OWNER'S MANUAL 2020

READY TO RACE
»www.ktm.com

RC4 R

Art. no. 3214169en

KTM

DEAR KTM CUSTOMER

Congratulations on your decision to purchase a KTM motorcycle. You are now the owner of a state-of-the-art, sporty motorcycle that you will continue to enjoy for a long time if you maintain it properly. 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 going to print. However, minor differences due to further developments in design cannot be ruled out completely.

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

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KTM applies quality assurance processes that lead to the highest possible product quality as defined in the ISO 9001 international quality management standard.
Issued by: TÜV Management Service

REG.NO. 12 100 6061

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This document is valid for the following models:
RC4 R (F8199T1)

3214169en

01/2020

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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).

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

Indicates a current measurement.

Indicates the end of an activity, including potential rework.

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 very hot when the vehicle is operated.

– Do not touch any parts such as the exhaust system, radiator, engine, shock absorber, 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.
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 remote key) or the engine must be at a standstill (models without ignition lock or remote 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)
During assembly, use new parts to replace parts which cannot be reused (e.g. self-locking screws and nuts, 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

It is important that you read this Owner's Manual carefully and completely before making your first trip. The Owner's Manual contains useful information and many tips on how to operate, handle, and service your motorcycle. Only then will you find out how to customize the vehicle ideally for your own use and how you can protect yourself from injury.
Keep the Owner's Manual in an accessible place to enable you to refer to it as needed.
If you would like to know more about the vehicle or have questions on the material you read, please contact an authorized KTM dealer.
The Owner's Manual is an important component of the vehicle and must be handed over to the new owner if the vehicle is sold.

The Owner's Manual is also available for download from your authorized KTM dealer and on the KTM website.
International KTM Website: http://www.ktm.com

3.1 Manufacturer and 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, accessories

For your own safety, only use spare parts and accessory products that are approved and/or recommended by KTM and have them installed by an authorized KTM workshop. KTM accepts no liability for other products and any resulting damage or loss.
Certain spare parts and accessory products are specified in parentheses in the descriptions. Your authorized KTM dealer will be glad to advise you.

The current **KTM PowerParts** for your vehicle can be found on the KTM website.
International KTM Website: http://www.ktm.com

3.4 Service

A prerequisite for perfect operation and prevention of premature wear is that the service, care, and tuning work on the engine and chassis is properly carried out as described in the Owner's Manual. An incorrect suspension setting can lead to damage and breakage of chassis components.
Use of the vehicle under difficult conditions, such as in heavy rain, intense heat or with a heavy payload, may 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.
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.

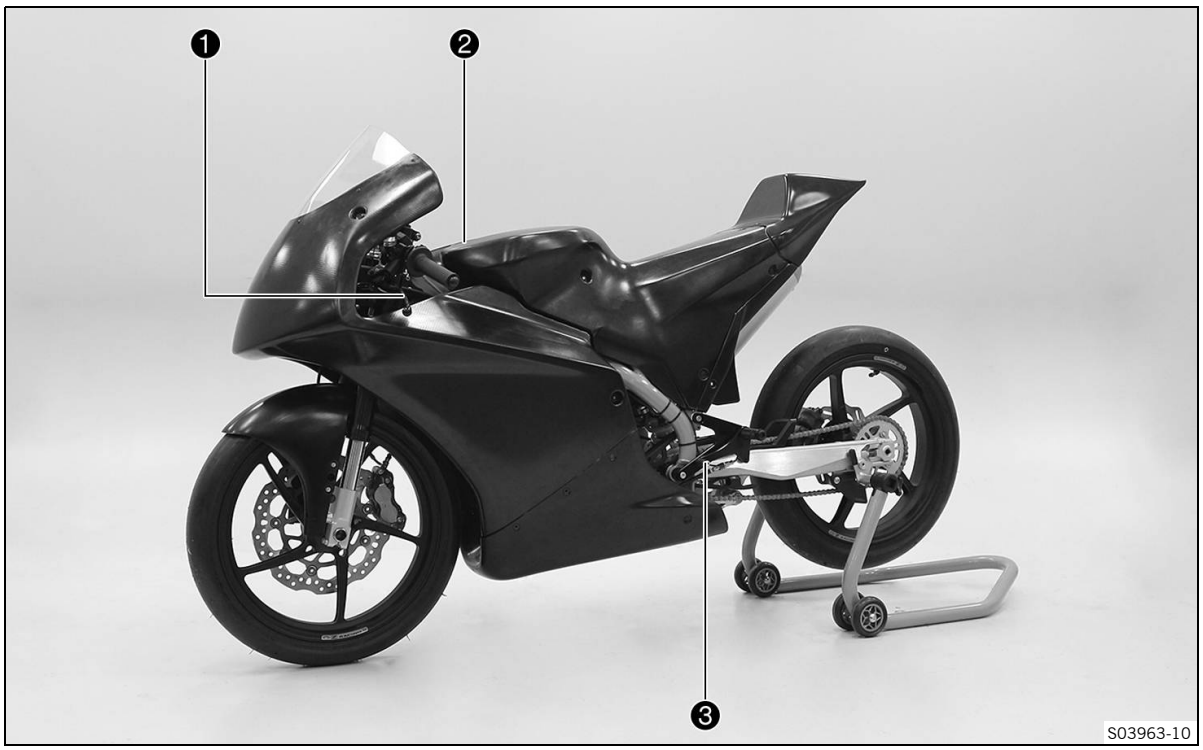
3.6 Customer service

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: http://www.ktm.com

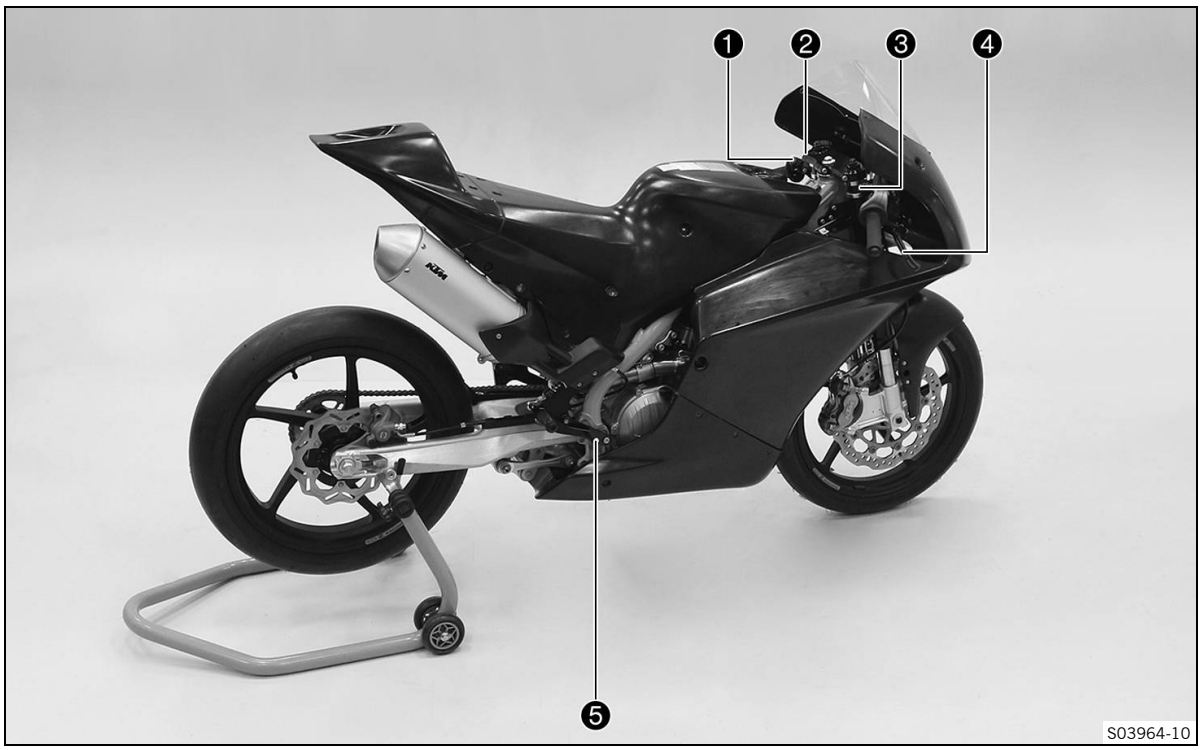
4 VIEW OF VEHICLE

4.1 View of vehicle, front left (example)



1. Clutch lever (📖 p. 13)
2. Fuel tank filler cap
3. Shift lever (📖 p. 18)

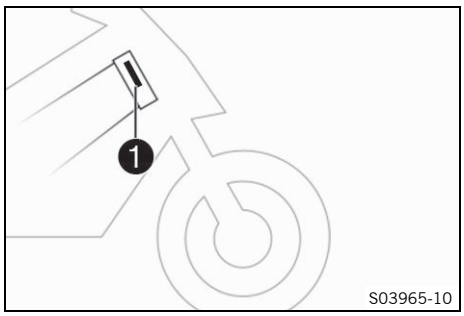
4.2 View of vehicle, rear right (example)



1. Switch-off button (p. 13)
2. Combination switch (p. 15)
3. Start button (p. 14)
4. Hand brake lever (p. 13)
5. Foot brake lever (p. 19)

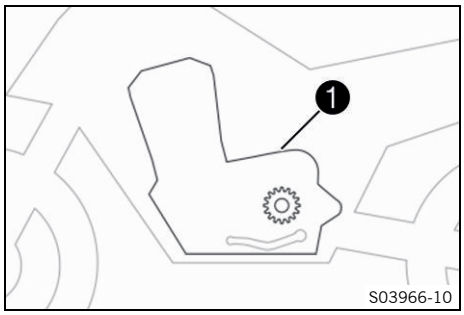
5 SERIAL NUMBERS

5.1 Vehicle identification number



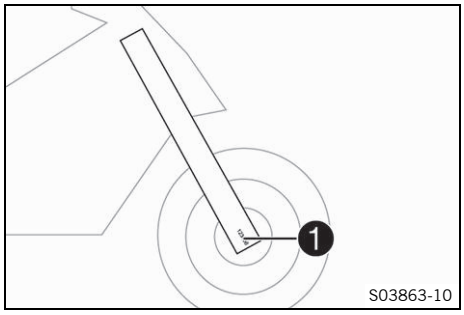
The vehicle identification number ❶ is stamped on the right side of the steering head.

5.2 Engine number



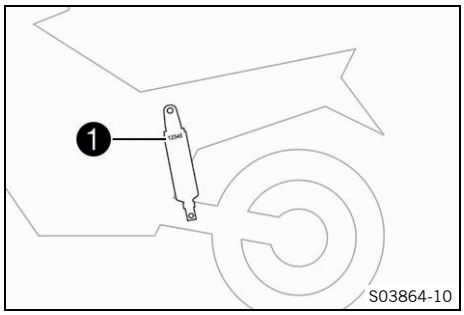
Engine number ❶ is embossed on the left side of the engine above the engine sprocket.

5.3 Fork article number



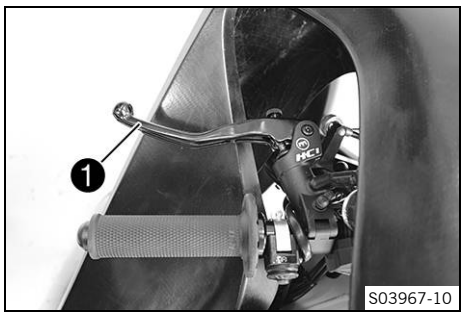
The fork article number ❶ is stamped on the inside of the axle clamp.

5.4 Shock absorber article number



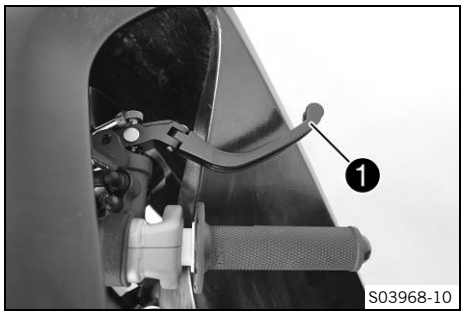
Shock absorber article number ❶ is stamped on the top of the shock absorber above the adjusting ring towards the motor side.

6.1 Clutch lever



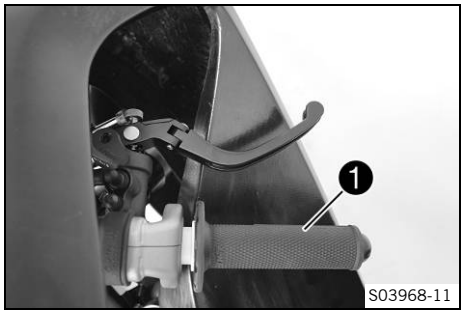
Clutch lever ❶ is fitted on the handlebar on the left.

6.2 Hand brake lever



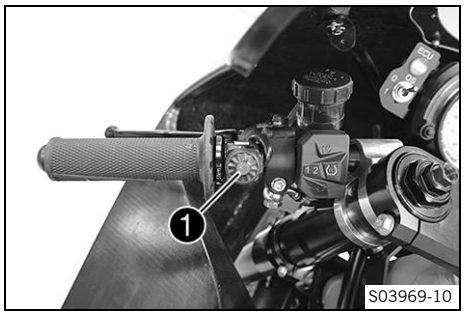
The front brake is engaged using the hand brake lever.
The hand brake lever ❶ is located on the right side of the handlebar.

6.3 Throttle grip



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

6.4 Switch-off button

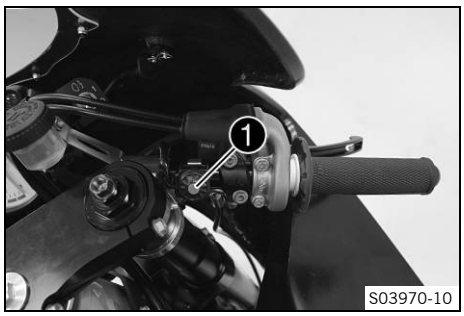


Switch-off button ❶ is fitted on the left side of the handlebar.

Possible states

- The switch-off button ☒ is in the basic position – In this position, the ignition circuit is closed and the engine can be started.
- The switch-off button ☒ is 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

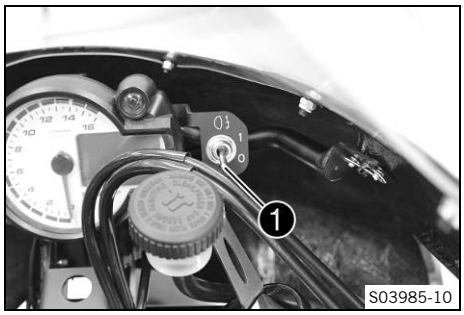


Start button ❶ is fitted on the right side of the handlebar.

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 Tail light switch

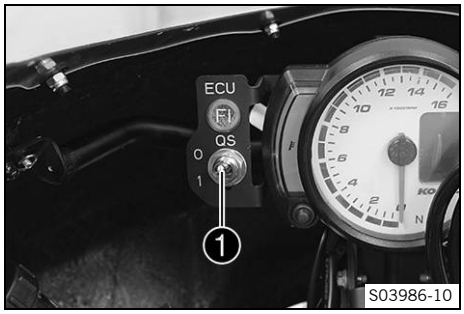


Tail light switch ❶ is located next to the combination instrument on the right.

Possible states

0	Tail light off – The tail light switch is in position **0**. In this position, the tail light is switched off.
I	Tail light on – The tail light switch is in position **1**. In this position, the tail light is switched on.

6.7 Quickshifter switch



Quickshifter switch ❶ is located next to the combination instrument on the left.

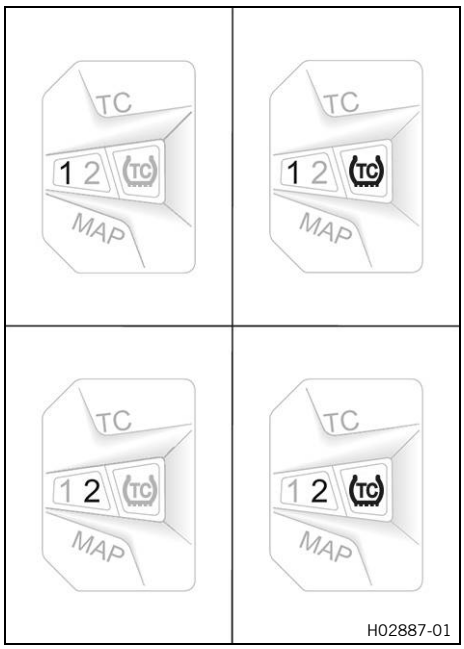
Info

If you are not shifting and a misfire occurs while riding, the quickshifter should be switched off until the cause is identified and fixed.

Possible states

0	Quickshifter off – The quickshifter switch is in position **0**. In this position, the quickshifter is switched off.
I	Quickshifter on – The quickshifter switch is in position **1**. In this position, the quickshifter is switched on.

6.8 Combination switch



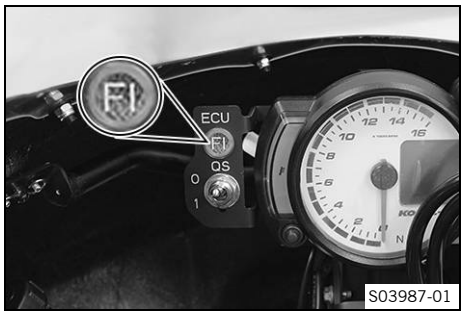
The combination switch is fitted on the left side of the handlebar.

Possible states

1	STANDARD – STANDARD mapping is activated when LED **1** lights up.
1TC	STANDARD with TC – STANDARD mapping with traction control is activated when LED **1** and **TC** light up.
2	ADVANCED – ADVANCED mapping is activated, when LED **2** lights up.
2 TC	ADVANCED with TC – ADVANCED mapping with traction control is activated when LED **2** and **TC** light up.

The engine characteristic can be changed using button **MAP** on the combination switch.
The launch control and the traction control can also be activated using the combination switch.

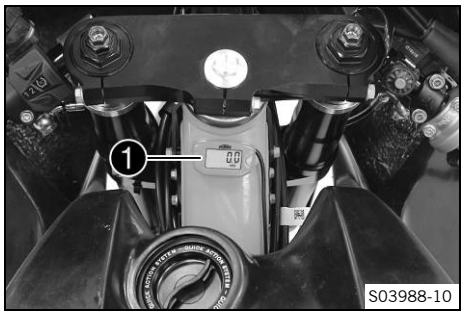
6.9 Malfunction indicator lamp



Possible states

FI	Malfunction indicator lamp lights up/flashes orange – The OBD has detected a malfunction in the vehicle electronics.
FI	Malfunction indicator lamp flashes orange rapidly – Launch control is activated.

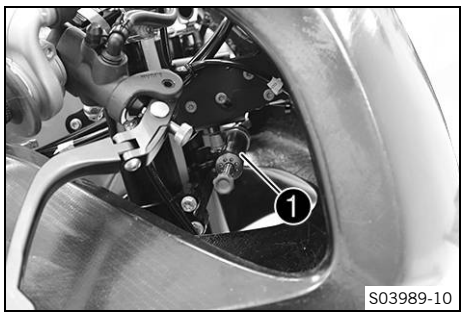
6.10 Service hour counter



Service hour counter ❶ is attached between the fuel tank and the steering head.
It shows the total number of service hours of the engine.
The service hour counter begins counting when the engine is started and stops when the engine is switched off.

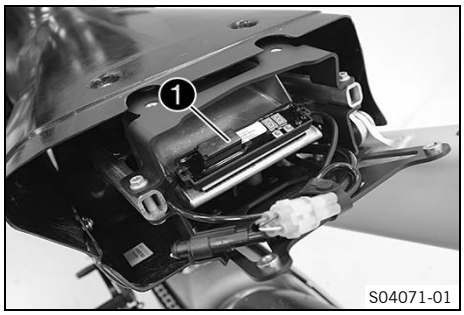
Info
The value indicated by the service hour counter cannot be cleared or adjusted.

6.11 Steering damper



Steering damper ❶ suppresses shocks to the steering arising from acceleration on uneven ground at high speed or when the load is temporarily taken from the front wheel.
The steering damper is adjusted to suit the riding style and the road conditions. For high speeds, a setting with high damping can be chosen to make the best possible use of the steering damper function. In slow, tight bends, intensive damping can negatively affect handling and steering precision, so the damping should be set to low.

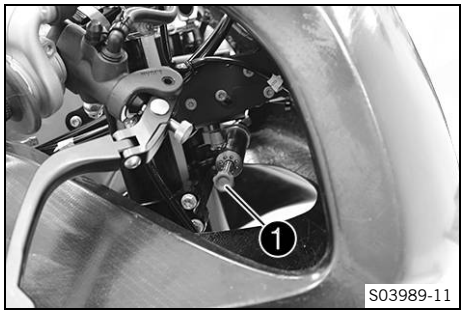
6.12 Quickshifter



Quickshifter ❶ is located in the tail section of the motorcycle.

6.13 Adjusting the steering damper

Info
In contrast to other absorbing elements, the steering damper is adjusted with the absorbing element open.



– Turn adjusting screw ❶ counterclockwise to the last detectable click.
– Adjust the steering damper according to your riding style and the road conditions by turning adjusting screw ❶ clockwise.

Guideline

Steering damper adjustment range	1 ... 32 clicks
Standard	16 clicks
Do not change the adjustment of the steering damper during the journey.	

– After adjusting the steering damper, check the steering for freedom of movement.
  ✔ The handlebar can be moved from one stop to the other without a locking tendency.

6.14 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 refuel 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

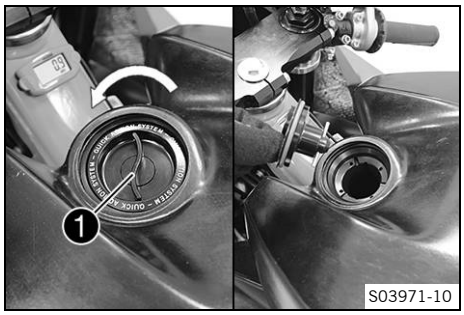
Danger of poisoning Fuel is poisonous and a health hazard.

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

Note

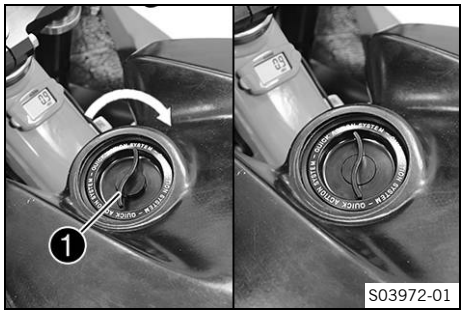
Environmental hazard Improper handling of fuel is a danger to the environment.

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



- Press in fuel tank quick release ❶ and turn counterclockwise.
- Take off the fuel tank cover.

6.15 Closing the fuel tank filler cap



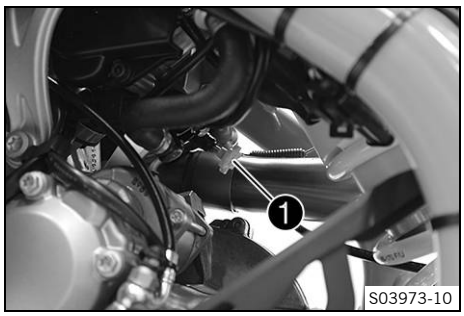
- Position the fuel tank cover.

  Guideline

The fuel tank cover must not protrude.

- Turn fuel tank quick release ❶ clockwise.

6.16 Cold start button

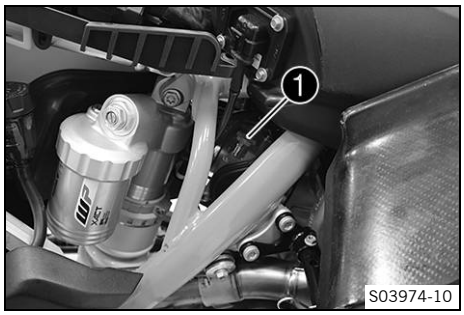


The cold start button 1 is fitted to the bottom of the throttle valve body.
The electronic fuel injection system extends the injection time if the engine is cold and the ambient temperature is low. To help the engine burn the increased fuel quantity, it must be supplied with additional oxygen by pushing 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.

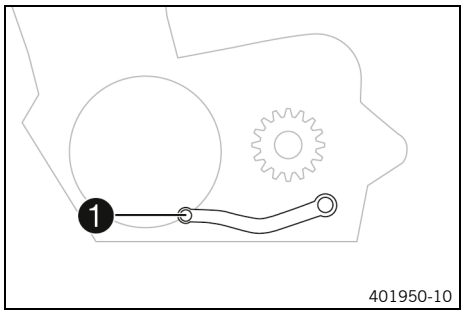
Possible states
- The cold start button is activated – The cold start button is pushed in all the way.
- The cold start button is deactivated – The cold start button is in its basic position.

6.17 Idle speed adjusting screw

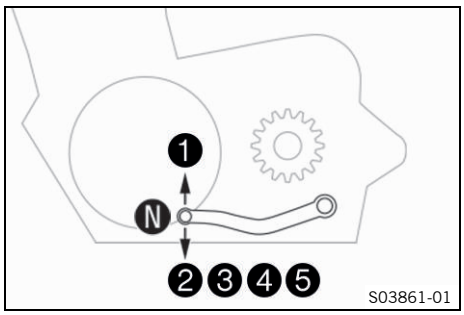


The idle setting of the throttle valve body substantially influences the vehicle's starting behavior, a stable idle speed, and the vehicle's response when the throttle is opened.
An engine with a correctly set idle speed is easier to start than an engine with the idle speed set incorrectly.
The idle speed is adjusted using the idle speed adjusting screw 1.
Increase the idle speed by turning the idle speed adjusting screw clockwise.
Decrease the idle speed by turning the idle speed adjusting screw counterclockwise.

6.18 Shift lever

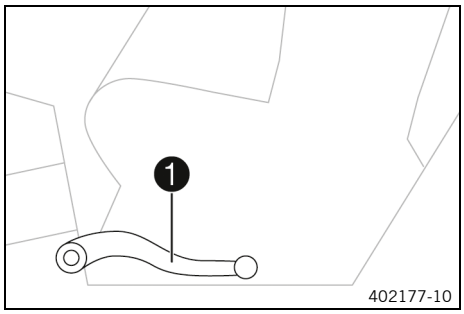


Shift lever 1 is located in front of the left footrest.



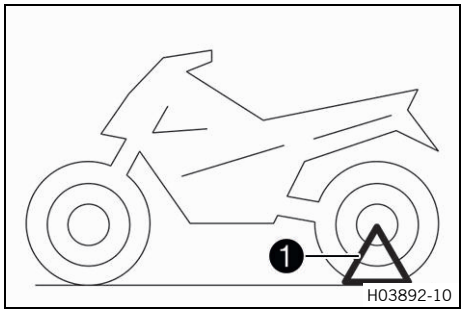
The gear positions can be seen in the figure.
The neutral or idle position is between the first and second gears.

6.19 Foot brake lever



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

6.20 Plug-in stand

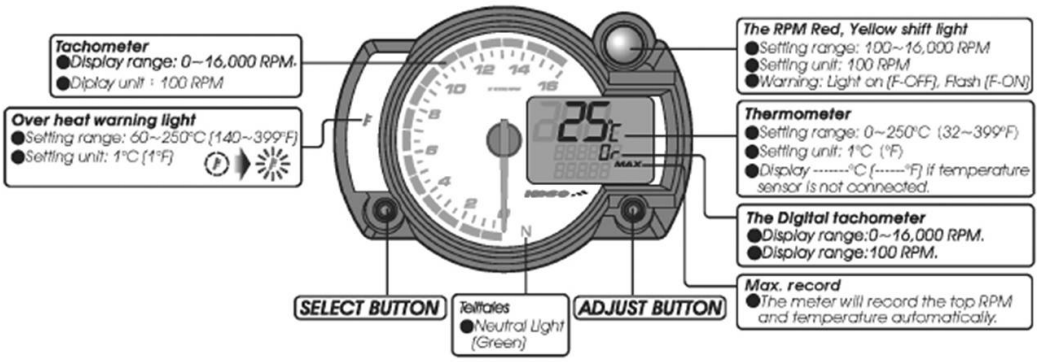


The support for plug-in stand ❶ is the left side of the wheel spindle.
The plug-in stand is used to park the motorcycle.

Info
Remove the plug-in stand before riding.

7.1 Combination instrument

3-1 Overview



3-2 Function setting instruction

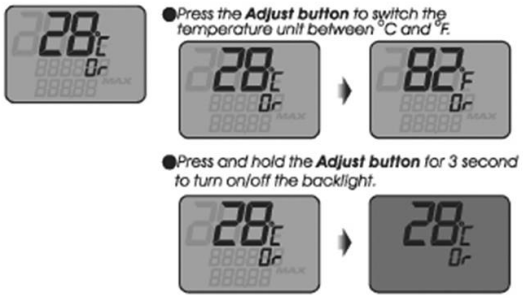
●Tachometer	Display range: 0~16,000 RPM
●Digital tachometer	Setting range 0~16,000 RPM Setting unit: 100 RPM
○Display internal	<0.5 second
○Shift light (Red)	Setting range: 100~16,000 RPM Setting unit: 100 RPM
○Shift light (Yellow)	Setting range: 100~16,000 RPM Setting unit: 100 RPM
○Max. RPM record	Display range : 0~16,000 RPM
○Piston setting	Setting range: P-0.5. 1. 1.5. 2. 2.5. 3. 4. 5. 6
○The RPM input pulse	Setting range: Hi (The positive wave pulse) Lo (The negative wave pulse)
●Thermometer	Setting range: 0~250°C (32~399°F) Setting unit: 1°C (°F)

○Display internal	<0.5 second
○Over heat warning light	Setting range: 60~250°C (140~399°F) Setting unit: 1°C (°F)
○TOP temperature record	Setting range: 0~250°C (32~399°F)
●Backlight color	Blue
●Battery type	9V-12V
●Effective temperature range	-10~+60°C
●Meter standard	JIS D 0203 S2
●Meter size	135.7 X 100.7 X 52 mm
●Meter weight	Around 240 g
●Telltales	Neutral light (Green) Over heat warning light (Red) RPM shift light (Red, Yellow)

NOTE Design and specification are subject to change without notice!

4-1 Adjust & Select button function instruction

● 4-1-1 Adjust button function instruction



●Press the **Adjust button** to switch the temperature unit between °C and °F.

●Press and hold the **Adjust button** for 3 second to turn on/off the backlight.

● 4-1-2 Select button function instruction

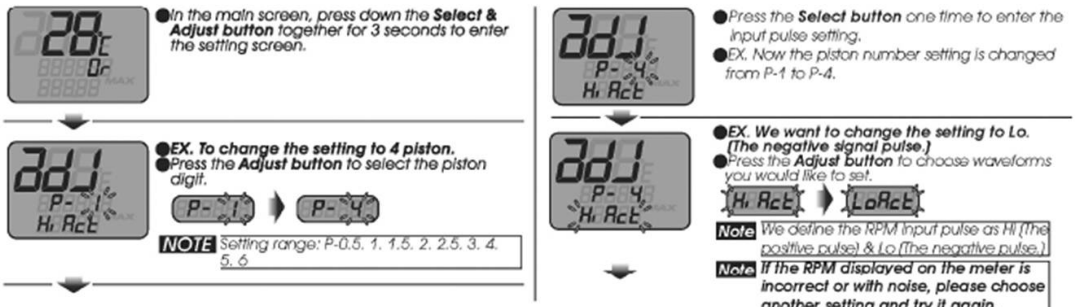
●Press the **Select button** once to switch from Max record to the main screen.

●Press down the **Select button** for 3 Seconds to reset the MAX record.

● 4-1-3 Adjust+Select button function instruction

●In main screen, press down the **Adjust+Select buttons** at the same time for 3 seconds to enter the setting screen. (Check section 4-2 for detail)

4-2 Function setting instruction



●In the main screen, press down the **Select & Adjust button** together for 3 seconds to enter the setting screen.

●**EX. To change the setting to 4 piston.**

●Press the **Adjust button** to select the piston digit.

NOTE Setting range: P-0.5. 1. 1.5. 2. 2.5. 3. 4. 5. 6

●Press the **Select button** one time to enter the input pulse setting.

●EX. Now the piston number setting is changed from P-1 to P-4.

●**EX. We want to change the setting to Lo. (The negative signal pulse.)**

●Press the **Adjust button** to choose waveforms you would like to set.

Note We define the RPM input pulse as Hi (The positive pulse) & Lo (The negative pulse.)

Note **If the RPM displayed on the meter is incorrect or with noise, please choose another setting and try it again.**

S03977-01

The combination instrument is attached in front of the handlebar.

●Press the **Select button** to enter the red shift light setting screen.
●EX. Now the input signal is changed from hight to low.

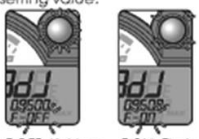
●**EX. The red shift light set on 9,500 RPM.**
●Press the **Select button** to move to the digit you want to set.

●Then press the **Adjust button** to change the setting value.

Note Setting range: 100~16,000 RPM
Setting unit: 100 RPM

●Press the **Select button** to enter the Red Shift Light Warning Method setting screen.
●EX. Now the red shift light is setting from 9,000 PRM to 9,500 RPM.

●**EX. To set F-ON (Flashing ON) for Red Shift Light Warning Method.**
●Then press the **Adjust button** to change the setting value.



●Press the **Select button** to enter the yellow shift light setting screen.
●EX. Now the Red Shift Light Warning Method is setting from F-OFF to F-ON.

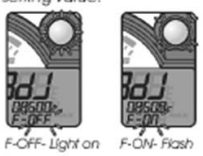
●**EX. The yellow shift light set on 8,500 RPM.**
●Press the **Select button** to move to the digit you want to set.

●Then press the **Adjust button** to change the setting value.

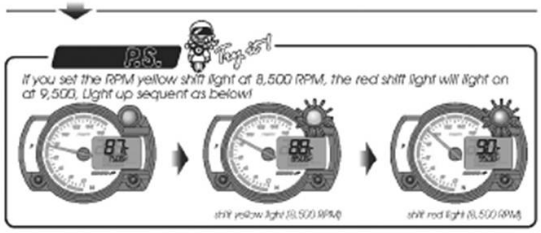
Note Setting range: 100~16,000 RPM
Setting unit: 100 RPM

●Press the **Select button** to enter the Yellow Shift Light Warning Method setting screen.
●EX. Now the yellow shift light is setting from 8,000 PRM to 8,500 RPM.

●**EX. To set F-ON (Flashing ON) for Yellow Shift Light Warning Method**
●Then press the **Adjust button** to change the setting value.



●Press the **Select button** to enter the over heat warning light setting screen.
●EX. Now the Yellow Shift Light Warning Method is setting from F-OFF to F-ON.



●**EX. The over heat warning set on 105°C.**
●Press the **Select button** to move to the digit you want to set.

●Press the **Adjust button** to change the setting digit.

Note Setting range: 60~250°C (140~399°F)
Setting unit: 1°C (°F)

●Press the **Select button** to back the main screen.

●The main screen.

5 Trouble shooting

The following situation do not indicate malfunction of the meter. Please check the following before taking it in for repair.

Trouble	Check item
The meter doesn't work when the power is on.	●The power doesn't supply to the meter. →Please make sure the wiring is connected. The wiring and fuse are not broken. →The battery is broken or the battery is too old to supply enough power **(DC 9 V) to** make the meter work.
The meter shows wrong information.	**●Please check the voltage of your battery, and make sure the voltage is over DC 9 V.**
Tachometer does not appear or appear incorrectly.	●Please check the RPM sensor wiring is connected correctly.

Trouble	Check item
Temp does not appear or appear incorrectly.	●Please check the spark plug is **R** type or not. If not, please replace the spark plug with the **R** type spark plug. ●Please check your setting. →Please refer to the manual **4-2**. **●Please check the sensor.** **→Does the wiring break or falling off ?**

S03978-01

The adjustment of the combination instrument is shown in the graphic.

8.1 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 when you are not braking.

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 misappropriation People who act without authorization endanger themselves and others.

– 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.
  ✓ The delivery certificate is transferred upon vehicle handover.
– Read the entire Owner's Manual before riding for the first time.
– Get to know the controls.
– Adjust basic position of the clutch lever. (📖 p. 72)
– Adjust basic position of the hand brake lever. (📖 p. 78)

– Adjust the basic position of the foot brake lever. (📖 p. 82)
– Adjust the shift lever. (📖 p. 104)
– 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.

– 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	190 kg (419 lb.)
Maximum permissible front axle load	93 kg (205 lb.)
Maximum permissible rear axle load	97 kg (214 lb.)

– Run the engine in. (📖 p. 25)

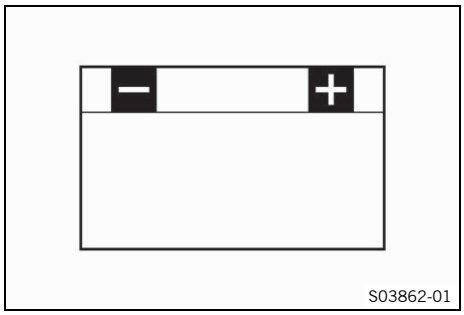
8.2 Running in the engine

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

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

– Avoid fully opening the throttle!

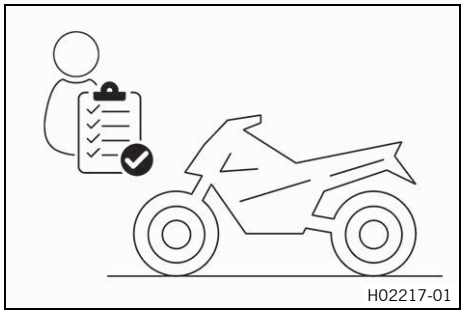
8.3 Starting power of lithium-ion batteries at low temperatures



Lithium-ion batteries are far lighter than lead batteries, have a low self-discharge rate, and have more starting power at temperatures over 15 °C (60 °F). At low temperatures, however, the starting power of lithium-ion batteries drops to below that of lead batteries.
Multiple starting attempts may be needed. Press the start button for 5 seconds, and wait 30 seconds between attempts. The pauses are necessary so that the heat created can distribute through the lithium-ion battery and the lithium-ion battery is not damaged.
If the charged lithium-ion battery is unable to actuate the electric starter when temperatures are below 15 °C (60 °F), the battery is not faulty, but needs to be warmed up internally to increase its starting power (current output).
The starting power increases as the battery warms up.

9.1 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 the engine oil level. (p. 108)
- Check the front brake fluid level. (p. 73)
- Check the rear brake fluid level. (p. 78)
- Check the front brake linings. (p. 75)
- Check the rear brake linings. (p. 80)
- Check that the brake system is functioning properly.
- Check the coolant level. (p. 97)
- Check for chain dirt accumulation. (p. 58)
- Check the chain, rear sprocket, and engine sprocket. (p. 61)
- Check the chain tension. (p. 59)
- Check the tire condition. (p. 88)
- Check tire pressure. (p. 89)
- Check the air filter.
- 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.

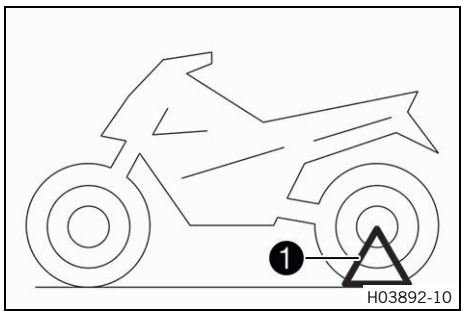
9.2 Starting

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.

Caution
Danger of accidents Electronic components and safety devices will be damaged if the 12-V battery is discharged or missing.
- Never operate the vehicle with a discharged 12-V battery or without a 12-V battery.

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.
- Never start to use the vehicle without an air filter.

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.

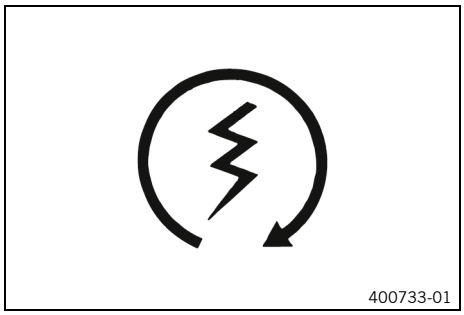


– Remove plug-in stand ❶.
– Shift the transmission into neutral.

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 30 seconds before a further attempt at starting.
At temperatures below 15 °C (60 °F), several attempts at starting may be necessary to warm-up the lithium-ion battery and thereby increase the starting power.
During the starting process, the malfunction indicator lamp lights up.

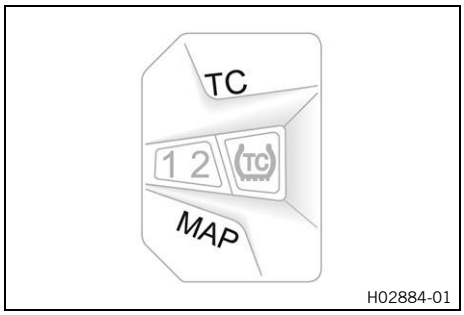
9.3 Activating launch control

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 **MAP** and **TC** buttons simultaneously.

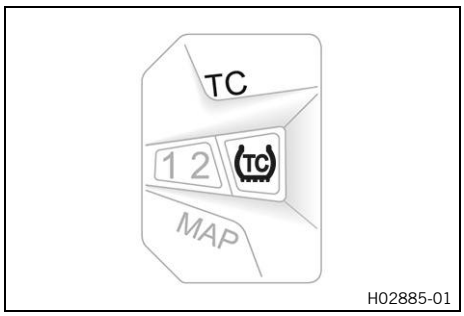
✓ The malfunction indicator lamp flashes orange rapidly.

Info

The launch control is deactivated automatically for a few seconds after the vehicle has started.
The launch control is also deactivated in the following cases (malfunction indicator lamp no longer flashes): 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.

9.4 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 button **TC** to switch the traction control on or off.
Guideline

Engine speed	≤ 4,000 rpm

✔ The **TC** LED lights up when the traction control is activated.

9.5 Starting off

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

Tip
If the engine dies while starting off, only pull the clutch lever and press the electric starter button. You do not need to shift into neutral.

9.6 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 (taking care not to endanger yourself or other road users in the process), switch off the engine and contact an authorized KTM workshop.
First-gear is used for starting off and for steep inclines.

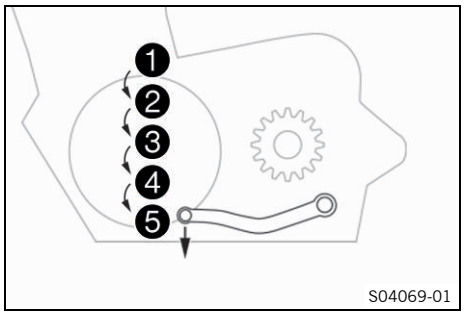
– Shift into a higher gear when conditions allow (incline, road situation, etc.). To do so, release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch lever and open the throttle.
– If the cold start button was pushed while starting, open the throttle 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.

Note

Transmission damage Incorrect use of the quickshifter will damage the transmission.

The quickshifter is only designed for shifting up under load.
The quickshifter can only be used if the function is enabled on the quickshifter switch.

– Use the quickshifter only to shift up under load.
– To shift in overrun condition or in load-free condition, use the clutch lever for shifting.
– Pull the clutch lever to shift down.

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

Info

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

9.7 Applying the brakes

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.

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 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 when you are not braking.

Warning
Danger of accidents The rear wheel can lock due to the engine braking effect.
– Pull in the clutch, if you perform emergency or full braking, or if you brake on a slippery ground.

Warning
Danger of accidents Banked or laterally sloping ground reduces the maximum possible delay.
– If possible finish braking before going into a bend.

– 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.

9.8 Stopping, parking

Warning
Risk of misappropriation People who act without authorization endanger themselves and others.
– 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 very hot when the vehicle is operated.
– Do not touch any parts such as the exhaust system, radiator, engine, shock absorber, 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 into neutral.
– Press and hold the switch-off button ⊠ while the engine is idling until the engine stops.
– Park the motorcycle on firm ground.

9.9 Transporting

Note

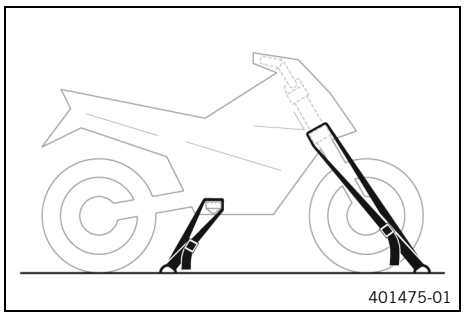
Danger of damage The parked vehicle can roll away or fall over.

– 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.



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

9.10 Refueling

Danger

Fire hazard Fuel is highly flammable.

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

– Do not refuel 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 poisonous and a health hazard.

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

Note

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

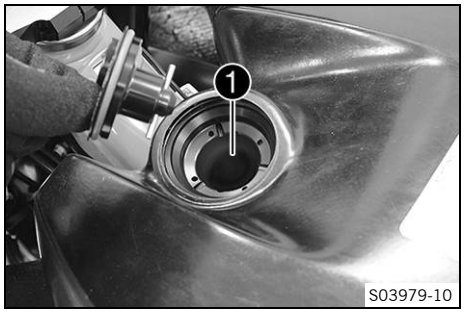
In some countries and regions, the available fuel quality and cleanliness may not be sufficient. This will result in problems with the fuel system.

– 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. 17)
– Fill the fuel tank with fuel up to the lower edge ❶ of the fuel filler.

Total fuel tank capacity, approx.	7 l (1.8 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (p. 137)

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

10.1 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.
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.

10.2 Service work

							after every race
						Every 30 operating hours	
					Every 20 operating hours		
				Every 15 operating hours			
			After 10 operating hours / Every 10 operating hours				
		Every 5 operating hours					
	After 1 operating hour						
Read out the fault memory using the KTM diagnostics tool. 🔧	○	●	●	●	●	●	●
Check that the electrical system is functioning properly.	○	●	●	●	●	●	
Change the engine oil and oil filter, clean the oil screen. 🔧 (📖 p. 109)	○	●	●	●	●	●	●
Check the brake discs. (📖 p. 73)	○	●	●	●	●	●	●
Check the front brake linings. (📖 p. 75)		●	●	●	●	●	●
Check the rear brake linings. (📖 p. 80)		●	●	●	●	●	●
Check the fork bearing for play. 🔧			●		●	●	
Check the heim joint for play. 🔧		●	●	●	●	●	●
Check the shock absorber linkage. 🔧		●	●	●	●	●	●
Check the tire condition. (📖 p. 88)	○	●	●	●	●	●	●
Check tire pressure. (📖 p. 89)	○	●	●	●	●	●	●
Check the brake lines for damage and tightness.	○	●	●	●	●	●	●
Check the front brake fluid level. (📖 p. 73)	○	●		●			
Check the rear brake fluid level. (📖 p. 78)	○	●		●			
Check/correct the fluid level of hydraulic clutch. (📖 p. 69)	○	●		●			
Clean the dust boots of the fork legs. 🔧				●		●	
Check the chain, rear sprocket, and engine sprocket. (📖 p. 61)		●	●	●	●	●	●
Check the chain tension. (📖 p. 59)	○	●	●	●	●	●	●
Check the coolant level. (📖 p. 97)	○		●		●	●	●
Clean the air filter box. 🔧		●	●	●	●	●	●
Change the air filter. 🔧				●		●	
Check that the throttle cables are undamaged, routed without kinks, and set correctly. 🔧	○	●	●	●	●	●	●
Check the cables for damage and for routing without kinks. 🔧		●	●	●	●	●	●
Check the valve clearance. 🔧	○			●		●	
Check the clutch. 🔧			●		●	●	
Change the cover seal and radial shaft seal rings of the water pump. 🔧				●		●	
Change the glass fiber yarn filling of the main silencer. 🔧 (📖 p. 64)			●		●	●	
Service the fork. 🔧			●		●	●	
Perform the shock absorber service. 🔧			○		●		
Check the fuel pressure. 🔧		●	●	●	●	●	●

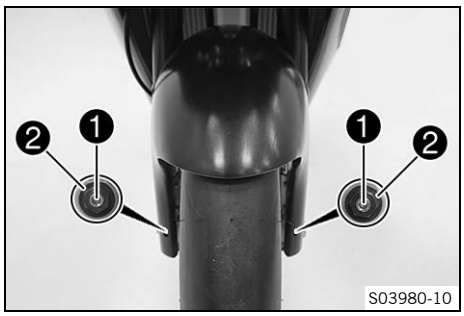
	After 1 operating hour	Every 5 operating hours	After 10 operating hours / Every 10 operating hours	Every 15 operating hours	Every 20 operating hours	Every 30 operating hours	after every race
Change the fuel screen. 🔧 (📖 p. 107)	○	●	●	●	●	●	●
Check the idle speed. 🔧	○	●	●	●	●	●	●
Change the front brake fluid. 🔧			●		●	●	●
Change the rear brake fluid. 🔧			●		●	●	●
Change the hydraulic clutch fluid. 🔧 (📖 p. 70)			●		●	●	
Check the steering head bearing play. (📖 p. 48)	○	●	●	●	●	●	●
Check the fuel collecting container.		●	●	●	●	●	●
Check the coolant overflow reservoir.		●	●	●	●	●	●
Clean the oil separator. 🔧					●		
Check the frame. 🔧 (📖 p. 68)		●	●	●	●	●	●
Check the link fork. 🔧 (📖 p. 68)		●	●	●	●	●	●
Check the wheel bearing for play. 🔧		●	●	●	●	●	●
Check the tightness of the safety-relevant screws and nuts which are easily accessible. 🔧	○	●	●	●	●	●	●
Grease all moving parts (e.g. side stand, hand lever, chain, etc.) and check for smooth operation. 🔧	○	●	●	●	●	●	
Check all hoses (e.g. fuel, cooling, bleeder, drainage hoses, etc.) and sleeves for cracking, tightness, and correct routing. 🔧	○	●	●	●	●	●	●
Empty the drainage hoses. 🔧	○			●		●	
Change the fuel filter. 🔧						●	
Perform engine service including removing and installing the engine. (Change the spark plug and spark plug connector. Change the piston, check and measure the cylinder; check the cylinder head. Check the camshaft and cam lever. Check the timing assembly. Change the intake flange. Change the valves, valve springs, valve spring seats and valve spring retainers. 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. Change the freewheel.) 🔧						●	
Read out the fault memory after the test ride using the KTM diagnostics tool. 🔧	○	●	●	●	●	●	●
Final check: Check the vehicle for operating safety and take a test ride. 🔧	○	●	●	●	●	●	●
Make a service entry in **KTM Dealer.net**. 🔧	○	●	●	●	●	●	●

○ One-time interval

● Periodic interval

11.1 Adjusting the compression damping of the fork

Info
The hydraulic compression damping determines the fork suspension behavior.



– Turn adjusting screws ❶ clockwise all the way.

Info
Adjusting screws ❶ are located at the bottom end of the fork legs.
Do not loosen screw caps ❷.

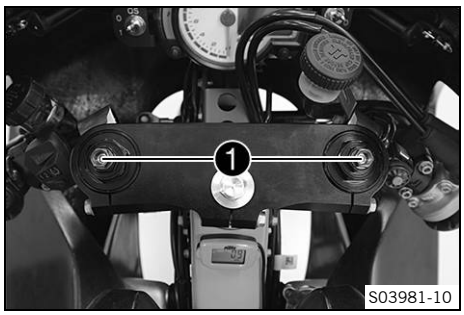
– Turn counterclockwise by the number of clicks corresponding to the fork type.
Guideline

Compression damping	
Standard	10 clicks

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

11.2 Adjusting the rebound damping of the fork

Info
The hydraulic rebound damping determines the fork suspension behavior.



– Turn adjusting screws ❶ clockwise all the way.

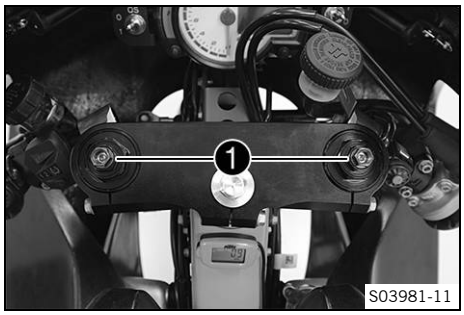
Info
Adjusting screws ❶ are located at the top end of the fork legs.

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

Rebound damping	
Standard	10 clicks

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

11.3 Adjusting the spring preload of the fork



Preparatory work
- Raise the motorcycle with the rear lifting gear. (📖 p. 40)
- Lift the motorcycle with the front lifting gear. (📖 p. 40)

Main work
- Turn adjusting screws ❶ counterclockwise all the way.

Info
Adjusting screws ❶ are located at the top end of the fork legs.
Make the same adjustment on both fork legs.

- Turn clockwise by the number of turns corresponding to the fork type.

Guideline

Spring preload - **Preload Adjuster**	
Standard	25 clicks

Info
Turning clockwise increases the preload; turning counterclockwise reduces the spring preload.
Changing the spring preload has no influence on the rebound damping although the adjusting screws turn during the adjustment work. However, you should also adjust the rebound damping when you alter the spring preload.

Finishing work
- Take the motorcycle off the front lifting gear. (📖 p. 41)
- Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)

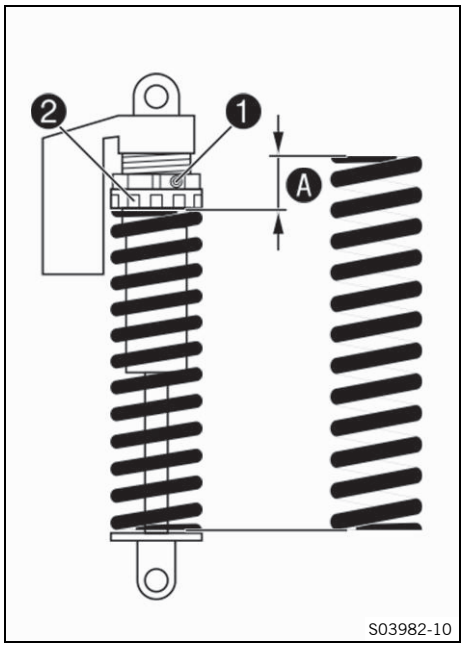
11.4 Adjusting the spring preload of the shock absorber 🔧

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 the front spoiler. 🔧 (📖 p. 54)
- Raise the motorcycle with a lift stand. (📖 p. 41)
- Remove the tail section. 🔧 (📖 p. 55)
- Take off the front rider's seat along with the fuel tank cover. 🔧 (📖 p. 53)
- Remove main silencer. 🔧 (📖 p. 62)

– Remove the shock absorber. (📖 p. 49)
– 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)

– 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	10 mm (0.39 in)

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

– Tighten screw ❶.

Guideline

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

Finishing work

– Install the shock absorber. (📖 p. 51)
– Install the main silencer. (📖 p. 63)
– Mount the front rider's seat along with the fuel tank cover. (📖 p. 54)
– Install the tail section. (📖 p. 55)
– Remove the motorcycle from the lift stand. (📖 p. 42)
– Fit the front spoiler. (📖 p. 54)

11.5 Compression damping of the shock absorber

The compression damping of the shock absorber is divided into two ranges: high-speed and low-speed.
High-speed and low-speed refer to the compression speed of the rear wheel suspension and not to the vehicle speed.
The high-speed setting, for example, has an effect when riding over an asphalt edge: the rear wheel suspension compresses quickly.
The low-speed setting, for example, has an effect 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, changes in the high-speed range affect the compression damping in the low-speed range and vice versa.

11.6 Adjusting the high-speed compression damping of the shock absorber

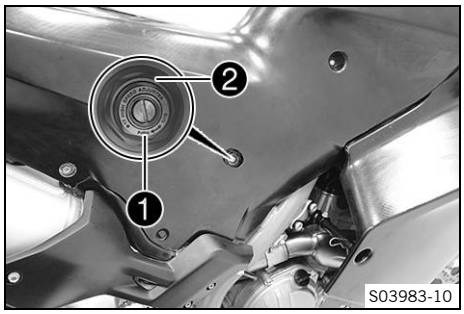
Caution

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 fast compression of the shock absorber.



– Turn adjusting screw ❶ all the way counterclockwise with a socket wrench.

Info

Do not loosen fitting ❷!

– Turn clockwise by the number of turns corresponding to the shock absorber type.

Guideline

Highspeed compression damping	
Standard	2 turns

Info

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

11.7 Adjusting the low-speed compression damping of the shock absorber

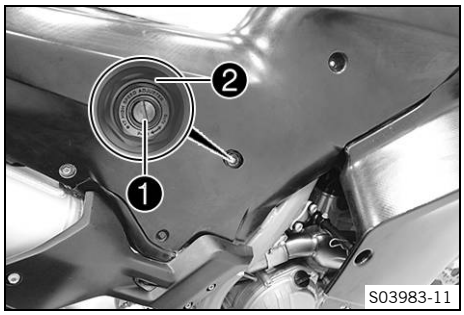
Caution

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 adjusting screw ❶ clockwise up to the last perceptible click.

Info

Do not loosen fitting ❷!

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

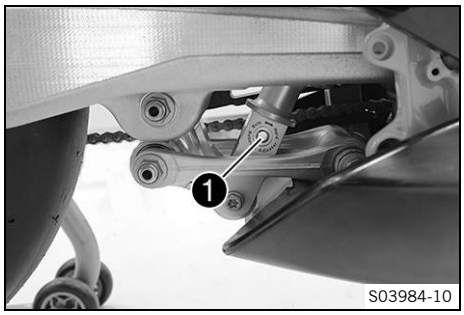
Guideline

Lowspeed compression damping	
Standard	5 clicks

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

11.8 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 adjusting screw 1 clockwise up to the last perceptible click.
– Turn counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

Rebound damping	
Standard	5 clicks

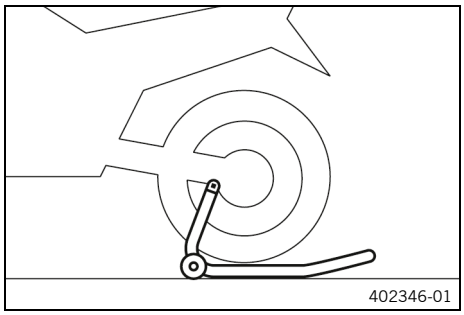
Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

12.1 Raising the motorcycle with rear lifting gear

Note

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

– Park the vehicle on a firm and level surface.



– Mount the supports of the lifting gear.

Bushings kit (635299550001)

– Insert the adapter in the rear lifting gear.

Retaining adapter (61029955144)
Rear wheel work stand (69329955000)

Info
The supports, the adapter and the lifting gear are included in the scope of supply.

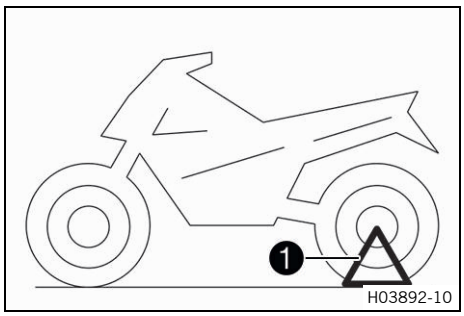
– Stand the motorcycle upright, align the lifting gear with the link fork and the adapters, and raise the motorcycle.

12.2 Removing the rear of the motorcycle from the lifting gear

Note

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

– Park the vehicle on a firm and level surface.



– Secure the motorcycle against falling over.
– Remove the rear lifting gear and lean the vehicle on plug-in stand ❶.
– Remove the lifting gear supports.

12.3 Lifting the motorcycle with the front lifting gear

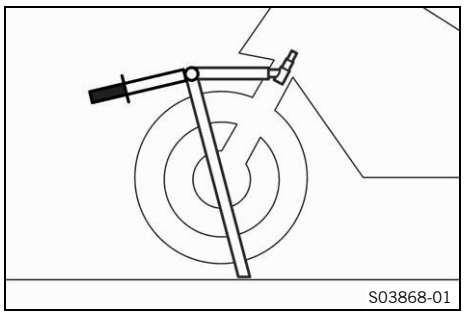
Note

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

– Park the vehicle on a firm and level surface.

Preparatory work

– Raise the motorcycle with the rear lifting gear. (📖 p. 40)



Main work

– Move the handlebar to the straight-ahead position. Position the lifting gear.

Front wheel lifting gear (A56029055000)

Info
Always raise the motorcycle at the rear first.

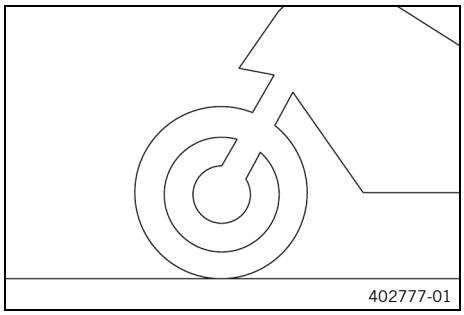
– Lift the motorcycle at the front.

12.4 Taking the motorcycle off the front lifting gear

Note

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

– Park the vehicle on a firm and level surface.



Main work

– Secure the motorcycle against falling over.
– Remove the front lifting gear.

Finishing work

– Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)

12.5 Raising the motorcycle with a lift stand

Note

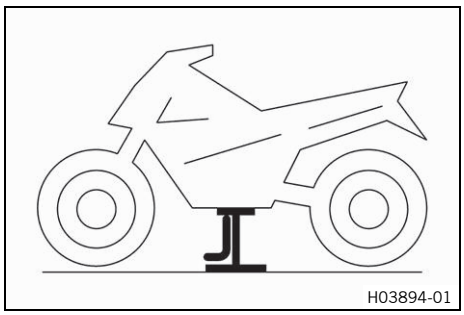
Material damage The vehicle may be damaged by incorrect procedure when parking.

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.

Preparatory work

– Remove the front spoiler. 🔧 (📖 p. 54)


H03894-01

Main work

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

Lift stand (78929955100)

✔ Neither wheel is in contact with the ground.

– Secure the motorcycle against falling over.

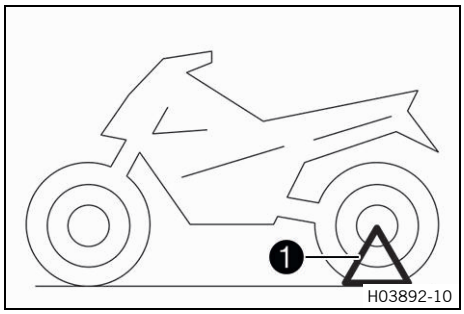
12.6 Removing the motorcycle from the lift stand

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.



H03892-10

Main work

– 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.

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

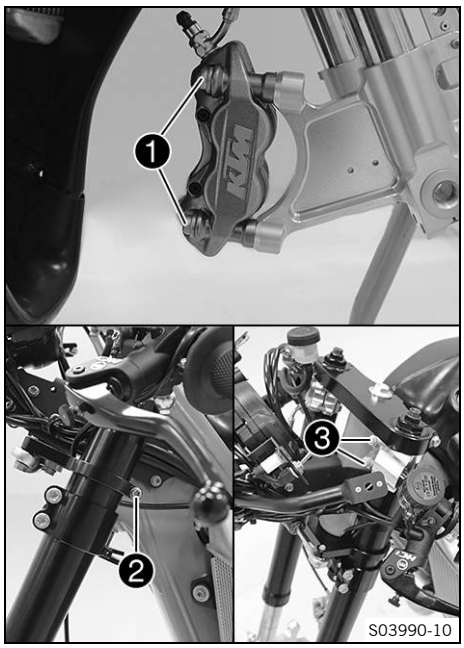
Finishing work

– Fit the front spoiler. (📖 p. 54)

12.7 Removing the fork legs 🔧

Preparatory work

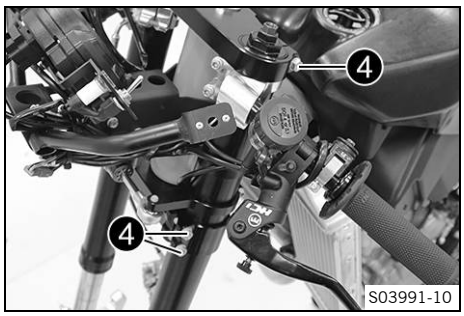
– Remove the front spoiler. 🔧 (📖 p. 54)
– Remove the trim along with the front. 🔧 (📖 p. 56)
– Raise the motorcycle with the rear lifting gear. (📖 p. 40)
– Lift the motorcycle with the front lifting gear. (📖 p. 40)
– Remove the front fender. (📖 p. 52)
– Remove the front wheel. 🔧 (📖 p. 85)



Main work

– Remove screws ❶ and take off the brake caliper.
– Loosen screw ❷ of the steering damper clamp.
– Loosen screws ❸ of the handlebar stub on both sides.
– Hang the brake caliper to the side.

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



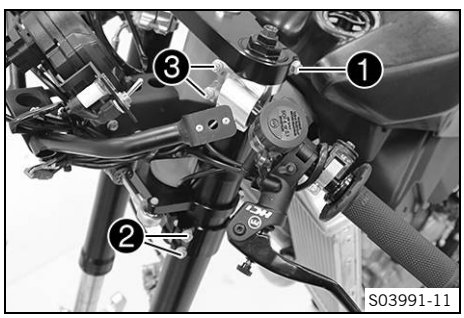
– Loosen screws ❹. Remove the left fork leg.
– Repeat the operation on the right side.

12.8 Installing the fork legs

Main work

– Position the fork legs.

Info
Make sure the cables and wiring are positioned correctly.
The upper triple clamp must be flush with the upper edge of the fork legs.
The support for the brake caliper is attached to the right fork leg.



– Tighten screw ❶.

Guideline

Screw, top triple clamp	M8	15 Nm (11.1 lbf ft)

– Tighten screws ❷.

Guideline

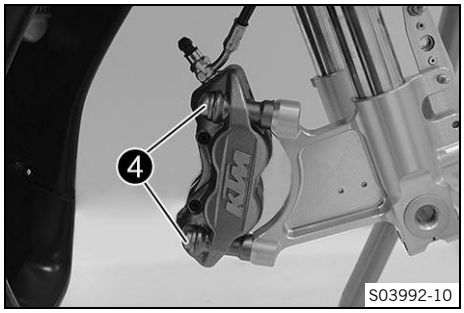
Screw, bottom triple clamp	M8	12 Nm (8.9 lbf ft)

– Position the handlebar stub.

– Tighten screws ❸.

Guideline

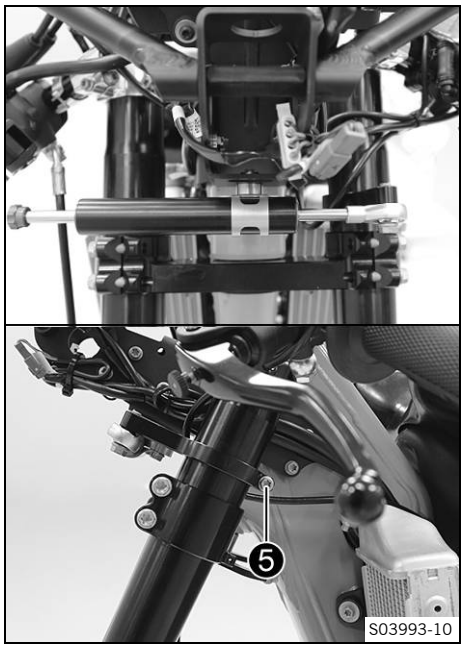
Screw, handlebar stub	M6	Tightening sequence: Tighten top first, then bottom. 10 Nm (7.4 lbf ft) **Loctite®243™**



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

Guideline

Screw, front brake caliper	M10	45 Nm (33.2 lbf ft) **Loctite®243™**



– Align the steering damper horizontally and align the steering damper clamp so that the damping rods are evenly extended.
– Tighten screw ❺.

Guideline

Screw, steering damper clamp	M6	10 Nm (7.4 lbf ft)

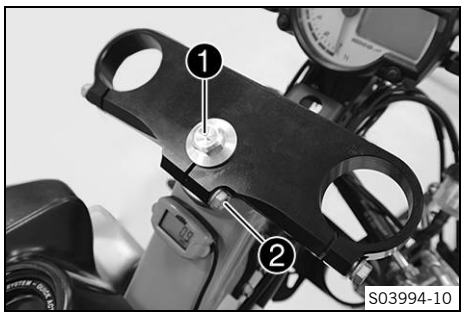
Finishing work

– Install the front wheel. (📖 p. 85)
– Take the motorcycle off the front lifting gear. (📖 p. 41)
– Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)
– Install the trim along with the front. (📖 p. 56)
– Fit the front spoiler. (📖 p. 54)

12.9 Removing the lower triple clamp

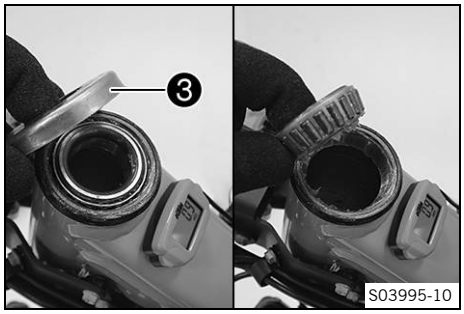
Condition
Front wheel removed.
The fork legs have been removed.

Preparatory work
- Remove the front spoiler. (p. 54)
- Raise the motorcycle with a lift stand. (p. 41)
- Remove the trim along with the front. (p. 56)



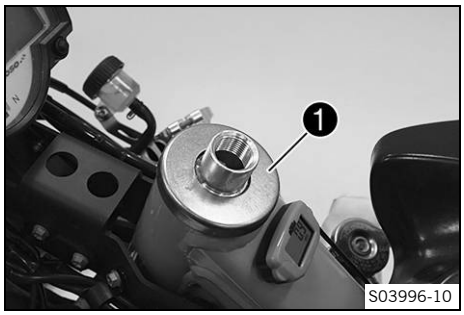
Main work
- Remove screw 1.
- Remove screw 2.
- Take off the upper triple clamp.

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



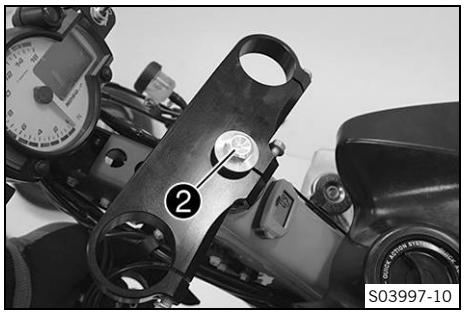
- Remove protective ring 3.
- Remove the lower triple clamp with the steering stem.
- Remove the upper steering head bearing.

12.10 Installing the lower triple clamp

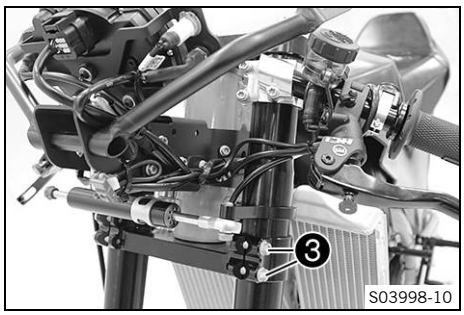


Main work
- Clean the bearing and sealing elements, check for damage, and grease.

  High viscosity grease (p. 138)
- Insert the lower triple clamp with the steering stem. Mount upper steering head bearing.
- Push on protective ring 1.



- Position the upper triple clamp.
- Mount screw 2, but do not tighten yet.



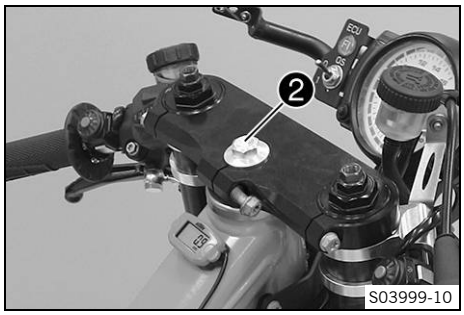
– Push the fork legs into the triple clamp and handlebar stub and position.

Info
The handlebar stub must be positioned underneath the upper triple clamp.
Make sure the cables and wiring are positioned correctly.
The upper triple clamp must be flush with the upper edge of the fork legs.

– Tighten screws ❸ on both sides.

Guideline

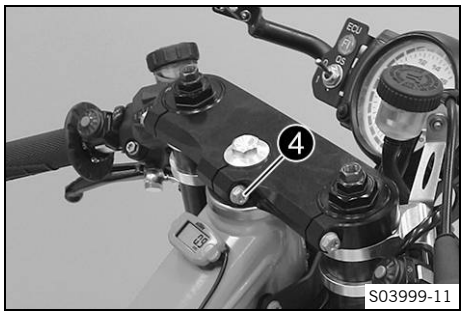
Screw, bottom triple clamp	M8	12 Nm (8.9 lbf ft)



– Tighten screw ❷.

Guideline

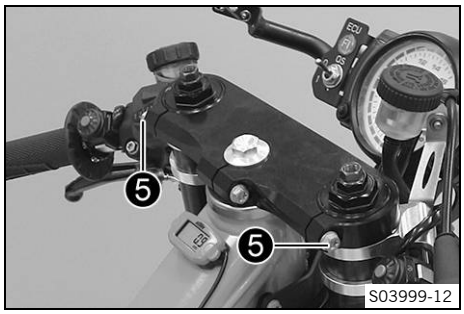
Screw, steering head, top	M20x1.5	12 Nm (8.9 lbf ft)



– Mount and tighten screw ❹.

Guideline

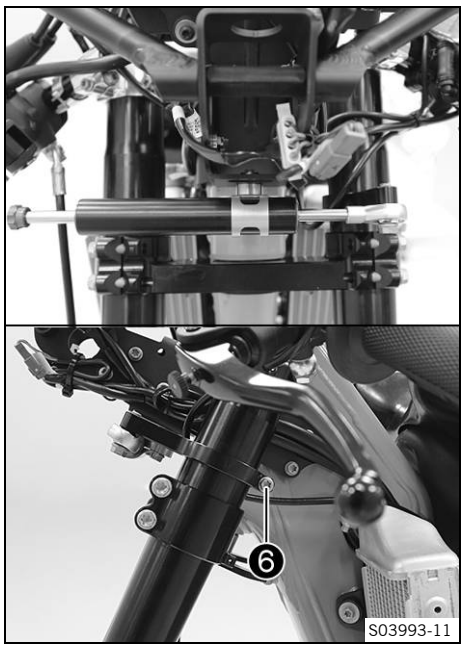
Screw, top steering stem	M8	20 Nm (14.8 lbf ft) **Loctite®243™**



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

Guideline

Screw, top triple clamp	M8	15 Nm (11.1 lbf ft)



– Align the steering damper and tighten screw ❻.

Guideline

Screw, steering damper clamp	M6	10 Nm (7.4 lbf ft)

– Position the handlebar stub and tighten screws ❼.

Guideline

Screw, handlebar stub	M6	Tightening sequence: Tighten top first, then bottom. 10 Nm (7.4 lbf ft) **Loctite®243™**

Finishing work

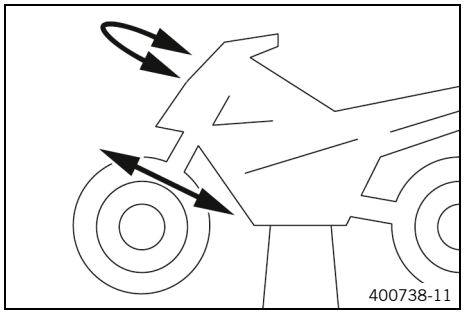
– Install the fork legs. (📖 p. 43)
– Install the trim along with the front. (📖 p. 56)
– Install the front wheel. (📖 p. 85)
– Take the motorcycle off the front lifting gear. (📖 p. 41)
– Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)
– Check that the wiring harness, throttle cables, and brake and clutch lines can move freely and are routed correctly.
– Check the steering head bearing play. (📖 p. 48)
– Remove the motorcycle from the lift stand. (📖 p. 42)
– Fit the front spoiler. (📖 p. 54)

12.11 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.)



Preparatory work

– Remove the front spoiler. (p. 54)
– Raise the motorcycle with a lift stand. (p. 41)

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. 48)

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

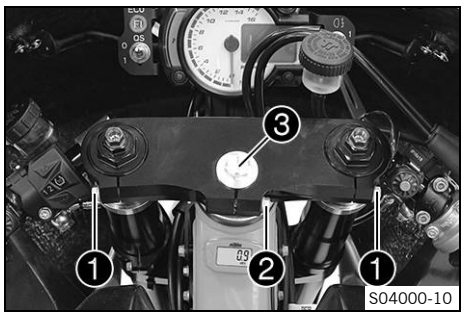
It must be possible to move the handlebar easily over the entire steering range. There should be no detectable detent positions.

» If detent positions are detected:
– Adjust the steering head bearing play. (p. 48)
– Check the steering head bearing and adjust if necessary.

Finishing work

– Remove the motorcycle from the lift stand. (p. 42)
– Fit the front spoiler. (p. 54)

12.12 Adjusting the steering head bearing play



Preparatory work

– Remove the front spoiler. (p. 54)
– Raise the motorcycle with a lift stand. (p. 41)

Main work

– Loosen screws 1.
– Remove screw 2.
– Loosen and retighten screw 3.

Guideline

Screw, steering head, top	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 2.

Guideline

Screw, top steering stem	M8	20 Nm (14.8 lbf ft) **Loctite®243™**

– Tighten screws ❶.

Guideline

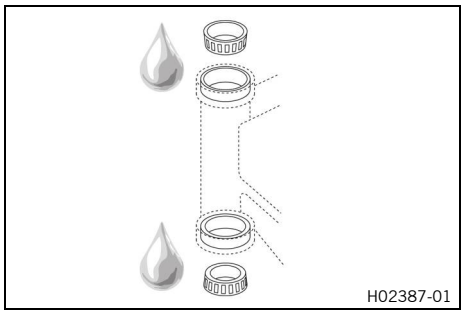
Screw, top triple clamp	M8	15 Nm (11.1 lbf ft)

– Check the steering head bearing play. (📖 p. 48)

Finishing work

– Remove the motorcycle from the lift stand. (📖 p. 42)
– Fit the front spoiler. (📖 p. 54)

12.13 Lubricating the steering head bearing


H02387-01

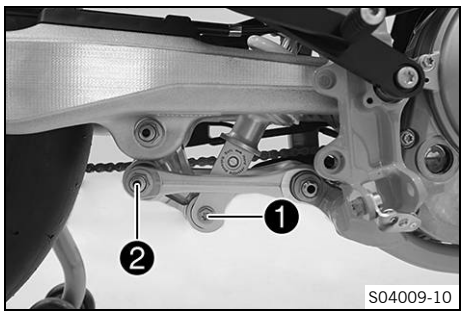
– Remove the lower triple clamp. (📖 p. 45)
– Install the lower triple clamp. (📖 p. 45)

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

12.14 Removing the shock absorber

Preparatory work

– Remove the front spoiler. (📖 p. 54)
– Raise the motorcycle with a lift stand. (📖 p. 41)
– Remove the tail section. (📖 p. 55)
– Take off the front rider's seat along with the fuel tank cover. (📖 p. 53)
– Remove main silencer. (📖 p. 62)

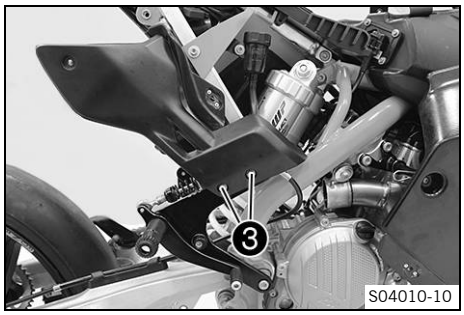


S04009-10

Main work

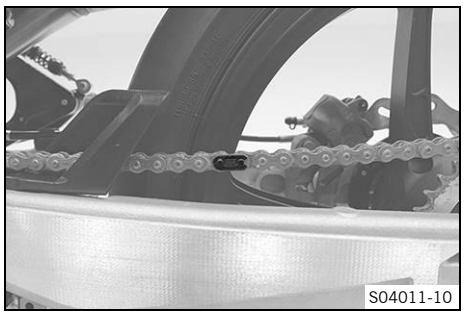
– Remove screw ❶.
– Remove fitting ❷.

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



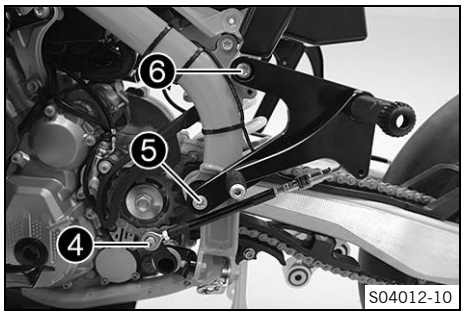
S04010-10

– Remove screws ❸.
– Remove the cover and pull foot brake cylinder with the spring off the push rod.



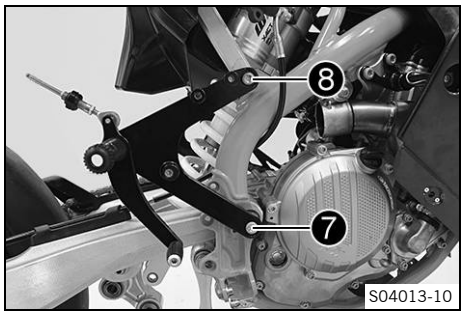
– Remove the connecting link of the chain.
– Take off the chain.

Info
Protect the components against damage by covering them.

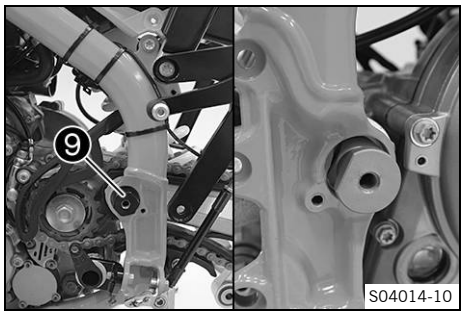


– Remove screw ❹ of the shift linkage.
– Remove screws ❺ and ❻.
– Hang the footrest bracket to the side.

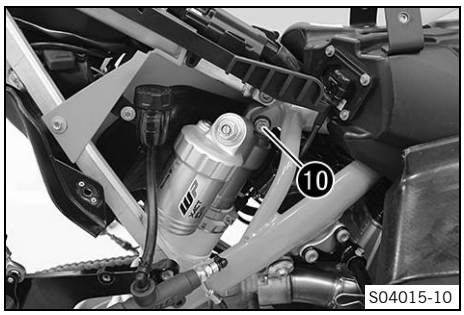
Info
Pay attention to the quickshifter cable.



– Remove screw ❼ and ❽.
– Hang the footrest bracket to the side.

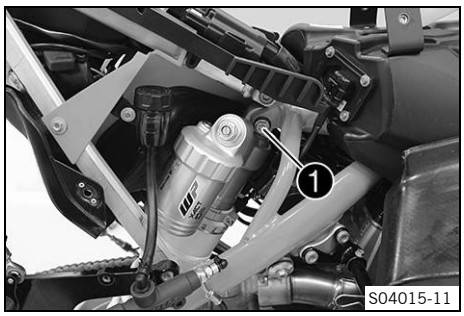


– Remove nut ❾ and the swingarm pivot.
– Push the link fork back and secure it against falling over.



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

12.15 Installing the shock absorber



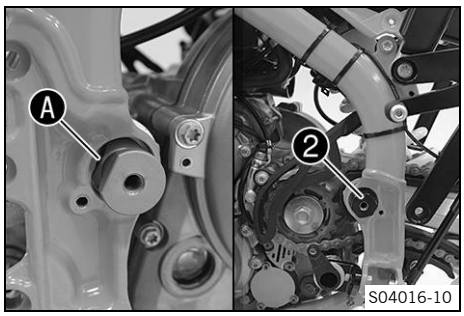
Main work

– 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) **Loctite®2701™**



– Position the link fork and mount the swingarm pivot.

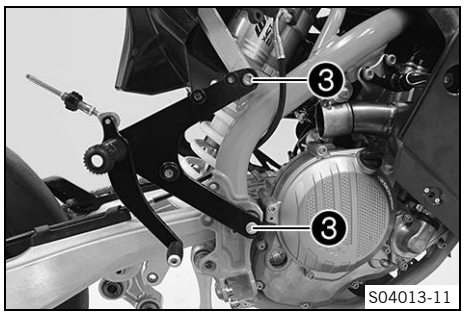
Info

Pay attention to flat area Ⓐ.

– Mount and tighten nut ❷.

Guideline

Nut, swingarm pivot	M16x1.5	100 Nm (73.8 lbf ft)

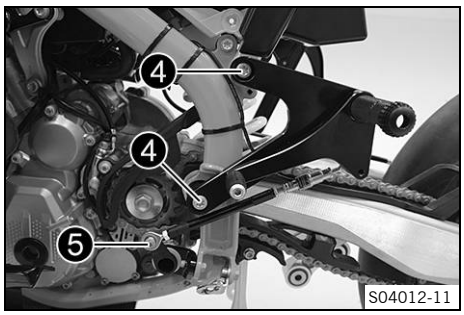


– Position the right footrest bracket.

– Mount and tighten screws ❸.

Guideline

Screw, footrest bracket	M8	30 Nm (22.1 lbf ft) **Loctite®2701™**



– Position the left footrest bracket.

– Mount and tighten screws ❹.

Guideline

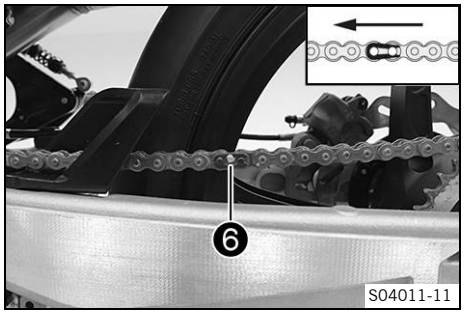
Screw, footrest bracket	M8	30 Nm (22.1 lbf ft) **Loctite®2701™**

– Position the shift linkage.

– Mount and tighten screw ❺.

Guideline

Screw, bell crank shift lever	M6	6.5 Nm (4.79 lbf ft)

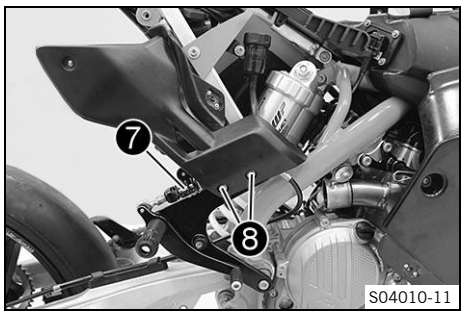


– Mount the chain.

– Connect the chain with connecting link ❻.

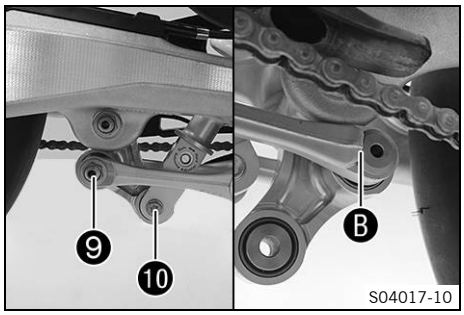
Guideline

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



– Position the foot brake cylinder along with the spring.
  ✔ Push rod ❼ engages in the foot brake cylinder.
– Mount and tighten screws ❽ as well as their covers.
  Guideline

Screw, foot brake cylinder	M6	9 Nm (6.6 lbf ft) **Loctite®243™**



– Position the angle lever and linkage lever.
– Mount and tighten fitting ❾.
  Guideline

Nut, linkage lever on angle lever	M14x1.5	60 Nm (44.3 lbf ft)

Info
Pay attention to flat area Ⓑ.

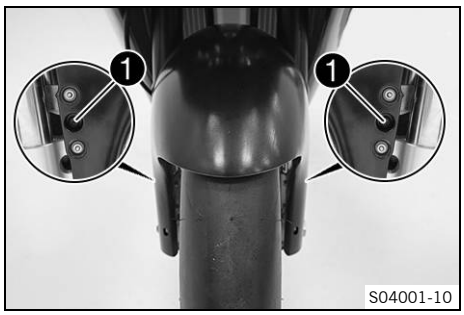
– Mount and tighten screw ❿.
  Guideline

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

Info
Raise the wheel slightly to be able to mount the screw more easily.

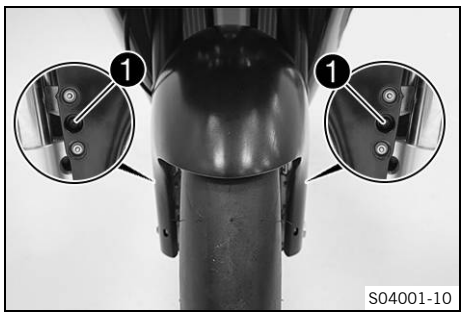
Finishing work
– Install the main silencer. (📖 p. 63)
– Mount the front rider's seat along with the fuel tank cover. (📖 p. 54)
– Install the tail section. (📖 p. 55)
– Remove the motorcycle from the lift stand. (📖 p. 42)
– Fit the front spoiler. (📖 p. 54)

12.16 Removing the front fender



– Remove quick releases ❶. Pull off the fender sideways and take it off toward the front.

12.17 Installing the front fender



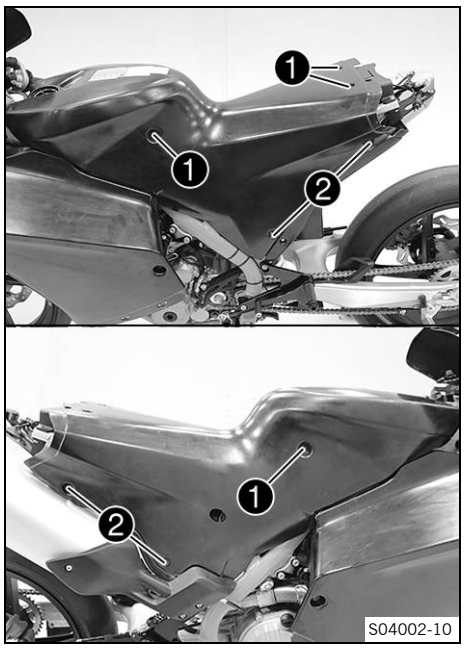
– Position the front fender. Mount and tighten quick releases ❶.

✔ The fender engages in the holding lugs.

12.18 Taking off the front rider's seat along with the fuel tank cover

Preparatory work

– Remove the tail section. (📖 p. 55)



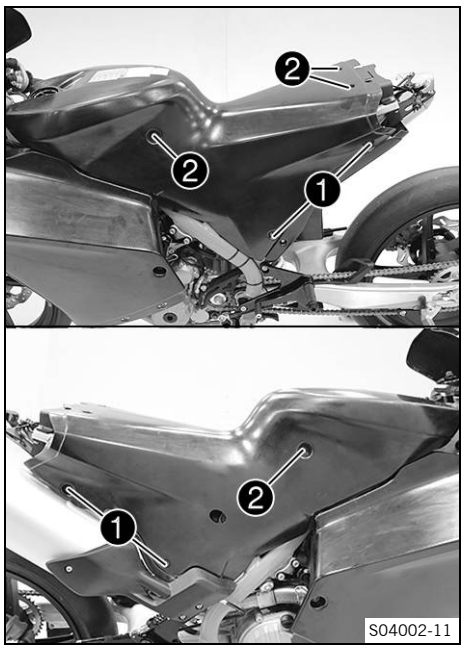
Main work

– Remove screws ❶.

– Unlock quick releases ❷.

– Lift off the seat along with the fuel tank cover.

12.19 Mounting the front rider's seat along with the fuel tank cover



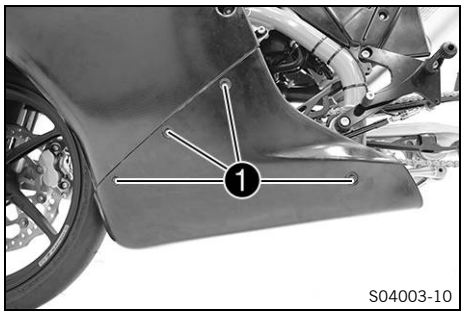
– Position the front rider's seat along with the fuel tank cover on the motorcycle from above.
– Lock quick releases ❶.
– Mount and tighten screws ❷.

Guideline

Remaining screws, chassis	M5	5 Nm (3.7 lbf ft)

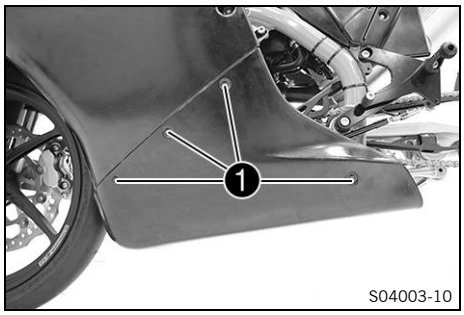
– Check that the front rider's seat is mounted correctly.

12.20 Removing the front spoiler



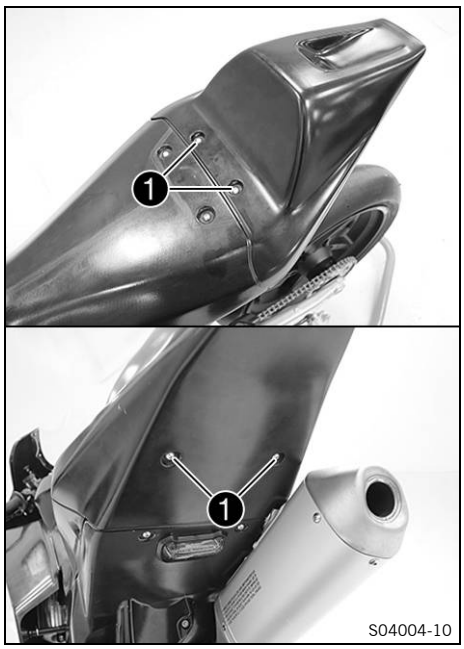
– Unlock quick releases ❶ on both sides.
– Take off the front spoiler.

12.21 Fitting front spoiler



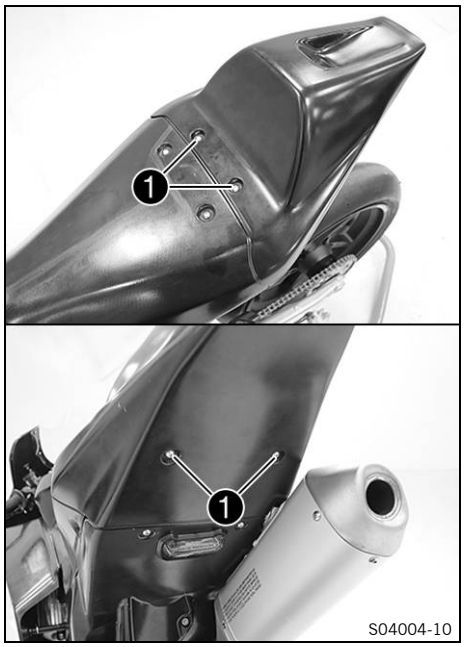
– Position the front spoiler.
– Lock quick releases ❶ on both sides.

12.22 Removing the tail section



– Remove screws 1.
– Pull the tail section toward the rear to remove.

12.23 Installing the tail section

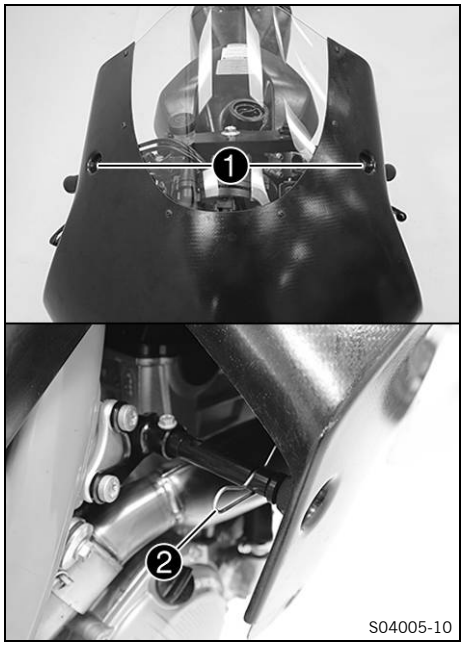


– Position the tail section.
– Mount and tighten screws 1.

Guideline

Remaining screws, chassis	M5	5 Nm (3.7 lbf ft)

12.24 Removing the trim along with the front



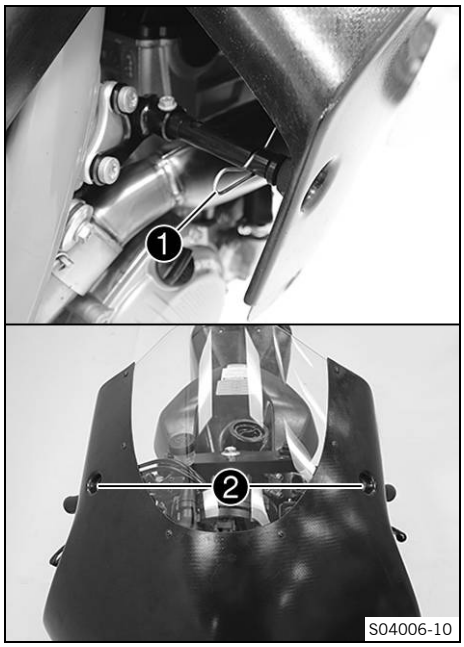
Preparatory work

– Remove the front spoiler. (p. 54)

Main work

– Unlock quick releases ❶.
– Remove pin ❷ on both sides.
– Pull trim laterally out of the retaining pins and pull toward the front to remove.

12.25 Installing the trim along with the front



Main work

– Position the trim from the front and attach laterally into the retaining pins.
– Mount pin ❶ on both sides.
– Lock quick releases ❷.
– Check that the trim is firmly seated.

Finishing work

– Fit the front spoiler. (p. 54)

12.26 Removing the air filter

Note

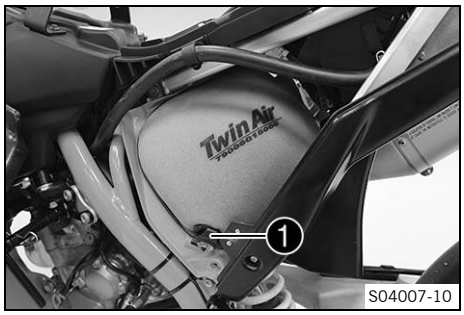
Engine damage Unfiltered intake air has a negative effect on the service life of the engine.

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

– Never start to use the vehicle without an air filter.

Preparatory work

– Remove the tail section. (p. 55)
– Take off the front rider's seat along with the fuel tank cover. (p. 53)



Main work

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

12.27 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.

Preparatory work

– Remove the tail section. (p. 55)
– Take off the front rider's seat along with the fuel tank cover. (p. 53)
– Remove the air filter. (p. 57)

Main work

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

Air filter cleaner (p. 138)

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.

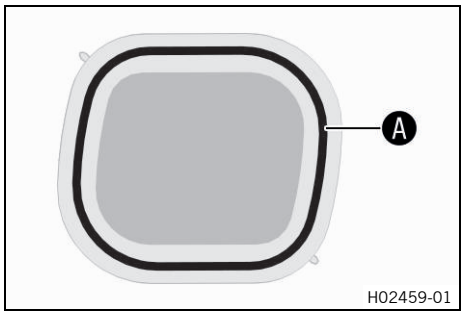
Oil for foam air filter (p. 138)

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

Finishing work

– Install the air filter. (📖 p. 58)
– Mount the front rider's seat along with the fuel tank cover. (📖 p. 54)

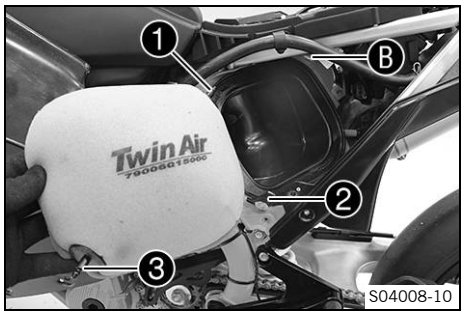
12.28 Installing the air filter



Main work

– Mount the clean air filter on the air filter support.
– Grease the air filter in area A.

Long-life grease (📖 p. 138)



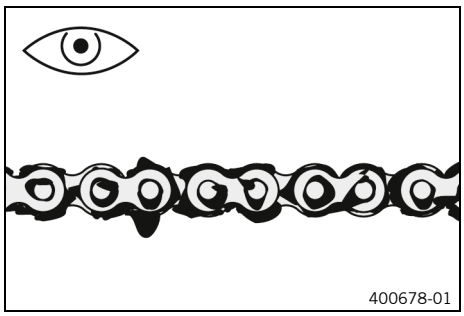
– Insert air filter and position retaining pin 1 in socket B.
  ✔ The air filter is correctly positioned.
– Insert retaining tab 2.
  ✔ Retaining pin 3 is secured by retaining tab 2.

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

Finishing work

– Mount the front rider's seat along with the fuel tank cover. (📖 p. 54)

12.29 Checking for chain dirt accumulation



– Check the chain for coarse dirt accumulation.
  » If the chain is very dirty:
    – Clean the chain. (📖 p. 59)

12.30 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.

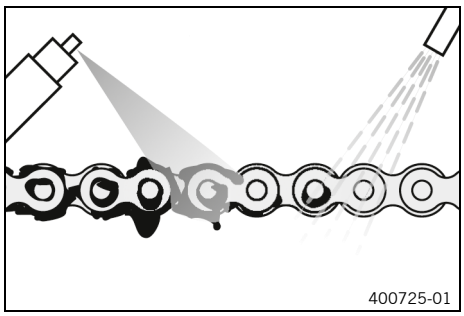
Note

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 the rear lifting gear. (📖 p. 40)

Main work

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

Chain cleaner (📖 p. 138)

– After drying, apply chain spray.

Street chain spray (📖 p. 139)

Finishing work

– Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)

12.31 Checking the chain tension

Warning

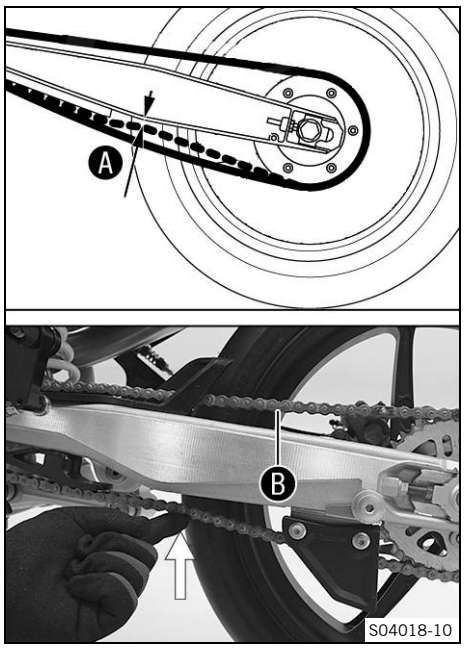
Danger of accidents Incorrect chain tension damages components and results in accidents.

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 the rear lifting gear. (📖 p. 40)



Main work

– Shift the transmission into neutral.
– In the area behind the chain sliding guard, press the chain upward toward the link fork and determine chain tension Ⓐ.

Info

The top part of chain Ⓑ must be taut.
Chains do not always wear evenly. Repeat this measurement at different chain positions.

Chain tension	5 ... 7 mm (0.2 ... 0.28 in)

» If the chain tension does not meet the specification:
– Adjust the chain tension. (📖 p. 60)

– Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)

12.32 Adjusting the chain tension

Warning

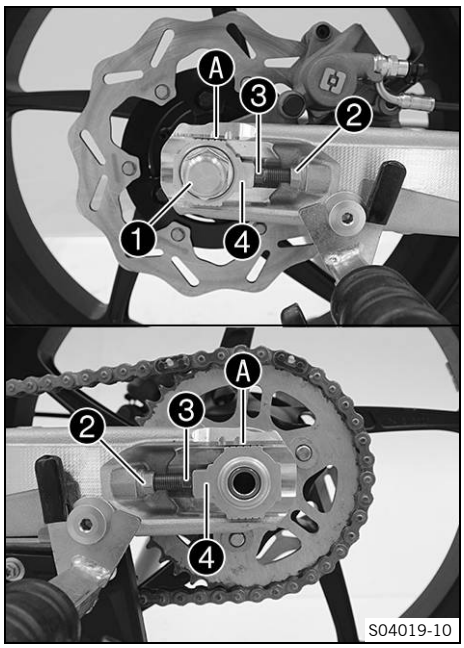
Danger of accidents Incorrect chain tension damages components and results in accidents.

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 the rear lifting gear. (📖 p. 40)
– Check the chain tension. (📖 p. 59)



Main work

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

Guideline

Chain tension	5 … 7 mm (0.2 … 0.28 in)
Turn the adjusting screws ❸ on the left and right so that the markings on the left and right chain adjusters ❹ are in the same position relative to the reference marks Ⓐ. The rear wheel is then correctly aligned.	

Info
The top part of the chain must be taut.
Chains do not always wear evenly, so you should check the setting at different chain positions.

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

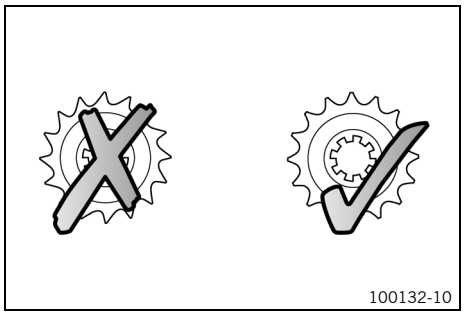
Guideline

Nut, rear wheel spindle	M20x1.5	80 Nm (59 lbf ft)

Finishing work

– Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)

12.33 Checking the chain, rear sprocket, and engine sprocket



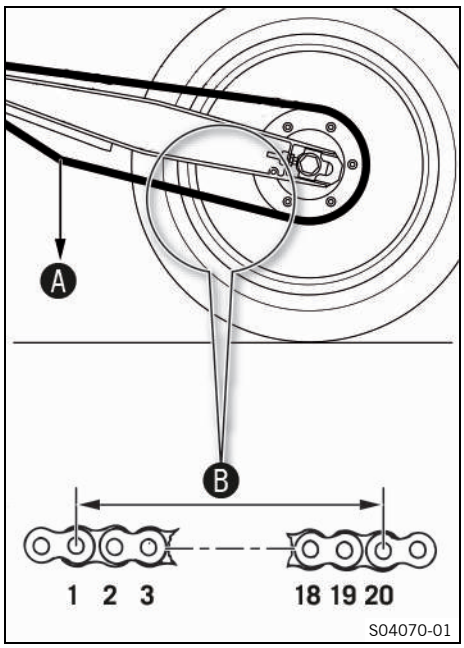
Preparatory work

– Raise the motorcycle with the rear lifting gear. (📖 p. 40)

Main work

– Shift the transmission into neutral.
– Check the rear sprocket and the engine sprocket for wear.
  » If the rear sprocket and engine sprocket are worn:
    – Change the drivetrain kit.

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



– Pull on the lower chain section with specified weight Ⓐ.

Guideline

Weight, chain wear measurement	15 kg (33 lb.)

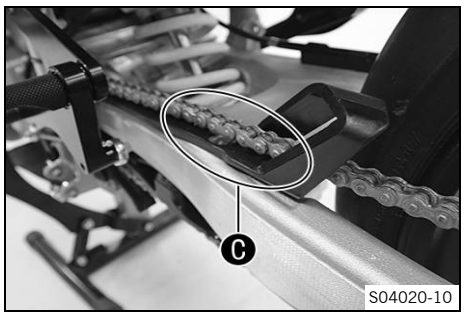
– Measure distance Ⓑ of 20 chain rollers in the lower chain section.

Info
Chains do not always wear evenly. Repeat this measurement at different chain positions.

Maximum distance Ⓑ from 20 chain rollers at the longest chain section	304 mm (11.97 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 old, worn sprockets.

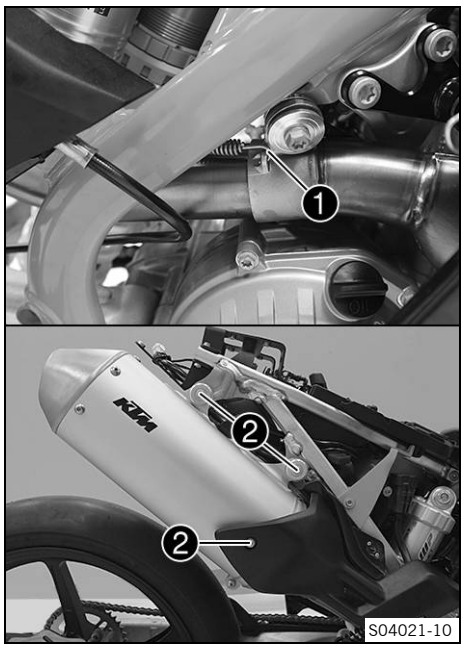


– Push the chain up in the area behind the chain guide.
– Check the chain sliding guard for wear.
» If the chain sliding guard in area Ⓒ has lost a large amount of material due to wear.
– Change the chain sliding guard.
– Check that the chain sliding guard is firmly seated.
» If the chain sliding guard is loose:
– Tighten screws on the chain sliding guard.

Finishing work
– Remove the rear of the motorcycle from the lifting gear. (p. 40)

12.34 Removing the main silencer

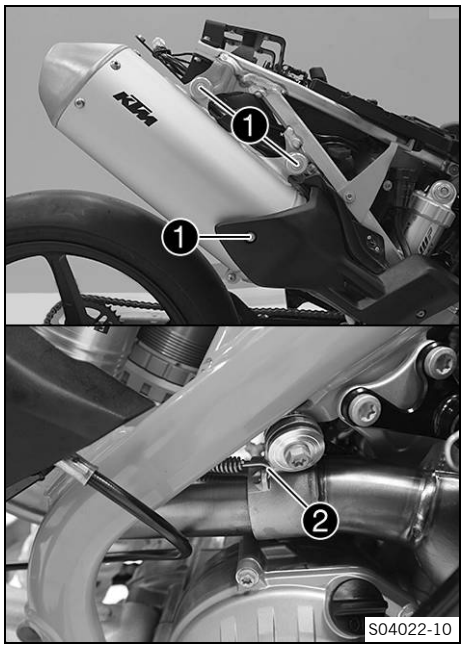
Preparatory work
– Remove the tail section. (p. 55)
– Take off the front rider's seat along with the fuel tank cover. (p. 53)



Main work

– Remove spring ❶.
– Remove screws ❷.
– Take off the main silencer.

12.35 Installing the main silencer



Main work

– Position the main silencer.
– Mount and tighten screws ❶.
  Guideline

Screw, main silencer	M8	18 Nm (13.3 lbf ft)

– Mount spring ❷.

Finishing work

– Mount the front rider's seat along with the fuel tank cover. (📖 p. 54)
– Install the tail section. (📖 p. 55)

12.36 Changing the glass fiber yarn filling of the main silencer

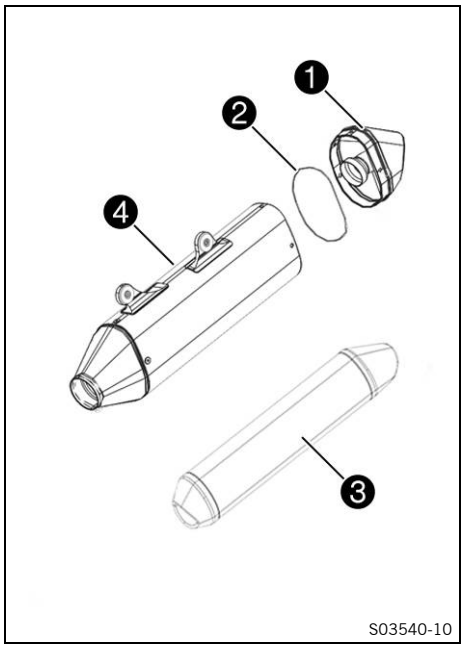
Warning

Danger of burns The exhaust system gets very 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 escape and the damper “burns” out.
Not only is the noise level higher, but the performance characteristics change.



Preparatory work

– Remove the tail section. (p. 55)
– Take off the front rider's seat along with the fuel tank cover. (p. 53)
– Remove main silencer. (p. 62)

Main work

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

Guideline

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

Finishing work

– Install the main silencer. (p. 63)
– Mount the front rider's seat along with the fuel tank cover. (p. 54)
– Install the tail section. (p. 55)

12.37 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 refuel 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 poisonous and a health hazard.

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

Note

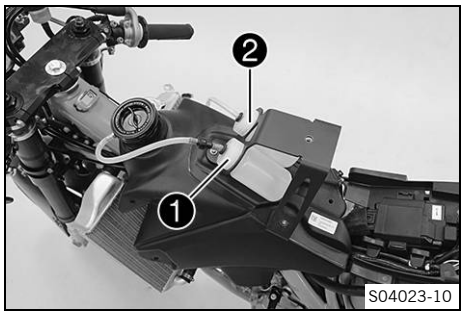
Environmental hazard Improper handling of fuel is a danger to the environment.

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

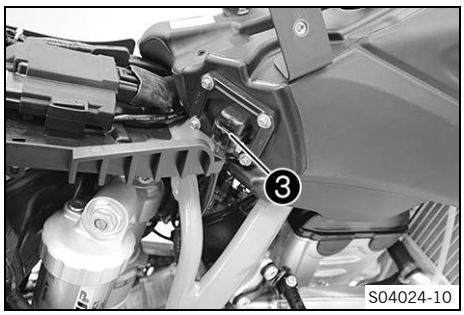
Preparatory work

- Remove the tail section. (p. 55)
- Take off the front rider's seat along with the fuel tank cover. (p. 53)
- Remove the front spoiler. (p. 54)
- Remove the trim along with the front. (p. 56)

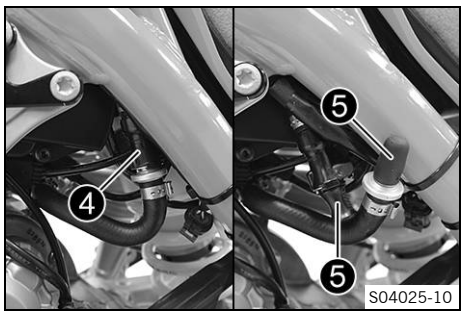
Main work



- Remove fuel collecting container ❶ and coolant collecting container ❷.



- Unplug connector ❸ of the fuel pump.

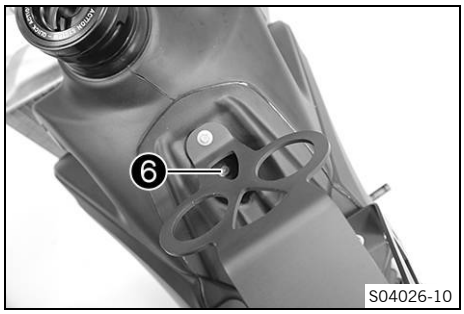


– Clean plug-in connection ❹ of the fuel line thoroughly with compressed air.

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.
– Mount wash cap set ❺.

Wash cap set (81212016100)



– Remove screw ❻.
– Remove the fuel tank from above.

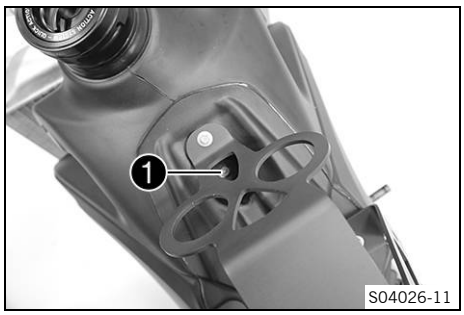
12.38 Installing the fuel tank

Danger
Fire hazard Fuel is highly flammable.
The fuel in the fuel tank expands when warm and can escape if overfilled.
– Do not refuel 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 poisonous and a health hazard.
– Avoid skin, eye and clothing contact with fuel.
– Immediately consult a doctor if you swallow fuel.
– Do not inhale fuel vapors.
– In case of skin contact, rinse the affected area with plenty of water.
– Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
– Change your clothing in case of 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.

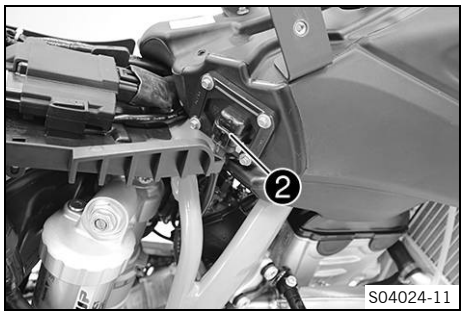
Main work
– Check the throttle cable routing. (📖 p. 68)



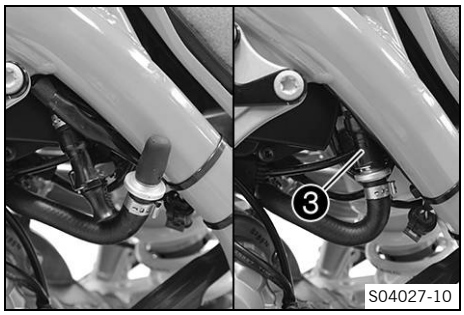
– Position the fuel tank.
– Mount and tighten screw ❶.

Guideline

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



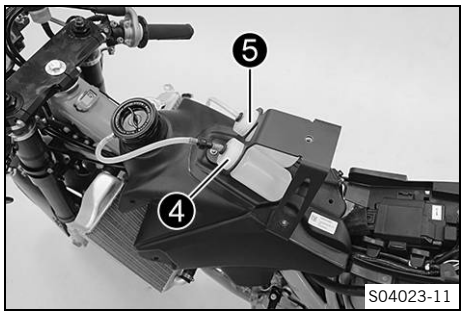
– Plug in connector ❷ for the fuel pump.



– 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!

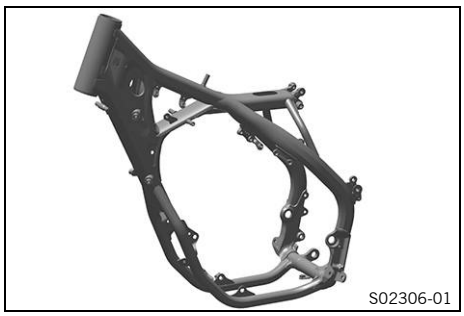
– Lubricate the O-ring and connect plug-in connection ❸ for the fuel line.



– Mount fuel collecting container ❹ and coolant collecting container ❺.

Finishing work
– Install the trim along with the front. (p. 56)
– Fit the front spoiler. (p. 54)
– Mount the front rider's seat along with the fuel tank cover. (p. 54)
– Install the tail section. (p. 55)

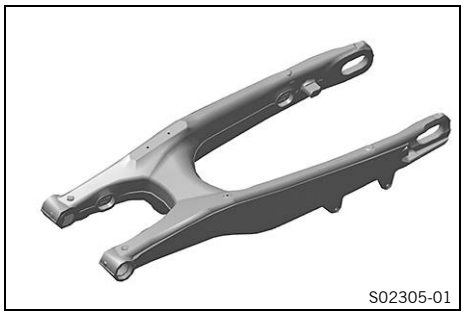
12.39 Checking the frame


S02306-01

– Check the frame for cracks and deformation.
  » If the frame exhibits cracks or deformation due to a mechanical impact:
    – Change the frame.

Info
Always replace a frame that has been damaged due to a mechanical impact. Repair of the frame is not authorized by KTM.

12.40 Checking the link fork

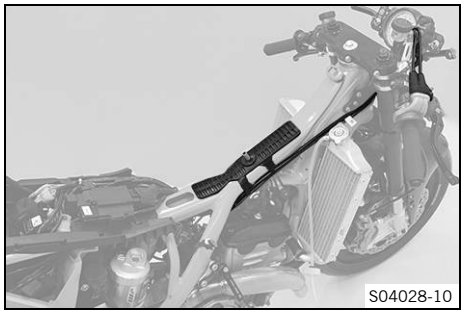

S02305-01

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

Info
Always replace a damaged link fork. Repairing the link fork is not authorized by KTM.

12.41 Checking the throttle cable routing

Preparatory work
– Remove the tail section. (p. 55)
– Take off the front rider's seat along with the fuel tank cover. (p. 53)
– Remove the front spoiler. (p. 54)
– Remove the trim along with the front. (p. 56)
– Remove the fuel tank. (p. 65)


S04028-10

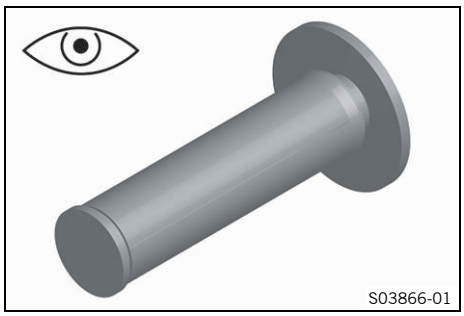
Main work
– Check the throttle cable routing.

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 routing is not as specified:
    – Correct the throttle cable routing.

Finishing work
– Install the fuel tank. (p. 66)
– Install the trim along with the front. (p. 56)
– Fit the front spoiler. (p. 54)
– Mount the front rider's seat along with the fuel tank cover. (p. 54)
– Install the tail section. (p. 55)

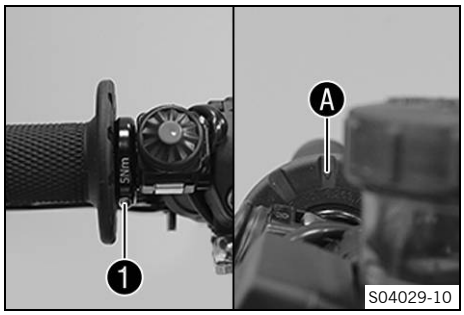
12.42 Checking the rubber grips



– 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) **Loctite®243™**

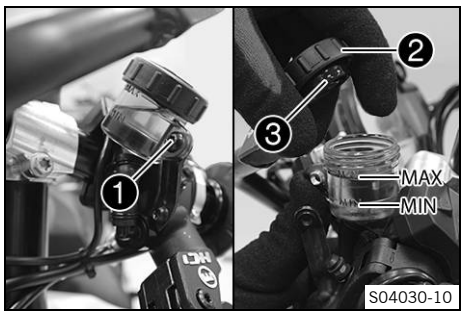
Diamond A must be positioned visibly as shown in the figure.

12.43 Checking/correcting the fluid level of hydraulic clutch

Warning
Skin irritation Brake fluid causes skin irritation.
– 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.
Never use DOT 5 brake fluid. It is silicone-based and purple in color. Oil seals and clutch lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint.
Only use clean brake fluid from a sealed container.

Preparatory work
– Remove the front spoiler. (p. 54)
– Remove the trim along with the front. (p. 56)



Main work

– Remove screw ❶.
– Move the hydraulic clutch fluid reservoir into a horizontal position.
– Take off screw cap ❷ with membrane ❸ and the shim.
– Check the fluid level.

  Guideline

  The fluid level must be between the **MIN** and **MAX** markings.

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

      Brake fluid DOT 4 / DOT 5.1 (📖 p. 136)

– Mount and tighten screw cap ❷ with membrane ❸ and the shim.

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

– Position the compensating tank, and mount and tighten screw ❶.

Finishing work

– Install the trim along with the front. 🔧 (📖 p. 56)
– Fit the front spoiler. (📖 p. 54)

12.44 Changing the hydraulic clutch fluid 🔧

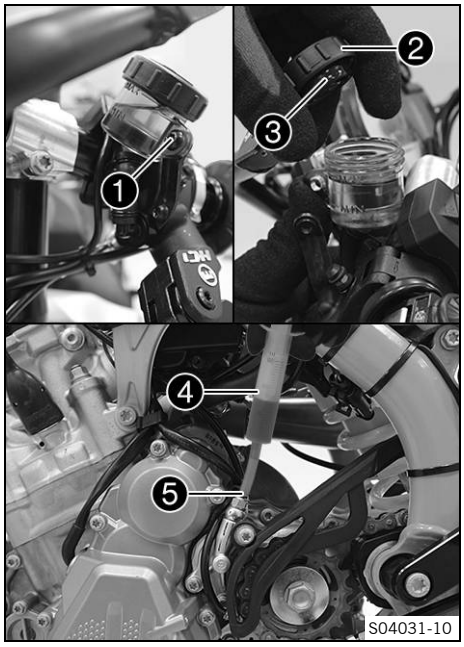
Warning
Skin irritation Brake fluid causes skin irritation.
– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes or clothing.
– Consult a doctor immediately if brake fluid has been 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.
Never use DOT 5 brake fluid. It is silicone-based and purple in color. Oil seals and clutch lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint.
Only use clean brake fluid from a sealed container.

Preparatory work

– Remove the front spoiler. (p. 54)
– Remove the trim along with the front. (p. 56)



Main work

– Remove screw ❶.
– Remove screw cap ❷ with membrane ❸.
– Move the hydraulic clutch fluid reservoir into a horizontal position.
– Fill bleeding syringe ❹ with the appropriate hydraulic fluid.

Syringe (50329050000)
Brake fluid DOT 4 / DOT 5.1 (p. 136)

– 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 to the point where 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 attacks paint.
Only use clean brake fluid from a sealed container.

– Inject the liquid into the system until it escapes from opening ❻ of the master cylinder without bubbles.
– Occasionally extract the fluid from the master cylinder reservoir to prevent overflowing.
– Tighten bleeder screw ❺ and remove bleeding syringe ❹ along with the hose. Mount the protection cap.
– Correct the fluid level of the hydraulic clutch.

  Guideline

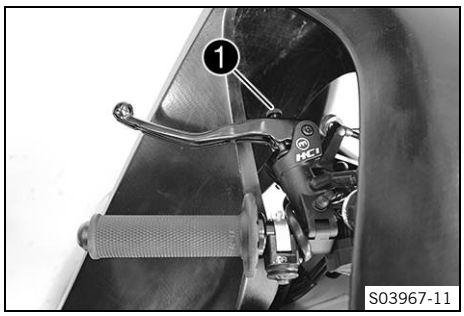
The fluid level must be between the **MIN** and **MAX** markings.

– Position screw cap ❷ with membrane ❸. Mount and tighten screw ❶.

Finishing work

– Install the trim along with the front. (p. 56)
– Fit the front spoiler. (p. 54)

12.45 Adjusting the basic position of the clutch lever



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

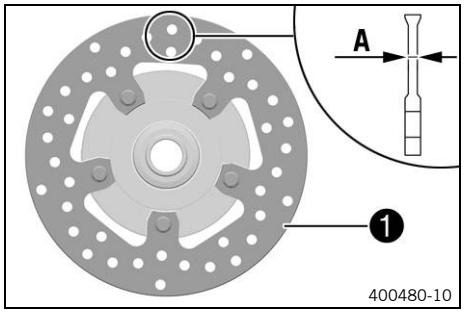
Info
Do not make any adjustments while riding.

13.1 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 will reduce the thickness of the brake disc at contact surface 1 of the brake linings.

Brake discs - wear limit	
front	4.0 mm (0.157 in)
rear	3.6 mm (0.142 in)

» If the brake disc thickness is less than the specified value.

– 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.

13.2 Checking the front brake fluid level

Warning

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

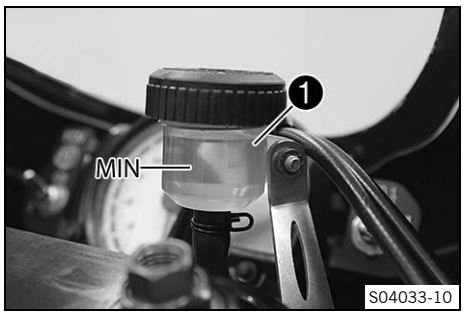
If the brake fluid level drops below the **MIN** marking, the brake system is leaking or the brake linings are worn down.

– 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 Old brake fluid reduces the braking effect.

– 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.)



– Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
– Check the brake fluid level in brake fluid reservoir 1.
  » If the brake fluid level is below the **MIN** marking:
    – Add front brake fluid. (📖 p. 74)

13.3 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 **MIN** marking, 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 causes skin irritation.

– 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 Old brake fluid reduces the braking effect.

– 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.)

Note

Environmental hazard Hazardous substances cause environmental damage.

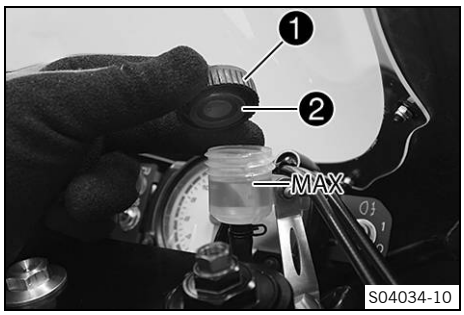
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

Info

Never use DOT 5 brake fluid. It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint.
Only use clean brake fluid from a sealed container.

Preparatory work

– Check the front brake linings. (📖 p. 75)



Main work

– Take off screw cap ❶ with membrane ❷ and the shim.
– Add brake fluid up to the **MAX-** marking.

Brake fluid DOT 4 / DOT 5.1 (📖 p. 136)

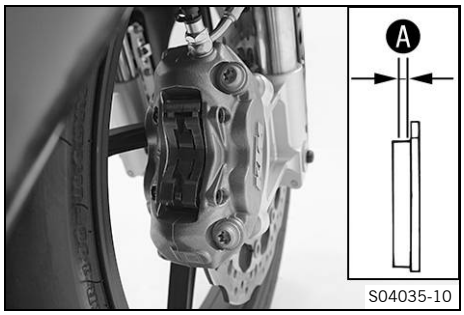
– Mount screw cap ❶ with membrane ❷ and the shim.

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

13.4 Checking the front brake linings

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.)

Warning
Danger of accidents Damaged brake discs reduce the braking effect.
If the brake linings are not changed in time, the brake lining carriers grind against the brake disc. As a consequence, the braking effect is greatly reduced and the brake discs are destroyed.
– Check the brake linings regularly.



– Check the brake linings for minimum thickness Ⓐ.

Minimum thickness Ⓐ	≥ 1 mm (≥ 0.04 in)

» If the minimum thickness is less than specified:
– Change the brake linings of the front brake. 🔧 (📖 p. 75)
– Check the brake linings for damage and cracking.
» If there is wear or tearing:
– Change the brake linings of the front brake. 🔧 (📖 p. 75)

13.5 Changing the brake linings of the front brake 🔧

Warning
Skin irritation Brake fluid causes skin irritation.
– 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 Old brake fluid reduces the braking effect.

– 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.)

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.

Warning

Danger of accidents Brake linings which have not been approved alter the braking efficiency.

Not all brake linings are tested and approved for KTM motorcycles. The structure and friction coefficient of the brake linings, and thus their brake power, may vary greatly from that of original brake linings.
If brake linings are used that differ from the original equipment, compliance with the original homologation is not guaranteed. In this case, the vehicle no longer corresponds to its condition at delivery and the warranty shall be void.

– Only use brake linings approved and recommended by KTM.

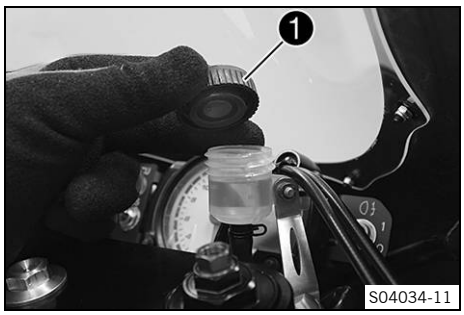
Note

Environmental hazard Hazardous substances cause environmental damage.

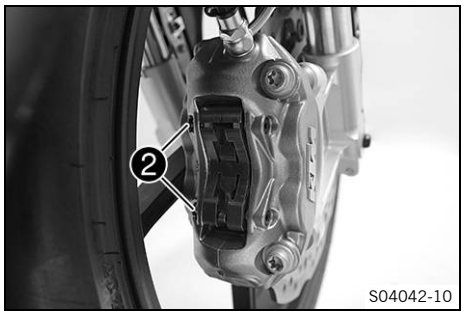
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

Info

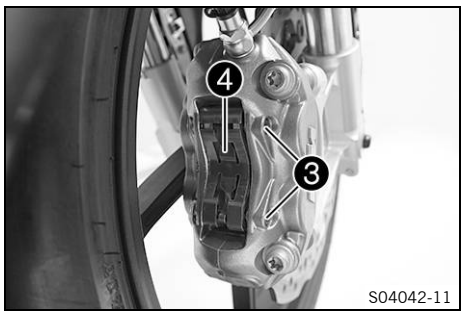
Never use DOT 5 brake fluid. It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint.
Only use clean brake fluid from a sealed container.



– Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
– Take off screw cap ❶ with the membrane and the shim.



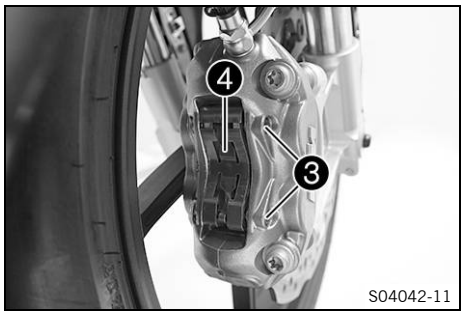
– Remove clips ❷.



- Remove pin ❸.
- Take off spring ❹.

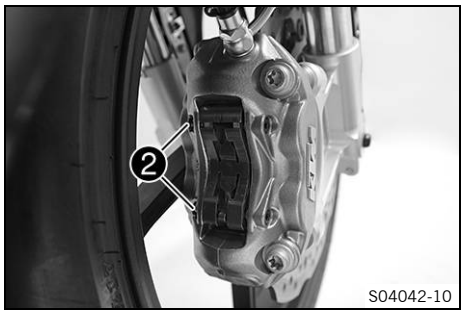
- Press the brake piston with the help of the worn brake linings back into the basic position and ensure that brake fluid does not flow out of the brake fluid reservoir, extracting some if necessary.
- Remove brake linings ❺.
- Clean brake caliper.
- Position new brake linings ❺.

Info
Always change the brake linings in pairs.

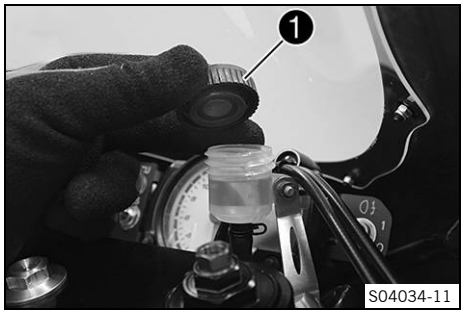


- Position spring ❹.
  ✔ The arrow on the spring points in the direction of rotation.
- Mount pin ❸.

Info
Ensure that the spring is correctly seated.



- Mount clips ❷.
- Operate the hand brake lever until a firm pressure point is present.



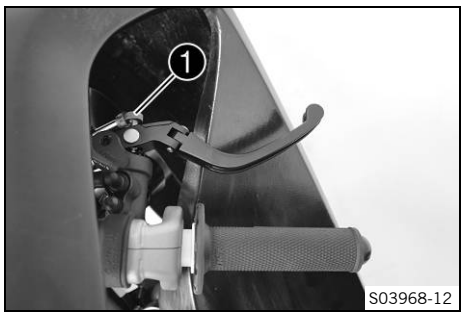
- Add brake fluid up to the **MAX** marking.

Brake fluid DOT 4 / DOT 5.1 (📖 p. 136)

- Mount screw cap ❶ with the membrane and the shim.

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

13.6 Adjusting the basic position of the hand brake lever



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

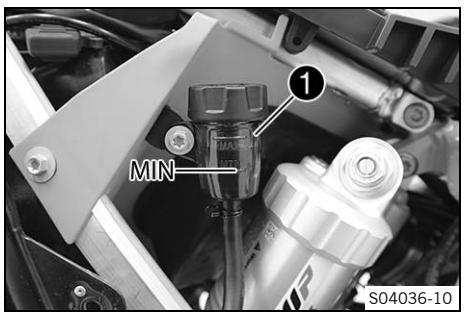
Info
Do not make any adjustments while riding.

13.7 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 **MIN** marking, 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 Old brake fluid reduces the braking effect.
– 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.)

Preparatory work
– Remove the tail section. 🔧 (📖 p. 55)
– Take off the front rider's seat along with the fuel tank cover. 🔧 (📖 p. 53)



Main work
– Position the vehicle vertically.
– Check the brake fluid level in brake fluid reservoir ❶.
  » If the brake fluid level has dropped below the **MIN** marking:
    – Add rear brake fluid. 🔧 (📖 p. 78)

13.8 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 **MIN** marking, 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 causes skin irritation.

– 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 Old brake fluid reduces the braking effect.

– 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.)

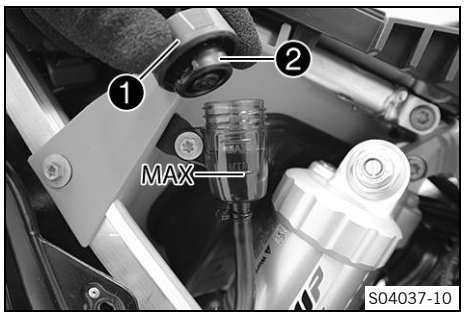
Note

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

Never use DOT 5 brake fluid. It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint.
Only use clean brake fluid from a sealed container.



Preparatory work

– Check the rear brake linings. (p. 80)

Main work

– Position the vehicle vertically.
– Remove screw cap ❶ with membrane ❷ and the shim.
– Add brake fluid up to the **MAX** marking.

Brake fluid DOT 4 / DOT 5.1 (p. 136)

– Mount screw cap ❶ with membrane ❷ and the shim.

Info

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

13.9 Checking the rear brake linings

Warning

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

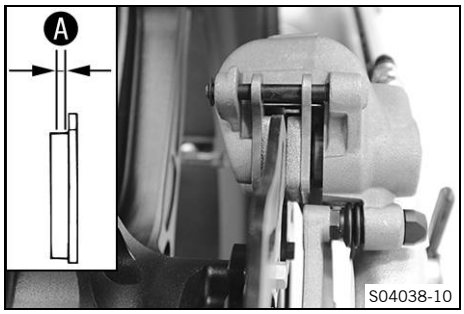
– Ensure that worn-out brake linings are replaced immediately. (Your authorized KTM workshop will be glad to help.)

Warning

Danger of accidents Damaged brake discs reduce the braking effect.

If the brake linings are not changed in time, the brake lining carriers grind against the brake disc. As a consequence, the braking effect is greatly reduced and the brake discs are destroyed.

– Check the brake linings regularly.



– Check the brake linings for minimum thickness Ⓐ.

Minimum thickness Ⓐ	≥ 1 mm (≥ 0.04 in)

» If the minimum thickness is less than specified:

– Change the rear brake linings. 🔧 (📖 p. 80)

– Check the brake linings for damage and cracking.

» If there is wear or tearing:

– Change the rear brake linings. 🔧 (📖 p. 80)

13.10 Changing the rear brake linings 🔧

Warning

Skin irritation Brake fluid causes skin irritation.

– 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 Old brake fluid reduces the braking effect.

– 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.)

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.

Warning

Danger of accidents Brake linings which have not been approved alter the braking efficiency.

Not all brake linings are tested and approved for KTM motorcycles. The structure and friction coefficient of the brake linings, and thus their brake power, may vary greatly from that of original brake linings.
If brake linings are used that differ from the original equipment, compliance with the original homologation is not guaranteed. In this case, the vehicle no longer corresponds to its condition at delivery and the warranty shall be void.

– Only use brake linings approved and recommended by KTM.

Note

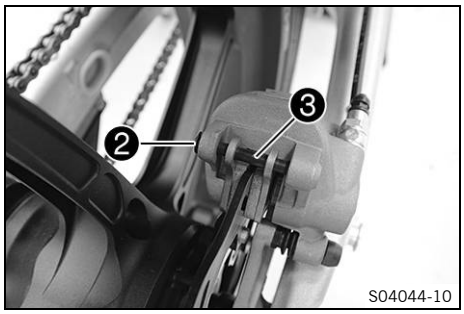
Environmental hazard Hazardous substances cause environmental damage.

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

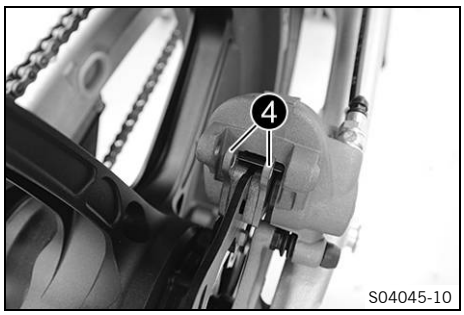
Info

Never use DOT 5 brake fluid. It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint.
Only use clean brake fluid from a sealed container.

– Position the vehicle vertically.
– Take off screw cap ❶ with the washer and membrane.
– 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, if necessary extract excess.



– Remove latch ❷.
– Remove pin ❸.

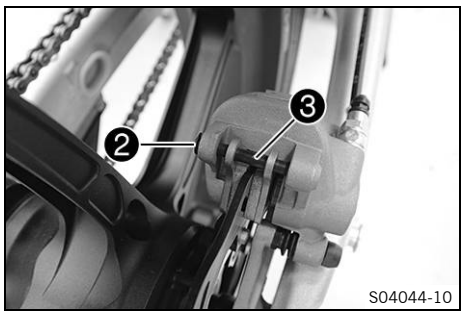


– Remove brake linings ❹.
– Clean brake caliper.
– Position new brake linings ❹.

Info

Always change the brake linings in pairs.
Check that the brake linings are seated properly.

– Mount pin ❸.



– Mount latch ❷.

– Operate the foot brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.
– Adjust the brake fluid level to the **MAX** marking.

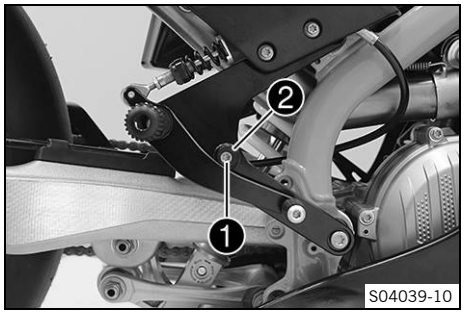
Brake fluid DOT 4 / DOT 5.1 (📖 p. 136)

– Mount and tighten screw cover ❶ with the shim and the membrane.

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

13.11 Adjusting the basic position of the foot brake lever

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



Main work
– To adjust the basic position of the foot brake lever to individual requirements, loosen screw ❶ and eccentric ❷ accordingly.

Info
The range of adjustment is limited.

– Tighten screw ❶.
Guideline

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

Finishing work
– Adjust the free travel of the foot brake lever. 🔧 (📖 p. 83)

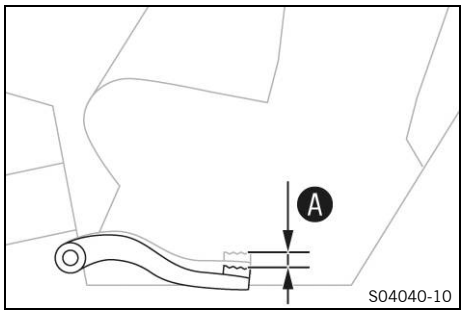
13.12 Checking the free travel of the foot brake lever

Warning

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

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.



– 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 match the specification:

– Adjust the free travel of the foot brake lever. (📖 p. 83)

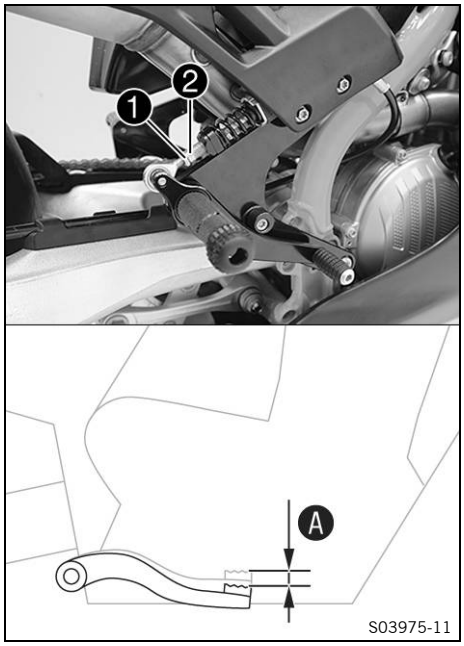
13.13 Adjusting the free travel of the foot brake lever

Warning

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

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.



– Release nut ❶ and use screw ❷ to adjust the specified free travel Ⓐ.

Guideline

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

Info

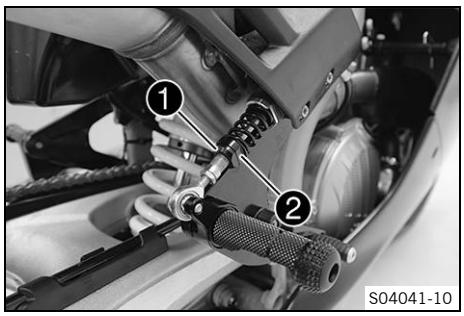
The range of adjustment is limited.

– Hold screw ❷ and tighten nut ❶.

Guideline

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

13.14 Adjusting the foot brake lever resistance

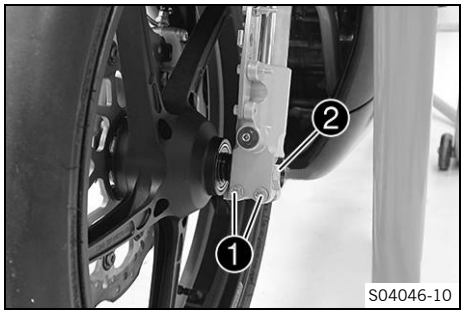


– Loosen lock nut ❶.
– Adjust the desired foot brake lever resistance using nut ❷.

Info
The spring must at least be pretensioned so that the foot brake lever can be depressed fully.
The range of adjustment is limited.

– Hold nut ❷ and tighten lock nut ❶.

14.1 Removing the front wheel



Preparatory work

- Raise the motorcycle with the rear lifting gear. (p. 40)
- Lift the motorcycle with the front lifting gear. (p. 40)
- Remove the front fender. (p. 52)

Main work

- Loosen screws ❶.
- Loosen wheel spindle ❷.

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

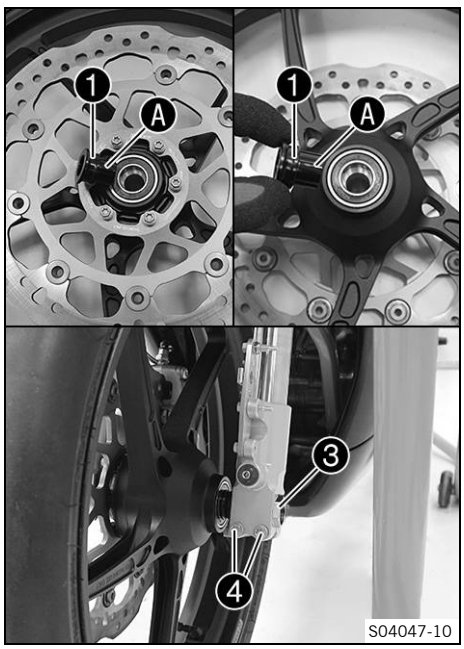
Do not actuate the hand brake lever when the front wheel is removed.

14.2 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.



Main work

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

Long-life grease (p. 138)

- Insert the spacers.
- Position the front wheel.
  - ✔ The brake linings are correctly positioned.
- Mount and tighten wheel spindle ❸.

  Guideline

Screw, front wheel spindle	M50	50 Nm (36.9 lbf ft)

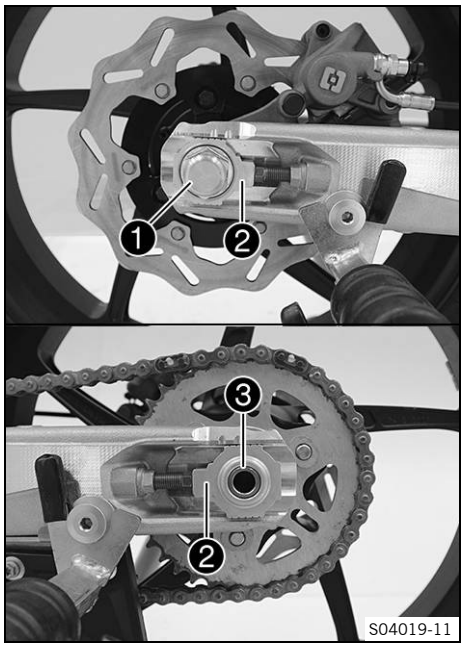
- Operate the hand brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.
- Take the motorcycle off the front lifting gear. (p. 41)

– Operate the front brake and compress the fork a few times firmly.
  ✔ The fork legs straighten.
– Tighten screws ❹.
  Guideline

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

Finishing work
– Take the motorcycle off the front lifting gear. (📖 p. 41)
– Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)

14.3 Removing the rear wheel



Preparatory work
– Raise the motorcycle with the rear lifting gear. (📖 p. 40)

Main work
– Remove nut ❶ with the washer. Take off chain adjuster ❷.
– Hold the rear wheel and pull out wheel spindle ❸ with the washer and chain adjuster ❷.
– Push the rear wheel forward as far as possible and take the chain off the rear sprocket.

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.

– Pull the rear wheel back and take it out of the link fork.

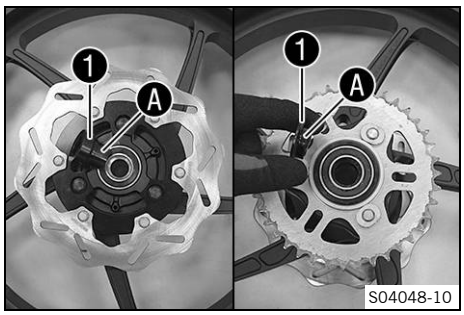
Info
Do not operate the foot brake lever when the rear wheel is removed.

14.4 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.

Warning
Danger of accidents There is no braking effect to start with at the rear brake after installing the rear wheel.
– Actuate the foot brake several times before going on a ride until you can feel a firm pressure point.

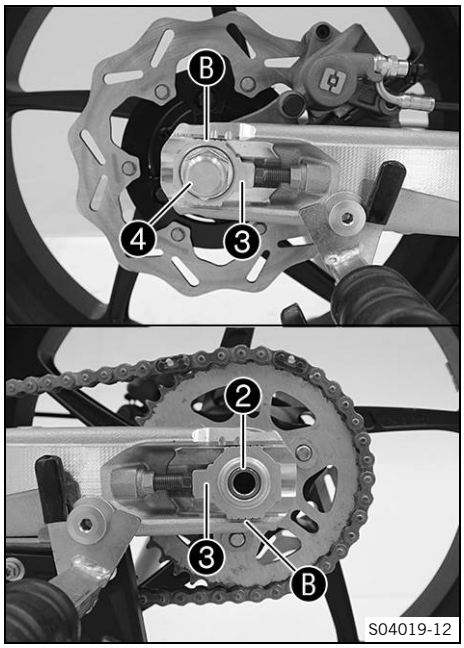
Main work
– Check the rear hub damping rubber pieces.



- Remove spacers ❶.
- Check the wheel bearing for damage and wear.
  - » If the wheel bearing is damaged or worn:
    - Change the rear wheel bearing. 🔧
- Clean and grease the contact surfaces Ⓐ of the spacers.

Long-life grease (📖 p. 138)

- Insert the spacers.



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

Long-life grease (📖 p. 138)

- Clean the contact areas on the brake caliper bracket and link fork.
- Position the rear wheel.
  - ✔ The brake linings are correctly positioned.
- Push the rear wheel forward as far as possible and lay the chain on the rear sprocket.
- Pull the rear wheel back and mount wheel spindle ❷ with the washers and chain adjusters ❸.

Info

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

- Mount nut ❹, but do not tighten yet.
- Ensure that the chain adjusters lie flat on the adjusting screws and tighten the nut ❹.

Guideline

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

Nut, rear wheel spindle	M20x1.5	80 Nm (59 lbf ft)

Finishing work

- Check the chain tension. (📖 p. 59)
- Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)

14.5 Checking the tire condition

Warning

Danger of accidents If a tire bursts while riding, the vehicle becomes uncontrollable.

– Ensure that damaged or worn tires are replaced immediately. (Your authorized KTM workshop will be glad to help.)

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.

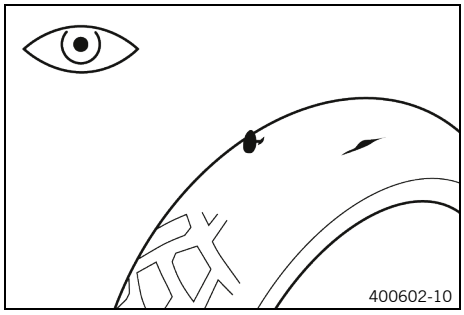
Warning

Danger of accidents Non-approved or non-recommended tires and wheels impact the handling characteristic.

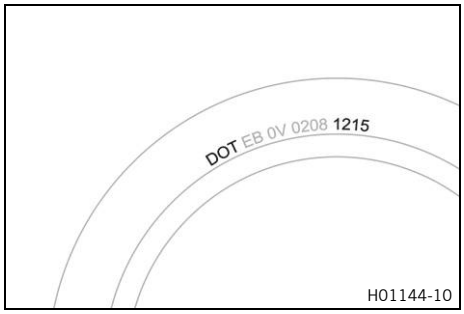
– Only use tires/wheels approved by KTM with the corresponding speed index.

Info

The type, condition, and pressure of the tires all have a major impact on the handling characteristic of the motorcycle.
Worn tires have a negative effect on handling characteristics, especially on wet surfaces.



– 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 tire wear.
  » If the tire is worn:
    – Change the tires.



– Check the tire age.

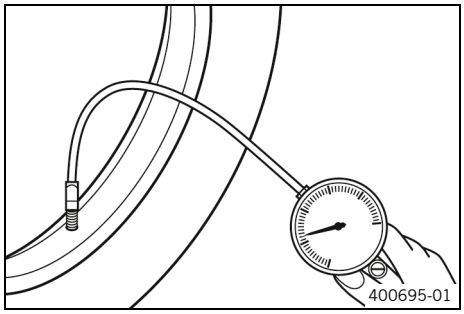
Info

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.

14.6 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 the tire pressure when the tires are cold.

Tire pressure (cold)	
front	1.9 bar (28 psi)
rear	1.9 bar (28 psi)

Tire pressure (80° warm)	
front	2.3 bar (33 psi)
rear	2.1 bar (30 psi)

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

15.1 Removing the 12-V battery

Caution

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

– 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.

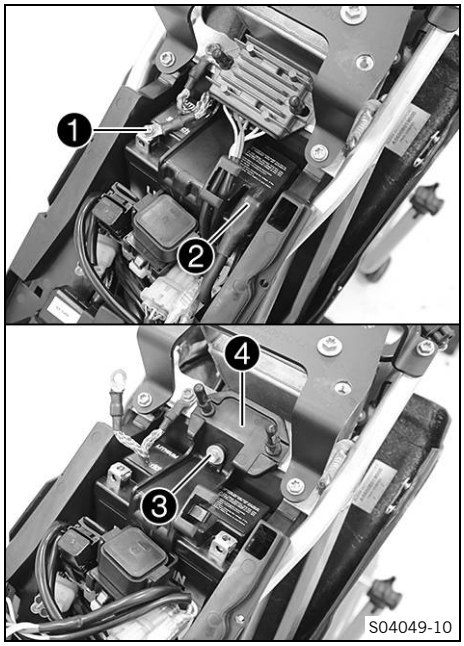
– Dispose of 12 V batteries at a collection point for used batteries.

Preparatory work

– Press and hold the switch-off button ⊠ while the engine is idling until the engine stops.

– Remove the tail section. (p. 55)

– Take off the front rider's seat along with the fuel tank cover. (p. 53)



Main work

– Hang the voltage regulator to the side.

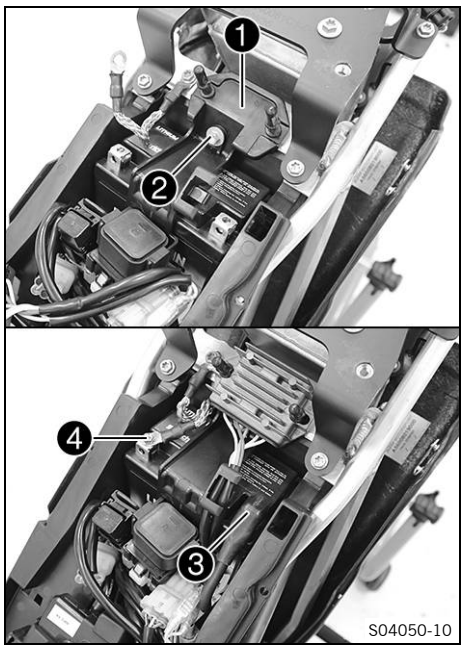
– Disconnect negative cable ❶ from the 12-V battery.

– Pull back positive terminal cover ❷ and disconnect the positive cable from the 12-V battery.

– Remove screw ❸.

– Pull holding bracket ❹ forward and remove the 12-V battery upwards.

15.2 Installing the 12-V battery



Main work

– Insert the 12-V battery into the battery compartment with the terminals facing forward and secure with holding bracket ❶.

12-V battery (HJTZ5S-FP-C) (📖 p. 124)

– Mount and tighten screw ❷.

Guideline

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

– Connect positive cable ❸ to the 12-V battery.

Guideline

Screw, battery terminal	M5	2.5 Nm (1.84 lbf ft)

– Connect negative cable ❹ to the 12-V battery.

Guideline

Screw, battery terminal	M5	2.5 Nm (1.84 lbf ft)

– Slide the positive terminal cover over the positive terminal.
– Position the voltage regulator.

Finishing work

– Mount the front rider's seat along with the fuel tank cover. (📖 p. 54)

15.3 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 with less than the minimum voltage correctly.

Note

Environmental hazard 12 V batteries contain environmentally hazardous materials.

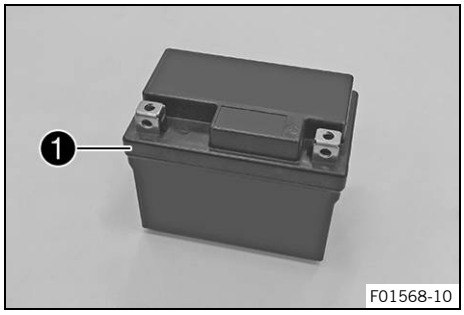
– Do not dispose of 12 V batteries as household waste.
– Dispose of 12 V batteries at a collection point for used batteries.

Info

Even when there is no load on the 12-V battery, it discharges steadily 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

– Press and hold the switch-off button ⊠ while the engine is idling until the engine stops.
– Remove the tail section. 🔧 (📖 p. 55)
– Take off the front rider's seat along with the fuel tank cover. 🔧 (📖 p. 53)
– Remove the 12-V battery. 🔧 (📖 p. 90)



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 1.

– Switch off the battery charger after charging and disconnect from the 12-V battery.

Finishing work
– Install the 12-V battery. (p. 91)
– Mount the front rider's seat along with the fuel tank cover. (p. 54)

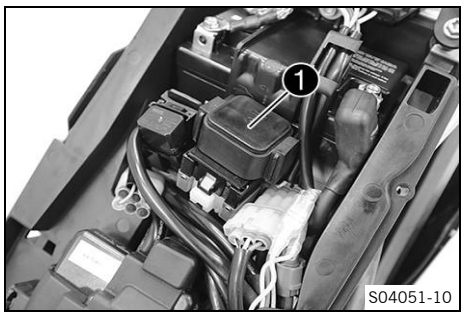
15.4 Changing main fuse

Warning
Fire hazard Incorrect fuses overload the electrical system.
– Only use fuses with the required ampere value.
– Do not bypass or repair fuses.

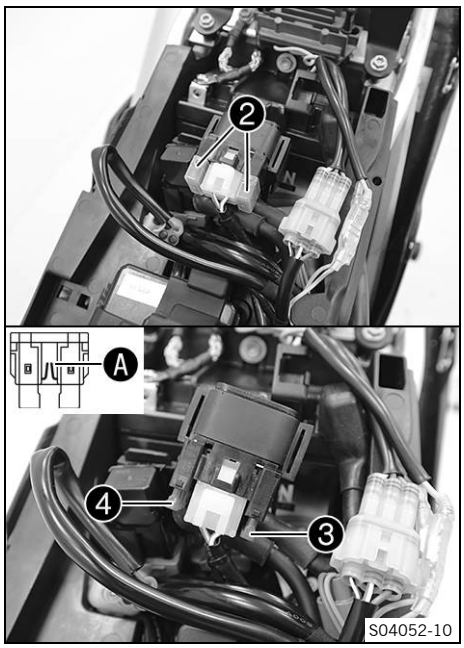
Caution
Danger of burns The voltage regulator gets very hot when the vehicle is driven.
– Allow the voltage regulator to cool down before performing any work.

Info
The main fuse protects all power consumers of the vehicle. It is located in the starter relay housing under the seat.

Preparatory work
– Press and hold the switch-off button ⊠ while the engine is idling until the engine stops.
– Remove the tail section. (p. 55)
– Take off the front rider's seat along with the fuel tank cover. (p. 53)



Main work
– Pull starter relay 1 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 (75011088010) (📖 p. 124)

– Check that the electrical system is functioning properly.

Tip
Insert a spare fuse so that it is available if needed.

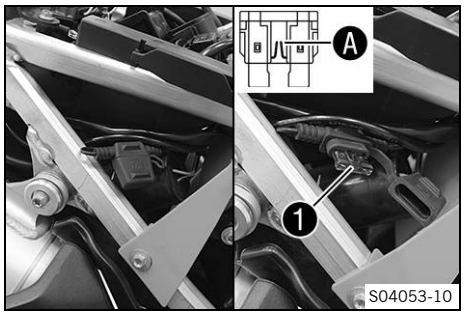
– Mount the protection caps.
– Mount the starter relay onto the holder and route the cable.

Finishing work
– Mount the front rider's seat along with the fuel tank cover. (📖 p. 54)
– Install the tail section. 🔧 (📖 p. 55)

15.5 Changing the fuse of individual power consumers

Info
The fuse for each power consumer is located on the right above the main silencer.

Preparatory work
– Switch off the ignition by turning the ignition key to the position ⊠.
– Remove the tail section. 🔧 (📖 p. 55)
– Take off the front rider's seat along with the fuel tank cover. 🔧 (📖 p. 53)



Main work
– Open the fuse cover.
– Remove the faulty fuse.

Guideline

Fuse **1** - 7.5 A - combination instrument, tail light, quick-shifter

Info
A faulty fuse has a burned-out fuse wire Ⓐ.

Warning

Fire hazard Incorrect fuses overload the electrical system.

– Only use fuses with the required ampere value.
– Do not bypass or repair fuses.

– Insert the spare fuse with the correct rating.

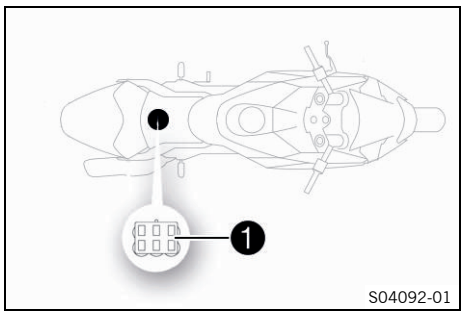
Fuse (067038485) (📖 p. 124)

– Check that the power consumers are functioning properly.
– Close the fuse cover.

Finishing work

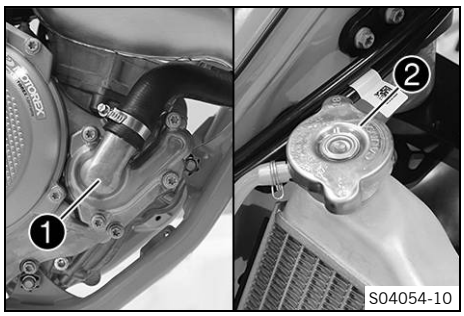
– Mount the front rider's seat along with the fuel tank cover. (📖 p. 54)
– Install the tail section. 🔧 (📖 p. 55)

15.6 Diagnostics connector



Diagnostics connector ❶ is located under the front rider's seat.

16.1 Cooling system



Water pump ❶ in the engine ensures forced circulation of 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.

16.2 Checking the antifreeze and coolant level

Warning

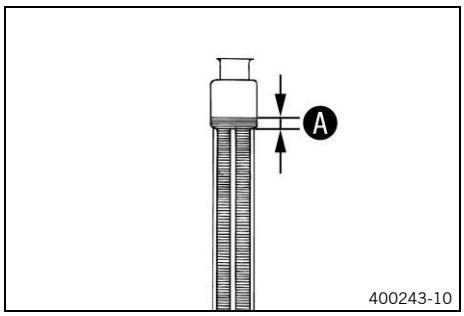
Danger of scalding During motorcycle operation, the coolant gets very hot and is under pressure.

- Do not 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 toxic and a health hazard.

- 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.
- Take off 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. 136)

- Mount the radiator cap.

16.3 Checking the coolant level

Warning

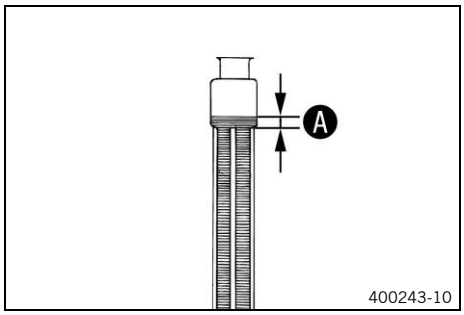
Danger of scalding During motorcycle operation, the coolant gets very hot and is under pressure.

- 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 toxic and a health hazard.

- 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.
- Take off 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. 136)

- Mount the radiator cap.

16.4 Draining the coolant 🔧

Warning

Danger of scalding During motorcycle operation, the coolant gets very 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 toxic and a health hazard.

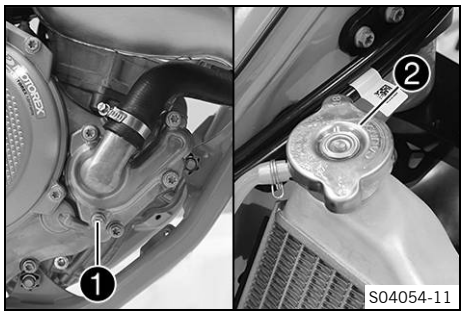
- Keep coolant out of the reach of children.
- Do not allow coolant to come into contact with the skin, the eyes and clothing.
- Consult a doctor immediately if coolant is swallowed.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse eyes thoroughly 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 front spoiler. (p. 54)



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

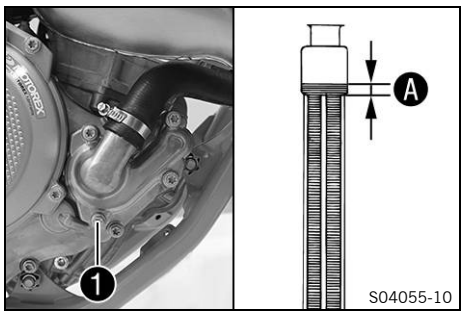
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)

16.5 Refilling with coolant

Warning

Danger of poisoning Coolant is toxic and a health hazard.

- 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	0.95 l (1 qt.)	Coolant (p. 136)

- Mount the radiator cap.
- Go for a short test ride.
- Check the coolant level. (p. 97)

Finishing work
– Fit the front spoiler. (📖 p. 54)

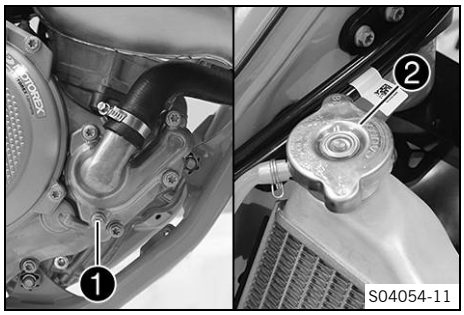
16.6 Changing the coolant

Warning
Danger of scalding During motorcycle operation, the coolant gets very 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.

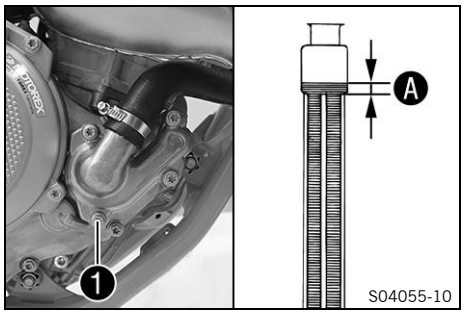
Warning
Danger of poisoning Coolant is toxic and a health hazard.
– Keep coolant out of the reach of children.
– Do not allow coolant to come into contact with the skin, the eyes and clothing.
– Consult a doctor immediately if coolant is swallowed.
– Rinse the affected area immediately with plenty of 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 front spoiler. 🔧 (📖 p. 54)



Main work
– Position the motorcycle upright.
– Place an appropriate container under the water pump cover.
– Remove screw ❶. Take off radiator cap ❷.
– Completely drain the coolant.



– Mount and tighten screw ❶ with a new seal ring.
Guideline

Screw, water pump cover	M6	10 Nm (7.4 lbf ft)

– Pour coolant in up to measurement Ⓐ above the radiator fins.
Guideline

Distance Ⓐ above the radiator fins	10 mm (0.39 in)

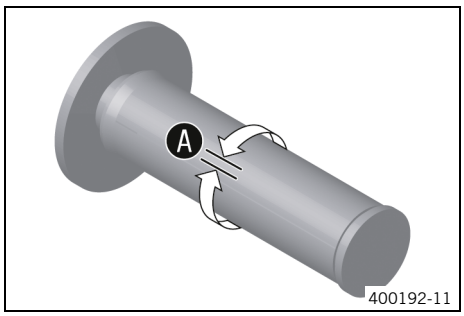
Coolant	0.95 l (1 qt.)	Coolant (📖 p. 136)

– Mount the radiator cap.
– Go for a short test ride.
– Check the coolant level. (📖 p. 97)

Finishing work

– Fit the front spoiler. (📖 p. 54)

17.1 Checking the throttle cable play



– 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 Ⓐ.

Throttle cable play	3 … 5 mm (0.12 … 0.2 in)

» If the throttle cable play does not meet specifications:
  – Adjust the throttle cable play. (📖 p. 101)
– 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 throttle cable play. (📖 p. 101)

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.

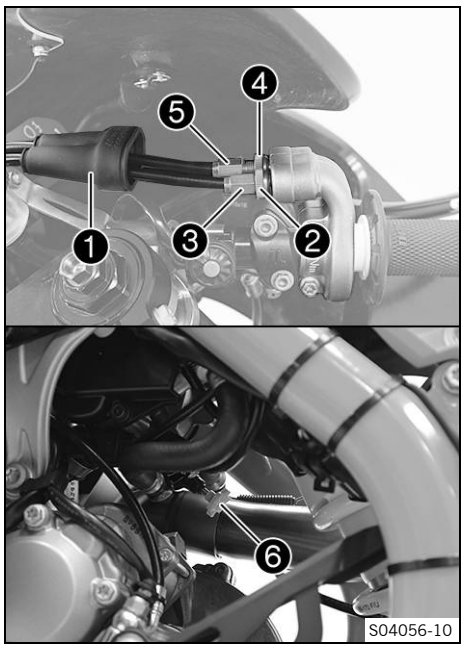
– Start the engine and let it run at idle speed. Move the handlebar to and fro over the entire steering range.

The idle speed must not change.

» If the idle speed changes:
  – Adjust the throttle cable play. (📖 p. 101)

17.2 Adjusting the throttle cable play

Preparatory work
– Remove the tail section. (📖 p. 55)
– Take off the front rider's seat along with the fuel tank cover. (📖 p. 53)
– Remove the front spoiler. (📖 p. 54)
– Remove the trim along with the front. (📖 p. 56)
– Remove the fuel tank. (📖 p. 65)
– Check the throttle cable routing. (📖 p. 68)



Info
If the correct routing of the throttle cables has already been secured, the fuel tank does not need to be removed.

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.

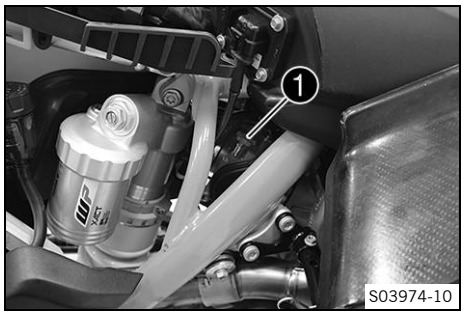
  Guideline

Throttle cable play	3 ... 5 mm (0.12 ... 0.2 in)

- Tighten nut ❷.
- Slide on sleeve ❶.
- Check the throttle grip for smooth operation.

17.3 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.)



Main work
- Run the engine until warm.
  - ✔ The cold start button is deactivated – The cold start button is in its basic position. (📖 p. 18)
- Take off the front rider's seat along with the fuel tank cover. (📖 p. 53)

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.

  Guideline

Idle speed	2,300 ± 50 rpm

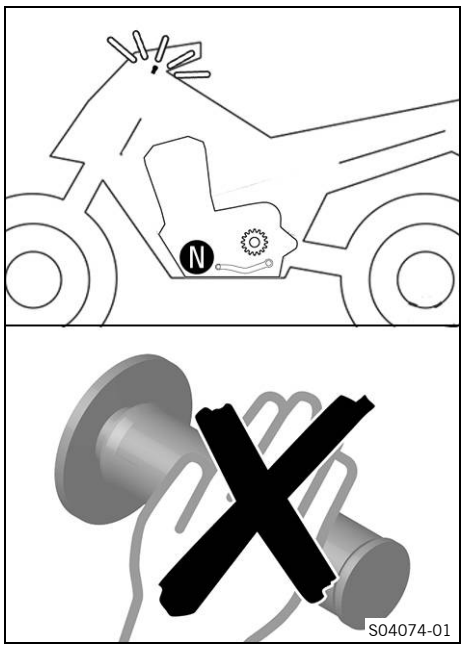
Tachometer (45129075000)

Info
Turning counterclockwise lowers the idle speed.
Turning clockwise raises the idle speed.

Finishing work
– Mount the front rider's seat along with the fuel tank cover. (p. 54)

17.4 Teaching the throttle valve position

Info
If the control unit detects that the throttle valve position at idle speed needs to be retaught, then the malfunction indicator lamp flashes 2x per second.



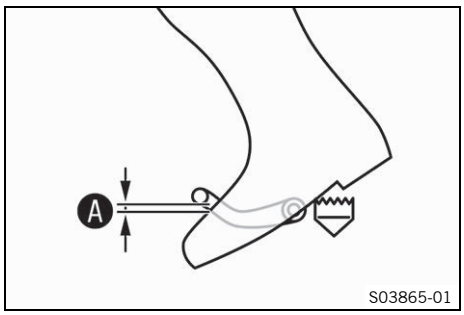
Danger
Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.
– Always make sure there is sufficient ventilation when running the engine.
– Use effective exhaust extraction when starting or running the engine in an enclosed space.

– Allow the vehicle to run at idle speed.
✔ The malfunction indicator lamp stops flashing once teaching is completed.

Info
If the engine becomes too hot, perform a cool-down ride at medium revs.
Then do not switch off the engine after this, but leave it running at idle speed until teaching is completed.

17.5 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.
When the shift lever keeps touching the boot, the transmission will be subject to an excessive load.



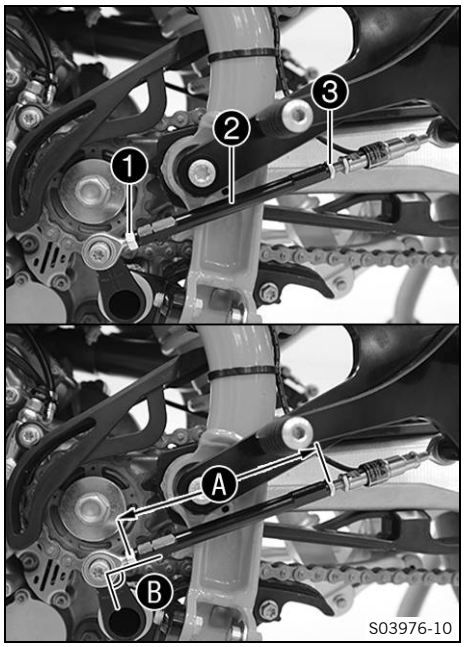
– Sit on the vehicle in the riding position and determine distance Ⓐ between the upper edge of your boot and the shift lever.

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 shift lever. (📖 p. 104)

17.6 Adjusting the shift lever

Info
The adjustment range of the shift lever is limited.



– Loosen nut ❶, holding threaded rod ❷.

Info
Nut ❶ has a left-handed thread.

– Loosen nut ❸, holding threaded rod ❷.
– Adjust the shift lever by turning shift rod ❷.

Guideline

Shift rod adjustment range Ⓐ	205 … 235 mm (8.07 … 9.25 in)

Info
Make equal adjustments on both sides.
At least five screw threads must be screwed into the seating.

– Check adjusting angle Ⓑ.

Guideline

Adjusting angle Ⓑ shift rod - bell crank - shift lever	97°

– Tighten nut ❸ while holding threaded rod ❷.

Guideline

Nut, shift rod	M6	10 Nm (7.4 lbf ft)

– Tighten nut ❶ while holding threaded rod ❷.

Guideline

Nut, shift rod	M6LH	10 Nm (7.4 lbf ft)

– Check the shift lever to ensure it is functioning properly and can move freely.

17.7 Adjusting the quickshifter

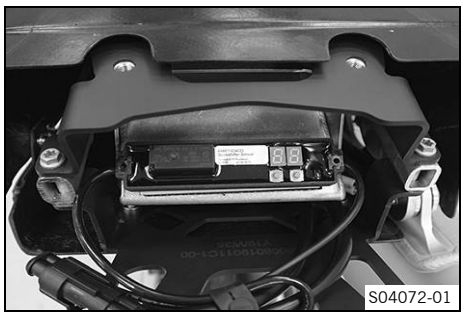
Danger

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.

Info

If the sensor or the cable is damaged, **E1** flashes.
The installation position of the adjusting box must not be changed.


S04072-01

Condition

The quickshifter switch is in position **0**.

Preparatory work

– Raise the motorcycle with the rear lifting gear. (📖 p. 40)
– Remove the tail section. 🔧 (📖 p. 55)

Adjusting the shifting resistance:

– Start the engine.
– Press the right button.
  ✔ **15** is displayed.
– Press and hold both buttons until **15** flashes.
– Reduce shifting resistance with the left button or increase with the right button.

  Guideline

Adjustment range	1 … 40 kg (2 … 88 lb.)
Standard adjustment	15 kg

  Info
  The value **00** may not be set.

– Press both buttons for 3–5 seconds.
  ✔ The indicator lights up and the value is stored.
– Release both buttons.
  ✔ The indicator goes out.
– Switch off the engine.

Adjusting the ignition interruption time:

– Start the engine.
– Press and hold the left button, and then press and hold both buttons until **30** is displayed.
  ✔ The indicator jumps from **t1** to **t2** and then to **30**.
  ✘ When the button is released, the quickshifter must be readjusted before the indicator displays **30**.
    – Press and hold the left button, and then press and hold both buttons for 10 seconds until **t1** is displayed. Release both buttons and repeat the step **"Adjusting the ignition interruption time"**.
– Release both buttons and reduce the desired ignition interruption time with the left button, or increase it with the right button.

Guideline

Adjustment range	10 ... 99 ms
Standard adjustment	30 ms

Info

df corresponds to an ignition interruption time of 150 ms.

– Press and hold both buttons until the value no longer flashes.

✓ The ignition interruption time is adopted.

– Release both buttons.

✓ The indicator goes out.

– Switch off the engine.

Programming shifting direction:

Condition

Engine is switched off.

– Engage second gear.

– Press and hold both buttons and start the engine with the clutch pulled.

✓ **up** flashes.

– With the engine running and the clutch pulled, shift from second into third gear and press and hold the shift lever until the indicator goes out.

Guideline

Standard adjustment	Pull on the sensor for shifting up
The standard adjustment must be retained as the quickshifter is only appropriate for shifting up and the shifting pattern cannot be changed.	

✓ When the indicator goes out, the adjustment is stored.

– Shift the transmission into neutral and switch off the engine.

Finishing work

– Install the tail section. (📖 p. 55)

– Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)

18.1 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 refuel 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

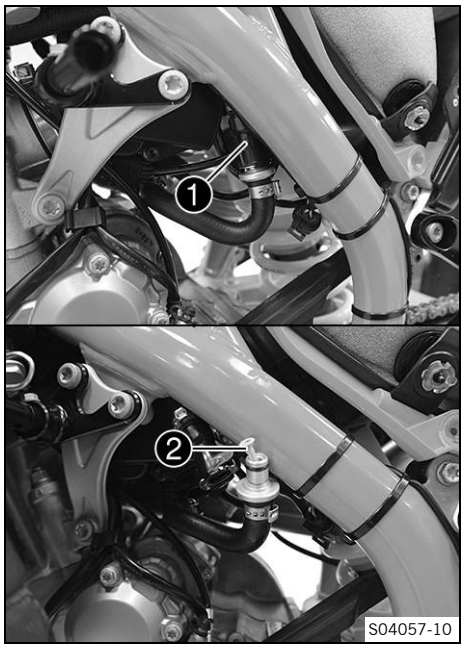
Danger of poisoning Fuel is poisonous and a health hazard.

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



Preparatory work

- Remove the front spoiler. (p. 54)
- Remove the trim along with the front. (p. 56)

Main work

- 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.
- Lubricate the O-ring and join the quick release coupling.

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.

Finishing work

– Install the trim along with the front. (p. 56)
– Fit the front spoiler. (p. 54)

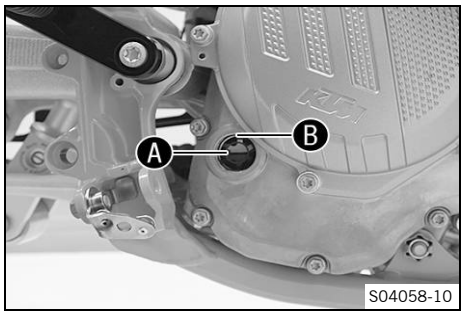
18.2 Checking the engine oil level

Info

The engine oil level can be checked when the engine is cold or warm.

Preparatory work

– Remove the front spoiler. (p. 54)
– 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 Ⓐ.

» If the engine oil does not reach the middle of the level viewer:

– Add engine oil. (p. 111)

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 Ⓐ and the upper edge of the level viewer Ⓑ.

» If the engine oil does not reach the middle of level viewer Ⓐ:

– Add engine oil. (p. 111)

Finishing work

– Fit the front spoiler. (p. 54)

18.3 Changing the engine oil and oil filter, cleaning the oil screen

Warning

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

– 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.

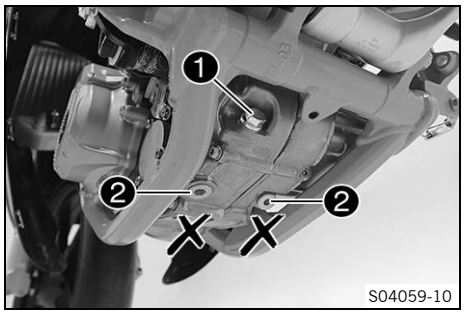
Info

Drain the engine oil while the engine is at operating temperature.

Preparatory work

– Remove the front spoiler. (p. 54)
– Park the motorcycle on a level surface.

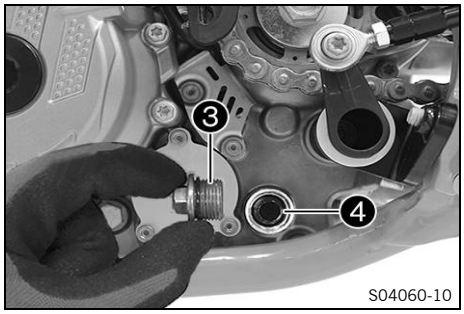
Main work



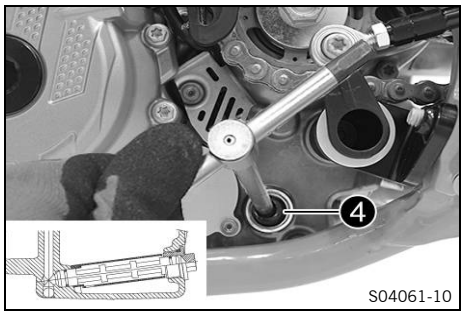
– Position an appropriate container under the engine.
– Remove oil drain plug ❶ with the magnet and seal ring.

Info

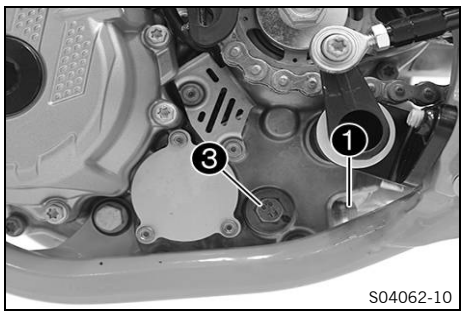
Do not remove screws ❷.



– Remove screw plug ❸ with oil screen ❹ and the O-rings.
– Allow the engine oil to drain completely.
– Thoroughly clean the parts and the sealing surfaces.



– Position oil screen ❹ 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 ❸ with the O-ring.

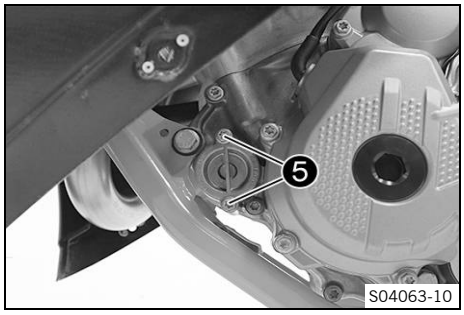
Guideline

Screw plug, oil screen	M20x1.5	15 Nm (11.1 lbf ft)

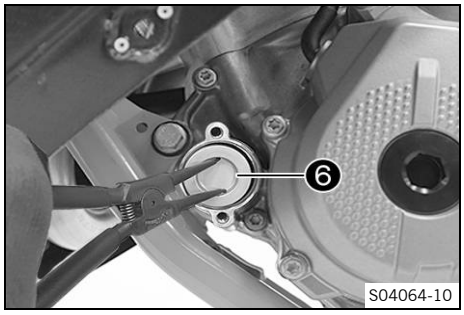
– Mount and tighten oil drain plug ❶ with the magnet and a new seal ring.

Guideline

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



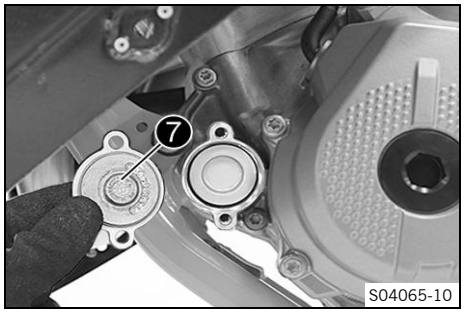
– Remove screws ❺. Remove the oil filter cover with the O-ring.



– Pull oil filter ❻ 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.

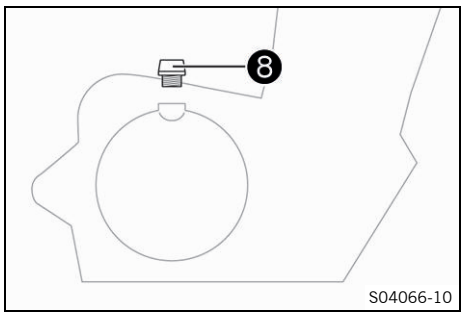


– Lay the motorcycle on its side and fill the oil filter housing to about ⅓ full with engine oil.
– Fill the oil filter with engine oil and position the oil filter in the housing.
– Oil the O-ring of the oil filter cover and mount it together with oil filter cover ❼.
– Mount and tighten the screws.

Guideline

Screw, oil filter cover	M6	10 Nm (7.4 lbf ft)

– Stand the motorcycle upright.



– Remove filler plug ❽ with the O-ring, and fill up with engine oil.

Engine oil	1.0 l (1.1 qt.)	Engine oil (SAE 10W/50) (📖 p. 136)

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 for tightness.

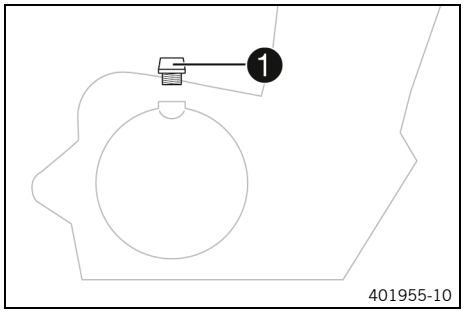
Finishing work

– Check the engine oil level. (p. 108)
– Fit the front spoiler. (p. 54)

18.4 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. 136)

Info

For optimal performance of the engine oil, do not mix different types of engine oil.
We recommended changing the engine oil when 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 for tightness.

19.1 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)

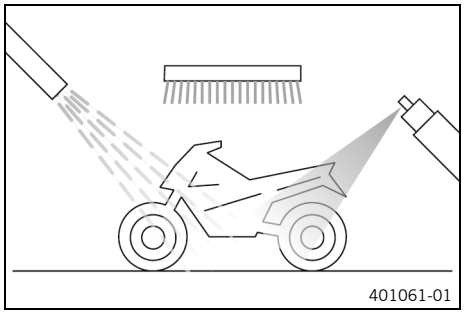
Note

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

Clean the motorcycle regularly to maintain its value and appearance over a long period.
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. 138)

Info

Use warm water containing normal motorcycle cleaner and a soft sponge.
Never apply motorcycle cleaner to a dry motorcycle; 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 sleeves 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. 59)
– Treat bare metal (except for brake discs and the exhaust system) with a corrosion inhibitor.

Preserving materials for paints, metal and rubber (📖 p. 138)

– Treat all painted parts with a mild paint care product.

Perfect finish and high gloss polish for paints (📖 p. 138)

Info
Do not polish parts that were matte when delivered as this would strongly impair the material quality.

– Treat all plastic parts and powder-coated parts with a mild cleaning and care product.

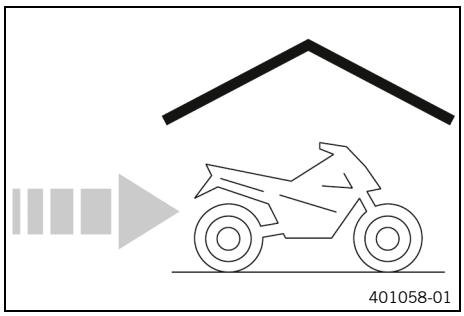
Special cleaner for glossy and matte paint finishes, metal and plastic surfaces (📖 p. 139)

– Lubricate the ignition and steering lock.

Universal oil spray (📖 p. 139)

20.1 Storage

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.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- When refueling for the last time before taking the motorcycle out of service, add fuel additive.

Fuel additive (📖 p. 138)

- Refuel. (📖 p. 31)
- Clean the motorcycle. (📖 p. 112)
- Change the engine oil and oil filter, clean the oil screen. 🔧 (📖 p. 109)
- Check the antifreeze and coolant level. (📖 p. 96)
- Check tire pressure. (📖 p. 89)
- Remove the 12-V battery. 🔧 (📖 p. 90)
- Charge the 12-V battery. 🔧 (📖 p. 91)

  Guideline

Storage temperature of the 12-V battery without direct sunlight	0 … 35 °C (32 … 95 °F)

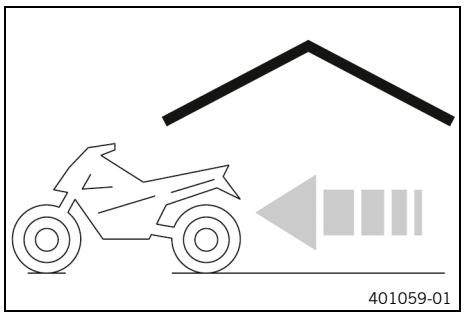
- Store vehicle in a dry location that is not subject to large fluctuations in temperature.

Info
KTM recommends jacking up the motorcycle.

- Raise the motorcycle with the rear lifting gear. (📖 p. 40)
- Lift the motorcycle with the front lifting gear. (📖 p. 40)
- Cover the motorcycle with a tarp or 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.

20.2 Preparing for use after storage



- Take the motorcycle off the front lifting gear. (📖 p. 41)
- Remove the rear of the motorcycle from the lifting gear. (📖 p. 40)
- Install the 12-V battery. 🔧 (📖 p. 91)
- Perform checks and maintenance measures when preparing for use. (📖 p. 26)
- Take a test ride.

Faults	Possible cause	Action
The engine does not turn when the start button is actuated	Operating error	– Carry out start procedure. (📖 p. 26)
	12-V battery discharged	– Charge the 12-V battery. 🔧 (📖 p. 91) – Check the charging voltage. 🔧 – Check the open-circuit current. 🔧 – Check the stator winding of the alternator. 🔧
	Main fuse blown	– Change the main fuse. (📖 p. 93)
	Starter relay defective	– Check the starter relay. 🔧
	Starter motor defective	– Check the starter motor. 🔧
The 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. 107)
	Idle speed is not set correctly	– Adjust the idle speed. 🔧 (📖 p. 102)
	Spark plug sooty or wet	– Clean and dry the spark plug, or change it if necessary.
	Plug gap of spark plug too wide	– Adjust plug gap. Guideline Spark plug electrode gap 0.8 mm (0.031 in)
	Short-circuit cable in wiring harness frayed, switch-off button faulty	– Check the wiring harness. (visual check) – 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. 57)
	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 the main silencer	– Check exhaust system for damage. – Change the glass fiber yarn filling of the main silencer. 🔧 (📖 p. 64)
	Valve clearance too little	– Adjust the valve clearance. 🔧
The engine dies during the trip	Lack of fuel	– Refuel. (📖 p. 31)
Engine overheats	Too little coolant in cooling system	– Check the cooling system for leakage. – Check the coolant level. (📖 p. 97)
	Too little air stream	– Switch off the engine when standing.
	Radiator fins very dirty	– Clean the radiator fins.
	Foam formation in the cooling system	– Drain the coolant. 🔧 (📖 p. 97) – Refill with coolant. 🔧 (📖 p. 98)
	Bent radiator hose	– Change the radiator hose. 🔧
Misfiring while riding	Quickshifter faulty	– Switch off the quickshifter.

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. – 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. 108)
	Engine oil too thin (low viscosity)	– Change the engine oil and oil filter, clean the oil screen. 🔧 (📖 p. 109)
	Piston or cylinder worn	– Measure the piston/cylinder mounting clearance.

Blink code for malfunction indicator lamp	FI 02a Malfunction indicator lamp flashes 2x per second
Error level condition	Teaching of throttle valve position required

Blink code for malfunction indicator lamp	FI 02 Malfunction indicator lamp flashes 2x short
Error level condition	Crankshaft speed sensor – circuit fault

Blink code for malfunction indicator lamp	FI 06 Malfunction indicator lamp flashes 6x short
Error level condition	Throttle valve position sensor circuit A – circuit fault
	Throttle valve position sensor circuit A – input signal too high

Blink code for malfunction indicator lamp	FI 09 Malfunction indicator lamp flashes 9x short
Error level condition	Induction manifold pressure sensor – circuit fault
	Induction manifold pressure sensor – input signal too low

Blink code for malfunction indicator lamp	FI 12 Malfunction indicator lamp flashes 1x long, 2x short
Error level condition	Coolant temperature sensor – circuit fault
	Coolant temperature sensor – input signal too low

Blink code for malfunction indicator lamp	FI 13 Malfunction indicator lamp flashes 1x long, 3x short
Error level condition	Intake air temperature sensor – circuit fault
	Intake air temperature sensor – input signal too low

Blink code for malfunction indicator lamp	FI 15 Malfunction indicator lamp flashes 1x long, 5x short
Error level condition	Tilt sensor – input signal too low
	Tilt sensor – input signal too high

Blink code for malfunction indicator lamp	FI 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 22 Malfunction indicator lamp flashes 2x long, 2x short
Error level condition	Gear position sensor – circuit fault
	Gear position sensor – input signal too high
	Gear position sensor – malfunction

Blink code for malfunction indicator lamp	 33 Malfunction indicator lamp flashes 3x long, 3x short
Error level condition	Injection valve cylinder 1 – circuit fault

Blink code for malfunction indicator lamp	 37 Malfunction indicator lamp flashes 3x long, 7x short
Error level condition	Ignition coil – circuit fault

Blink code for malfunction indicator lamp	 41 Malfunction indicator lamp flashes 4x long, 1x short
Error level condition	Fuel pump controller – short circuit to ground/open circuit
	Fuel pump controller – open circuit/short circuit to plus

Blink code for malfunction indicator lamp	 65 Malfunction indicator lamp flashes 6x long, 5x short
Error level condition	EEPROM – malfunction

Blink code for malfunction indicator lamp	 Malfunction indicator lamp flashes continuously
Error level condition	THREF – malfunction

23.1 Engine

Design	1-cylinder 4-stroke engine, water-cooled
Displacement	249.91 cm³ (15.2505 cu in)
Stroke	52.3 mm (2.059 in)
Bore	78 mm (3.07 in)
Compression ratio	14.4:1
Idle speed	2,300 ± 50 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	26.5 mm (1.043 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	24:73
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-8
Spark plug electrode gap	0.8 mm (0.031 in)
Cooling	Water cooling, permanent circulation of coolant by water pump
Starting aid	Starter motor

23.2 Engine tightening torques

Nozzle, crank chamber ventilation	M4	2 Nm (1.5 lbf ft) **Loctite®243™**
Oil nozzle for alternator cooling	M4	2 Nm (1.5 lbf ft) **Loctite®243™**
Oil nozzle for balancer shaft lubrication	M4	2 Nm (1.5 lbf ft) **Loctite®243™**
Oil nozzle for clutch lubrication	M4	2 Nm (1.5 lbf ft) **Loctite®243™**
Oil nozzle for conrod bearing lubrication	M4	2 Nm (1.5 lbf ft) **Loctite®243™**
Oil nozzle for main bearing lubrication	M4	2 Nm (1.5 lbf ft) **Loctite®243™**
Screw, oil nozzle for piston cooling	M4	2.5 Nm (1.84 lbf ft) **Loctite®243™**
Locking screw for bearing	M5	6 Nm (4.4 lbf ft) **Loctite®243™**
Oil channel screw plug in alternator cover	M5	2 Nm (1.5 lbf ft) **Loctite®243™**
Oil nozzle for cam lever lubrication	M5	3 Nm (2.2 lbf ft) **Loctite®243™**
Oil nozzle, piston cooling	M5	2 Nm (1.5 lbf ft) **Loctite®243™**
Screw, bearing bolt, oil pump idler gear	M5	6 Nm (4.4 lbf ft) **Loctite®243™**
Screw, clutch spring retainer	M5	6 Nm (4.4 lbf ft)
Screw, crankshaft speed sensor	M5	6 Nm (4.4 lbf ft) **Loctite®243™**
Screw, gear position sensor	M5	5 Nm (3.7 lbf ft) **Loctite®243™**
Screw, locking lever	M5	6 Nm (4.4 lbf ft) **Loctite®243™**
Screw, oil pump cover	M5	6 Nm (4.4 lbf ft) **Loctite®243™**
Screw, stator	M5	6 Nm (4.4 lbf ft) **Loctite®243™**
Nut, cylinder head	M6	10 Nm (7.4 lbf ft) Lubricated with engine oil
Nut, water pump impeller	M6	6 Nm (4.4 lbf ft) **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) **Loctite®243™**
Screw, guide rail	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, oil filter cover	M6	10 Nm (7.4 lbf ft)

Screw, shift drum locating	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, shift lever	M6	14 Nm (10.3 lbf ft) **Loctite®243™**
Screw, starter motor	M6	10 Nm (7.4 lbf ft)
Screw, timing chain failure protection	M6	10 Nm (7.4 lbf ft) **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	10 Nm (7.4 lbf ft)
Screw, camshaft bearing bridge	M7x1	Tightening sequence: Tighten diagonally. 1st tightening stage 5 Nm (3.7 lbf ft) 2nd tightening stage 14 Nm (10.3 lbf ft) 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) **Loctite®243™**
Screw, engine sprocket	M10	60 Nm (44.3 lbf ft) **Loctite®243™**
Plug, oil channel	M10x1	15 Nm (11.1 lbf ft) **Loctite®243™**
Screw plug, cam lever axis	M10x1	10 Nm (7.4 lbf ft)
Screw, rotor	M10x1	70 Nm (51.6 lbf ft) 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: Tighten diagonally. 1st tightening stage 10 Nm (7.4 lbf ft) 2nd tightening stage 30 Nm (22.1 lbf ft) 3rd tightening stage 180°
Stud, cylinder head	M10x1.25	20 Nm (14.8 lbf ft) **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) **Loctite®243™**
Nut, primary gear wheel	M18LHx1.5	120 Nm (88.5 lbf ft) **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) **Loctite®243™**

23.3 Capacities

23.3.1 Engine oil

Engine oil	1.0 l (1.1 qt.)	Engine oil (SAE 10W/50) (📖 p. 136)

23.3.2 Coolant

Coolant	0.95 l (1 qt.)	Coolant (📖 p. 136)

23.3.3 Fuel

Total fuel tank capacity, approx.	7 l (1.8 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (📖 p. 137)

Fuel reserve, approx.	1.5 l (1.6 qt.)

23.4 Chassis

Frame	Lattice frame of steel tubes, powder-coated
Fork	**WP Suspension APEX PRO 6535**
Shock absorber	**WP Suspension XACT 5750**
Brake system	
front	Disc brake with 4-piston brake caliper
rear	Disc brake with single-pot brake caliper, floating
Suspension travel	
front	120 mm (4.72 in)
rear	150 mm (5.91 in)
Brake discs - diameter	
front	300 mm (11.81 in)
rear	220 mm (8.66 in)
Brake discs - wear limit	
front	4.0 mm (0.157 in)
rear	3.6 mm (0.142 in)
Tire pressure (cold)	
front	1.9 bar (28 psi)
rear	1.9 bar (28 psi)
Tire pressure (80° warm)	
front	2.3 bar (33 psi)
rear	2.1 bar (30 psi)
Secondary ratio	17:37
Chain	1/2 x 3/16" (415)
Steering head angle	71.9°
Wheelbase	1,307 ± 15 mm (51.46 ± 0.59 in)

Seat height, unloaded	820 mm (32.28 in)
Ground clearance, unloaded	135 mm (5.31 in)
Weight without fuel, approx.	95 kg (209 lb.)
Maximum permissible front axle load	93 kg (205 lb.)
Maximum permissible rear axle load	97 kg (214 lb.)
Maximum permissible overall weight	190 kg (419 lb.)

23.5 Electrical system

12-V battery	HJTZ5S-FP-C	Lithium-ion battery Battery voltage: 12 V Nominal capacity: 2.0 Ah Maintenance-free
Fuse	067038485	7.5 A
Fuse	75011088010	10 A
Malfunction indicator lamp	LED	
Brake/tail light	LED	

23.6 Tires

Front tire	**Rear tire**
90/80 R 17 54TL Dunlop Racing KR 149 Radial	**115/75 R 17 66TL** Dunlop Racing KR 133 Radial
The tires specified represent one of the possible series production tires. Additional information is available in the Service section under: http://www.ktm.com	

23.7 Fork

Fork article number	70354003
Fork	**WP Suspension APEX PRO 6535**
Compression damping	
Standard	10 clicks
Rebound damping	
Standard	10 clicks
Spring preload - **Preload Adjuster**	
Standard	25 clicks
Spring length with preload spacer(s)	225 mm (8.86 in)
Spring rate	
Medium (standard)	6 N/mm (34 lb/in)
Fork length	660 mm (25.98 in)

Fork oil per fork leg	160 ml (5.41 fl. oz.)	Fork oil (SAE 4) (48601166S1) (📖 p. 137)

23.8 Shock absorber

Shock absorber article number	18.18.7T.05
Shock absorber	**WP Suspension XACT 5750**
Lowspeed compression damping	
Standard	5 clicks
Highspeed compression damping	
Standard	2 turns
Rebound damping	
Standard	5 clicks
Spring preload	10 mm (0.39 in)
Spring rate	
Weight of rider: 75 ... 85 kg (165 ... 187 lb.)	85 N/mm (485 lb/in)
Spring length	170 mm (6.69 in)
Gas pressure	10 bar (145 psi)
Fitted length	462 mm (18.19 in)

23.9 Chassis tightening torques

Screw, combination switch	**EJOT PT®** K50x18 T20	2 Nm (1.5 lbf ft)
Screw, intake air temperature sensor	**EJOT DELTA PT®** 45x12-Z	0.7 Nm (0.52 lbf ft)
Fitting, start button	M3	0.4 Nm (0.3 lbf ft)
Fitting, switch-off button	M3	0.4 Nm (0.3 lbf ft)
Fitting, inlet sleeve to throttle valve body	M4	5 Nm (3.7 lbf ft)
Screw, fixed grip	M4	5 Nm (3.7 lbf ft) **Loctite®243™**
Screw, service hour counter	M4	0.8 Nm (0.59 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, ground wire on frame	M5	5 Nm (3.7 lbf ft)
Screw, shock absorber adjusting ring	M5	5 Nm (3.7 lbf ft)
Nut, cable on starter motor	M6	4 Nm (3 lbf ft)
Remaining nuts, chassis	M6	10 Nm (7.4 lbf ft)
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
Screw, bell crank shift lever	M6	6.5 Nm (4.79 lbf ft)
Screw, chain sliding guard	M6	6 Nm (4.4 lbf ft) **Loctite®243™**
Screw, front brake disc	M6	14 Nm (10.3 lbf ft) **Loctite®243™**
Screw, handlebar stub	M6	Tightening sequence: Tighten top first, then bottom. 10 Nm (7.4 lbf ft) **Loctite®243™**

Screw, rear brake disc	M6	14 Nm (10.3 lbf ft) **Loctite®243™**
Screw, steering damper clamp	M6	10 Nm (7.4 lbf ft)
Screw, throttle grip	M6	5 Nm (3.7 lbf ft)
Fuel connection on fuel tank	M8	15 Nm (11.1 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 brace on engine	M8x20	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, engine brace on frame	M8x15	25 Nm (18.4 lbf ft) **Loctite®2701™**
Screw, footrest bracket	M8	30 Nm (22.1 lbf ft) **Loctite®2701™**
Screw, fork stub	M8	15 Nm (11.1 lbf ft)
Screw, manifold on cylinder head bolt	M8	15 Nm (11.1 lbf ft)
Screw, subframe bottom	M8	30 Nm (22.1 lbf ft) **Loctite®2701™**
Screw, subframe top	M8	35 Nm (25.8 lbf ft) **Loctite®2701™**
Screw, top steering stem	M8	20 Nm (14.8 lbf ft) **Loctite®243™**
Screw, top triple clamp	M8	12 Nm (8.9 lbf ft)
Engine bracket 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) **Loctite®2701™**
Screw, front brake caliper	M10	45 Nm (33.2 lbf ft) **Loctite®243™**
Screw, top shock absorber	M10	60 Nm (44.3 lbf ft) **Loctite®2701™**
Rear sprocket bolt	M10x1.25	50 Nm (36.9 lbf ft) **Loctite®243™**
Nut, fuel pump	M12	15 Nm (11.1 lbf ft)
Nut, angle lever to link fork	M14x1.5	60 Nm (44.3 lbf ft)
Nut, frame on linkage lever	M14x1.5	60 Nm (44.3 lbf ft)
Nut, linkage lever on angle lever	M14x1.5	60 Nm (44.3 lbf ft)
Nut, swingarm pivot	M16x1.5	100 Nm (73.8 lbf ft)
Nut, rear wheel spindle	M20x1.5	80 Nm (59 lbf ft)
Screw, steering head, top	M20x1.5	12 Nm (8.9 lbf ft)
Screw-in fitting, cooling system	M24x1.5	15 Nm (11.1 lbf ft) **Loctite®243™**
Screw, front wheel spindle	M50	50 Nm (36.9 lbf ft)

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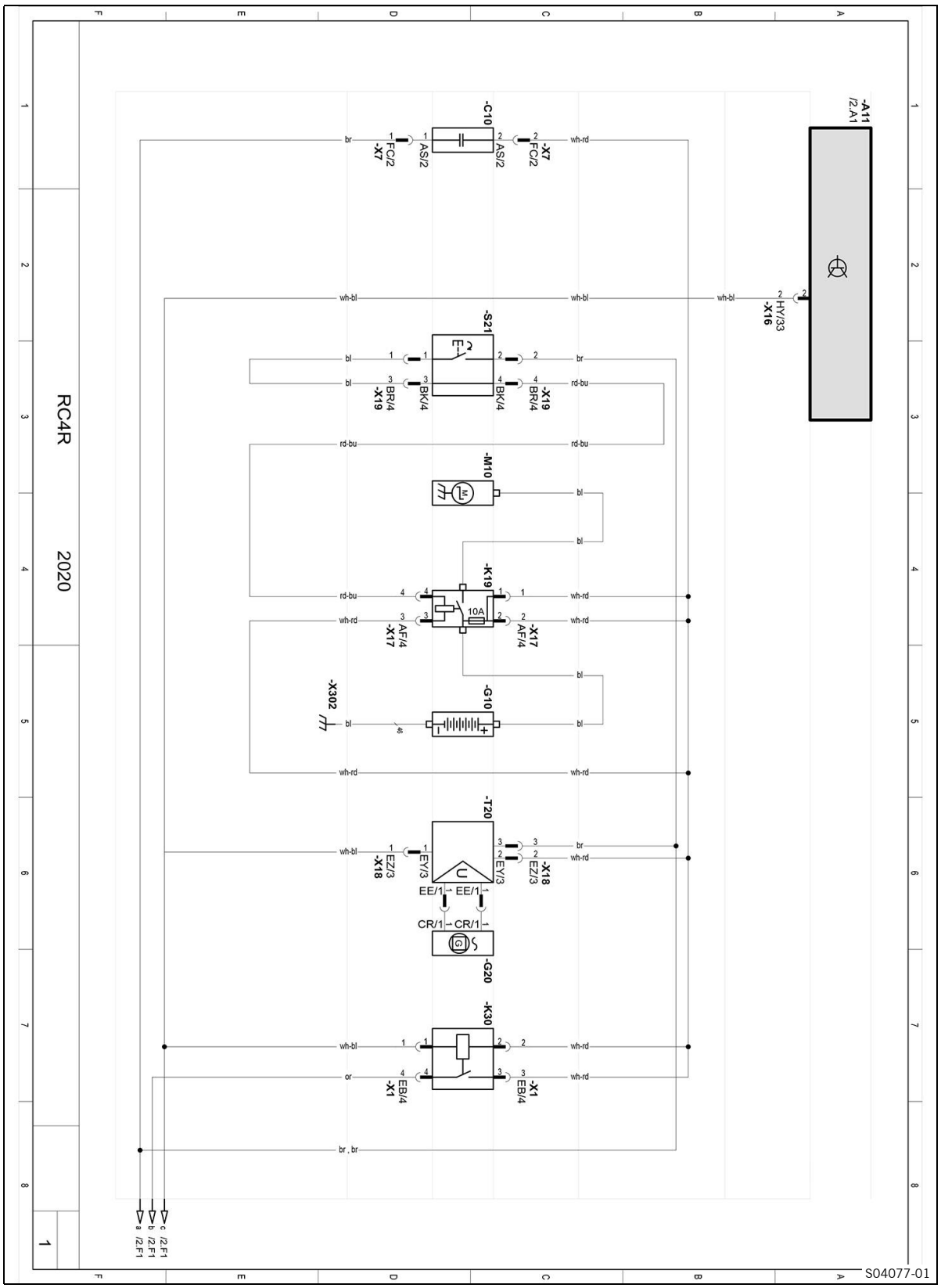
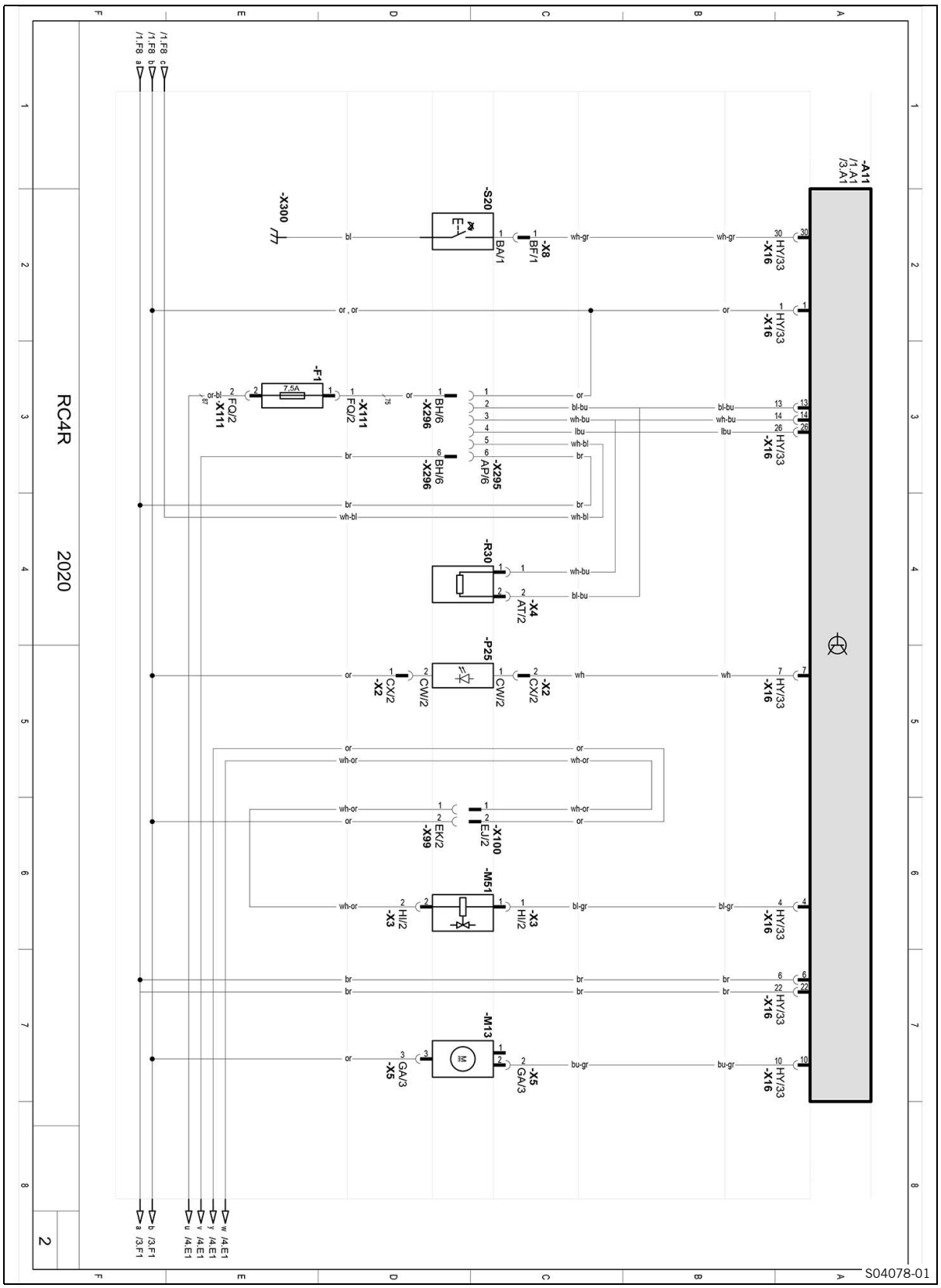


Components:

A11	EFI control unit
C10	Capacitor
S21	Start button
M10	Electric starter system
K19	Starter relay
G10	12-V battery
T20	Voltage regulator
G20	Alternator
K30	Power relay

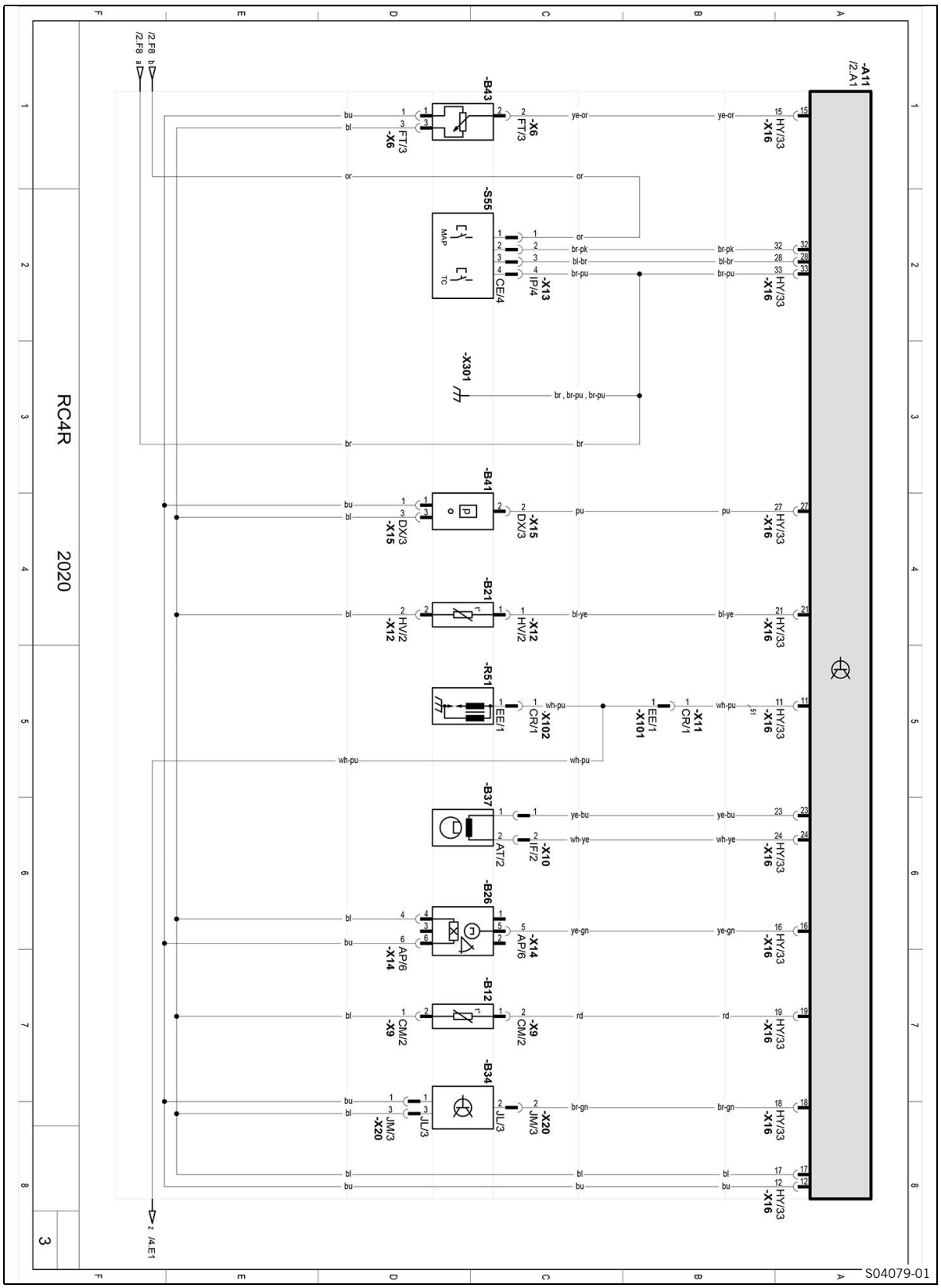
24.2 Page 2 of 4



Components:

A11	EFI control unit
S20	Switch-off button
F1	Fuse
R30	CAN bus
P25	Malfunction indicator lamp
M51	Injection valve
M13	Fuel pump

24.3 Page 3 of 4



Components:

A11	EFI control unit
B43	Throttle valve position sensor
S55	Map Select switch
B41	Induction manifold pressure sensor
B21	Coolant temperature sensor
R51	Ignition coil
B37	Crankshaft speed sensor
B26	Tilt sensor
B12	Intake air temperature sensor
B34	Gear position sensor

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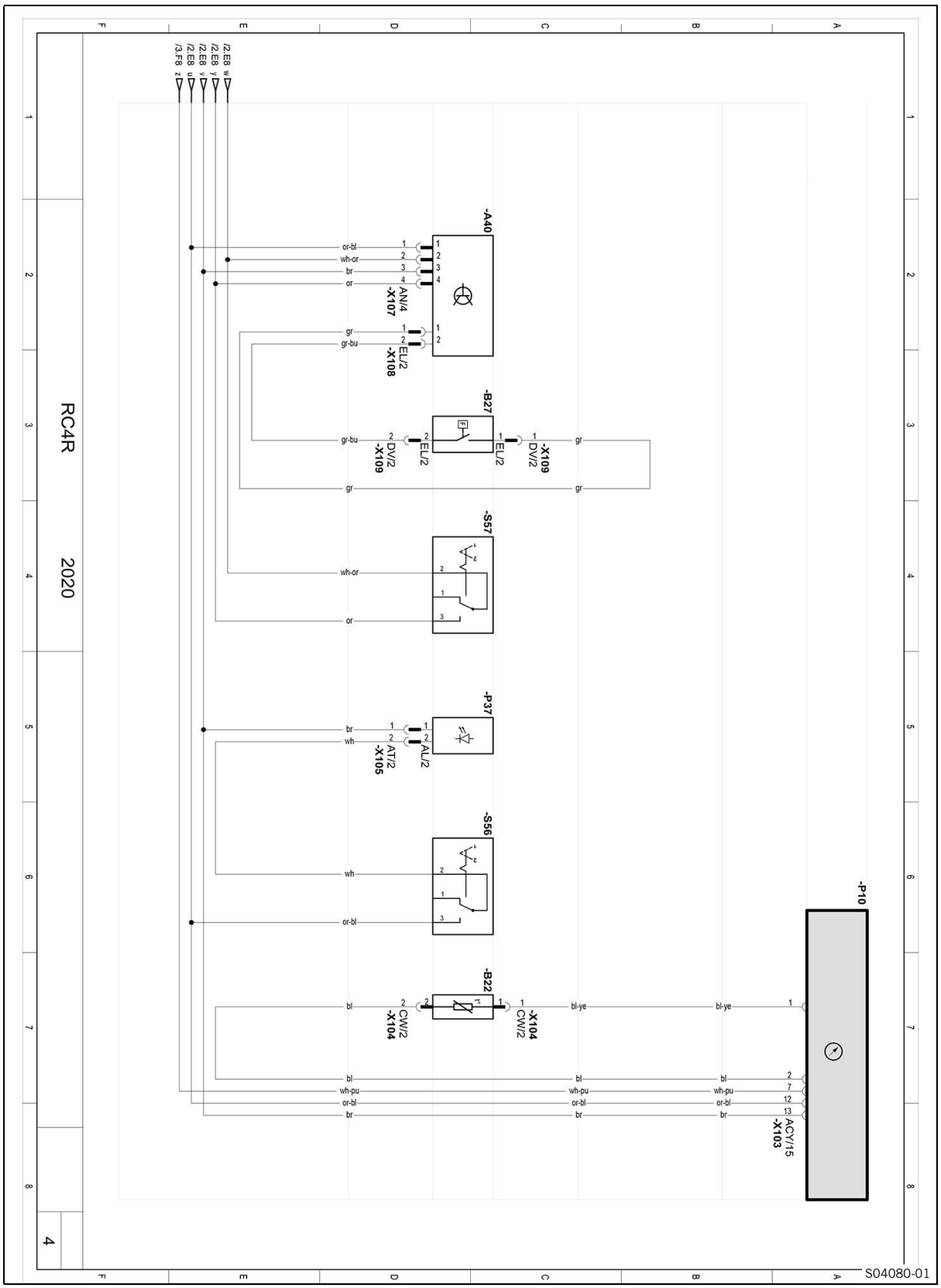

Components:

P10	Combination instrument
A40	Quick shifter control unit
B27	Shift shaft sensor
S57	Quickshift switch
P37	Tail light
S56	Tail light switch
B22	Coolant temperature sensor

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. 140)
– SAE (📖 p. 140) (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. 140) (SAE 4)

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/RON 95/PON 91)

Standard/classification

– DIN EN 228 (ROZ 95/RON 95/PON 91)

Guideline

– Only use unleaded super fuel that matches or is equivalent to the specified fuel grade.
– Fuel with an ethanol content of up to 10 % (E10 fuel) is safe to use.

Info

Do **not** use fuel containing methanol (e. g. M15, M85, M100) or more than 10 % ethanol (e. g. E15, E25, E85, E100).

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**

Oil for foam air filter

Recommended supplier
MOTOREX®
– **Racing Bio Liquid Power**

Perfect finish and high gloss polish for paints

Recommended supplier
MOTOREX®
– **Moto Shine**

Preserving materials for paints, metal and rubber

Recommended supplier
MOTOREX®
– **Moto Protect**

Special cleaner for glossy and matte paint finishes, metal and plastic surfaces

Recommended supplier
MOTOREX®
– **Quick Cleaner**

Street chain spray

Guideline

Recommended supplier
MOTOREX®
– **Chainlube Road Strong**

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

29 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

30.1 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.
	Malfunction indicator lamp flashes orange rapidly – Launch control is activated.

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Photo: Mitterbauer/KISKA/KTM