.




– Move the hydraulic clutch fluid reservoir mounted on the handlebar into a horizontal position.
– Remove screws ❶.
– Take off cover ❷ with membrane ❸.

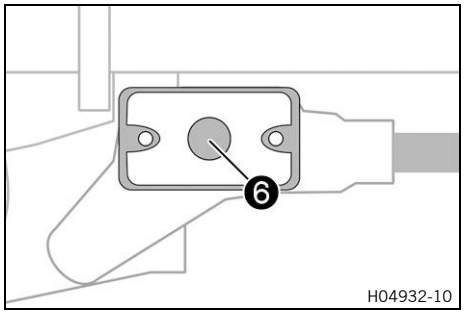



– Fill bleeding syringe ❹ with the appropriate hydraulic fluid.

| |
|---|
| Syringe (50329050000) |
| Brake fluid DOT 4 / DOT 5.1 (📖 p. 138) |

– On the clutch slave cylinder, remove the protection cap and mount bleeding syringe ❹ with an appropriate hose piece on bleeder screw ❺.
– Only loosen bleeder screw ❺ on the clutch slave cylinder until filling is possible.

**Info**
Use water to immediately clean up any brake fluid that has overflowed or spilled.
Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.
Only use clean brake fluid from a sealed container.




– Now press the fluid into the system until it emerges from hole ❻ of the master cylinder without bubbles.
– Occasionally extract the fluid from the master cylinder reservoir to prevent overflowing.
– Tighten the bleeder screw and remove the bleeding syringe with the hose. Mount the protection cap.
– Correct the fluid level of the hydraulic clutch.

Guideline

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

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

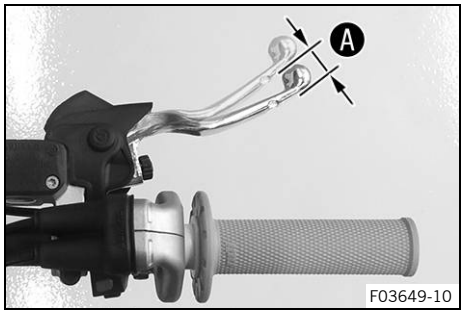
## 12.1 Checking the free travel of the hand brake lever

**Warning**

**Danger of accidents** The brake system fails in the event of overheating.

If there is no free travel on the hand brake lever, pressure builds up on the front brake circuit.

– Set the free travel on the hand brake lever in accordance with the specification.




– Push the hand brake lever forward and check free travel Ⓐ.

| | |
|---|---|
| Free travel of hand brake lever | ≥ 3 mm (≥ 0.12 in) |

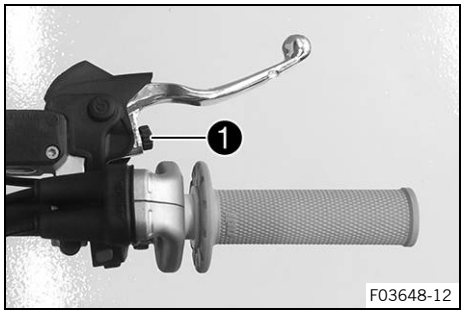
» If the free travel does not match the specification:

– Adjust the basic position of the hand brake lever. (📖 p. 81)

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

**Preparatory work**

– Check the free travel of the hand brake lever. (📖 p. 81)




**Main work**

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

**Info**

Turn the adjusting screw clockwise to increase the distance between the hand brake lever and the handlebar.

Turn the adjusting screw counterclockwise to decrease the distance between the hand brake lever and the handlebar.

The range of adjustment is limited.

Only turn the adjusting screw by hand, and do not use force.

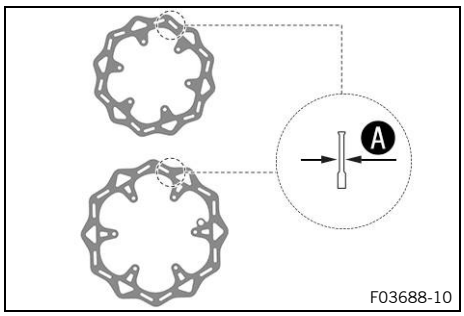
Do not make any adjustments while riding.

## 12.3 Checking the brake discs

**Warning**

**Danger of accidents** Worn-out brake discs reduce the braking effect.

– Make sure that worn-out brake discs are replaced immediately. (Your authorized KTM workshop will be glad to help.)




– Check the front and rear brake disc thickness at multiple points for the dimension A.

**Info**
Wear reduces the thickness of the brake disc around the contact surface of the brake linings.

| Brake discs - wear limit | |
|---|---|
| front | 2.5 mm (0.098 in) |
| rear | 3.5 mm (0.138 in) |

» If the brake disc thickness is less than the specification:
  – Change the front brake disc.
  – Change the rear brake disc.

– Check the front and rear brake discs for damage, cracking, and deformation.
  » If the brake disc exhibits damage, cracking, or deformation:
    – Change the front brake disc.
    – Change the rear brake disc.

## 12.4 Checking the front brake fluid level

**Warning**
**Danger of accidents** An insufficient brake fluid level will cause the brake system to fail.

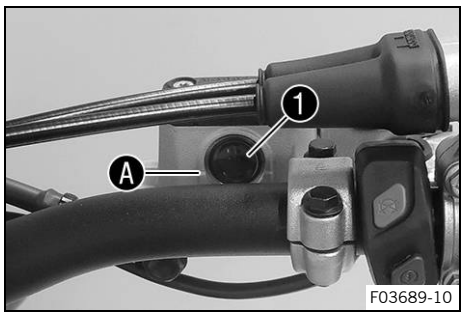
If the brake fluid level drops below the specified marking or the specified value, the brake system is leaking or the brake linings are worn down.

– Check the brake system and do not continue riding until the problem is eliminated. (Your authorized KTM workshop will be glad to help.)

**Warning**
**Danger of accidents** Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule. (Your authorized KTM workshop will be glad to help.)
– Make sure that only clean, approved brake fluid from a tightly sealed container is used. (Your authorized KTM workshop will be glad to help.)

**Preparatory work**
– Check that the brake linings of the front brake are secured. (p. 84)




**Main work**
– Move the brake reservoir mounted on the handlebar to a horizontal position.
– Check the brake fluid level in level viewer 1.
  » If the brake fluid level has dropped below the marking A:
    – Add front brake fluid. (p. 83)

## 12.5 Adding front brake fluid

**Warning**

**Danger of accidents** An insufficient brake fluid level will cause the brake system to fail.

If the brake fluid level drops below the specified marking or the specified value, the brake system is leaking or the brake linings are worn down.

– Check the brake system and do not continue riding until the problem is eliminated. (Your authorized KTM workshop will be glad to help.)

**Warning**

**Skin irritation** Brake fluid is a harmful substance.

– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes or clothing.
– Consult a doctor immediately if brake fluid has been swallowed.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

**Warning**

**Danger of accidents** Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule. (Your authorized KTM workshop will be glad to help.)
– Make sure that only clean, approved brake fluid from a tightly sealed container is used. (Your authorized KTM workshop will be glad to help.)

**Note**

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

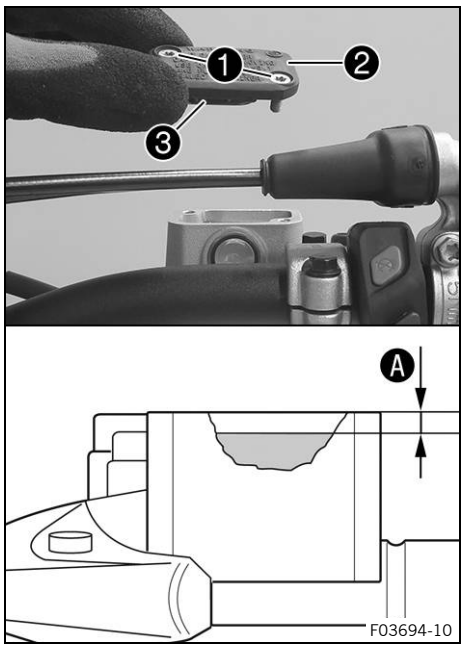
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Info**

Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.

**Preparatory work**

– Check that the brake linings of the front brake are secured. (📖 p. 84)




**Main work**

– Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
– Remove screws ❶.
– Take off cover ❷ with membrane ❸.
– Add brake fluid to level Ⓐ.

Guideline

| | |
|---|---|
| Level Ⓐ (brake fluid level below reservoir rim) | 5 mm (0.2 in) |

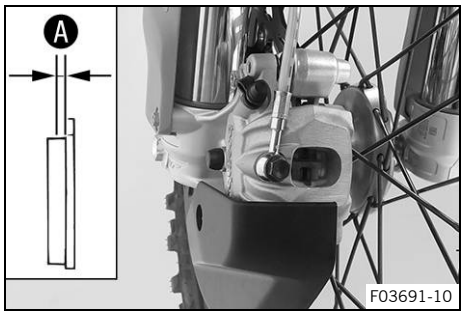
| |
|---|
| Brake fluid DOT 4 / DOT 5.1 (📖 p. 138) |

– Position cover ❷ with membrane ❸. Mount and tighten screws ❶.

**Info**
Use water to immediately clean up any brake fluid that has overflowed or spilled.

## 12.6 Checking that the brake linings of the front brake are secured

**Warning**
**Danger of accidents** Worn-out brake linings reduce the braking effect.
– Ensure that worn-out brake linings are replaced immediately. (Your authorized KTM workshop will be glad to help.)




– Check the brake linings for lining thickness Ⓐ.

| | |
|---|---|
| Minimum thickness Ⓐ | ≥ 1 mm (≥ 0.04 in) |

» If it is less than the minimum thickness:
– Change the brake linings of the front brake. 🔧 (📖 p. 85)
– Check the brake linings for damage and cracking.
» If there is damage or cracking:
– Change the brake linings of the front brake. 🔧 (📖 p. 85)
– Check that the brake linings are secured.
» If the brake linings are not secured correctly:
– Secure brake linings, replace with new parts if necessary.

## 12.7 Changing the brake linings of the front brake

**Warning**

**Danger of accidents** Incorrect servicing will cause the brake system to fail.

– Ensure that service work and repairs are performed professionally. (Your authorized KTM workshop will be glad to help.)

**Warning**

**Skin irritation** Brake fluid is a harmful substance.

– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes or clothing.
– Consult a doctor immediately if brake fluid has been swallowed.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

**Warning**

**Danger of accidents** Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule. (Your authorized KTM workshop will be glad to help.)
– Make sure that only clean, approved brake fluid from a tightly sealed container is used. (Your authorized KTM workshop will be glad to help.)

**Warning**

**Danger of accidents** Oil or grease on the brake discs reduces the braking effect.

– Always keep the brake discs free of oil and grease.
– Clean the brake discs with brake cleaner when necessary.

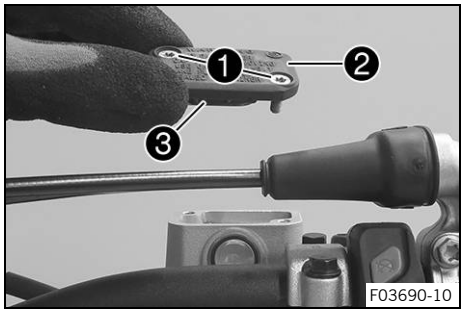
**Note**

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

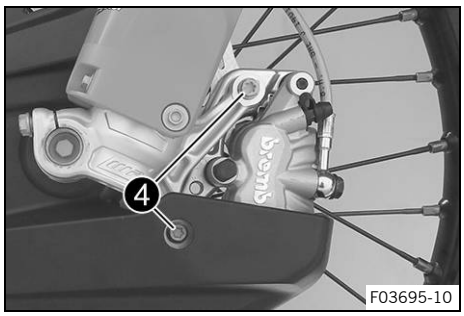
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Info**

Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.

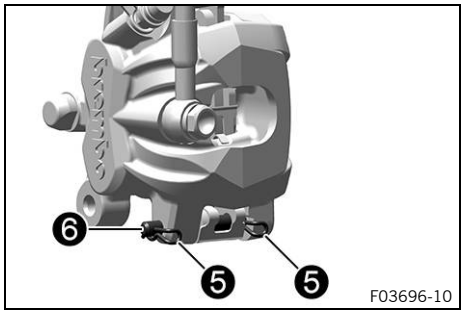



– Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
– Remove screws ❶.
– Take off cover ❷ with membrane ❸.

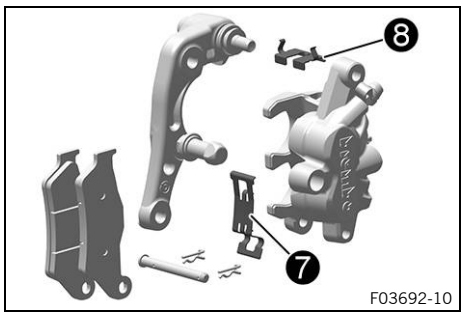



– Remove screws ❹.
– Press back the brake linings by slightly tilting the brake caliper laterally on the brake disc. Carefully pull the brake caliper up and off the brake disc.
– Press the brake piston back into the basic position and ensure that brake fluid does not flow out of the brake fluid reservoir; extract some if necessary.

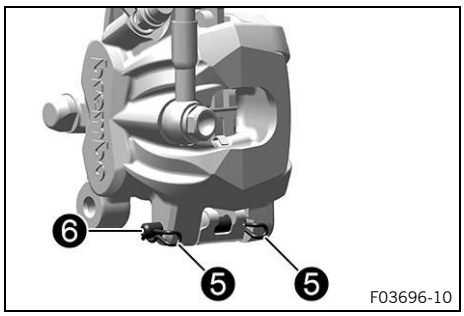
**Info**
Do not operate the hand brake lever if the brake caliper has been removed.




– Remove cotter pins ❺, pull out pin ❻, and remove the brake linings.
– Clean the brake caliper and the brake caliper bracket.

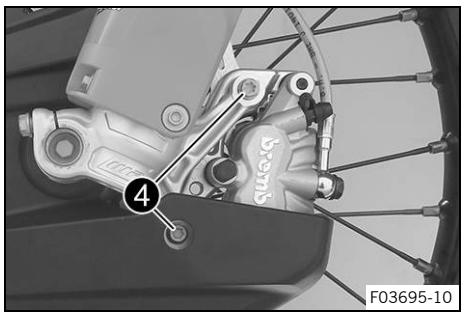



– Check that spring plate ❼ in the brake caliper and brake pad sliding plate ❽ in the brake caliper bracket are seated correctly.




– Insert the new brake linings, insert pin ❻, and mount cotter pins ❺.

**Info**
Always change the brake linings in pairs.
To make it easier to mount the pin, push the brake linings against the retainer spring.
Make sure the brake linings and retainer spring are seated correctly.

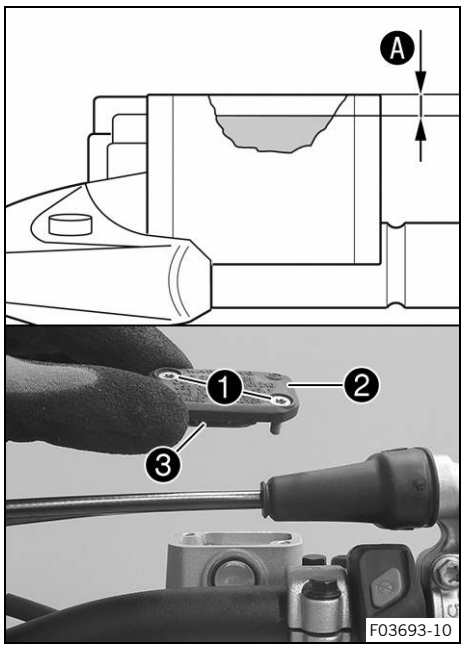



– Position the brake caliper.
– Mount and tighten screws ❹.

Guideline

| | | |
|---|---|---|
| Screw, front brake caliper | M8 | 25 Nm (18.4 lbf ft)<br>**Loctite®243™** |

– Operate the hand brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.




– Add brake fluid up to level Ⓐ.

Guideline

| | |
|---|---|
| Level Ⓐ (brake fluid level below reservoir rim) | 5 mm (0.2 in) |

| |
|---|
| Brake fluid DOT 4 / DOT 5.1 (📖 p. 138) |

– Position cover ❷ with membrane ❸.
– Mount and tighten screws ❶.

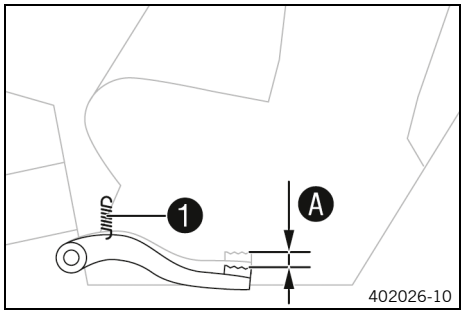
**Info**
Use water to immediately clean up any brake fluid that has overflowed or spilled.

## 12.8 Checking the free travel of foot brake lever

**Warning**
**Danger of accidents** The brake system will fail if it overheats or is adjusted incorrectly.

If there is no free travel on the foot brake lever, pressure builds up in the brake system on the rear brake.

– Set the free travel on the foot brake lever in accordance with the specification.
– Ensure that the adjustment steps are performed properly. (Your authorized KTM workshop will be glad to help.)




– Disconnect spring ❶.
– 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 Ⓐ.

Guideline

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

» If the free travel does not meet specifications:
– Adjust the basic position of the foot brake lever. 🔧 (📖 p. 88)

– Reconnect spring ❶.

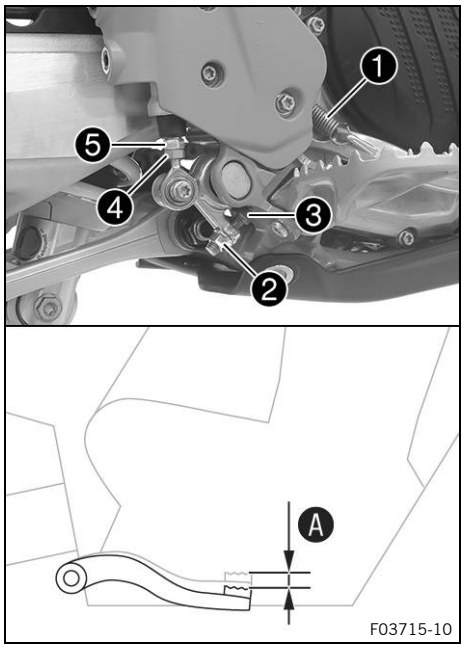
## 12.9 Adjusting the basic position of the foot brake lever

**Warning**

**Danger of accidents** The brake system will fail if it overheats or is adjusted incorrectly.

If there is no free travel on the foot brake lever, pressure builds up in the brake system on the rear brake.

– Set the free travel on the foot brake lever in accordance with the specification.
– Ensure that the adjustment steps are performed properly. (Your authorized KTM workshop will be glad to help.)




– Detach spring ❶.
– Loosen nut ❹ and, with push rod ❺, turn it back until you have maximum free travel.
– To adjust the basic position of the foot brake lever to individual requirements, loosen nut ❷ and turn screw ❸ accordingly.

**Info**
The range of adjustment is limited.

– Turn push rod ❺ accordingly until you have free travel Ⓐ. 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 push rod ❺ and tighten nut ❹.

Guideline

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

– Hold screw ❸ and tighten nut ❷.

Guideline

| | | |
|---|---|---|
| Brake lever stop nut | M8 | 20 Nm (14.8 lbf ft) |

– Attach spring ❶.

## 12.10 Checking the rear brake fluid level

**Warning**

**Danger of accidents** An insufficient brake fluid level will cause the brake system to fail.

If the brake fluid level drops below the specified marking or the specified value, the brake system is leaking or the brake linings are worn down.

– Check the brake system and do not continue riding until the problem is eliminated. (Your authorized KTM workshop will be glad to help.)

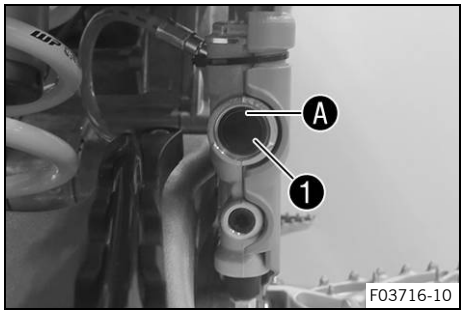
**Warning**

**Danger of accidents** Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule. (Your authorized KTM workshop will be glad to help.)
– Make sure that only clean, approved brake fluid from a tightly sealed container is used. (Your authorized KTM workshop will be glad to help.)

**Preparatory work**

– Check that the brake linings of the rear brake are secured. (p. 91)




**Main work**

– Stand the vehicle upright.
– Check the brake fluid level in level viewer 1.
  » If the brake fluid has dropped below marking A:
    – Add rear brake fluid. (p. 89)

## 12.11 Adding rear brake fluid

**Warning**

**Danger of accidents** An insufficient brake fluid level will cause the brake system to fail.

If the brake fluid level drops below the specified marking or the specified value, the brake system is leaking or the brake linings are worn down.

– Check the brake system and do not continue riding until the problem is eliminated. (Your authorized KTM workshop will be glad to help.)

**Warning**

**Skin irritation** Brake fluid is a harmful substance.

– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes or clothing.
– Consult a doctor immediately if brake fluid has been swallowed.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

**Warning**

**Danger of accidents** Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule. (Your authorized KTM workshop will be glad to help.)
– Make sure that only clean, approved brake fluid from a tightly sealed container is used. (Your authorized KTM workshop will be glad to help.)

**Note**

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

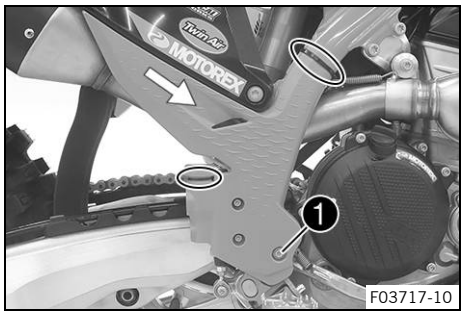
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Info**

Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.

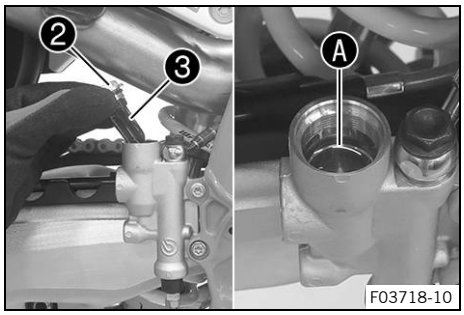
**Preparatory work**

– Check that the brake linings of the rear brake are secured. (p. 91)




**Main work**

– Remove the cable ties.
– Remove screw 1 with washer.
– Push the right frame protector to the front and take off at the bottom.



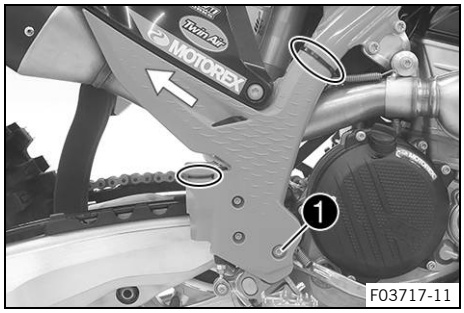

– Stand the vehicle upright.
– Remove screw cap 2 with membrane 3 and the O-ring.
– Add brake fluid up to the marking A.

| Brake fluid DOT 4 / DOT 5.1 (p. 138) |
|---|

– Mount and tighten the screw cap with the membrane and O-ring.

**Info**

Use water to immediately clean up any brake fluid that has overflowed or spilled.




– Insert the right frame protector from below and push it to the rear.
– Mount and tighten screw 1 with washer.

Guideline

| | | |
|---|---|---|
| Screw, frame protector | M5 | 3 Nm (2.2 lbf ft) |

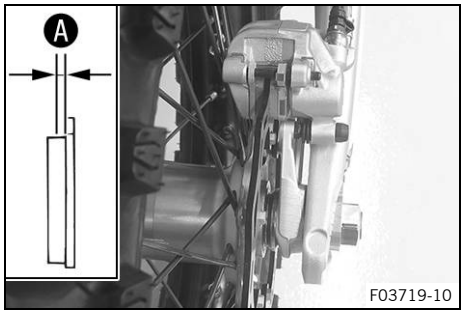
– Mount the new cable ties.

## 12.12 Checking that the brake linings of the rear brake are secured

**Warning**

**Danger of accidents** Worn-out brake linings reduce the braking effect.

– Ensure that worn-out brake linings are replaced immediately. (Your authorized KTM workshop will be glad to help.)




– Check the brake linings for lining thickness A.

| | |
|---|---|
| Minimum thickness A | ≥ 1 mm (≥ 0.04 in) |

» If it is less than the minimum thickness:
  – Change the rear brake linings. (p. 91)
– Check the brake linings for damage and cracking.
» If there is damage or cracking:
  – Change the rear brake linings. (p. 91)
– Check that the brake linings are secured.
» If the brake linings are not secured correctly:
  – Secure brake linings, replace with new parts if necessary.

## 12.13 Changing the rear brake linings

**Warning**

**Danger of accidents** Incorrect servicing will cause the brake system to fail.

– Ensure that service work and repairs are performed professionally. (Your authorized KTM workshop will be glad to help.)

**Warning**

**Skin irritation** Brake fluid is a harmful substance.

– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes or clothing.
– Consult a doctor immediately if brake fluid has been swallowed.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

**Warning**

**Danger of accidents** Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule. (Your authorized KTM workshop will be glad to help.)
– Make sure that only clean, approved brake fluid from a tightly sealed container is used. (Your authorized KTM workshop will be glad to help.)

**Warning**

**Danger of accidents** Oil or grease on the brake discs reduces the braking effect.

– Always keep the brake discs free of oil and grease.
– Clean the brake discs with brake cleaner when necessary.

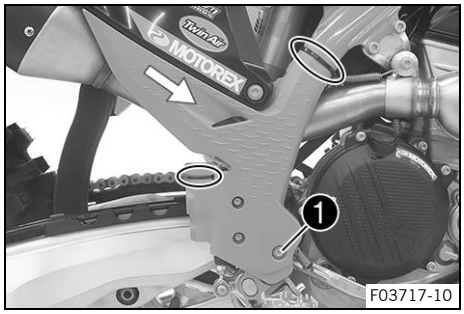
**Note**

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

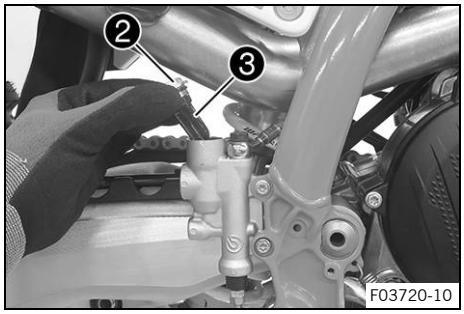
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Info**

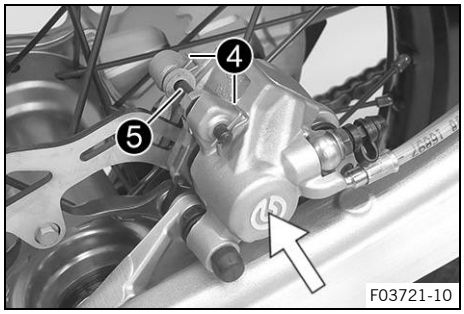
Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.




– Remove the cable ties.
– Remove screw ❶ with washer.
– Push the right frame protector to the front and take off at the bottom.




– Stand the vehicle upright.
– Remove screw cap ❷ with membrane ❸ and the O-ring.

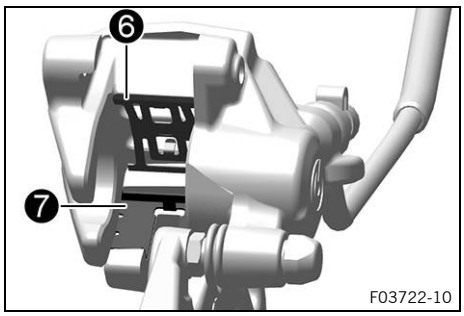



– Manually press the brake caliper toward the brake disc to push back the brake piston. Ensure that brake fluid does not flow out of the brake fluid reservoir; extract some if necessary.

**Info**

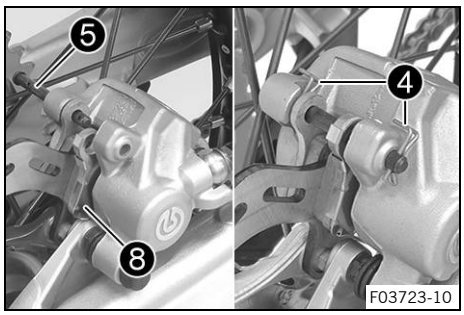
Make sure that you do not press the brake caliper against the spokes when pushing back the brake piston.

– Remove cotter pins ❹, pull out pin ❺, and remove the brake linings.
– Clean the brake caliper and the brake caliper bracket.




– Check that spring plate ❻ in the brake caliper and brake pad sliding plate ❼ in the brake caliper bracket are seated correctly.

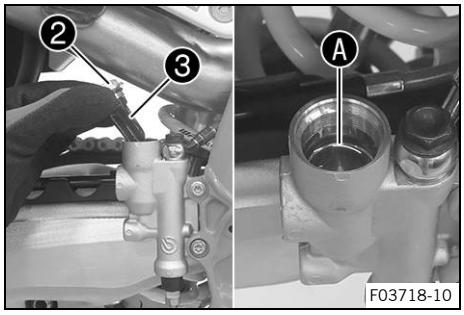
**Info**
The arrow on the spring plate points in the direction of rotation of the brake disc.




– Insert the new brake linings, insert pin ❺, and mount cotter pins ❹.

**Info**
Always change the brake linings in pairs.
Make sure that decoupling plate ❽ is mounted on the piston side brake lining.

– Operate the foot brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.

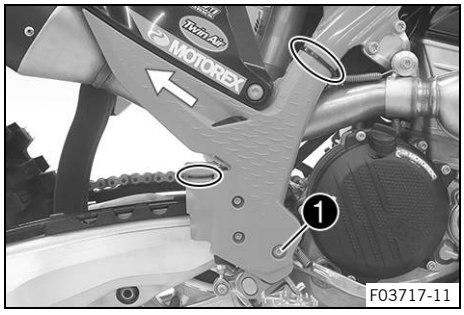



– Correct brake fluid level to marking Ⓐ.

| Brake fluid DOT 4 / DOT 5.1 (📖 p. 138) |
|---|

– Mount and tighten screw cap ❷ with membrane ❸ and the O-ring.

**Info**
Use water to immediately clean up any brake fluid that has overflowed or spilled.




– Insert the right frame protector from below and push it to the rear.

– Mount and tighten screw ❶ with washer.

Guideline

| | | |
|---|---|---|
| Screw, frame protector | M5 | 3 Nm (2.2 lbf ft) |

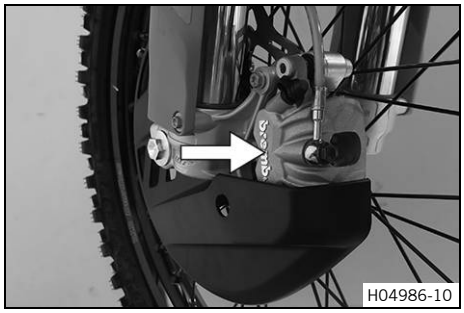
– Mount the new cable ties.

◆

## 13.1 Removing the front wheel

**Preparatory work**

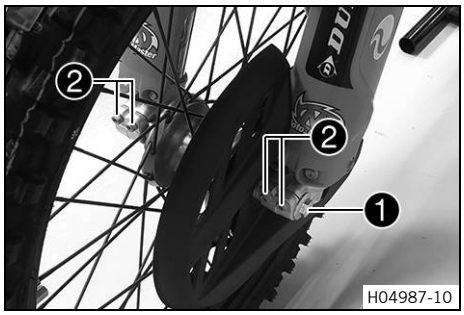
– Raise the motorcycle with a lift stand. (p. 47)


H04986-10

**Main work**

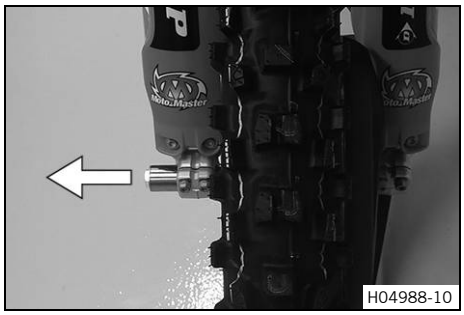
– Manually press the brake caliper toward the brake disc to push back the brake pistons.

**Info**
Make sure that you do not press the brake caliper against the spokes when pushing back the brake pistons.



H04987-10

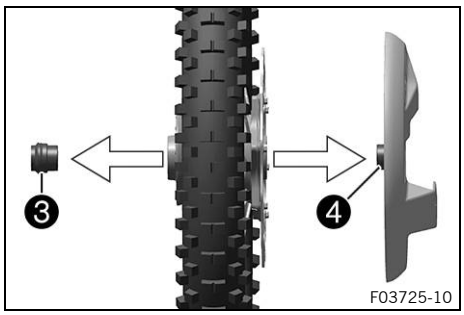
– Loosen screw ❶ by several rotations.
– Loosen screws ❷.
– Press on screw ❶ to push the wheel spindle out of the axle clamp.
– Remove screw ❶.


H04988-10

**Warning**
**Danger of accidents** Damaged brake discs reduce the braking effect.
– Always lay the wheel down in such a way that the brake disc is not damaged.

– Hold front wheel and remove wheel spindle. Take the front wheel out of the fork.

**Info**
Do not actuate the hand brake lever when the front wheel is removed.



F03725-10

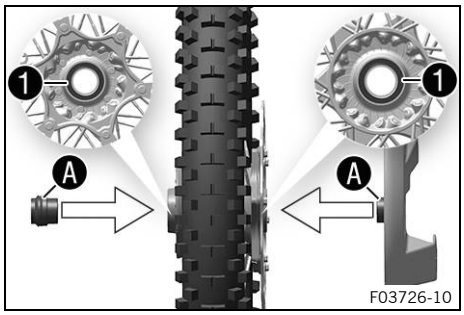
– Remove spacer ❸ and brake disc guard ❹.

## 13.2 Installing the front wheel

**Warning**

**Danger of accidents** Oil or grease on the brake discs reduces the braking effect.

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



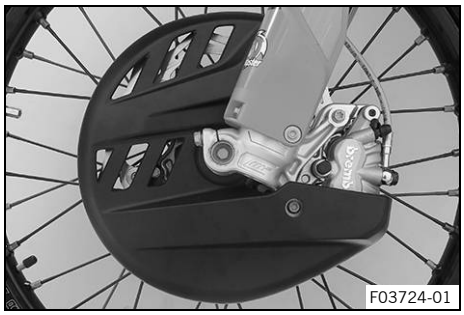

- Check the wheel bearing for damage and wear.
  - » If the wheel bearing is damaged or worn:
    - Change front wheel bearing.
- Clean and grease shaft seal rings ❶ and contact surfaces Ⓐ of the spacers.

| Long-life grease (📖 p. 140) |
|---|

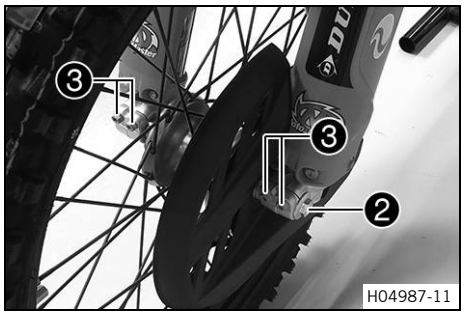
- Insert the spacer and brake disc guard.
- Clean and lightly grease the wheel spindle.

| Long-life grease (📖 p. 140) |
|---|

- Position the front wheel and insert the wheel spindle.
  - ✔ The brake linings are correctly positioned.




- Position the brake disc guard.




- Mount and tighten screw ❷.

  Guideline

| | | |
|---|---|---|
| Screw, front wheel spindle | M20x1.5 | 35 Nm (25.8 lbf ft) |

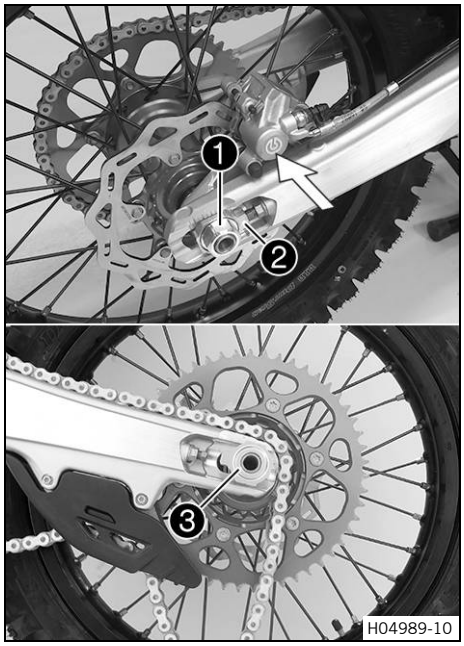
- Operate the hand brake lever several times until the brake linings are seated correctly against the brake disc.
- Remove the motorcycle from the lift stand. (📖 p. 47)
- Operate the front brake and compress the fork a few times firmly.
  - ✔ The fork legs straighten.
- Tighten screws ❸.

  Guideline

| | | |
|---|---|---|
| Screw, fork stub | M8 | 15 Nm (11.1 lbf ft) |

◀

## 13.3 Removing the rear wheel




**Preparatory work**

– Raise the motorcycle with a lift stand. (p. 47)

**Main work**

– Manually press the brake caliper toward the brake disc to push back the brake piston.

**Info**
Make sure that you do not press the brake caliper against the spokes when pushing back the brake piston.

– Remove nut ❶.

– Take off chain adjuster ❷. Pull out wheel spindle ❸ far enough to allow the rear wheel to be pushed forward.

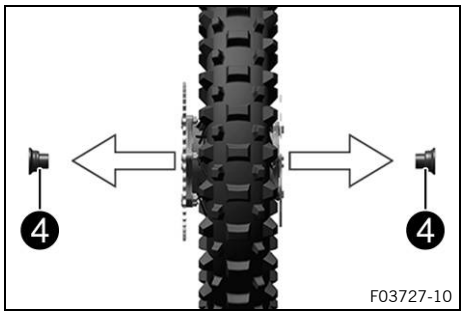
– Push the rear wheel forward as far as possible. Remove the chain from the rear sprocket.

**Info**
Cover the components to protect them against damage.

**Warning**
**Danger of accidents** Damaged brake discs reduce the braking effect.
– Always lay the wheel down in such a way that the brake disc is not damaged.

– Hold the rear wheel and remove the wheel spindle. Take the rear wheel out of the link fork.

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



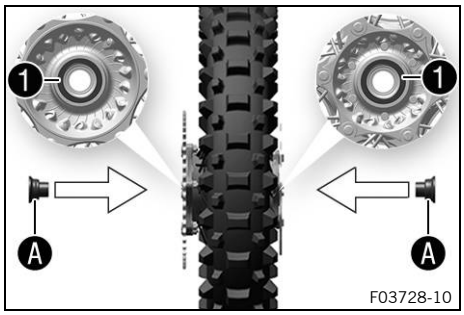

– Remove spacers ❹.

## 13.4 Installing the rear wheel

**Warning**

**Danger of accidents** Oil or grease on the brake discs reduces the braking effect.

– Always keep the brake discs free of oil and grease.
– Clean the brake discs with brake cleaner when necessary.

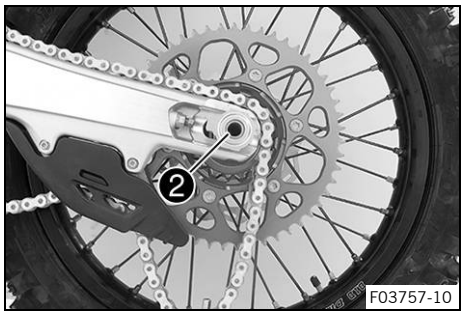



**Main work**

– Check the wheel bearing for damage and wear.
  » If the wheel bearing is damaged or worn:
    – Change the rear wheel bearing.
– Clean and grease shaft seal rings ❶ and contact surfaces Ⓐ of the spacers.

| Long-life grease (📖 p. 140) |
|---|

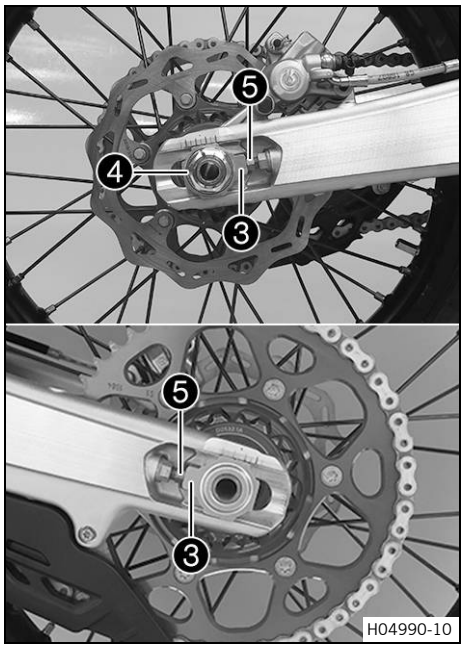
– Insert the spacers.




– Clean and grease the wheel spindle.

| Long-life grease (📖 p. 140) |
|---|

– Position rear wheel and insert wheel spindle ❷.
  ✔ The brake linings are correctly positioned.
– Mount the chain.




– Position chain adjuster ❸. Mount nut ❹, but do not tighten it yet.
– Make sure that chain adjusters ❸ are fitted correctly on adjusting screws ❺.
– Check the chain tension. (📖 p. 72)
– Tighten nut ❹.

Guideline

| | | |
|---|---|---|
| Nut, rear wheel spindle | M22x1.5 | 80 Nm (59 lbf ft) |

**Info**

The wide adjustment range of the chain adjusters (32 mm (1.26 in)) enables different secondary ratios with the same chain length.

Chain adjusters ❸ can be turned by 180°.

– Operate the foot brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.

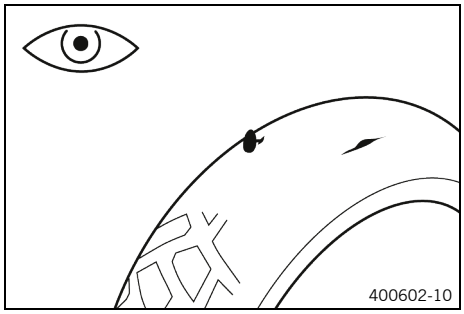
**Finishing work**

– Remove the motorcycle from the lift stand. (📖 p. 47)

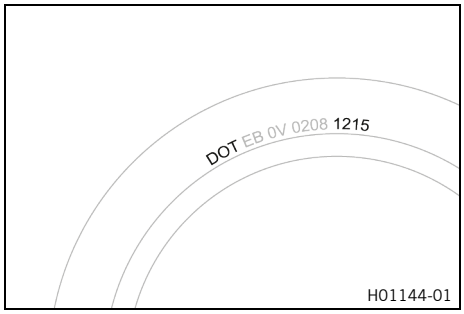
## 13.5 Checking the tire condition

**Info**
Only mount tires approved and/or recommended by KTM.
Other tires could have a negative effect on handling characteristics.
The type, condition, and pressure of the tires all have a major impact on the handling characteristic of the motorcycle.
The tires mounted on the front and rear wheels must have a similar profile.
Worn tires have a negative effect on handling characteristics, especially on wet surfaces.

**Preparatory work**
– Raise the motorcycle with a lift stand. (📖 p. 47)




**Main work**
– Check the front and rear tires for cuts, embedded objects, and other damage.
  » If the tires have cuts, run-in objects, or other damage:
    – Change the tires.




– Check the tire age.

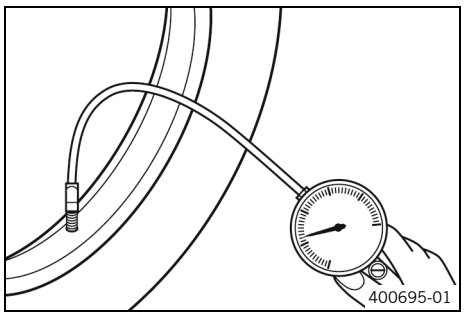
**Info**
The tire date of manufacture is usually contained in the tire label and is indicated by the last four digits of the **DOT** number. The first two digits indicate the week of manufacture and the last two digits the year of manufacture.
KTM recommends that the tires be changed after 5 years at the latest, regardless of the actual state of wear.

  » If the tires are more than 5 years old:
    – Change the tires.

**Finishing work**
– Remove the motorcycle from the lift stand. (📖 p. 47)

## 13.6 Checking 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 tire pressure when the tires are cold.

| Offroad tire pressure | |
|---|---|
| front | 1.0 bar (15 psi) |
| rear | 1.0 bar (15 psi) |

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

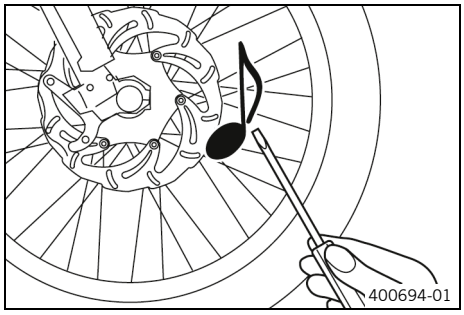
## 13.7 Checking the spoke tension

**Warning**

**Danger of accidents** Incorrectly tensioned spokes impair the handling characteristic and result in secondary damage.

The spokes break due to being overloaded if they are too tightly tensioned. If the tension in the spokes is too low, then lateral and radial run-out will form in the wheel. Other spokes will become looser as a result.

– Check spoke tension regularly, and in particular on a new vehicle. (Your authorized KTM workshop will be glad to help.)




– Strike each spoke briefly using a screwdriver blade.

**Info**

The frequency of the sound depends on the spoke length and spoke diameter.
If spokes of the same length and diameter vibrate with a different tone, this is an indication that the spoke tensions differ.

| You should hear a high note. |
|---|

» If the spoke tension differs:
  – Correct the spoke tension.
– Check the spoke torque.

Guideline

| | | |
|---|---|---|
| Spoke nipple, front wheel | M4.5 | 6 Nm (4.4 lbf ft) |
| Spoke nipple, rear wheel | M4.5 | 6 Nm (4.4 lbf ft) |

| Torque wrench kit (58429094000) |
|---|

## 14.1 Removing the 12-V battery

**Caution**

**Danger of burns** The voltage regulator gets very hot when the vehicle is operated.

– Allow the voltage regulator to cool down before performing any work.

**Note**

**Environmental hazard** 12 V batteries contain environmentally hazardous materials.

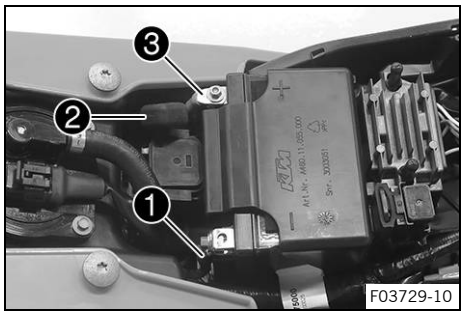
– Do not dispose of 12 V batteries as household waste.

– Dispose of 12 V batteries at a collection point for used batteries.

**Preparatory work**

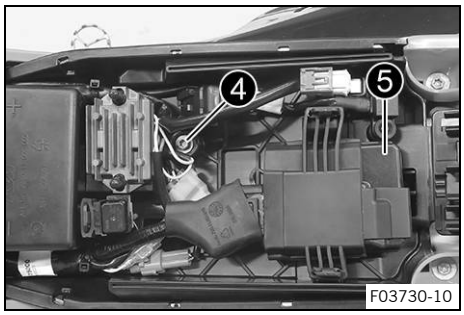
– Remove the seat. (p. 61)

**Main work**



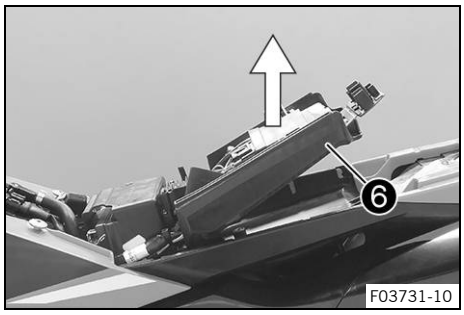

– Disconnect negative cable ❶ from the 12-V battery.

– Pull back positive terminal cover ❷ and disconnect positive cable ❸ from the 12-V battery.




– Remove screw ❹.

– Pull off engine control unit ❺ from the holder and hang to the side.

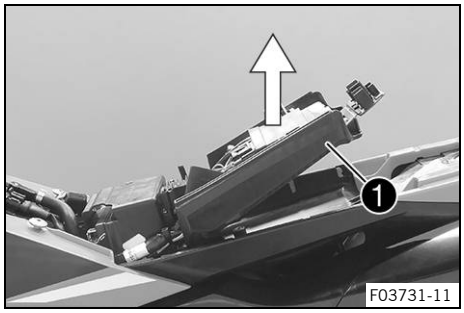



– Pull up the battery holding bracket ❻ and remove the 12-V battery to the rear.

**Info**

Pay attention to the wiring harness.

## 14.2 Installing the 12-V battery

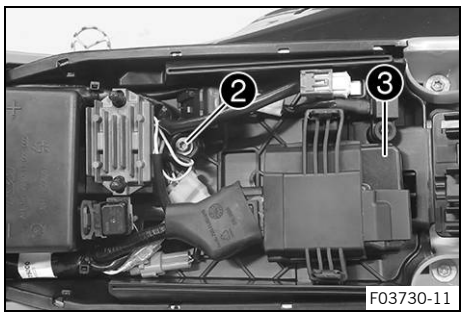



**Main work**

– Pull up the battery holding bracket ❶, insert the 12-V battery into the battery compartment with the terminals facing upwards and secure with the battery holding bracket ❶.

| |
|---|
| 12-V battery (HJTZ5S-FP-C) (📖 p. 134) |

**Info**
Ensure that the cable is routed correctly.

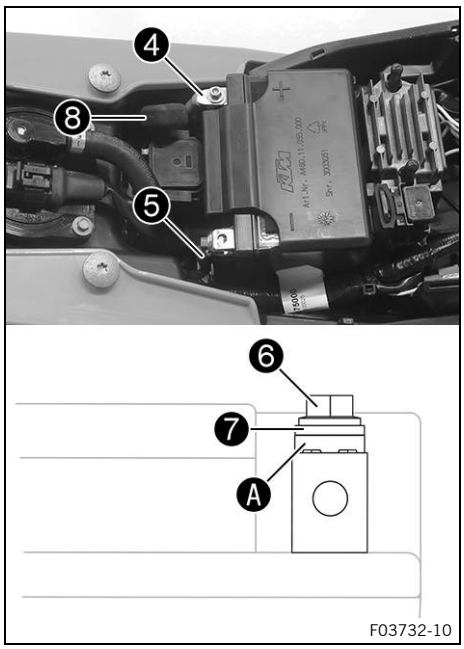



– Mount and tighten screw ❷.

Guideline

| | | |
|---|---|---|
| Screw, battery support bracket | M6 | 6 Nm (4.4 lbf ft) |

– Attach the engine control unit ❸ to the holder.




– Connect positive cable ❹ to the 12-V battery.

Guideline

| | | |
|---|---|---|
| Screw, battery terminal | M5 | 2.5 Nm (1.84 lbf ft) |

– Connect negative cable ❺ to the 12 V battery.

Guideline

| | | |
|---|---|---|
| Screw, battery terminal | M5 | 2.5 Nm (1.84 lbf ft) |

| |
|---|
| Contact disks Ⓐ must be mounted under screws ❻ and cable sockets ❼ with the claws toward the battery terminal. |

– Slide positive terminal cover ❽ over the positive terminal.

**Finishing work**

– Mount the seat. (📖 p. 62)

## 14.3 Charging the 12-V battery

**Warning**

**Risk of injury** 12 V batteries contain harmful substances.

- Keep 12 V batteries out of the reach of children.
- Keep sparks and open flames away from 12 V batteries.
- Only charge 12 V batteries in well-ventilated rooms.
- Maintain a minimum clearance from inflammable materials when charging 12 V batteries.
  Minimum clearance 1 m (3 ft)
- Do not charge deeply discharged 12 V batteries if the charge is already below the minimum voltage.
  Minimum voltage before the start of the charge 9 V
- Dispose of 12 V batteries correctly if they have less than the minimum voltage.

**Note**

**Environmental hazard** 12 V batteries contain environmentally hazardous materials.

- Do not dispose of 12 V batteries as household waste.
- Dispose of 12 V batteries at a collection point for used batteries.

**Info**

Even if there is no load on the 12-V battery, it discharges each day.
The charging level and the method of charging are very important for the service life of the 12-V battery.
Rapid recharging with a high charging current shortens the service life of the battery.
If the charging current, charging voltage, or charging time is exceeded, the 12 V battery will be destroyed.
If the 12-V battery is depleted by repeated starting, the 12-V battery must be charged immediately.
If the 12-V battery is left in a discharged state for an extended period, it will become deeply discharged and suffer a loss of capacity, destroying the battery.
The 12-V battery is maintenance-free.




**Preparatory work**

- Remove the seat. (p. 61)
- Remove the 12-V battery. (p. 100)

**Main work**

- Check the battery voltage.
  - » Battery voltage: < 9 V
    - Do not charge the 12 V battery.
    - Replace the 12 V battery and dispose of the old 12 V battery properly.
  - » If the specifications have been met:
    Battery voltage: ≥ 9 V
    - Connect a battery charger to the 12-V battery. Switch on the battery charger.

Guideline

| The charging current, charging voltage, and charging time must not be exceeded. | |
|---|---|
| Maximum charging voltage | 14.4 V |
| Maximum charging current | 3.0 A |
| Maximum charging time | 24 h |
| Recharge the 12-V battery regularly when the motorcycle is not being used | 6 months |

(EU) battery charger (79629974000)

**Alternative 1**

(US) battery charger (79629974500)

These battery chargers test whether the 12 V battery retains its voltage. It is also impossible to overcharge the 12 V battery with these battery chargers. The charging time may be longer at low temperatures.

These battery chargers are only suitable for lithium iron phosphate batteries. Read the accompanying **KTM PowerParts** instructions.

**Info**

Never remove cover ❶.

– Switch off the battery charger after charging and disconnect it from the 12-V battery.

**Finishing work**

– Install the 12-V battery. (🔧 (📖 p. 101))
– Mount the seat. (📖 p. 62)

## 14.4 Changing the main fuse

**Warning**

**Fire hazard** Incorrect fuses overload the electrical system.

– Only use fuses with the required ampere value.
– Do not bypass or repair fuses.

**Caution**

**Danger of burns** The voltage regulator gets very hot when the vehicle is operated.

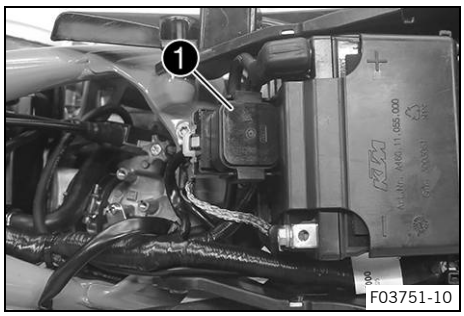
– Allow the voltage regulator to cool down before performing any work.

**Info**

The main fuse protects all electrical power consumers of the vehicle. It is located in the starter relay housing under the seat.

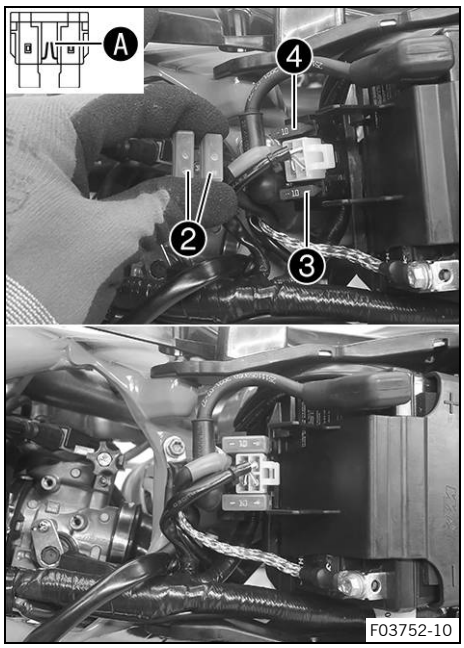
**Preparatory work**

– Remove the seat. (📖 p. 61)
– Remove the fuel tank. (🔧 (📖 p. 68))




**Main work**

– Pull starter relay ❶ from the holder.




– Take off protection caps ❷.
– Remove faulty main fuse ❸.

**Info**
A faulty fuse has a burned-out fuse wire Ⓐ.
A spare fuse ❹ is located in the starter relay.

– Insert a new main fuse.

Fuse (58011109110) (📖 p. 134)

– Check that the electrical system is functioning properly.

**Tip**
Insert a spare fuse so that it is available if needed.

– Mount the protection caps.
– Mount the starter relay onto the holder and route the cable.

**Finishing work**

– Install the fuel tank. 🔧 (📖 p. 70)
– Mount the seat. (📖 p. 62)

## 14.5 Changing the fuse of the fuel pump

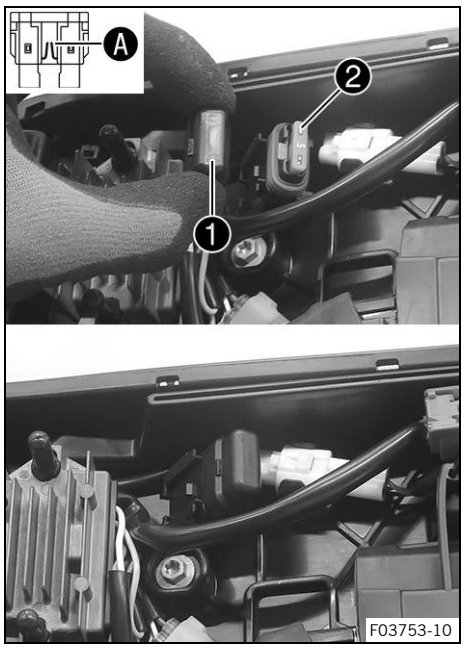
**Warning**
**Fire hazard** Incorrect fuses overload the electrical system.
– Only use fuses with the required ampere value.
– Do not bypass or repair fuses.

**Caution**
**Danger of burns** The voltage regulator gets very hot when the vehicle is operated.
– Allow the voltage regulator to cool down before performing any work.

**Info**
The fuel pump is protected by the fuel pump fuse. This is located under the seat.

**Preparatory work**

– Remove the seat. (📖 p. 61)




**Main work**

– Take off protection cap ❶.
– Remove the faulty fuse ❷.

**Info**
A faulty fuse has a burned-out fuse wire Ⓐ.

– Insert the new fuse for the fuel pump.

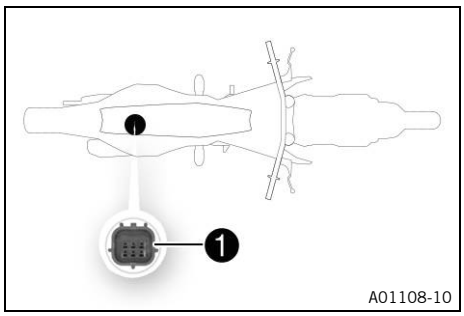
Fuse (58011109105) (📖 p. 134)

– Check that the electrical system is functioning properly.
– Attach the protection cap.

**Finishing work**

– Mount the seat. (📖 p. 62)

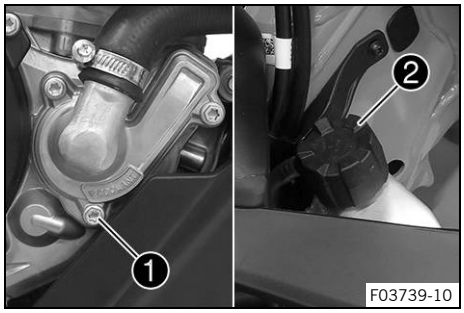
## 14.6 Diagnostics connector




Diagnostics connector ❶ is located under the seat.

**Info**
As soon as the diagnostics tool is connected, the service hour counter starts running.
Before longer diagnostic sessions, unplug the service hour counter behind the start number plate.

## 15.1 Cooling system




Water pump ❶ in the engine circulates the coolant.
The pressure resulting from the warming of the cooling system is regulated by a valve in radiator cap ❷. This ensures that operating the vehicle at the specified coolant temperature will not result in a risk of malfunctions.

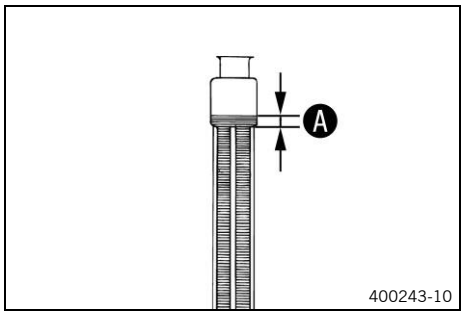
| |
|---|
| 120 °C (248 °F) |

Cooling is effected by the air stream.
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 hot and is under pressure.
- Do not open the radiator, the radiator hoses or other cooling system components if the engine or the cooling system are at operating temperature.
- Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses or other components of the cooling system.
- In the event of scalding, rinse the area affected immediately with lukewarm water.

**Warning**
**Danger of poisoning** Coolant is harmful to health.
- Keep coolant out of the reach of children.
- Do not allow coolant to come into contact with the skin, the eyes and clothing.
- Consult a doctor immediately if coolant is swallowed.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse eyes thoroughly with water and consult a doctor immediately if coolant gets into the eyes.
- Change clothing if coolant spills onto your clothing.




**Condition**
The engine is cold.

- Stand the motorcycle upright on a horizontal surface.
- Remove the radiator cap.
- Check the antifreeze in the coolant.

| |
|---|
| −25 ... −45 °C (−13 ... −49 °F) |

» If the antifreeze in the coolant does not match the specified value:
  - Correct the antifreeze in the coolant.

- Check the coolant level in the radiator.

| | |
|---|---|
| Coolant level Ⓐ above the radiator fins | 10 mm (0.39 in) |

» If the coolant level does not match the specified value:
  - Correct the coolant level.

| |
|---|
| Coolant (📖 p. 138) |

- Mount the radiator cap.

## 15.3 Checking the coolant level

**Warning**

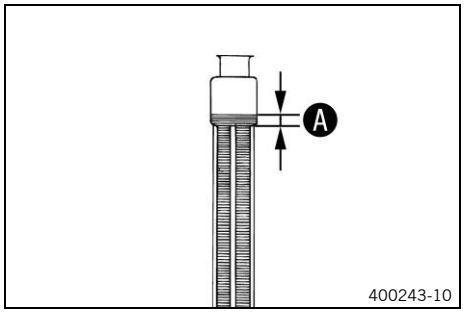
**Danger of scalding** During motorcycle operation, the coolant gets hot and is under pressure.

- Do not open the radiator, the radiator hoses or other cooling system components if the engine or the cooling system are at operating temperature.
- Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses or other components of the cooling system.
- In the event of scalding, rinse the area affected immediately with lukewarm water.

**Warning**

**Danger of poisoning** Coolant is harmful to health.

- Keep coolant out of the reach of children.
- Do not allow coolant to come into contact with the skin, the eyes and clothing.
- Consult a doctor immediately if coolant is swallowed.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse eyes thoroughly with water and consult a doctor immediately if coolant gets into the eyes.
- Change clothing if coolant spills onto your clothing.




**Condition**

The engine is cold.

- Stand the motorcycle upright on a horizontal surface.
- Remove the radiator cap.
- Check the coolant level in the radiator.

| | |
|---|---|
| Coolant level Ⓐ above the radiator fins | 10 mm (0.39 in) |

» If the coolant level does not match the specified value:

- Correct the coolant level.

Coolant (📖 p. 138)

- Mount the radiator cap.

## 15.4 Draining the coolant 🔧

**Warning**

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

- Do not open the radiator, the radiator hoses or other cooling system components if the engine or the cooling system are at operating temperature.
- Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses or other components of the cooling system.
- In the event of scalding, rinse the area affected immediately with lukewarm water.

**Warning**

**Danger of poisoning** Coolant is harmful to health.

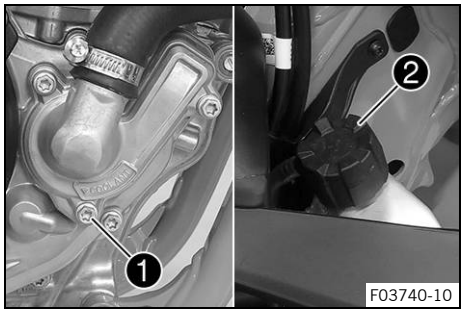
- Keep coolant out of the reach of children.
- Do not allow coolant to come into contact with the skin, the eyes and clothing.
- Consult a doctor immediately if coolant is swallowed.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse eyes thoroughly with water and consult a doctor immediately if coolant gets into the eyes.
- Change clothing if coolant spills onto your clothing.

**Condition**

The engine is cold.

**Preparatory work**

- Remove the engine guard. (p. 50)




**Main work**

- Position the motorcycle upright.
- Place an appropriate container under the water pump cover.
- Remove screw 1. Take off radiator cap 2.
- Completely drain the coolant.
- Mount and tighten screw 1 with a new seal ring.

  Guideline

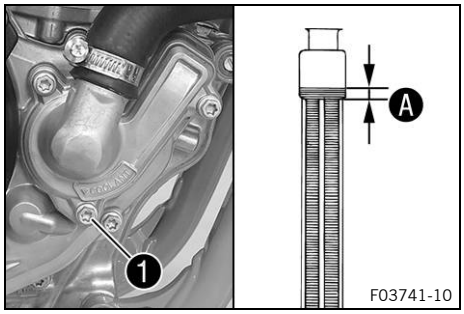
| | | |
|---|---|---|
| Screw, water pump cover | M6 | 10 Nm (7.4 lbf ft) |

## 15.5 Refilling with coolant

**Warning**

**Danger of poisoning** Coolant is harmful to health.

- Keep coolant out of the reach of children.
- Do not allow coolant to come into contact with the skin, the eyes and clothing.
- Consult a doctor immediately if coolant is swallowed.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse eyes thoroughly with water and consult a doctor immediately if coolant gets into the eyes.
- Change clothing if coolant spills onto your clothing.




**Main work**

- Make sure that screw 1 is tightened.
- Position the motorcycle upright.
- Pour coolant in up to measurement A above the radiator fins.

  Guideline

| | | |
|---|---|---|
| Distance A above the radiator fins | 10 mm (0.39 in) | |

| | | |
|---|---|---|
| Coolant | 0.9 l (1 qt.) | Coolant (p. 138) |

- Mount the radiator cap.
- Go for a short test ride.
- Check the coolant level. (p. 107)

**Finishing work**

– Install the engine guard. (p. 50)

## 15.6 Changing the coolant

**Warning**

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

– Do not open the radiator, the radiator hoses or other cooling system components if the engine or the cooling system are at operating temperature.
– Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses or other components of the cooling system.
– In the event of scalding, rinse the area affected immediately with lukewarm water.

**Warning**

**Danger of poisoning** Coolant is harmful to health.

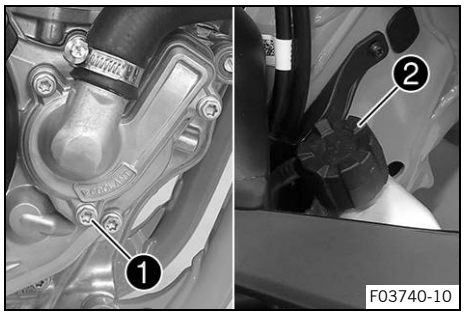
– Keep coolant out of the reach of children.
– Do not allow coolant to come into contact with the skin, the eyes and clothing.
– Consult a doctor immediately if coolant is swallowed.
– Rinse the affected area immediately with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water and consult a doctor immediately if coolant gets into the eyes.
– Change clothing if coolant spills onto your clothing.

**Condition**

The engine is cold.

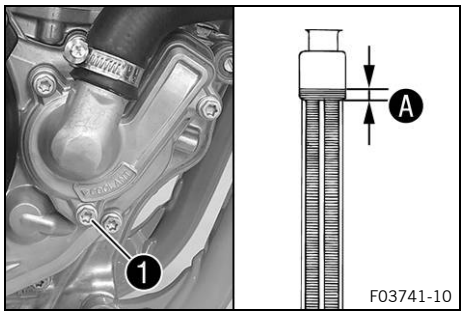
**Preparatory work**

– Remove the engine guard. (p. 50)




**Main work**

– Position the motorcycle upright.
– Place an appropriate container under the water pump cover.
– Remove screw 1. Take off radiator cap 2.
– Completely drain the coolant.




– Mount and tighten screw 1 with a new seal ring.

  Guideline

| | | |
|---|---|---|
| Screw, water pump cover | M6 | 10 Nm (7.4 lbf ft) |

– Pour coolant in up to level A above the radiator fins.

  Guideline

| | |
|---|---|
| Distance A above the radiator fins | 10 mm (0.39 in) |

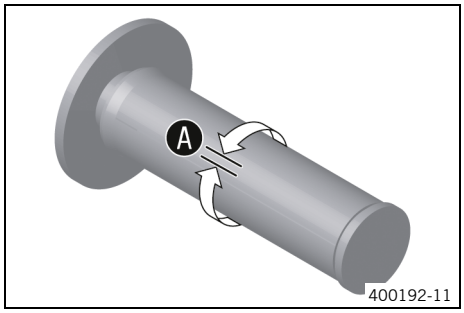
| | | |
|---|---|---|
| Coolant | 0.9 l (1 qt.) | Coolant (p. 138) |

– Mount the radiator cap.
– Go for a short test ride.
– Check the coolant level. (p. 107)

**Finishing work**

– Install the engine guard. (📖 p. 50)

## 16.1 Checking the play in the throttle cable




– Check the throttle grip for smooth operation.
– Move the handlebar to the straight-ahead position. Turn the throttle grip back and forth slightly and determine the play in throttle cable Ⓐ.

| | |
|---|---|
| Play in throttle cable | 3 … 5 mm (0.12 … 0.2 in) |

» If the throttle cable play does not meet the specified value:
– Adjust the play in the throttle cable. 🔧 (📖 p. 111)

– Push the cold start button in all the way.

When the throttle grip is turned forward, the cold start button returns to its original position.

» If the cold start button does not return to its original position:
– Adjust the play in the throttle cable. 🔧 (📖 p. 111)

**Danger**
**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and death.
– Always make sure there is sufficient ventilation when running the engine.
– Use effective exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and let it run at idle speed. Move the handlebar to and fro over the entire steering range.

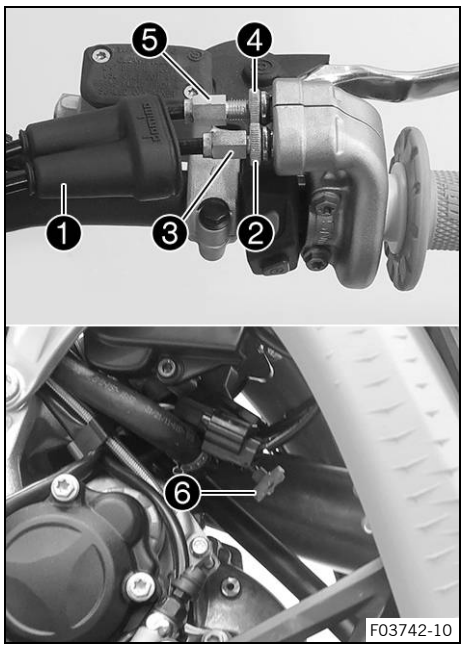
The idle speed must not change.

» If the idle speed changes:
– Adjust the play in the throttle cable. 🔧 (📖 p. 111)

## 16.2 Adjusting the play in the throttle cable 🔧

**Info**
If the correct routing of the throttle cables has already been secured, the fuel tank does not need to be removed.

**Preparatory work**
– Remove the seat. (📖 p. 61)
– Remove the fuel tank. 🔧 (📖 p. 68)
– Check the throttle cable routing. (📖 p. 76)




**Main work**

- Move the handlebar to the straight-ahead position.
- Push back sleeve ❶.
- Loosen nut ❷.
- Turn adjusting screw ❸ in as far as possible.
- Loosen nut ❹.
- Push cold start button ❻ all the way to the stop.
- Turn adjusting screw ❺ so that the cold start button moves to the basic position when the throttle grip is turned to the front.
- Tighten nut ❹.
- Turn adjusting screw ❸ so that there is play in the throttle cable at the throttle grip.

  Guideline

| | |
|---|---|
| Play in throttle cable | 3 ... 5 mm (0.12 ... 0.2 in) |

- Tighten nut ❷.
- Slide on sleeve ❶.
- Check the throttle grip for smooth operation.

**Finishing work**

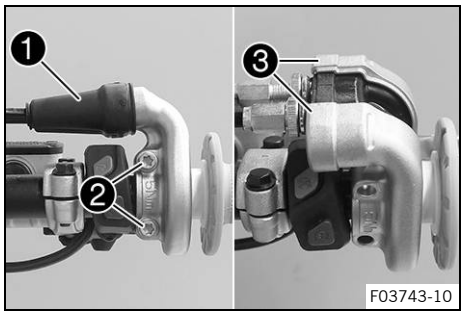
- Check the play in the throttle cable. (📖 p. 111)

## 16.3 Adjusting the characteristic map of the throttle response

**Info**

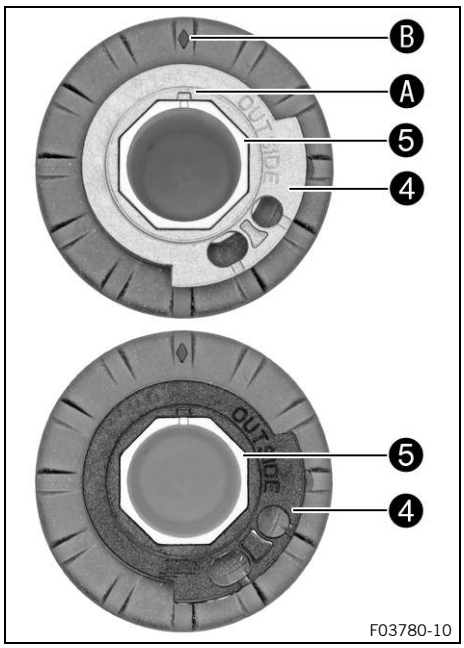
On the throttle grip, the characteristic map of the throttle response is changed by changing the guide plate.

A guide plate with a different characteristic map is supplied.




**Main work**

- Push back sleeve ❶.
- Remove screws ❷ and half-shells ❸.
- Detach the throttle cables and take off the grip tube.




– Remove guide plate ❹ from handle tube ❺.
– Position the required guide plate on the grip tube.

Guideline

| |
|---|
| The label **OUTSIDE** must be visible. Marking Ⓐ must be positioned at marking Ⓑ. |

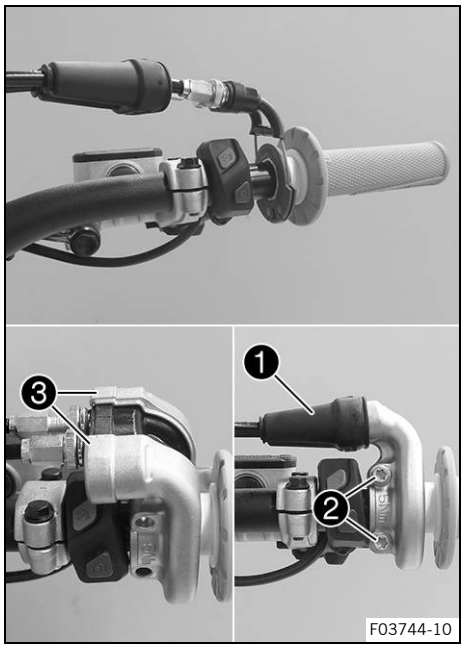
| |
|---|
| Black guide plate (A46002014000) |

**Alternative 1**

| |
|---|
| Gray guide plate (A48002014000) |

**Info**

The gray guide plate opens the throttle valve more slowly.
The black guide plate opens the throttle valve more quickly.
The black guide plate is already mounted when the vehicle is delivered.




– Clean the outside of the handlebar and the inside of the grip tube. Mount the grip tube on the handlebar.
– Attach the throttle cables to the guide plate and route correctly.
– Position half-shells ❸, mount and tighten screws ❷.

Guideline

| | | |
|---|---|---|
| Screw, throttle grip | M6 | 5 Nm (3.7 lbf ft) |

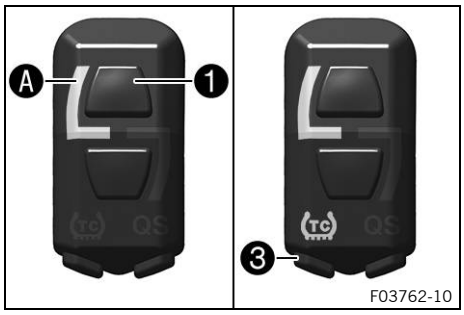
– Slide on sleeve ❶ and check the throttle grip for ease of movement.

**Finishing work**

– Check the play in the throttle cable. (📖 p. 111)

## 16.4 Changing the mapping

**Info**
The desired engine characteristic can be activated using the combination switch.
The setting most recently selected is activated again when restarting.
Traction control can also be activated in each mapping.
The mapping can also be changed during the ride.




**Activating STANDARD mapping:**

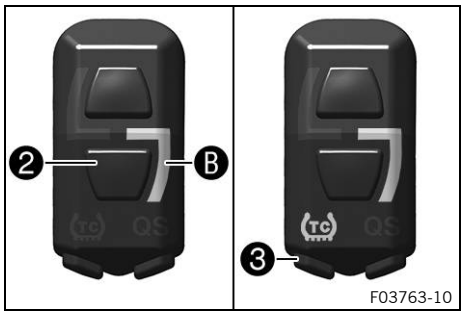
– Press button ❶.

Guideline

| | |
|---|---|
| Engine speed | < 4,000 rpm |

✔ The indicator lamp Ⓐ lights up.
✔ STANDARD – balanced response

**Info**
Traction control can be activated additionally using the TC button ❸.




**Activating ADVANCED mapping:**

– Press button ❷.

Guideline

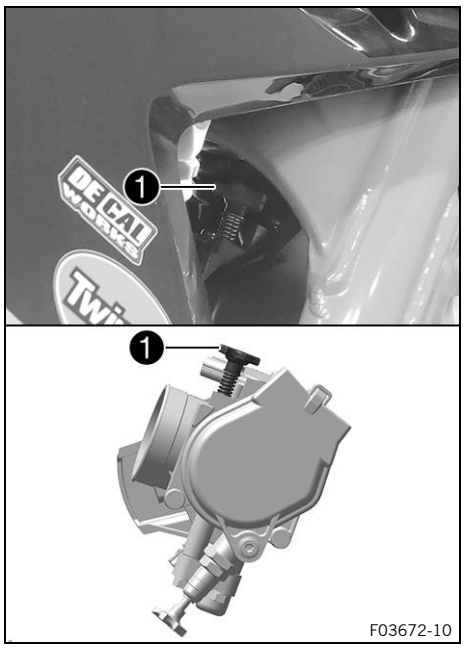
| | |
|---|---|
| Engine speed | < 4,000 rpm |

✔ The indicator lamp Ⓑ lights up.
✔ ADVANCED – direct response

**Info**
Traction control can be activated additionally using the TC button ❸.

## 16.5 Adjusting the idle speed

**Warning**
**Danger of accidents** The engine may go out spontaneously if the idle speed is set too low.
– Set the idle speed to the specified value. (Your authorized KTM workshop will be glad to help.)




– Run the engine until warm.

✔ The cold start button is deactivated – The cold start button is in its basic position. (📖 p. 17)

**Danger**

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

– Always make sure there is sufficient ventilation when running the engine.
– Use effective exhaust extraction when starting or running the engine in an enclosed space.

– Adjust the idle speed by turning idle speed adjusting screw ❶ using a suitable tachometer.

Guideline

| | |
|---|---|
| Idle speed | 2,250 … 2,350 rpm |

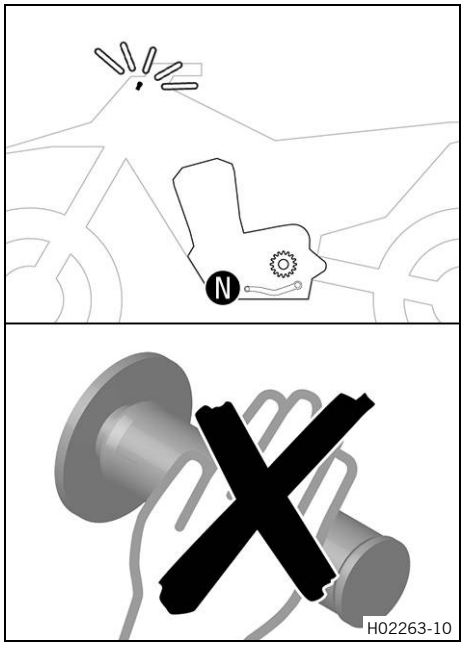
**Info**

Turning counterclockwise lowers the idle speed.
Turning clockwise raises the idle speed.

## 16.6 Programming the throttle valve position

**Info**

If the control unit detects that the throttle valve position at idle speed needs to be reprogrammed, then the malfunction indicator lamp flashes 2x per second.




**Danger**

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

– Always make sure there is sufficient ventilation when running the engine.
– Use effective exhaust extraction when starting or running the engine in an enclosed space.

– Allow the vehicle to run at idle speed.

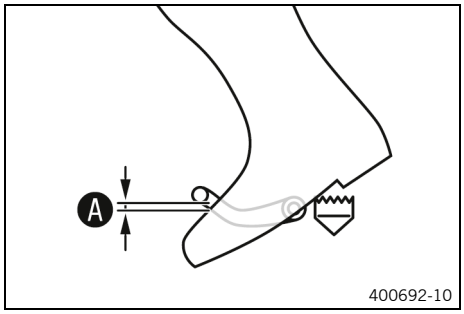
✔ The malfunction indicator lamp stops flashing once programming is completed.

**Info**

If the engine becomes too warm, perform a cool-down ride at medium speed.
After this, do not switch off the engine, but leave it running at idle speed until the programming is finished.

## 16.7 Checking the basic position of the shift lever

**Info**
When driving, the shift lever must not touch the rider's boot when in the basic position.
If the shift lever is permanently touching the boot, the transmission will be subject to excessive load; this can cause a malfunction of the quickshifter.

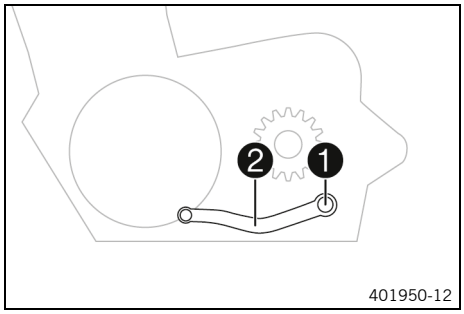



– Sit on the vehicle in the riding position and determine distance Ⓐ between the upper edge of your boot and the shift lever.

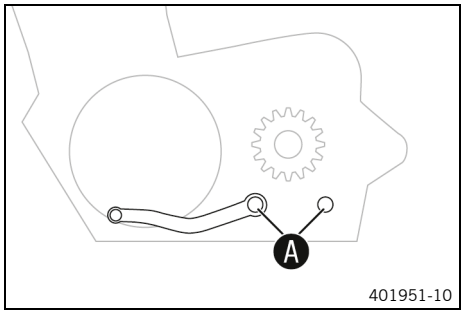
| | |
|---|---|
| Distance between shift lever and upper edge of boot | 10 … 20 mm (0.39 … 0.79 in) |

» If the distance does not meet specifications:
– Adjust the basic position of the shift lever. (📖 p. 116)

## 16.8 Adjusting the basic position of the shift lever




– Remove screw ❶ with the washers and take off shift lever ❷.




– Clean gear teeth Ⓐ of the shift lever and shift shaft.
– Mount the shift lever on the shift shaft in the required position and engage 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 screw ❶ with washers.

Guideline

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

## 17.1 Changing the fuel screen

**Danger**

**Fire hazard** Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

- Do not fuel the vehicle in the vicinity of open flames or lit cigarettes.
- Switch off the engine for refueling.
- Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
- If any fuel is spilled, wipe it off immediately.
- Observe the specifications for refueling.

**Warning**

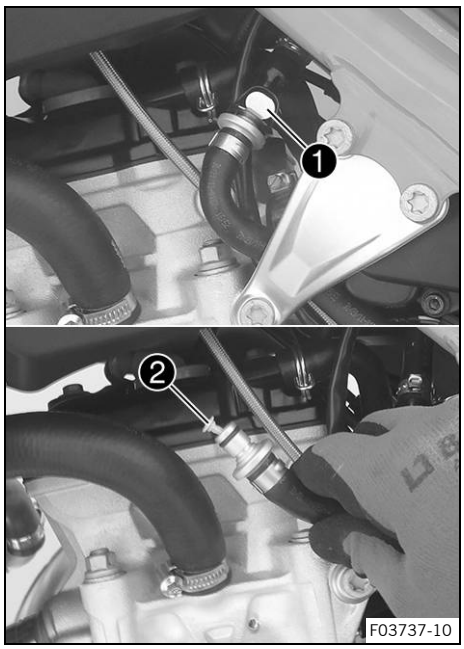
**Danger of poisoning** Fuel is harmful to health.

- Avoid skin, eye and clothing contact with fuel.
- Immediately consult a doctor if you swallow fuel.
- Do not inhale fuel vapors.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
- Change your clothing if fuel spills on them.

**Note**

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

- Do not allow fuel to enter the groundwater, the soil, or the sewage system.




- Clean quick release coupling ❶ thoroughly with compressed air.

**Info**

Under no circumstances should dirt enter into the fuel line. Dirt in the fuel line clogs the injection valve!

- Disconnect the quick release coupling.

**Info**

Remaining fuel may flow out of the fuel hose.

- Pull fuel screen ❷ out of the connecting piece.
- Insert the new fuel screen all the way into the connecting piece.
- Spray silicone spray onto a lint-free cleaning cloth and lightly lubricate the O-ring of the quick-release coupling.

Silicone spray (📖 p. 141)

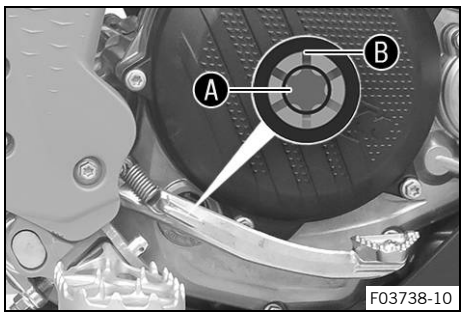
- Join quick release coupling ❶.

**Danger**
**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and death.
– Always make sure there is sufficient ventilation when running the engine.
– Use effective exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and check the response.

## 17.2 Checking the engine oil level

**Info**
The engine oil level can be checked when the engine is cold or warm.




**Preparatory work**
– Stand the motorcycle upright on a horizontal surface.

**Condition**
The engine is cold.
– Check the engine oil level.

| The engine oil reaches the middle of level viewer A. |
|---|

» If the engine oil does not reach the middle of the level viewer:
– Add engine oil. (📖 p. 121)

**Condition**
The engine is at operating temperature.
– Check the engine oil level.

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

| The engine oil level is between the middle of the level viewer A and the upper edge of the level viewer B. |
|---|

» If the engine oil does not reach the middle of level viewer A:
– Add engine oil. (📖 p. 121)

## 17.3 Changing the engine oil and oil filter, cleaning the oil screen

**Warning**
**Danger of scalding** Engine and gear oil get hot when the motorcycle is operated.
– Wear suitable protective clothing and safety gloves.
– In the event of scalding, rinse the area affected immediately with lukewarm water.

**Note**

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

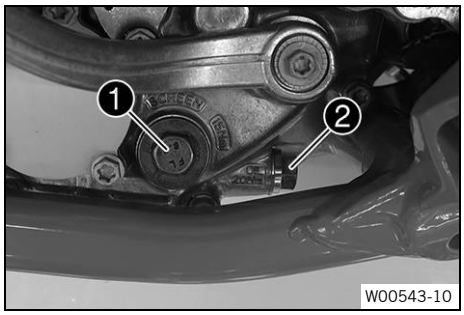
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Info**

Drain the engine oil while the engine is at operating temperature.

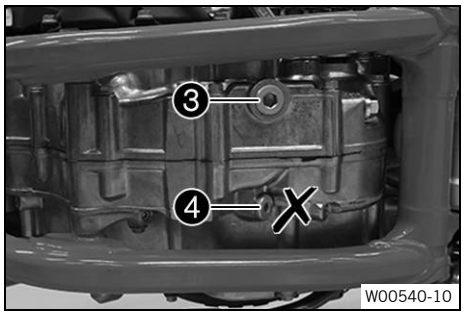
**Preparatory work**

– Park the motorcycle on a level surface.
– Remove the engine guard. (p. 50)




**Main work**

– Position an appropriate container under the engine.
– Remove screw plug ❶ with oil screen and the O-rings.
– Remove oil drain plug ❷ with the magnet and seal ring.




– Remove oil drain plug ❸ with the magnet and seal ring.

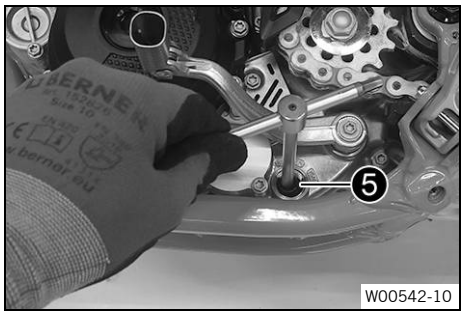
**Info**

Do not remove screw ❹.

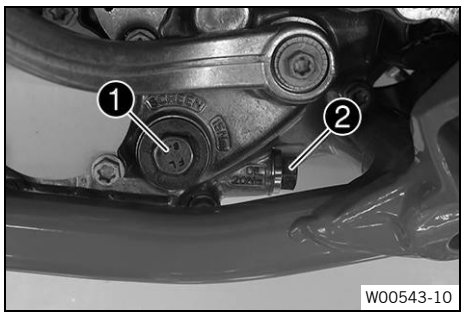
– Allow the engine oil to drain completely.
– Thoroughly clean the parts and the sealing surfaces.
– Mount and tighten oil drain plug ❸ with the magnet and a new seal ring.

Guideline

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




– Position oil screen ❺ with the O-rings on a pin wrench.
– Position the pin wrench through the drill hole of the screw plug in the opposite section of the engine case.
– Push the oil screen all the way into the engine case.




– Mount and tighten screw plug ❶ with the O-ring.

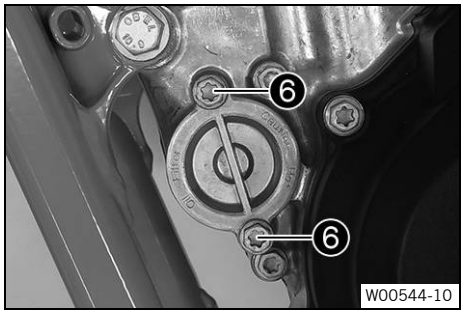
Guideline

| | | |
|---|---|---|
| Screw plug, oil screen | M20x1.5 | 15 Nm (11.1 lbf ft) |

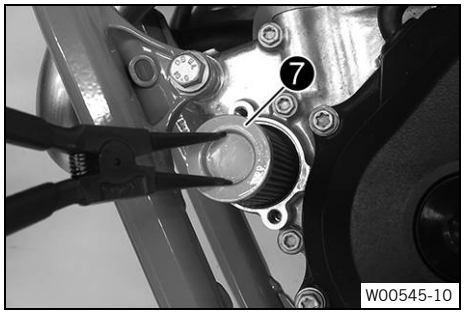
– Mount and tighten oil drain plug ❷ with the magnet and a new seal ring.

Guideline

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



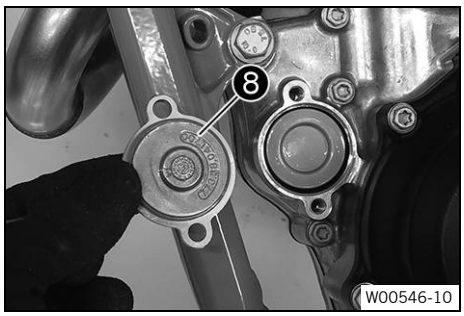

– Remove screws ❻. Take off the oil filter cover with the O-ring.




– Pull oil filter ❼ out of the oil filter housing.

| |
|---|
| Lock ring plier (51012011000) |

– Allow the engine oil to drain completely.
– Thoroughly clean the parts and the sealing surfaces.

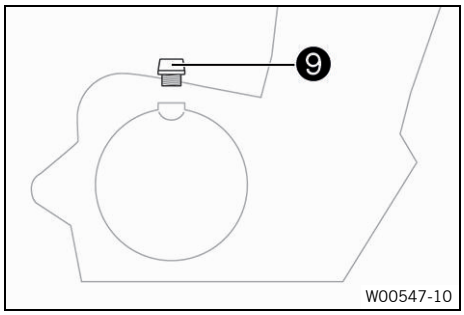



– Lay the motorcycle on its side and fill the oil filter housing to about ⅓ full with engine oil.
– Fill the oil filter with engine oil and position the oil filter in the housing.
– Oil the O-ring of the oil filter cover and mount it together with oil filter cover ❽.
– Mount and tighten the screws.

Guideline

| | | |
|---|---|---|
| Screw, oil filter cover | M6 | 10 Nm (7.4 lbf ft) |

– Stand the motorcycle upright.




– Remove filler plug ❾ with the O-ring, and fill up with engine oil.

| | | |
|---|---|---|
| Engine oil | 1.0 l (1.1 qt.) | Engine oil (SAE 10W/50) (📖 p. 138) |

**Info**
Too little engine oil or poor-quality engine oil will result in premature wear of the engine.

– Mount and tighten the filler plug together with the O-ring.

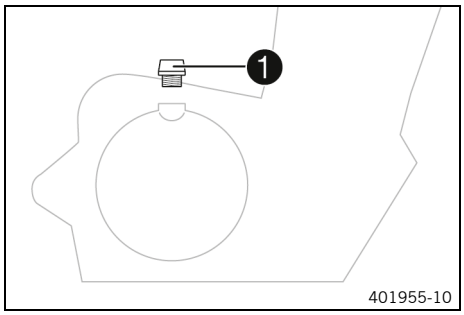
**Danger**
**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and death.
- Always make sure there is sufficient ventilation when running the engine.
- Use effective exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and check it for leaks.

**Finishing work**
– Install the engine guard. (p. 50)
– Check the engine oil level. (p. 118)

## 17.4 Adding engine oil

**Info**
Too little engine oil or poor-quality engine oil will result in premature wear of the engine.




– Remove filler plug 1 with the O-ring.
– Add the same engine oil used when the last oil change was carried out.

| Engine oil (SAE 10W/50) (p. 138) |
|---|

**Info**
In order to achieve optimal engine oil performance, it is not advisable to mix different engine oils.
KTM recommends changing the engine oil where necessary.

– Mount and tighten the filler plug together with the O-ring.

**Danger**
**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and death.
- Always make sure there is sufficient ventilation when running the engine.
- Use effective exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and check it for leaks.

## 18.1 Cleaning the motorcycle

**Note**

**Material damage** Components become damaged or destroyed if a pressure cleaner is used incorrectly.

The high pressure forces water into the electrical components, connectors, throttle cables, and bearings, etc.

Pressure which is too high causes malfunctions and destroys components.

– Do not direct the water jet directly on to electrical components, connectors, throttle cables or bearings.
– Maintain a minimum distance between the nozzle of the pressure cleaner and the component.

| | |
|---|---|
| Minimum clearance | 60 cm (23.6 in) |

**Note**

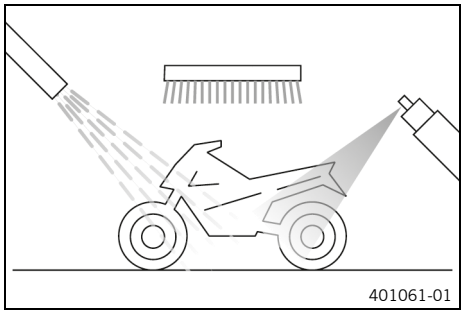
**Environmental hazard** Hazardous substances cause environmental damage.

– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

**Info**

To maintain the value and appearance of the motorcycle over a long period, clean it regularly.

Avoid direct sunshine when cleaning the motorcycle.




– Close off exhaust system to keep water from entering.
– Remove loose dirt first with a soft jet of water.
– Spray the heavily soiled parts with a normal commercial motorcycle cleaner and clean using a brush.

Motorcycle cleaner (p. 140)

**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.

– 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** Moisture and dirt impair the brake system.

– Brake carefully several times to dry out and remove dirt from the brake linings and the brake discs.

– 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.

– Push back the protection caps of the handlebar controls to allow any water that has penetrated to evaporate.

– After the motorcycle has cooled down, lubricate all moving parts and pivot points.
– Clean the chain. (📖 p. 71)
– Treat bare metal (except for brake discs and the exhaust system) with a corrosion inhibitor.

| |
|---|
| Preserving materials for paints, metal and rubber (📖 p. 140) |

– Treat all plastic parts and powder-coated parts with a mild cleaning and care product.

| |
|---|
| Special cleaner for glossy and matte paint finishes, metal and plastic surfaces (📖 p. 141) |

## 19.1 Storage

**Warning**

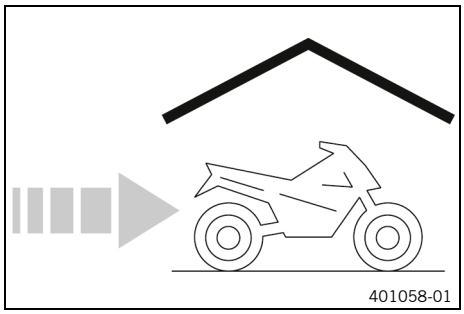
**Danger of poisoning** Fuel is harmful to health.

- Avoid skin, eye and clothing contact with fuel.
- Immediately consult a doctor if you swallow fuel.
- Do not inhale fuel vapors.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
- Change your clothing if fuel spills on them.
- Keep fuels correctly in a suitable canister, and out of the reach of children.

**Info**

If you plan to garage the motorcycle for a longer period, perform the following steps or have them performed.

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. 140) |
  |---|

- Refuel. (📖 p. 32)

**Tip**

Fill the fuel tank completely as specified, using fuel with the lowest possible ethanol content.

- Clean the motorcycle. (📖 p. 122)
- Change the engine oil and oil filter, clean the oil screen. 🔧 (📖 p. 118)
- Check the antifreeze and coolant level. (📖 p. 106)
- Check the tire pressure. (📖 p. 98)
- Remove the 12-V battery. 🔧 (📖 p. 100)
- Charge the 12-V battery. 🔧 (📖 p. 102)

  Guideline

  | | |
  |---|---|
  | Ideal charging and storage temperature of the lithium-ion battery | 10 … 20 °C (50 … 68 °F) |

- Store the vehicle in a dry location that is not subject to large fluctuations in temperature.

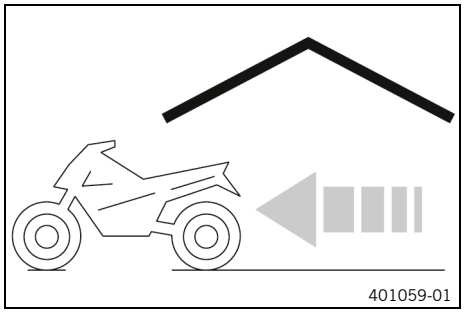
**Info**

KTM recommends jacking up the motorcycle.

- Raise the motorcycle with a lift stand. (📖 p. 47)
- Cover the vehicle with a tarp or a similar cover that is permeable to air.

**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 the exhaust system to rust.

## 19.2 Putting into operation after storage




- Install the 12-V battery. (p. 101)
- Remove the motorcycle from the lift stand. (p. 47)
- Perform checks and maintenance measures when preparing for use. (p. 25)
- Take a test ride.

| Faults | Possible cause | Action |
|---|---|---|
| The engine does not turn when the start button is pressed | Operating error | – Carry out start procedure. (📖 p. 25) |
| | 12-V battery discharged | – Charge the 12-V battery. 🔧 (📖 p. 102)<br>– Check the charging voltage. 🔧<br>– Check the open-circuit current. 🔧<br>– Check the stator winding of the alternator. 🔧 |
| | Main fuse blown | – Change the main fuse. (📖 p. 103) |
| | Faulty starter relay | – Check the starter relay. 🔧 |
| | Faulty starter motor | – Check the starter motor. 🔧 |
| Engine turns but does not start | Quick release coupling not joined | – Join quick release coupling. |
| | Fuel screen in the quick release coupling is clogged | – Change the fuel screen. 🔧 (📖 p. 117) |
| | Idle speed is not set correctly | – Adjust the idle speed. 🔧 (📖 p. 114) |
| | Spark plug sooty or wet | – Clean and dry the spark plug and spark plug connector, or change if necessary. |
| | Plug gap of spark plug too wide | – Adjust plug gap.<br>Guideline<br>Spark plug electrode gap<br>1.0 mm (0.039 in) |
| | Short-circuit cable in wiring harness frayed, stop button faulty | – Check the wiring harness. (visual check)<br>– Check the electrical system. |
| | Malfunction in the electronic fuel injection | – Read out the fault memory using the KTM diagnostics tool. 🔧 |
| Engine does not speed up | Malfunction in the electronic fuel injection | – Read out the fault memory using the KTM diagnostics tool. 🔧 |
| Engine has too little power | Air filter is very dirty | – Clean the air filter and air filter box. 🔧 (📖 p. 65) |
| | Fuel filter is very dirty | – Change the fuel filter. 🔧 |
| | Malfunction in the electronic fuel injection | – Read out the fault memory using the KTM diagnostics tool. 🔧 |
| | Exhaust system leaks, deformed or too little glass fiber yarn filling in main silencer | – Check exhaust system for damage.<br>– Change the glass fiber yarn filling of the main silencer. 🔧 (📖 p. 67) |
| | Valve clearance too little | – Adjust the valve clearance. 🔧 |
| Engine dies during the trip | Lack of fuel | – Refuel. (📖 p. 32) |
| Engine overheats | Too little coolant in cooling system | – Check the cooling system for leakage.<br>– Check the coolant level. (📖 p. 107) |
| | Too little air stream | – Switch off the engine when standing. |
| | Radiator fins very dirty | – Clean the radiator fins. |
| | Foam formation in cooling system | – Drain the coolant. 🔧 (📖 p. 107)<br>– Refill with coolant. 🔧 (📖 p. 108) |
| | Bent radiator hose | – Change the radiator hose. 🔧 |

| Faults | Possible cause | Action |
|---|---|---|
| Malfunction indicator lamp lights up or flashes | Malfunction in the electronic fuel injection | – Check the wiring for damage and the electrical plug-in connections for corrosion and damage.<br>– Read out the 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. |
| | Engine oil level too high | – Check the engine oil level. (📖 p. 118) |
| | Engine oil too thin (low viscosity) | – Change the engine oil and oil filter, clean the oil screen. 🔧 (📖 p. 118) |
| | Piston or cylinder worn | – Measure the piston/cylinder mounting clearance. |
| 12-V battery discharged | 12 V battery is not charging | – Check the charging voltage. 🔧<br>– Check the stator winding of the alternator. 🔧 |
| | Unwanted electrical power consumer | – Check the open-circuit current. 🔧 |

| | |
|---|---|
| **Error level condition** | Combination switch, left side – buttons pressed longer than 20 seconds |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>Malfunction indicator lamp flashes continuously |
| **Error level condition** | THREF – internal malfunction of the engine control unit |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>02 Malfunction indicator lamp flashes 2x short |
| **Error level condition** | Crankshaft speed sensor – circuit fault |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>06 Malfunction indicator lamp flashes 6x short |
| **Error level condition** | Throttle valve position sensor circuit A – input signal too low |
| | Throttle valve position sensor circuit A – input signal too high |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>09 Malfunction indicator lamp flashes 9x short |
| **Error level condition** | Induction manifold pressure sensor – input signal too high |
| | Induction manifold pressure sensor – input signal too low |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>12 Malfunction indicator lamp flashes 1x long, 2x short |
| **Error level condition** | Coolant temperature sensor – input signal too high |
| | Coolant temperature sensor – input signal too low |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>13 Malfunction indicator lamp flashes 1x long, 3x short |
| **Error level condition** | Intake air temperature sensor – input signal too high |
| | Intake air temperature sensor – input signal too low |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>15 Malfunction indicator lamp flashes 1x long, 5x short |
| **Error level condition** | Tilt sensor – input signal too low |
| | Tilt sensor – open / input signal too high |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>21 Malfunction indicator lamp flashes 2x long, 1x short |
| **Error level condition** | Battery voltage – input voltage too high |

| | |
|---|---|
| **Blink code for malfunction indicator lamp** | Fi<br>22 Malfunction indicator lamp flashes 2x long, 2x short |
| **Error level condition** | Gear position sensor – input signal too low |
| | Gear position sensor – input signal too high |
| | Gear position sensor – malfunction |

| Blink code for malfunction indicator lamp | Fi<br>33 Malfunction indicator lamp flashes 3x long, 3x short |
|---|---|
| **Error level condition** | Injection valve cylinder 1 – circuit fault |

| Blink code for malfunction indicator lamp | Fi<br>37 Malfunction indicator lamp flashes 3x long, 7x short |
|---|---|
| **Error level condition** | Ignition coil – circuit fault |

| Blink code for malfunction indicator lamp | Fi<br>41 Malfunction indicator lamp flashes 4x long, 1x short |
|---|---|
| **Error level condition** | Fuel pump controller – short circuit to ground/open circuit |
| | Fuel pump controller - short circuit to plus |

| Blink code for malfunction indicator lamp | Fi<br>65 Malfunction indicator lamp flashes 6x long, 5x short |
|---|---|
| **Error level condition** | EEPROM – malfunction |

| Blink code for malfunction indicator lamp | Fi<br>91 Malfunction indicator lamp flashes 9x long, 1x short |
|---|---|
| **Error level condition** | CAN bus communication – faulty |

## 22.1 Engine

| | |
|---|---|
| Design | 1-cylinder 4-stroke engine, water-cooled |
| Displacement | 249.92 cm³ (15.2511 cu in) |
| Stroke | 48.5 mm (1.909 in) |
| Bore | 81 mm (3.19 in) |
| Compression ratio | 14.5:1 |
| Idle speed | 2,250 ... 2,350 rpm |
| Control | DOHC, four valves controlled via cam lever, drive via timing chain |
| Valve diameter, intake | 32.5 mm (1.28 in) |
| Valve diameter, exhaust | 27.5 mm (1.083 in) |
| Valve clearance | |
| Intake at: 20 °C (68 °F) | 0.08 ... 0.15 mm (0.0031 ... 0.0059 in) |
| Exhaust at: 20 °C (68 °F) | 0.12 ... 0.19 mm (0.0047 ... 0.0075 in) |
| Crankshaft bearing | 2 cylinder bearings |
| Conrod bearing | Slide bearing |
| Piston pin bearing | Bearing bush |
| Pistons | Forged light alloy |
| Piston rings | 1 compression ring, 1 oil scraper ring |
| Engine lubrication | Pressure circulation lubrication with 2 trochoidal pumps |
| Primary transmission | 24:72 |
| Clutch | Multidisc clutch in oil bath/hydraulically activated |
| Gearbox | 5-gear transmission, claw shifted |
| Transmission ratio | |
| first-gear | 13:32 |
| second-gear | 16:32 |
| third-gear | 17:28 |
| fourth-gear | 19:26 |
| fifth-gear | 21:25 |
| Alternator | 12 V, 70 W |
| Ignition | Contactless controlled fully electronic ignition with digital ignition adjustment |
| Spark plug | NGK LMAR9AI-10 |
| Spark plug electrode gap | 1.0 mm (0.039 in) |
| Cooling | Water cooling, permanent circulation of coolant by water pump |
| Starting aid | Starter motor |

## 22.2 Engine tightening torques

| | | |
|---|---|---|
| Nozzle, crank chamber ventilation | M4 | 2 Nm (1.5 lbf ft)<br>**Loctite®243™** |
| Oil nozzle for clutch lubrication | M4 | 2 Nm (1.5 lbf ft)<br>**Loctite®243™** |
| Oil nozzle for conrod bearing lubrication | M4 | 2 Nm (1.5 lbf ft)<br>**Loctite®243™** |
| Oil nozzle for main bearing lubrication | M4 | 2 Nm (1.5 lbf ft)<br>**Loctite®243™** |
| Screw, hose clip, inlet sleeve | M4 | 3 Nm (2.2 lbf ft) |
| Screw, oil nozzle for piston cooling | M4 | 2.5 Nm (1.84 lbf ft)<br>**Loctite®243™** |
| Locking screw for bearing | M5 | 6 Nm (4.4 lbf ft)<br>**Loctite®243™** |
| Oil channel screw plug in alternator cover | M5 | 2 Nm (1.5 lbf ft)<br>**Loctite®243™** |
| Oil nozzle for cam lever lubrication | M5 | 3 Nm (2.2 lbf ft)<br>**Loctite®243™** |
| Oil nozzle, piston cooling | M5 | 2 Nm (1.5 lbf ft)<br>**Loctite®243™** |
| Screw, bearing bolt, oil pump idler gear | M5 | 6 Nm (4.4 lbf ft)<br>**Loctite®243™** |
| Screw, clutch spring retainer | M5 | 6 Nm (4.4 lbf ft) |
| Screw, crankshaft speed sensor | M5 | 6 Nm (4.4 lbf ft)<br>**Loctite®243™** |
| Screw, gear position sensor | M5 | 5 Nm (3.7 lbf ft)<br>**Loctite®243™** |
| Screw, locking lever | M5 | 6 Nm (4.4 lbf ft)<br>**Loctite®243™** |
| Screw, oil pump cover | M5 | 6 Nm (4.4 lbf ft)<br>**Loctite®243™** |
| Screw, stator | M5 | 6 Nm (4.4 lbf ft)<br>**Loctite®2701™** |
| Nut, cylinder head | M6 | 10 Nm (7.4 lbf ft)<br>Lubricated with engine oil |
| Nut, water pump impeller | M6 | 6 Nm (4.4 lbf ft)<br>**Loctite®243™** |
| Screw, alternator cover | M6 | 10 Nm (7.4 lbf ft) |
| Screw, clutch cover | M6 | 10 Nm (7.4 lbf ft) |
| Screw, clutch slave cylinder | M6 | 10 Nm (7.4 lbf ft) |
| Screw, engine case | M6 | 10 Nm (7.4 lbf ft) |
| Screw, exhaust flange | M6 | 10 Nm (7.4 lbf ft)<br>**Loctite®243™** |
| Screw, guide rail | M6 | 10 Nm (7.4 lbf ft)<br>**Loctite®243™** |
| Screw, oil filter cover | M6 | 10 Nm (7.4 lbf ft) |
| Screw, shift drum locating | M6 | 10 Nm (7.4 lbf ft)<br>**Loctite®243™** |

| | | |
|---|---|---|
| Screw, shift lever | M6 | 14 Nm (10.3 lbf ft)<br>**Loctite®243™** |
| Screw, starter motor | M6 | 10 Nm (7.4 lbf ft) |
| Screw, starter motor - intermediate gear | M6 | 10 Nm (7.4 lbf ft)<br>**Loctite®243™** |
| Screw, timing chain failure protection | M6 | 10 Nm (7.4 lbf ft)<br>**Loctite®243™** |
| Screw, valve cover | M6 | 8 Nm (5.9 lbf ft) |
| Screw, water pump cover | M6 | 10 Nm (7.4 lbf ft) |
| Stud, cylinder head | M6 | 6 Nm (4.4 lbf ft)<br>**Loctite®243™** |
| Screw, camshaft bearing bridge | M7x1 | Tightening sequence:<br>Tighten diagonally.<br>1st tightening stage<br>5 Nm (3.7 lbf ft)<br>2nd tightening stage<br>14 Nm (10.3 lbf ft)<br>Lubricated with engine oil |
| Crankshaft clamp screw plug | M8 | 10 Nm (7.4 lbf ft) |
| Screw, tensioning rail | M8 | 15 Nm (11.1 lbf ft)<br>**Loctite®243™** |
| Screw, engine sprocket | M10 | 60 Nm (44.3 lbf ft)<br>**Loctite®243™** |
| Plug, oil channel | M10x1 | 15 Nm (11.1 lbf ft)<br>**Loctite®243™** |
| Screw plug, cam lever axis | M10x1 | 10 Nm (7.4 lbf ft) |
| Screw, rotor | M10x1 | 70 Nm (51.6 lbf ft)<br>Collar and thread oiled / cone degreased |
| Screw, unlocking of timing chain tensioner | M10x1 | 8 Nm (5.9 lbf ft) |
| Spark plug | M10x1 | 12 Nm (8.9 lbf ft) |
| Coolant temperature sensor | M10x1.25 | 12 Nm (8.9 lbf ft) |
| Nut, cylinder head | M10x1.25 | Tightening sequence:<br>Tighten diagonally.<br>1st tightening stage<br>10 Nm (7.4 lbf ft)<br>2nd tightening stage<br>30 Nm (22.1 lbf ft)<br>3rd tightening stage<br>180°<br>Thread oiled |
| Stud, cylinder head | M10x1.25 | 20 Nm (14.8 lbf ft)<br>**Loctite®243™** |
| Oil drain plug with magnet | M12x1.5 | 20 Nm (14.8 lbf ft) |
| Screw plug, oil pressure control valve | M12x1.5 | 20 Nm (14.8 lbf ft) |
| Oil drain plug | M14x1.5 | 15 Nm (11.1 lbf ft) |
| Nut, inner clutch hub | M18x1.5 | 100 Nm (73.8 lbf ft)<br>**Loctite®243™** |

| | | |
|---|---|---|
| Nut, primary gear wheel | M18LHx1.5 | 120 Nm (88.5 lbf ft)<br>**Loctite®243™** |
| Screw plug, oil screen | M20x1.5 | 15 Nm (11.1 lbf ft) |
| Plug, timing chain tensioner | M24x1.5 | 40 Nm (29.5 lbf ft) |
| Screw, alternator cover | M24x1.5 | 18 Nm (13.3 lbf ft) |
| Fixing nut for main bearing inner ring | M27x1 | 60 Nm (44.3 lbf ft)<br>**Loctite®243™** |

## 22.3 Capacities

### 22.3.1 Engine oil

| | | |
|---|---|---|
| Engine oil | 1.0 l (1.1 qt.) | Engine oil (SAE 10W/50)<br>(📖 p. 138) |

### 22.3.2 Coolant

| | | |
|---|---|---|
| Coolant | 0.9 l (1 qt.) | Coolant (📖 p. 138) |

### 22.3.3 Fuel

| | |
|---|---|
| Super unleaded (ROZ 95) (📖 p. 139) | 7.2 l (1.9 US gal) |

## 22.4 Chassis

| | |
|---|---|
| Frame | Central tube frame made of chrome molybdenum steel tubing |
| Fork | **WP XACT 5448** |
| Suspension travel | |
| front | 310 mm (12.2 in) |
| rear | 300 mm (11.81 in) |
| Fork offset | 22 mm (0.87 in) |
| Shock absorber | **WP XACT 5750** |
| Brake system | Disc brakes, floating brake calipers |
| Brake discs - diameter | |
| front | 260 mm (10.24 in) |
| rear | 220 mm (8.66 in) |
| Brake discs - wear limit | |
| front | 2.5 mm (0.098 in) |
| rear | 3.5 mm (0.138 in) |
| Offroad tire pressure | |
| front | 1.0 bar (15 psi) |
| rear | 1.0 bar (15 psi) |
| Secondary ratio | 14:51 |
| Chain | 5/8 x 1/4" |
| Available rear sprockets | 47, 48, 49, 50, 51, 52 |
| Steering head angle | 63.9° |
| Wheelbase | 1,493 ± 10 mm (58.78 ± 0.39 in) |
| Seat height, unloaded | 958 mm (37.72 in) |

| | |
|---|---|
| Ground clearance, unloaded | 343 mm (13.5 in) |
| Weight without fuel, approx. | 101.9 kg (224.6 lb.) |
| Maximum permissible front axle load | 145 kg (320 lb.) |
| Maximum permissible rear axle load | 190 kg (419 lb.) |
| Maximum permissible overall weight | 335 kg (739 lb.) |

## 22.5 Electrical system

| | | |
|---|---|---|
| 12-V battery | HJTZ5S-FP-C | Lithium-ion battery<br>Battery voltage: 12 V<br>Nominal capacity: 2.0 Ah<br>Maintenance-free |
| Fuse | 58011109110 | 10 A |
| Fuse | 58011109105 | 5 A |

| | |
|---|---|
| Combination instrument lighting and indicator lamps | LED |

## 22.6 Tires

| **Front tire** | **Rear tire** |
|---|---|
| **80/100 - 21 51M TT**<br>Dunlop GEOMAX MX33F | **110/90 - 19 62M TT**<br>Dunlop GEOMAX MX33 |
| The tires specified represent one of the possible series production tires. For alternative manufacturers, if any, contact an authorized dealer or qualified tire dealership. If local road approval regulations apply, these and the respective technical specifications must be observed. Additional information is available in the Service section under:<br>KTM.COM | |

## 22.7 Fork

| | |
|---|---|
| Fork article number | A460C195W406000 |
| Fork | **WP XACT 5448** |
| Compression damping | |
| Comfort | 17 clicks |
| Standard | 12 clicks |
| Sport | 7 clicks |
| Rebound damping | |
| Comfort | 23 clicks |
| Standard | 18 clicks |
| Sport | 13 clicks |
| Air pressure | 10.7 bar (155 psi) |
| Fork length | 950 mm (37.4 in) |

| | | |
|---|---|---|
| Oil capacity external mechanism right | 230 $\pm\frac{10}{50}$ ml (7.78 $\pm\frac{0.34}{1.69}$ fl. oz.) | Fork oil (SAE 4) (48601166S1) (📖 p. 139) |
| Oil capacity external mechanism left | 230 $\pm\frac{10}{50}$ ml (7.78 $\pm\frac{0.34}{1.69}$ fl. oz.) | Fork oil (SAE 4) (48601166S1) (📖 p. 139) |
| Oil capacity, right cartridge | 380 ml (12.85 fl. oz.) | Fork oil (SAE 4) (48601166S1) (📖 p. 139) |
| Grease capacity, left cartridge | 5 g (0.18 oz) | Special grease (00062010053) (📖 p. 141) |

## 22.8 Shock absorber

| | |
|---|---|
| Shock absorber article number | A460C455W408000 |
| Shock absorber | **WP XACT 5750** |
| Lowspeed compression damping | |
| Comfort | 17 clicks |
| Standard | 15 clicks |
| Sport | 13 clicks |
| Highspeed compression damping | |
| Comfort | 2 turns |
| Standard | 1.5 turns |
| Sport | 1 turn |
| Rebound damping | |
| Comfort | 17 clicks |
| Standard | 15 clicks |
| Sport | 13 clicks |
| Spring preload | 8 mm (0.31 in) |
| Spring rate | |
| Weight of rider: 65 ... 75 kg (143 ... 165 lb.) | 39 N/mm (223 lb/in) |
| Weight of rider: 75 ... 85 kg (165 ... 187 lb.) | 42 N/mm (240 lb/in) |
| Weight of rider: 85 ... 95 kg (187 ... 209 lb.) | 45 N/mm (257 lb/in) |
| Spring length | 240 mm (9.45 in) |
| Gas pressure | 10 bar (145 psi) |
| Static sag | 35 mm (1.38 in) |
| Riding sag | 105 mm (4.13 in) |
| Fitted length | 456.3 mm (17.965 in) |

| | |
|---|---|
| Shock absorber oil | Shock absorber fluid (SAE 2.5) (50180751S1) (📖 p. 139) |

## 22.9 Chassis tightening torques

| | | |
|---|---|---|
| Screw, air filter box cover | **EJOT PT®** K60x20-Z | 3 Nm (2.2 lbf ft) |
| Screw, air filter box, on subframe | **EJOT PT®** K60x20AL | 5 Nm (3.7 lbf ft) |
| Screw, combination switch | **EJOT PT®** K50x18 T20 | 2 Nm (1.5 lbf ft) |
| Screw, fuel pump on fuel tank | **EJOT PT®** K60x25-Z | 2.3 Nm (1.7 lbf ft) |
| Screw, intake air temperature sensor | **EJOT PT®** K50x18 T20 | 0.7 Nm (0.52 lbf ft) |
| Screw, radiator hoses clip | | 2.4 Nm (1.77 lbf ft) |
| Screw, seat fixing | **EJOT EJOFORM PT®** K60x23/18 | 2.5 Nm (1.84 lbf ft) |
| Screw, start/stop button | **EJOT PT®** K50x18 T20 | 2 Nm (1.5 lbf ft) |
| Screw, fixed grip | M4 | 5 Nm (3.7 lbf ft) **Loctite®243™** |
| Screw, throttle valve body hose clamp | M4 | 5 Nm (3.7 lbf ft) |
| Spoke nipple, front wheel | M4.5 | 6 Nm (4.4 lbf ft) |
| Spoke nipple, rear wheel | M4.5 | 6 Nm (4.4 lbf ft) |
| Remaining nuts, chassis | M5 | 5 Nm (3.7 lbf ft) |

| | | |
|---|---|---|
| Remaining screws, chassis | M5 | 5 Nm (3.7 lbf ft) |
| Screw, battery terminal | M5 | 2.5 Nm (1.84 lbf ft) |
| Screw, frame protector | M5 | 3 Nm (2.2 lbf ft) |
| Screw, shock absorber adjusting ring | M5 | 5 Nm (3.7 lbf ft) |
| Screw, throttle valve body cover | M5 | 2.6 Nm (1.92 lbf ft) |
| Screws on main silencer | M5 | 7 Nm (5.2 lbf ft) |
| Nut, starter cable on starter motor | M6 | 4 Nm (3 lbf ft) |
| Nut, throttle cable on throttle valve body | M6 | 3 Nm (2.2 lbf ft) |
| Remaining nuts, chassis | M6 | 10 Nm (7.4 lbf ft) |
| Remaining screws, chassis | M6 | 10 Nm (7.4 lbf ft) |
| Screw, battery support bracket | M6 | 6 Nm (4.4 lbf ft) |
| Screw, brake line guide on link fork | M6 | 6 Nm (4.4 lbf ft) |
| Screw, chain guide on link fork at the front | M6x45 | 10 Nm (7.4 lbf ft) |
| Screw, chain guide on link fork at the rear | M6x16 | 10 Nm (7.4 lbf ft) |
| Screw, chain sliding guard on link fork | M6 | 6 Nm (4.4 lbf ft) |
| Screw, connector board with combination instrument | M6 | 5 Nm (3.7 lbf ft) |
| Screw, front brake disc | M6 | 14 Nm (10.3 lbf ft) **Loctite®243™** |
| Screw, fuel tank spoiler on radiator | M6 | 6 Nm (4.4 lbf ft) |
| Screw, ground wire on frame | M6 | 10 Nm (7.4 lbf ft) |
| Screw, hand lever | M6 | 5 Nm (3.7 lbf ft) |
| Screw, push rod ball joint on the rear brake cylinder | M6 | 10 Nm (7.4 lbf ft) **Loctite®243™** |
| Screw, rear brake disc | M6 | 14 Nm (10.3 lbf ft) **Loctite®243™** |
| Screw, seat fixing | M6 | 8 Nm (5.9 lbf ft) |
| Screw, starter cable to starter relay | M6 | 6 Nm (4.4 lbf ft) |
| Screw, throttle grip | M6 | 5 Nm (3.7 lbf ft) |
| Brake lever stop nut | M8 | 20 Nm (14.8 lbf ft) |
| Nut, rear sprocket screw | M8 | 35 Nm (25.8 lbf ft) **Loctite®2701™** |
| Nut, rim lock | M8 | 12 Nm (8.9 lbf ft) |
| 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, chain sliding piece | M8 | 15 Nm (11.1 lbf ft) |
| Screw, engine sprocket cover | M8 | 15 Nm (11.1 lbf ft) |
| Screw, fork stub | M8 | 15 Nm (11.1 lbf ft) |
| Screw, front brake caliper | M8 | 25 Nm (18.4 lbf ft) **Loctite®243™** |
| Screw, handlebar clamp | M8 | 20 Nm (14.8 lbf ft) |

| | | |
|---|---|---|
| Screw, manifold on cylinder head brace | M8 | 15 Nm (11.1 lbf ft) |
| Screw, subframe bottom | M8 | 30 Nm (22.1 lbf ft)<br>**Loctite®2701™** |
| Screw, subframe top | M8 | 35 Nm (25.8 lbf ft)<br>**Loctite®2701™** |
| Screw, top steering stem | M8 | 20 Nm (14.8 lbf ft)<br>**Loctite®243™** |
| Screw, top triple clamp | M8 | 17 Nm (12.5 lbf ft) |
| Engine carrying screw | M10 | 60 Nm (44.3 lbf ft) |
| Remaining nuts, chassis | M10 | 45 Nm (33.2 lbf ft) |
| Remaining screws, chassis | M10 | 45 Nm (33.2 lbf ft) |
| Screw, bottom shock absorber | M10 | 60 Nm (44.3 lbf ft)<br>**Loctite®2701™** |
| Screw, handlebar support | M10 | 40 Nm (29.5 lbf ft)<br>**Loctite®243™** |
| Screw, top shock absorber | M10 | 60 Nm (44.3 lbf ft)<br>**Loctite®2701™** |
| Nut, angle lever to link fork | M16x1.5 | 60 Nm (44.3 lbf ft) |
| Nut, fork pivot | M16x1.5 | 100 Nm (73.8 lbf ft) |
| Nut, frame on linkage lever | M16x1.5 | 60 Nm (44.3 lbf ft) |
| Nut, linkage lever on angle lever | M16x1.5 | 60 Nm (44.3 lbf ft) |
| Screw, front wheel spindle | M20x1.5 | 35 Nm (25.8 lbf ft) |
| Screw, top steering head | M20x1.5 | 12 Nm (8.9 lbf ft) |
| Nut, rear wheel spindle | M22x1.5 | 80 Nm (59 lbf ft) |
| Screw-in fitting, cooling system | M24x1.5 | 7.5 Nm (5.53 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 exhibits the corresponding properties.

**Recommended supplier**

**Castrol**

– **REACT PERFORMANCE DOT 4**

**MOTOREX®**

– **Brake Fluid DOT 5.1**

## Coolant

**Guideline**

– Only use high-grade, silicate-free coolant with corrosion inhibitor additive for aluminum motors. Low grade and unsuitable antifreeze causes corrosion, deposits and frothing.

– Do not use pure water as only coolant is able to meet the requirements needed in terms of corrosion protection and lubrication properties.

– Only use coolant that complies with the requirements stated (see specifications on the container) and that has the relevant properties.

| | |
|---|---|
| Antifreeze protection to at least | −25 °C (−13 °F) |

The mixture ratio must be adjusted to the necessary antifreeze protection. Use distilled water if the coolant needs to be diluted.

The use of premixed coolant is recommended.

Observe the coolant manufacturer specifications for antifreeze protection, dilution and miscibility (compatibility) with other coolants.

**Recommended supplier**

**MOTOREX®**

– **COOLANT M3.0**

## Engine oil (SAE 10W/50)

**Standard/classification**

– JASO T903 MA2 (📖 p. 142)

– SAE (📖 p. 142) (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®**

– **Cross Power 4T**

## Fork oil (SAE 4) (48601166S1)

**Standard/classification**

– SAE (📖 p. 142) (SAE 4)

**Guideline**

– Use only oils that comply with the specified standards (see specifications on the container) and that exhibit the corresponding properties.

## Shock absorber fluid (SAE 2.5) (50180751S1)

**Standard/classification**

– SAE (📖 p. 142) (SAE 2.5)

**Guideline**

– Use only oils that comply with the specified standards (see specifications on the container) and that exhibit the corresponding properties.

## Super unleaded (ROZ 95)

**Standard/classification**

– DIN EN 228 (ROZ 95)

**Guideline**

– Only use super unleaded fuel that matches or is equivalent to the specified standard.
– 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).

## Air filter cleaner

**Recommended supplier**
**MOTOREX®**
– **Racing Bio Dirt Remover**

## Chain cleaner

**Recommended supplier**
**MOTOREX®**
– **Chain Clean**

## Fuel additive

**Recommended supplier**
**MOTOREX®**
– **Fuel Stabilizer**

## High viscosity grease

**Recommended supplier**
**SKF®**
– **LGHB 2**

## Long-life grease

**Recommended supplier**
**MOTOREX®**
– **Bike Grease 2000**

## Motorcycle cleaner

**Recommended supplier**
**MOTOREX®**
– **Moto Clean**

## Off-road chain spray

**Recommended supplier**
**MOTOREX®**
– **Chainlube Offroad**

## Oil for foam air filter

**Recommended supplier**
**MOTOREX®**
– **Racing Bio Liquid Power**

## Preserving materials for paints, metal and rubber

**Recommended supplier**
**MOTOREX®**
– **Moto Protect**

## Silicone spray

**Recommended supplier**
**MOTOREX®**
– **Silicone Spray**

## Special cleaner for glossy and matte paint finishes, metal and plastic surfaces

**Recommended supplier**
**MOTOREX®**
– **Quick Cleaner**

## Special grease (00062010053)

**Recommended supplier**
**Klüber Lubrication®**
– **Klüberfood NH1 34-401**

## Universal oil spray

**Recommended supplier**
**MOTOREX®**
– **Joker 440 Synthetic**

## JASO T903 MA2

Different technical development directions required a separate specification for motorcycles – the **JASO T903 MA2** standard.
Earlier, engine oils from the automobile industry were used for motorcycles because there was no separate motorcycle specification.
Whereas long service intervals are demanded for automobile engines, the focus for motorcycle engines is on high performance at high engine speeds.
In most motorcycle engines, the transmission and clutch are lubricated with the same oil.
The **JASO T903 MA2** 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.

| | | |
|---|---|---|
| - | Launch control | Vehicles electronics functions for achieving the best possible acceleration from a standing position |
| OBD | On-board diagnosis | Vehicle system, which monitors the specified parameters of the vehicle electronics |
| - | Quickshifter | Function of the engine electronics for shifting up without clutch actuation |
| TC | Traction Control | Auxiliary function of the motor control that reduces engine torque with spinning rear wheel |

# 27 LIST OF ABBREVIATIONS

| | |
|---|---|
| Art. no. | Article number |
| ca. | circa |
| cf. | compare |
| e.g. | for example |
| etc. | et cetera |
| i.a. | inter alia |
| no. | number |
| poss. | possibly |

## 28.1 Yellow and orange symbols

Yellow and orange symbols indicate an error condition that requires prompt intervention. Active driving aids are also represented by yellow or orange symbols.

| | |
|---|---|
|  | Malfunction indicator lamp lights up/flashes orange – The OBD has detected a malfunction in the vehicle electronics. The malfunction indicator lamp also lights up if traction control is activated and the speed limiter intervenes. |
|  | TC indicator lamp lights up orange – **TC** is enabled or is currently intervening. The TC indicator lamp flashes if launch control is activated. |

## 28.2 Green and blue symbols

Green and blue symbols reflect information.

| | |
|---|---|
|  | QS indicator lamp lights up blue – The quickshifter is activated. The QS indicator lamp flashes when the quickshifter is being programmed. |
|  | Indicator lamp Ⓑ lights up green – ADVANCED mapping is activated. |

## 28.3 White symbols

White symbols convey information.

| | |
|---|---|
|  | Indicator lamp Ⓐ lights up white – STANDARD mapping is activated. |

1

**12-V battery**
installing . . . . . 101
recharging . . . . . 102
removing . . . . . 100
starting power . . . . . 21

A

**Air filter**
cleaning . . . . . 65
installing . . . . . 66
removing . . . . . 64

**Air filter box**
cleaning . . . . . 65

**Air filter box cover**
installing . . . . . 63
preparing for securing . . . . . 66
removing . . . . . 62

**Air suspension XACT** . . . . . 35

**Antifreeze**
checking . . . . . 106

**Auxiliary substances** . . . . . 9

B

**Basic chassis setting**
rider's weight, checking with . . . . . 35

**Blink code** . . . . . 128-129

**Brake discs**
checking . . . . . 81

**Brake fluid**
front brake, adding . . . . . 83
rear brake, adding . . . . . 89

**Brake fluid level**
front brake, checking . . . . . 82
rear brake, checking . . . . . 88

**Brake lining retainers**
of front brake, checking . . . . . 84
of rear brake, checking . . . . . 91

**Brake linings**
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