

85 SX 19/16
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Art. no. 3213329en



KTM

DEAR KTM CUSTOMER

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

We hope you enjoy your new vehicle!

Enter the serial numbers of your vehicle below.

Chassis number (☛ p. 10)	Dealer's stamp
Engine number (☛ p. 10)	

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

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KTM Sportmotorcycle GmbH
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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. There, your motorcycle will be optimally cared for by specially trained experts using the specialist tools required.
	Indicates a page reference (more information is provided on the specified page).
	Indicates information with more details or tips.
	Indicates the result of a testing step.

1.2 Formats used

The typographical formats used in this document are explained below.

Specific name	Identifies a proprietary name.
Name[®]	Identifies a protected name.
Brand[™]	Identifies a brand available on the open market.
<u>Underlined terms</u>	Refer to technical details of the vehicle or indicate technical terms that are explained in the glossary.

2.1 Use definition - intended use

KTM sport motorcycles are designed and built to withstand the normal stresses and strains of competitive use. The motorcycles comply with currently valid regulations and categories of the top international motorsport organizations.



Info

The motorcycle may only be used in closed off areas remote from public road traffic.

2.2 Safety advice

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



Info

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

2.3 Degrees of risk and symbols



Danger

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



Warning

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



Caution

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

Note

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



Warning

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

2.4 Tampering warning

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

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

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

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

2.5 Safe operation



Danger

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

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



Danger

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

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



Warning

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

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

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

The vehicle should only be used by trained persons.

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

Adhere to the information and warning labels on the vehicle.

2.6 Protective clothing



Warning

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

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

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

2.7 Work rules

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

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

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

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

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

2.8 Environment

If you use your motorcycle responsibly, you can ensure that problems and conflicts do not occur. To protect the future of the motorcycle sport, make sure that you use your motorcycle legally, display environmental consciousness, and respect the rights of others.

When disposing of used oil, other operating and auxiliary fluids, and used components, comply with the laws and regulations of the respective country.

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

2.9 Owner's Manual

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

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

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

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

3.1 Guarantee, warranty

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

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

3.2 Operating and auxiliary substances



Warning

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

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

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

3.3 Spare parts, accessories

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

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

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

3.4 Service

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

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

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

3.5 Figures

The figures contained in the manual may depict special equipment.

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

3.6 Customer service

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

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

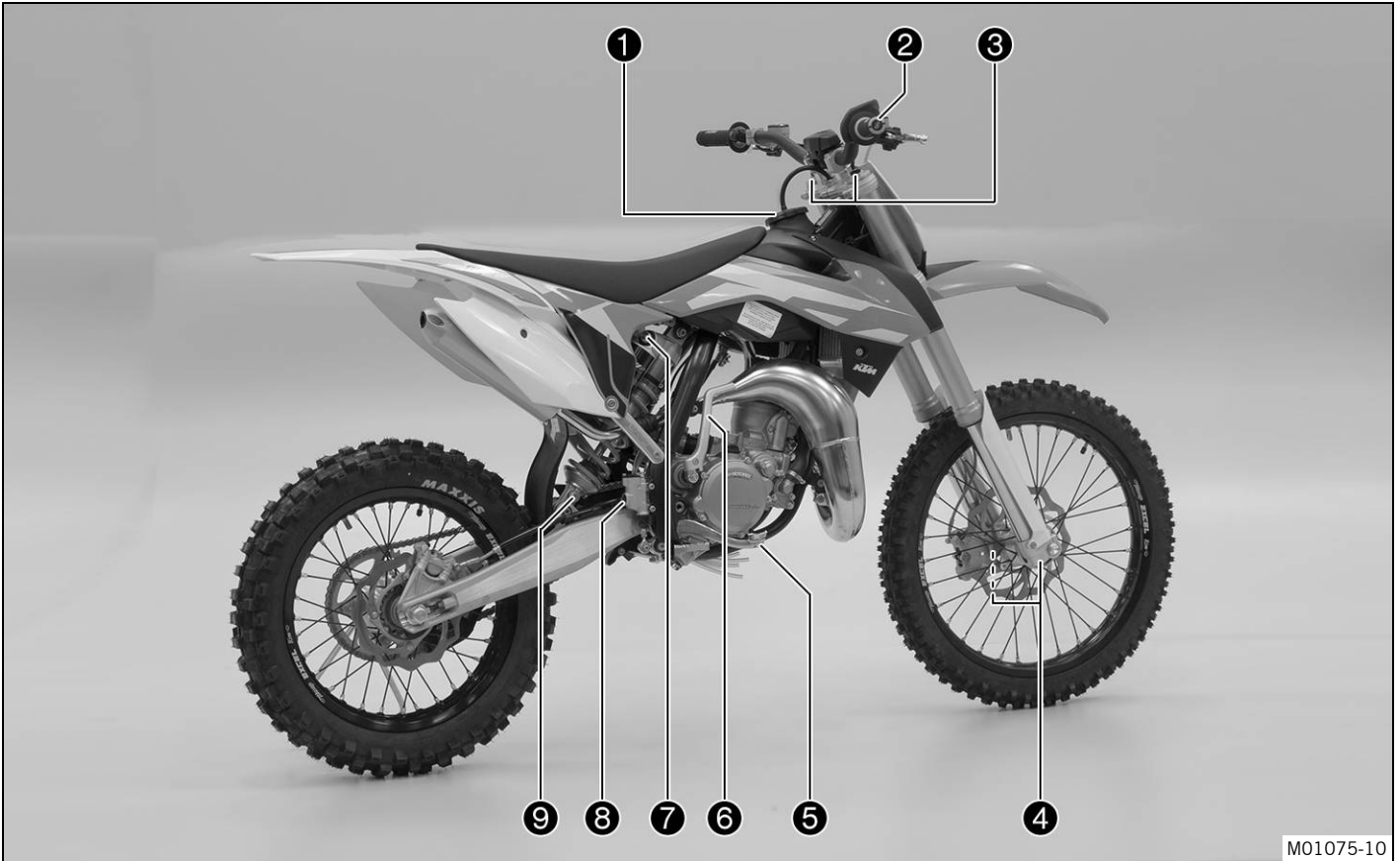
International KTM Website: <http://www.ktm.com>

4.1 View of vehicle, front left (example)



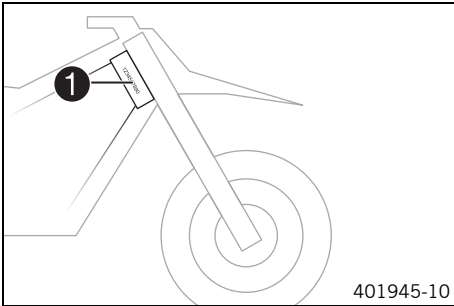
- | | |
|---|----------------------------|
| 1 | Hand brake lever (☛ p. 11) |
| 2 | Kill switch (☛ p. 11) |
| 3 | Clutch lever (☛ p. 11) |
| 4 | Air filter box lid |
| 5 | Shift lever (☛ p. 13) |
| 6 | Choke (☛ p. 13) |
| 7 | Fuel tap |

4.2 View of vehicle, rear right (example)



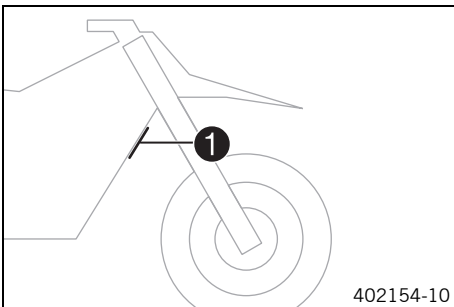
1	Filler cap
2	Throttle grip (☛ p. 11)
3	Fork rebound setting
4	Fork compression adjustment
5	Foot brake lever (☛ p. 13)
6	Kick starter (☛ p. 13)
7	Shock absorber compression adjustment
8	Level viewer for brake fluid, rear
9	Shock absorber rebound adjustment

5.1 Chassis number



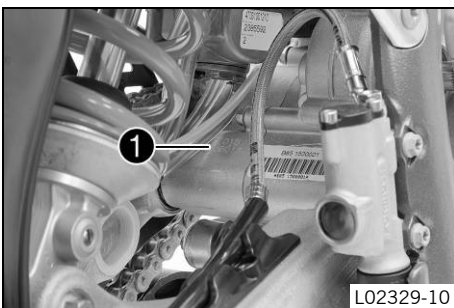
Chassis number ❶ is stamped on the right side of the steering head.

5.2 Type label



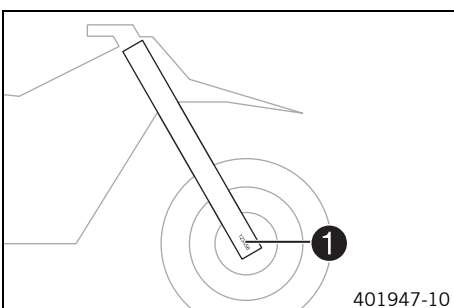
Type label ❶ is located on the front frame tube.

5.3 Engine number



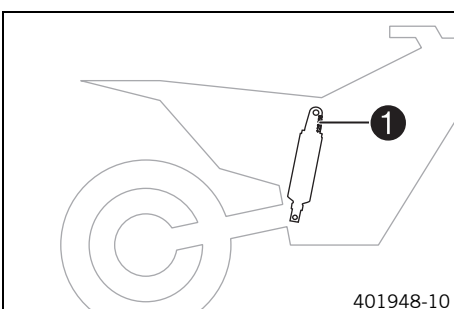
Engine number ❶ is stamp into the engine case below the carburetor.

5.4 Fork part number



Fork part number ❶ is stamped on the inner side of the axle clamp.

5.5 Shock absorber article number



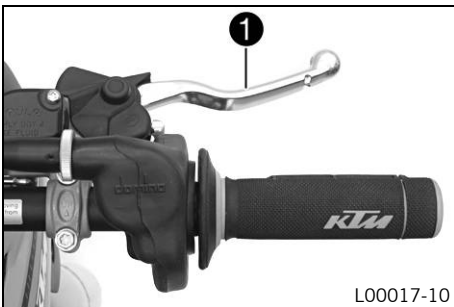
The shock absorber part number ❶ is stamped on the top of the shock absorber above the adjusting ring towards the engine side.

6.1 Clutch lever



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

6.2 Hand brake lever



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

6.3 Throttle grip



Throttle grip ❶ is fitted on the right side of the handlebar.

6.4 Kill switch



Kill switch ❶ is fitted on the left side of the handlebar.

Possible states

- Kill switch ☒ in basic position – In this position, the ignition circuit is closed and the engine can be started.
- Kill switch ☒ pressed – In this position, the ignition circuit is interrupted, a running engine stops, and a non-running engine will not start.

6.5 Opening the filler cap



Danger

Fire hazard Fuel is highly flammable.

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



Warning

Danger of poisoning Fuel is poisonous and a health hazard.

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



Warning

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

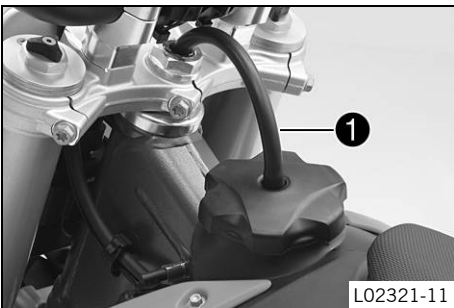
- Do not allow fuel to get into the ground water, the ground, or the sewage system.



L02321-10

- Turn filler cap **1** counterclockwise and lift it off.

6.6 Closing the filler cap



L02321-11

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



Info

Run fuel tank breather hose **1** without kinks.

6.7 Fuel tap



The fuel tap is on the left of the fuel tank.

Tap handle **1** on the fuel tap can be used to open or close the fuel supply to the carburetor.

Possible states

- Fuel supply closed **OFF** – Fuel cannot flow from the fuel tank to the carburetor.
- Fuel supply open **ON** – Fuel can flow from the fuel tank to the carburetor. The fuel tank empties fully.

ON

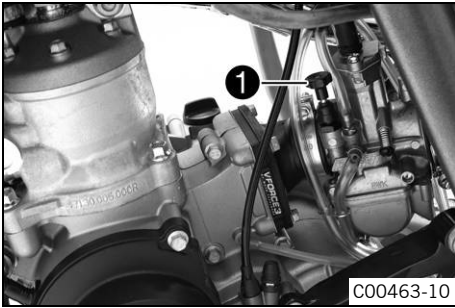


OFF



C00462-10

6.8 Choke



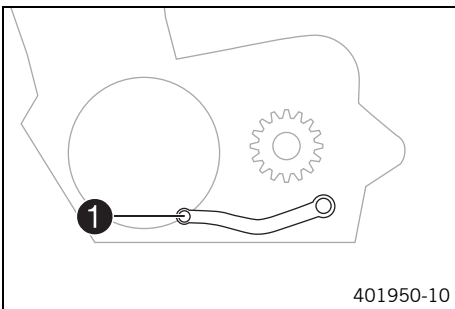
Choke lever **1** is fitted on the left side of the carburetor. Activating the choke function frees an opening in the carburetor through which the engine can draw extra fuel. This creates a richer fuel-air mixture, as is required for a cold start.

i Info
If the engine is warm, the choke function must be deactivated.

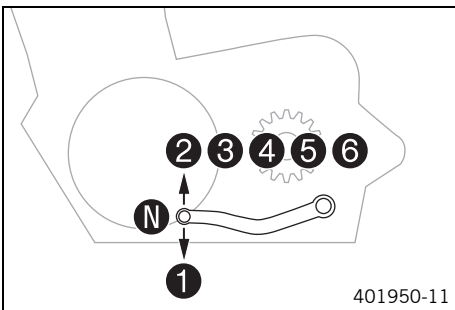
Possible states

- Choke function activated – The choke lever is pulled out to the stop.
- Choke function deactivated – The choke lever is pushed in to the stop.

6.9 Shift lever

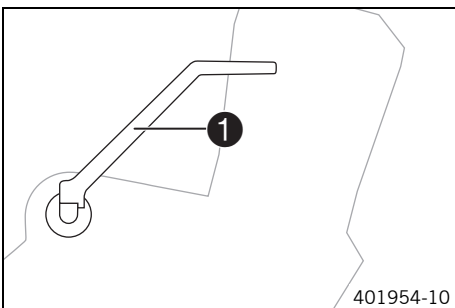


Shift lever **1** is mounted on the left side of the engine.



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

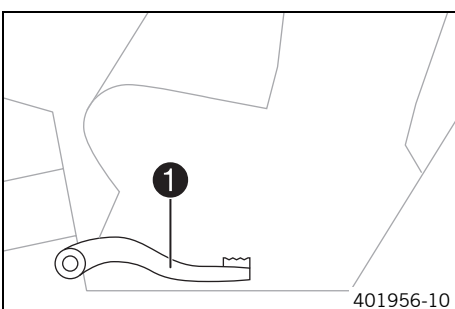
6.10 Kick starter



Kick starter **1** is fitted on the right side of the engine. The kick starter can be swiveled.

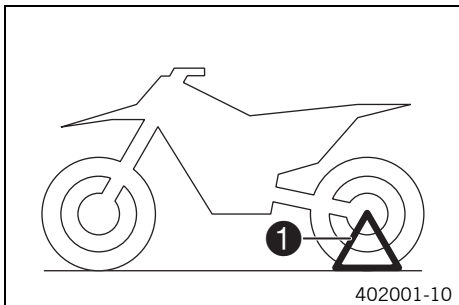
i Info
Before riding, swing the kickstarter inwards towards the engine.

6.11 Foot brake lever



Foot brake lever **1** is located in front of the right footrest. The foot brake lever is used to activate the rear brake.

6.12 Plug-in stand



The fixture for plug-in stand ① is located on the frame on the left side of the vehicle. The plug-in stand is used to park the motorcycle.



Info

Remove the plug-in stand before riding.

7.1 Advice on first use



Warning

Danger of accidents Physical and mental readiness of a child.

- Your child must be able to ride a bicycle and must be able to erect the vehicle independently after a fall. In addition, your child must understand the regulations and instructions from you or from other guardians. Do not ask too much of your child; participation in competitive activities should not be considered until your child's stamina, riding techniques and motivation are at the necessary levels. Children often underestimate or fail to recognize dangerous situations; make it clear to your child that it should not, under any circumstances, operate the vehicle without supervision and that your child may only drive at speeds that are commensurate with the child's riding abilities and the road conditions.
- Only let your child ride on the vehicle if it is physically and mentally ready to operate the vehicle.



Warning

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

- Wear protective clothing (helmet, boots, gloves, pants and jacket with protectors) every time you ride the vehicle. You and your child should always use protective clothing that is in good condition and meets the legal requirements. When you ride a motorcycle, set an example for your child and wear suitable protective clothing.



Warning

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

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



Warning

Danger of accidents Critical riding behavior due to inappropriate riding.

- Ensure that your child adapts the riding speed to the road conditions and to his or her riding abilities.



Warning

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

- Your vehicle is not designed to carry passengers. Do not ride with a passenger.



Warning

Danger of accidents Brake system failure.

- If the foot brake lever is not released, the brake linings drag continuously. The rear brake may fail due to overheating. Ensure that your child raises his or her foot from the foot brake lever when the child does not want to brake.



Warning

Danger of accidents Destruction of chassis components.

- Do not exceed the maximum allowable rider weight.



Warning

Risk of misappropriation Usage by unauthorized persons.

- Never leave the vehicle while the engine is running. Secure the vehicle against use by unauthorized persons.



Info

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

- Make sure that the pre-delivery inspection work has been carried out by an authorized KTM workshop.
 - ✓ You receive a delivery certificate and the service record at vehicle handover.
- Carefully read the entire owner's manual together with your child before going for the first ride.



Info

Pay special attention to the safety warnings and injury risks.

Explain to your child the techniques of riding and falling, e.g. how shifting weight can influence handling characteristics.

- Familiarize your child with the controls.
- Adjust the basic position of the clutch lever. (☞ p. 50)
- Adjust the free travel of the handbrake lever. (☞ p. 52)
- Adjust the basic position of the foot brake lever. ☞ (☞ p. 57)
- Before using the vehicle for the first time, ensure that the basic settings of the chassis are suitable for the weight of your child.

- Accustom your child to the handling of the motorcycle on suitable terrain, preferably on a large open meadow.

i Info

To give your child a feel for the brake system, you should push your child at first. Do not start the engine until your child is able to apply the necessary front brake pressure.
Initially, let your child drive to another person who can help your child stop and turn.

- Erect obstacles for your child to navigate around to accustom your child to handling the vehicle.
- Your child should also try to ride as slowly as possible and in a standing position to get a better feeling for the vehicle.
- Do not let your child ride on terrain that exceed your child's capabilities and experience.
- Your child should hold the handlebar firmly with both hands and keep his or her feet on the footrests when riding.
- Do not exceed the maximum allowable rider weight.

Guideline

Maximum rider weight	75 kg (165 lb.)
----------------------	-----------------

- Check the spoke tension. (☛ p. 64)

i Info

The spoke tension must be checked after riding the motorcycle for half an hour.

- Run the engine in. (☛ p. 16)

7.2 Running in the engine

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

Guideline

Maximum engine performance	
During the first 3 operating hours	< 70 %
During the first 5 operating hours	< 100 %

- Avoid fully opening the throttle!

7.3 Preparing the vehicle for difficult riding conditions

i Info

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

- Seal the air filter box. ☛ (☛ p. 43)
- Clean the air filter and air filter box. ☛ (☛ p. 42)

i Info

Check the air filter approx. every 30 minutes.

- Additionally secure the rubber grip. (☛ p. 50)
- Check the electrical connector for humidity and corrosion and to ensure it is firmly seated.
 - » If humidity, corrosion, or damage is found:
 - Clean and dry the connector, or change it if necessary.

Difficult riding conditions are:

- Rides on dry sand. (☛ p. 17)
- Rides on wet sand. (☛ p. 17)
- Rides on wet and muddy surfaces. (☛ p. 18)
- Rides at high temperature and slow speed. (☛ p. 18)
- Rides at low temperatures or in snow. (☛ p. 19)

7.4 Preparing for rides on dry sand



- Check the radiator cap.

Value on radiator cap	1.8 bar (26 psi)
-----------------------	------------------

- » If the displayed value does not meet specifications:



Warning

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

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

- Change the radiator cap.

- Fit a dust cover on the air filter.

Dust protection device for air filter (59006019000)



Info

See the **KTM PowerParts** fitting instructions.



- Fit a sand cover on the air filter.

Sand protection device for air filter (59006022000)



Info

See the **KTM PowerParts** fitting instructions.

- Adjust the carburetor jetting and the setting.



Info

Your authorized KTM workshop can recommend the right carburetor tuning.



- Clean the chain.

Chain cleaner (☛ p. 87)

- Fit the steel sprocket.



Tip

Do not grease the chain.

- Clean the radiator fins.
- Straighten bent radiator fins carefully.
- If used in sand regularly, replace the piston every 10 operating hours.

7.5 Preparing for rides on wet sand



- Check the radiator cap.

Value on radiator cap	1.8 bar (26 psi)
-----------------------	------------------

- » If the displayed value does not meet specifications:



Warning

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

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



- Change the radiator cap.
- Fit a rain cover on the air filter.

Waterproofing device for air filter (59006021000)

i Info
See the **KTM PowerParts** fitting instructions.

- Adjust the carburetor jetting and the setting.

i Info
Your authorized KTM workshop can recommend the right carburetor tuning.

- Clean the chain.

Chain cleaner (☛ p. 87)

- Fit the steel sprocket.

i Tip
Do not grease the chain.

- Clean the radiator fins.
- Straighten bent radiator fins carefully.
- If used in sand regularly, replace the piston every 10 operating hours.

7.6 Preparing for rides on wet and muddy surfaces



- Fit a rain cover on the air filter.

Waterproofing device for air filter (59006021000)

i Info
See the **KTM PowerParts** fitting instructions.

- Adjust the carburetor jetting and the setting.

i Info
Your authorized KTM workshop can recommend the right carburetor tuning.

- Fit the steel sprocket.
- Clean the motorcycle. (☛ p. 75)
- Straighten bent radiator fins carefully.

7.7 Preparing for rides at high temperature and slow speed



- Check the radiator cap.

Value on radiator cap	1.8 bar (26 psi)
-----------------------	------------------

- » If the displayed value does not meet specifications:

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

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



- Change the radiator cap.
- Adjust the secondary drive to the road conditions.

**Info**

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

- Clean the chain.

Chain cleaner (☛ p. 87)

- Clean the radiator fins.
- Straighten bent radiator fins carefully.
- Check the coolant level. (☛ p. 65)

7.8 Preparing for riding at low temperatures or in snow



- Fit a rain cover on the air filter.

Waterproofing device for air filter (59006021000)

**Info**

See the **KTM PowerParts** fitting instructions.

- Adjust the carburetor jetting and the setting.

**Info**

Your authorized KTM workshop can recommend the right carburetor tuning.

8.1 Checks and maintenance work when preparing for use



Info

Before riding the vehicle, always check its condition and operating safety. The vehicle must be in perfect technical condition when used.

- Check the gear oil level. (☞ p. 72)
- Check the front brake fluid level. (☞ p. 53)
- Check the rear brake fluid level. (☞ p. 57)
- Check the front brake linings. (☞ p. 54)
- Check the rear brake linings. (☞ p. 59)
- Check that the brake system is functioning properly.
- Check the coolant level. (☞ p. 65)
- Check for chain dirt accumulation. (☞ p. 45)
- Check the chain, rear sprocket, engine sprocket, and chain guide. (☞ p. 47)
- Check the chain tension. (☞ p. 46)
- Check the tire condition. (☞ p. 63)
- Check the tire air pressure. (☞ p. 64)
- Check the spoke tension. (☞ p. 64)
- Clean the dust boots of the fork legs. (☞ p. 33)
- Bleed the fork legs. (☞ p. 32)
- Check the air filter.
- Check the settings of all controls and ensure that they can be operated smoothly.
- Check all screws, nuts, and hose clamps regularly for tightness.
- Check the fuel supply.

8.2 Starting



Danger

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

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

Note

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

- Always warm up the engine at low engine speeds.



Info

If the motorcycle is unwilling to start, the cause can be old fuel in the float chamber. The flammable elements of the fuel evaporate after a long time of standing.

If the float chamber is filled with fresh fuel, the engine starts immediately.

Engine has been out of use for more than 1 week

- Empty the carburetor float chamber. ☞ (☞ p. 70)
- Turn tap handle ① on the fuel tap to the **ON** position. (Figure C00462-10☞ p. 12)
 - ✓ Fuel can flow from the fuel tank to the carburetor.
- Remove the motorcycle from the stand.
- Shift gear to neutral.

The engine is cold

- Pull the choke lever out as far as possible.
- Forcefully step on the kick starter, pushing it all the way down.



Info

Do not open the throttle.

8.3 Starting off



Info

The plug-in stand must be removed before riding.

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

8.4 Shifting, riding



Warning

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

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



Info

If you hear unusual noises while riding, stop immediately, switch off the engine, and contact an authorized KTM workshop. First gear is used for starting off or for steep inclines.

- When conditions allow (incline, road situation, etc.), your child can shift into a higher gear. To do so, release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch, and open the throttle.
- If the choke function was activated, deactivate it after the engine has warmed up.
- After reaching maximum speed by fully opening the throttle grip, turn the throttle back so it is $\frac{3}{4}$ open. This will barely reduce the speed but fuel consumption will be considerably lower.
- Your child should always open the throttle only as much as the engine can handle – abruptly opening the throttle increases fuel consumption.
- To shift down, brake and close the throttle at the same time.
- Pull the clutch lever and shift into a lower gear, release the clutch lever slowly, and open the throttle or shift again.
- Your child should switch off the engine if he or she expects to be standing for a long time.

Guideline

≥ 2 min

- Your child should avoid frequent and extended slipping of the clutch. This heats the engine oil, the engine, and the cooling system.
- Insist that your child ride with a low rpm instead of with a high rpm and a slipping clutch.

8.5 Applying the brakes



Warning

Danger of accidents If you brake too hard, the wheels can lock.

- Adapt your braking to the traffic situation and the road conditions.



Warning

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

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



Warning

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

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

- On sandy, wet or slippery surfaces, use the rear brake.
- Braking should always be completed before you go into a bend. Your child should change down to a lower gear appropriate to the road speed.
- Insist that your child take advantage of the braking action of the engine when riding on long downhill. To do so, shift back one or two gears, but do not overrev the engine. Your child will need to apply the brakes far less often and the brake system will not overheat.

8.6 Stopping, parking



Warning

Risk of misappropriation Usage by unauthorized persons.

- Never leave the vehicle while the engine is running. Secure the vehicle against use by unauthorized persons.



Warning

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

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

Note

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

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

Note

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

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

Note

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

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

- Brake the motorcycle.
- Shift gear to neutral.
- Press and hold the kill switch \otimes while the engine is idling until the engine stops.
- Turn tap handle ① on the fuel tap to the **OFF** position. (Figure C00462-10 p. 12)
- Park the motorcycle on firm ground.

8.7 Transport

Note

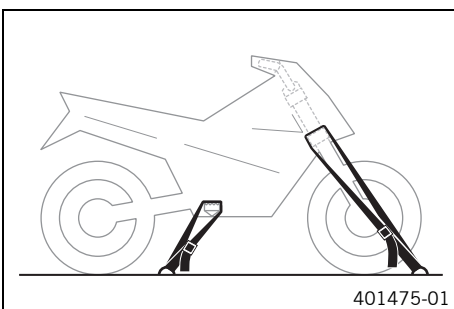
Danger of damage The parked vehicle may roll away or fall over.

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

Note

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

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



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

8.8 Refueling



Danger

Fire hazard Fuel is highly flammable.

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



Warning

Danger of poisoning Fuel is poisonous and a health hazard.

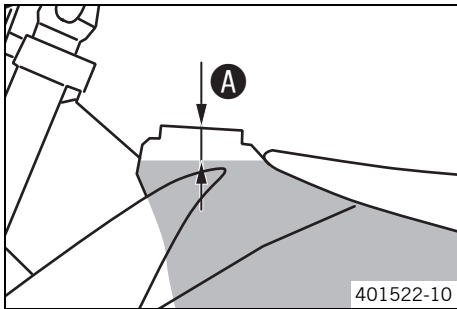
- Fuel must not come into contact with the skin, eyes, or clothing. Do not breathe in the fuel vapors. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If fuel is swallowed, contact a physician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



Warning

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

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



- Switch off the engine.
- Open the filler cap. (☛ p. 11)
- Fill the fuel tank with fuel up to measurement **A**.

Guideline

Measurement of A	35 mm (1.38 in)	
-------------------------	-----------------	--

Fuel tank capacity, approx.	5.0 l (1.32 US gal)	Super unleaded (98 octane) mixed with 2-stroke engine oil (1:40) (☛ p. 86)
-----------------------------	------------------------	---

Engine oil, 2-stroke (☛ p. 85)

- Close the filler cap. (☛ p. 12)

9.1 Service schedule

	Every 40 operating hours		
	Every 20 operating hours/after every race		
	Once after 10 operating hours / Every 10 operating hours		
Change the gear oil. 🛠️ (📖 p. 72)	○	●	●
Check the front brake linings. (📖 p. 54)	○	●	●
Check the rear brake linings. (📖 p. 59)	○	●	●
Check the brake discs. (📖 p. 52)	○	●	●
Check the brake lines for damage and leakage.	○	●	●
Change the foot brake cylinder seals. 🛠️		●	●
Check the rear brake fluid level. (📖 p. 57)	○	●	●
Check the free travel of the foot brake lever. (📖 p. 56)	○	●	●
Check the frame and swingarm. 🛠️		●	●
Check the swingarm bearing. 🛠️		●	●
Check the heim joints at the top and bottom of the shock absorber. 🛠️		●	●
Service the fork. 🛠️			●
Perform a shock absorber service. 🛠️			●
Check the tire condition. (📖 p. 63)	○	●	●
Check the tire air pressure. (📖 p. 64)	○	●	●
Check the wheel bearing for play. 🛠️		●	●
Check the wheel hubs. 🛠️		●	●
Check the rim run-out. 🛠️	○	●	●
Check the spoke tension. (📖 p. 64)	○	●	●
Check the chain, rear sprocket, engine sprocket, and chain guide. (📖 p. 47)	○	●	●
Check the chain tension. (📖 p. 46)	○	●	●
Grease all moving parts (e.g., hand lever, chain, ...) and check for smooth operation. 🛠️	○	●	●
Check the fluid level of the hydraulic clutch. (📖 p. 50)	○	●	●
Check the front brake fluid level. (📖 p. 53)	○	●	●
Check the free travel of the hand brake lever. (📖 p. 52)	○	●	●
Check the play of the steering head bearing. (📖 p. 38)	○	●	●
Change pistons and check cylinders. 🛠️		●	●
Change pistons and check cylinders. (in difficult operating conditions) 🛠️	●	●	●
Change the connecting rod, conrod bearing, and crank pin. 🛠️			●
Change the crankshaft bearing. 🛠️			●
Check the transmission and shift mechanism. 🛠️			●
Change the spark plug. 🛠️		●	●
Change the spark plug connector. 🛠️			●
Check the intake membrane. 🛠️		●	●
Check the exhaust control for functioning and smooth operation. 🛠️		●	●
Check the clutch. 🛠️		●	●
Check all hoses (e.g. fuel, cooling, bleeder, drainage, etc.) and sleeves for cracking, leaks, and incorrect routing. 🛠️	○	●	●
Check the antifreeze and coolant level. (📖 p. 65)	○	●	●
Check the cables for damage and routing without sharp bends. 🛠️	○	●	●
Check that the cables are undamaged, routed without sharp bends and set correctly.		●	●
Clean the air filter and air filter box. 🛠️	○	●	●
Change the glass fiber yarn filling of the main silencer. 🛠️ (📖 p. 43)			●
Check the screws and nuts for tightness. 🛠️	○	●	●
Check idle. 🛠️	○	●	●
Final check: Check the vehicle for safe operation and take a test ride.	○	●	●
Make the service entry in the KTM Dealer.net and in the Service and Warranty Booklet. 🛠️	○	●	●

- One-time interval
- Periodic interval

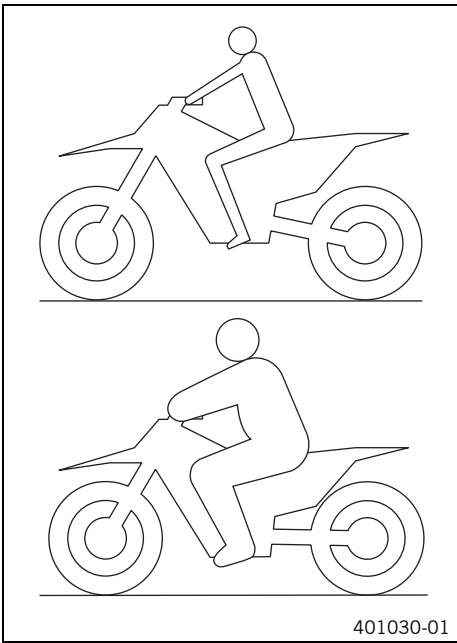
9.2 Service work (as additional order)

	Every 80 operating hours	Every 40 operating hours	Annually
Change the front brake fluid. 🛠️			●
Change the rear brake fluid. 🛠️			●
Change the hydraulic clutch fluid. 🛠️ (📖 p. 51)			●
Grease the steering head bearing. 🛠️ (📖 p. 39)			●
Check/set the carburetor components. 🛠️	●	●	●
Change all engine bearings. 🛠️			●

- Periodic interval

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

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



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

Guideline

Standard rider weight	45... 55 kg (99... 121 lb.)
-----------------------	-----------------------------

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

10.2 Compression damping of the shock absorber

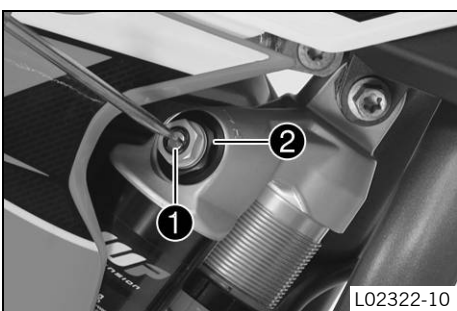
The compression damping of the shock absorber is divided into two ranges: high-speed and low-speed. High-speed and low-speed refer to the compression speed of the rear wheel suspension and not to the vehicle speed. The high-speed setting, for example, has an effect on the landing after a jump: the rear wheel suspension compresses more quickly. The low-speed setting, for example, has an effect when riding over long ground swells: the rear wheel suspension compresses more slowly. These two ranges can be adjusted separately, although the transition between high-speed and low-speed is gradual. Thus, changes in the high-speed range affect the compression damping in the low-speed range and vice versa.

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

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

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

i Info The low-speed setting can be seen during the slow to normal compression of the shock absorber.



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

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

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

Guideline

Compression damping, low-speed	
Comfort	18 clicks
Standard	15 clicks
Sport	12 clicks

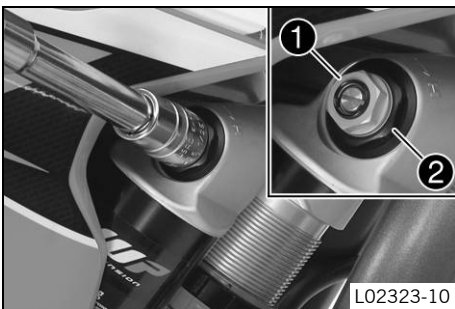
i Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

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

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

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

i Info
The high-speed setting can be seen during the fast compression of the shock absorber.



- Turn adjusting screw **1** all the way clockwise with a socket wrench.

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

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

Guideline

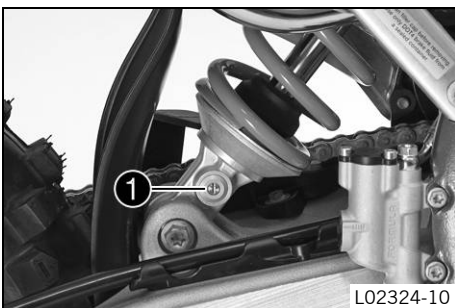
Compression damping, high-speed	
Comfort	2 turns
Standard	1.5 turns
Sport	1 turn

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

10.5 Adjusting the rebound damping of the shock absorber

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

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



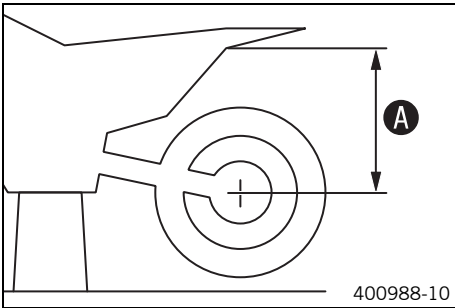
- Turn adjusting screw **1** clockwise up to the last perceptible click.
- Turn counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

Rebound damping	
Comfort	18 clicks
Standard	15 clicks
Sport	12 clicks

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

10.6 Measuring rear wheel sag unloaded



Preparatory work

- Raise the motorcycle with the lift stand. (🔧 p. 32)

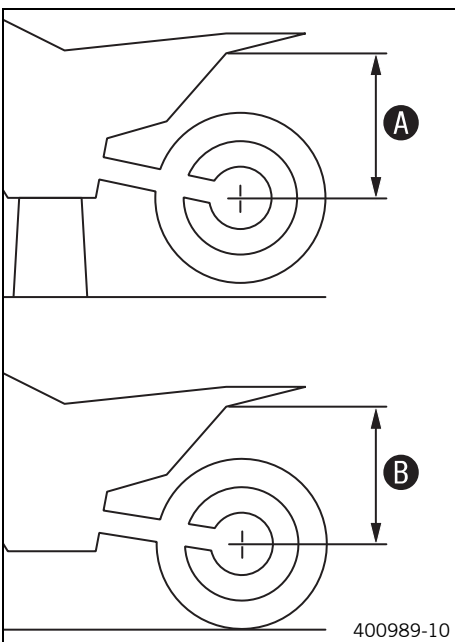
Main work

- Measure the distance – as vertically as possible – between the rear axle and a fixed point such as a mark on the side cover.
- Make a note of the value as dimension **A**.

Finishing work

- Remove the motorcycle from the lift stand. (🔧 p. 32)

10.7 Checking the static sag of the shock absorber



- Measure distance **A** of rear wheel unloaded. (🔧 p. 28)
- Hold the motorcycle upright with the aid of an assistant.
- Measure the distance between the rear axle and the fixed point again.
- Note down the value as dimension **B**.

Info

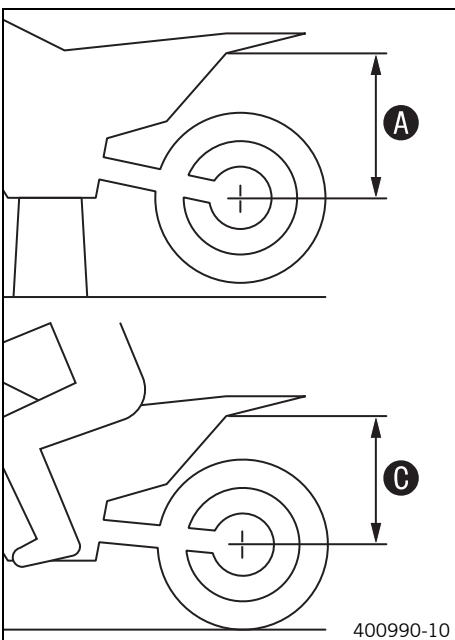
The static sag is the difference between measurements **A** and **B**.

- Check the static sag.

Static sag	30 mm (1.18 in)
------------	-----------------

- » If the static sag is less or more than the specified value:
 - Adjust the spring preload of the shock absorber. 🛠️ (🔧 p. 29)

10.8 Checking the riding sag of the shock absorber



- Measure distance **A** of rear wheel unloaded. (🔧 p. 28)
- With another person holding the motorcycle, the rider, wearing full protective clothing, sits on the seat in a normal sitting position (feet on footrests) and bounces up and down a few times.
 - ✓ The rear wheel suspension levels out.
- Another person now measures the distance between the rear axle and the fixed point.
- Note down the value as dimension **C**.

Info

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

- Check the riding sag.

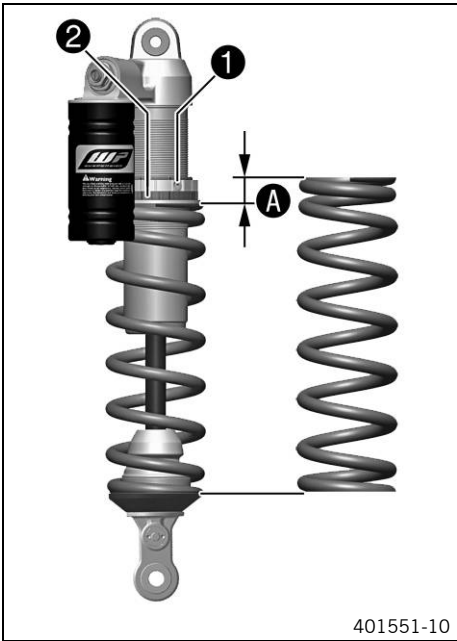
Riding sag	100 mm (3.94 in)
------------	------------------

- » If the riding sag differs from the specified measurement:
 - Adjust the riding sag. 🛠️ (🔧 p. 29)

10.9 Adjusting the spring preload of the shock absorber ↘

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

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



Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)
- Remove the shock absorber. ↘ (☛ p. 40)
- After removing the shock absorber, clean it thoroughly.

Main work

- Measure the full spring length while it is under tension and note down the value.
- Loosen retaining ring ①.
- Turn adjusting ring ② until the spring is no longer under tension.

Combination wrench (50329080000)
Hook wrench (T106S)

- Measure the overall spring length while the spring is not under tension.
- Tighten the spring by turning adjusting ring ② to measurement A.

Guideline

Spring preload	
Standard	10 mm (0.39 in)

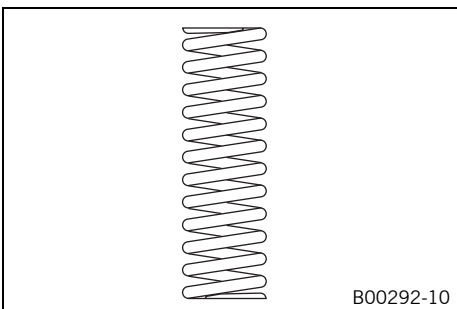
i Info
 The spring preload is the difference between the relaxed spring length and the tensioned spring length.
 Depending on the static sag and/or the riding sag, it may be necessary to increase or decrease the spring preload.

- Tighten screw ①.

Finishing work

- Install the shock absorber. ↘ (☛ p. 40)
- Remove the motorcycle from the lift stand. (☛ p. 32)

10.10 Adjusting the riding sag ↘



Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)
- Remove the shock absorber. ↘ (☛ p. 40)
- After removing the shock absorber, clean it thoroughly.

Main work

- Choose and mount a suitable spring.

Guideline

Spring rate	
Weight of rider: < 45 kg (< 99 lb.)	30 N/mm (171 lb/in)
Weight of rider: 45... 55 kg (99... 121 lb.)	35 N/mm (200 lb/in)
Weight of rider: > 55 kg (> 121 lb.)	40 N/mm (228 lb/in)

i Info
 The spring rate is shown on the outside of the spring.
 Smaller weight differences can be compensated by changing the spring preload.

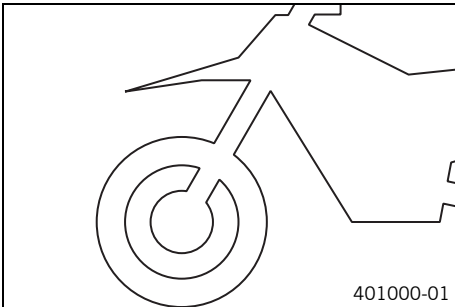
Finishing work

- Install the shock absorber. ↘ (☛ p. 40)
- Remove the motorcycle from the lift stand. (☛ p. 32)
- Check the static sag of the shock absorber. (☛ p. 28)

- Check the riding sag of the shock absorber. (☛ p. 28)
- Adjust the rebound damping of the shock absorber. (☛ p. 27)

10.11 Checking the basic setting of the fork

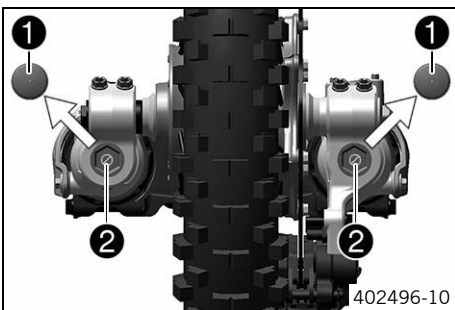
i Info
For various reasons, no exact riding sag can be determined for the forks.



- As with the shock absorber, smaller differences in the rider's weight can be compensated by the spring preload.
- However, if the fork is often overloaded (hard end stop on compression), harder springs must be fit to avoid damage to the fork and frame.

10.12 Adjusting the compression damping of the fork

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



- Remove protection caps ①.
- Turn adjusting screws ② clockwise all the way.

i Info
Adjusting screws ② are located at the bottom end of the fork legs. Make the same adjustment on both fork legs.

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

Guideline

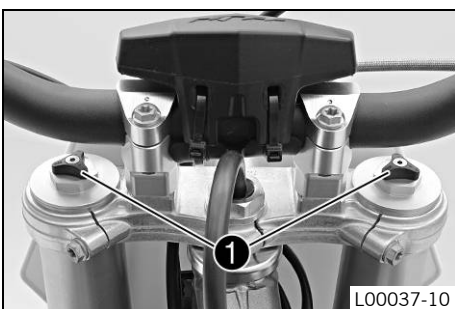
Compression damping	
Comfort	18 clicks
Standard	15 clicks
Sport	12 clicks

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

- Mount protection caps ①.

10.13 Adjusting the rebound damping of the fork

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



- Turn adjusting screw ① clockwise all the way.

i Info
Adjusting screws ① are located at the top end of the fork legs. Make the same adjustment on both fork legs.

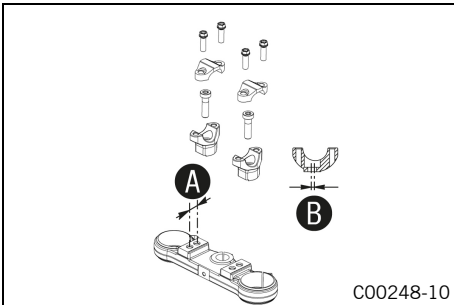
- Turn counterclockwise by the number of clicks corresponding to the fork type.

Guideline

Rebound damping	
Comfort	18 clicks
Standard	15 clicks
Sport	12 clicks

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

10.14 Handlebar position



On the upper triple clamp, there are two holes at a distance of **A** to each other.

Hole distance A	15 mm (0.59 in)
-----------------	-----------------

The holes on the handlebar support are placed at a distance of **B** from the center.

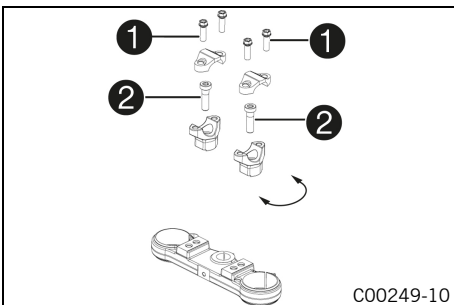
Hole distance B	3.5 mm (0.138 in)
-----------------	-------------------

The handlebar can be mounted in four different positions. In this way, the handlebar can be mounted in the position that is most comfortable for the rider.

10.15 Adjusting the handlebar position

Warning
Danger of accidents Handlebar breakage.

- If the handlebar is bent or straightened it will cause material fatigue, and the handlebar can break. Always replace handlebar.



- Remove screws **1**. Take off the handlebar clamps. Remove the handlebar and lay it to one side.

i Info
Protect the motorcycle and its attachments against damage by covering them.
Do not bend the cables and lines.

- Remove screws **2**. Remove the handlebar support.
- Place the handlebar support in the required position. Mount and tighten screws **2**.

Guideline

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

- Position the handlebar.

i Info
Make sure cables and wiring are positioned correctly.

- Position the handlebar clamps. Mount screws **1** and tighten evenly.

Guideline

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

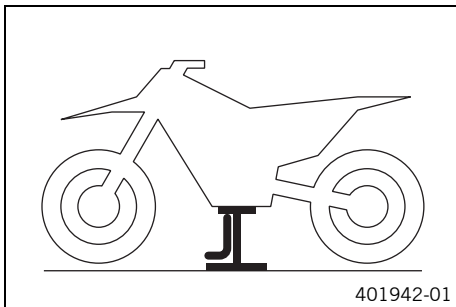
i Info
Make sure the gap width is even.

11.1 Raising the motorcycle with the lift stand

Note

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

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



- Raise the motorcycle at the frame underneath the engine.

Lift stand (59229055000)

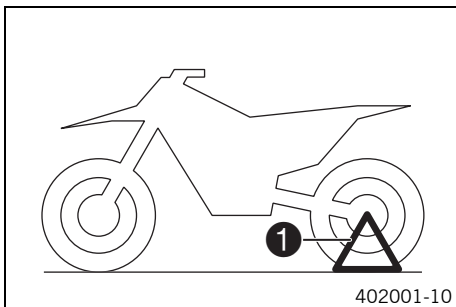
- ✓ Neither wheel is in contact with the ground.
- Secure the motorcycle against falling over.

11.2 Removing the motorcycle from the lift stand

Note

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

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



- Remove the motorcycle from the lift stand.
- Remove the lift stand.
- To park the motorcycle, insert plug-in stand ① into the left side of the wheel spindle.



Info

Remove the plug-in stand before riding.

11.3 Bleeding the fork legs



Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)

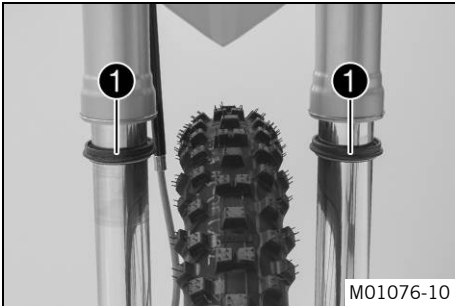
Main work

- Release bleeder screws ①.
 - ✓ Any excess pressure escapes from the interior of the fork.
- Tighten the bleeder screws.

Finishing work

- Remove the motorcycle from the lift stand. (☛ p. 32)

11.4 Cleaning the dust boots of the fork legs



Preparatory work

- Raise the motorcycle with the lift stand. (☞ p. 32)
- Remove the fork protector. (☞ p. 34)

Main work

- Push dust boots ① of both fork legs downwards.



Info

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



Warning

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

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

- Clean and oil the dust boots and inner fork tube of both fork legs.

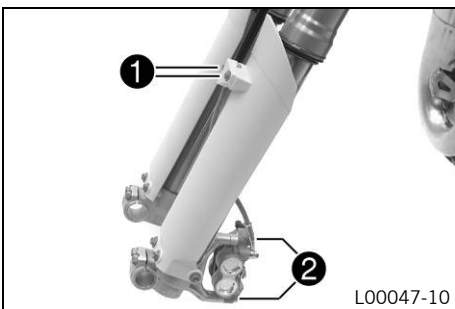
Universal oil spray (☞ p. 88)

- Press the dust boots back into their normal position.
- Remove excess oil.

Finishing work

- Install the fork protector. (☞ p. 35)
- Remove the motorcycle from the lift stand. (☞ p. 32)

11.5 Removing the fork legs



Preparatory work

- Raise the motorcycle with the lift stand. (☞ p. 32)
- Remove the front wheel. (☞ p. 61)

Main work

- Remove screws ①. Take off the clamp.

(85 SX 17/14)

- Remove screws ②.
- Allow the brake caliper and brake line to hang tension-free to the side.



Info

Do not kink the brake line.
Do not activate the hand brake lever when the brake caliper is removed.

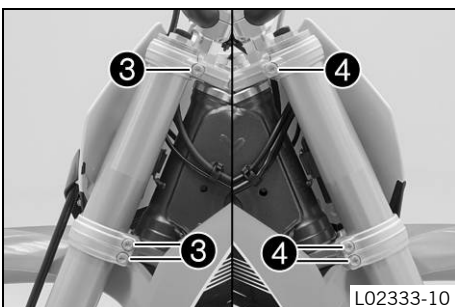
(85 SX 19/16)

- Remove screws ② and spacers.
- Allow the brake caliper and brake line to hang tension-free to the side.



Info

Do not kink the brake line.
Do not activate the hand brake lever when the brake caliper is removed.



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

11.6 Installing the fork legs

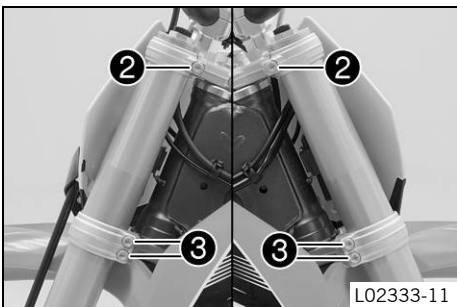
Warning
Danger of accidents Modifications to the suspension settings can seriously alter the vehicle's ride behavior.
 - Following modifications, ride slowly at first to get the feel of the new ride behavior.



Main work

- Position the fork legs.
- ✓ Bleeder screws 1 face forward.

Info
 The second milled groove (from the top) must be flush with the top edge of the upper triple clamp.



- Tighten screws 2.

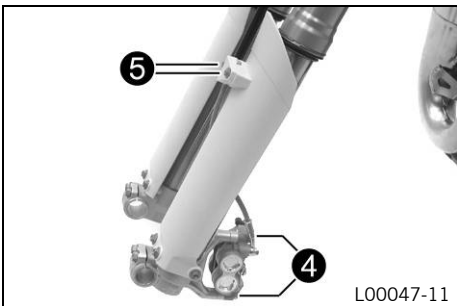
Guideline

Screw, top triple clamp	M8	20 Nm (14.8 lbf ft)
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- Tighten screws 3.

Guideline

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



(85 SX 17/14)

- Position brake caliper, and mount and tighten screws 4.

Guideline

Screw of brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
------------------------	----	------------------------	----------------------

- Position the brake line. Position the clamp. Mount and tighten screws 5.

(85 SX 19/16)

- Position the brake caliper with spacers and fit and tighten screws 4.

Guideline

Screw of brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
------------------------	----	------------------------	----------------------

- Position the brake line. Position the clamp. Mount and tighten screws 5.

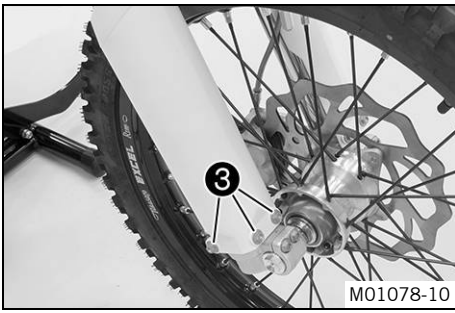
Finishing work

- Install the front wheel. (☞ p. 61)
- Remove the motorcycle from the lift stand. (☞ p. 32)

11.7 Removing the fork protector

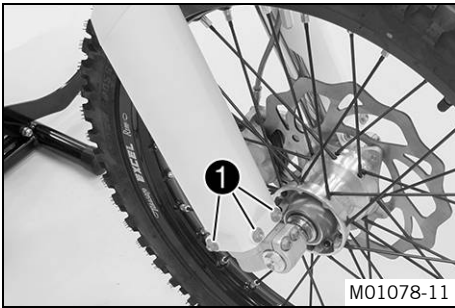


- Remove screws 1. Take off the clamp.
- Remove screws 2 on the left fork leg. Take off the fork protector.



- Remove screws ③ on the right fork leg. Take off the fork protector.

11.8 Installing the fork protector



- Position the fork protection on the right fork leg. Mount and tighten screws ①.
- Guideline

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



- Position the fork protection on the left fork leg. Mount and tighten screws ②.
- Guideline

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

- Position the brake line and clamp. Mount and tighten screws ③.

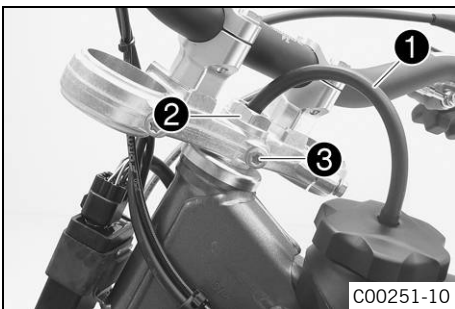
11.9 Removing the lower triple clamp

Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)
- Remove the front wheel. ☛ (☛ p. 61)
- Remove the fork legs. ☛ (☛ p. 33)
- Remove the start number plate. (☛ p. 39)
- Remove the front fender. (☛ p. 39)
- Remove the handlebar cushion.

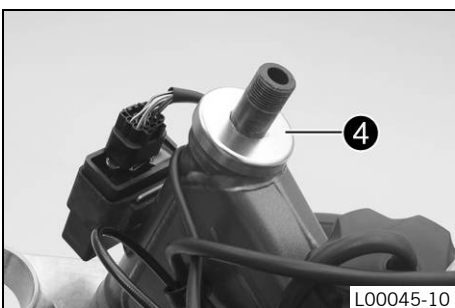
Main work

- Remove fuel tank breather ①.
- Remove nut ②. Remove screw ③, pull off the upper triple clamp with the handlebar, and hang it to the side.



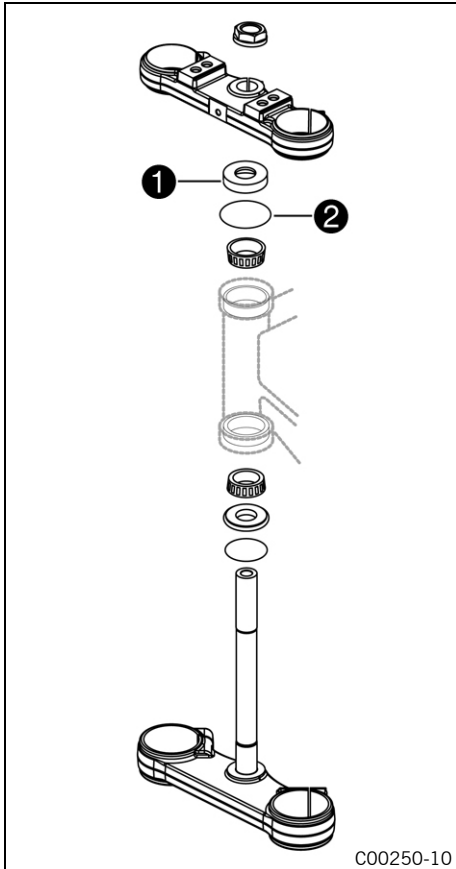
Info

Cover the components to protect them against damage. Do not bend the cables and lines.



- Remove protective ring ④.
- Take off the lower triple clamp with the steering stem.
- Remove the upper steering head bearing.

11.10 Installing the lower triple clamp

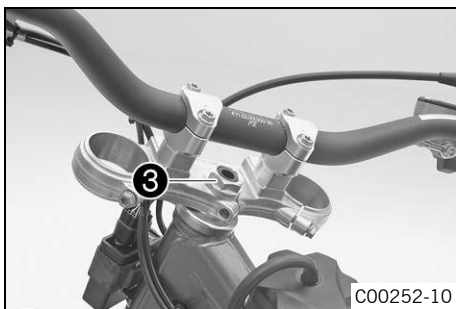


Main work

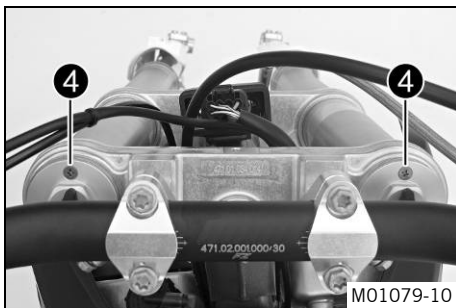
- Clean the bearing and sealing elements, check for damage, and grease.

High viscosity grease (☛ p. 87)

- Insert the lower triple clamp with the steering stem. Mount the upper steering head bearing.
- Slide on O-ring (2).
- Position protective ring (1).



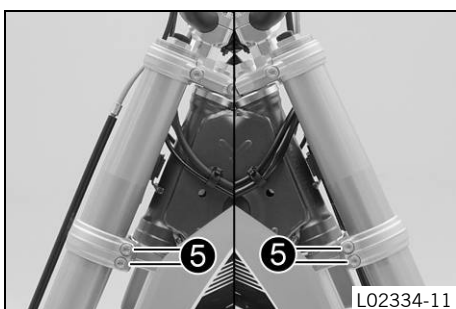
- Position the upper triple clamp with the steering.
- Mount nut (3), but do not tighten it yet.



- Position the fork legs.
- ✓ Bleeder screws (4) face forward.

Info

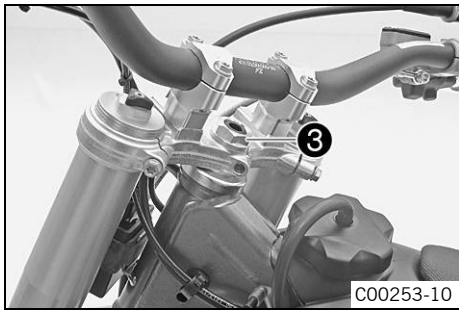
The second milled groove (from the top) must be flush with the top edge of the upper triple clamp.



- Tighten screws (5).

Guideline

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

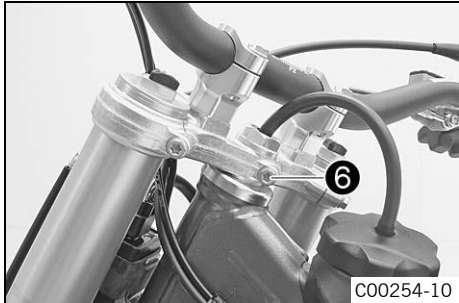


- Tighten nut **3**.

Guideline

Nut, steering stem	M20x1.5	10 Nm (7.4 lbf ft)
--------------------	---------	--------------------

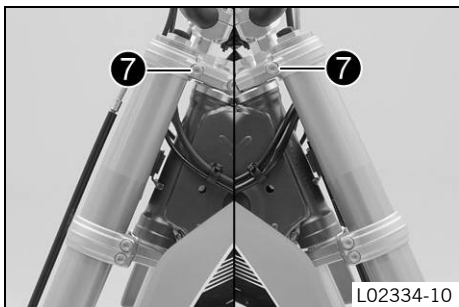
- Position the fuel tank breather.



- Mount and tighten screw **6**.

Guideline

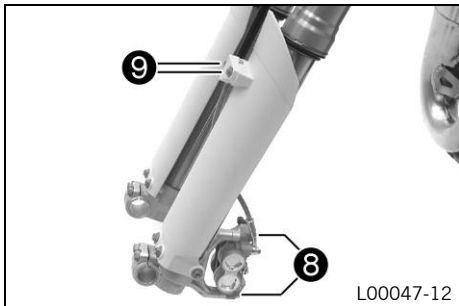
Screw, top triple clamp	M8	20 Nm (14.8 lbf ft)
-------------------------	----	---------------------



- Tighten screws **7**.

Guideline

Screw, top triple clamp	M8	20 Nm (14.8 lbf ft)
-------------------------	----	---------------------



(85 SX 17/14)

- Position brake caliper, mount and tighten screws **8**.

Guideline

Screw of brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
------------------------	----	---------------------	----------------------

- Position the brake line. Position the clamp. Mount and tighten screws **9**.

(85 SX 19/16)

- Position the brake caliper with spacers and fit and tighten screws **8**.

Guideline

Screw of brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
------------------------	----	---------------------	----------------------

- Position the brake line. Position the clamp. Mount and tighten screws **9**.

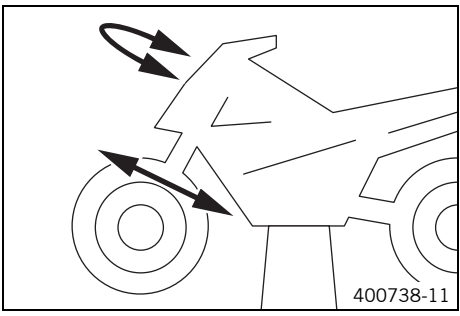
Finishing work

- Install the front fender. (☛ p. 39)
- Install the start number plate. (☛ p. 39)
- Check that the wiring harness, cables, and brake and clutch lines can move freely and are routed correctly.
- Install the front wheel. ☛ (☛ p. 61)
- Check the play of the steering head bearing. (☛ p. 38)
- Remove the motorcycle from the lift stand. (☛ p. 32)
- Position the handlebar cushion and secure with a cable tie.

11.11 Checking the play of the steering head bearing

Warning
Danger of accidents Unstable vehicle handling from incorrect steering head bearing play.
 – Adjust the steering head bearing play without delay. (Your authorized KTM workshop will be glad to help.)

Info
 If the bike is ridden with play in the steering head bearing, the bearing and the bearing seats in the frame can become damaged over time.

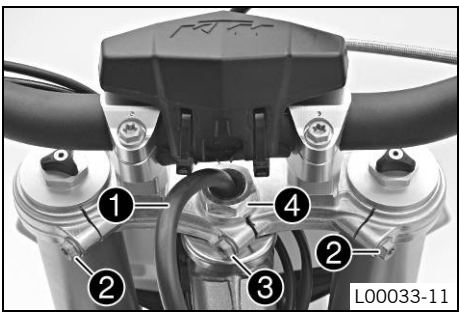


- Preparatory work**
- Raise the motorcycle with the lift stand. (☞ p. 32)
- Main work**
- Move the handlebar to the straight-ahead position. Move the fork legs to and fro in the direction of travel.
- No play should be noticeable in the steering head bearing.
- » If there is noticeable play present:
 - Adjust the play of the steering head bearing. ☞ (☞ p. 38)
 - Move the handlebar to and fro over the entire steering range.
- The handlebar must be able to move easily over the entire steering range. No resting locations should be noticeable.
- » If click positions are noticeable:
 - Adjust the play of the steering head bearing. ☞ (☞ p. 38)
 - Check the steering head bearing and replace if required.

Finishing work

- Remove the motorcycle from the lift stand. (☞ p. 32)

11.12 Adjusting the play of the steering head bearing ☞

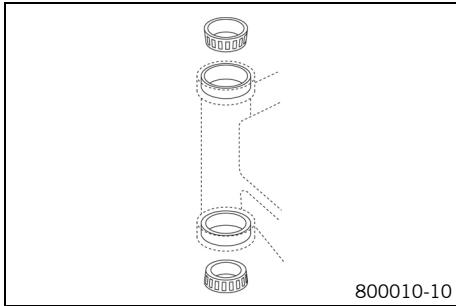


- Preparatory work**
- Raise the motorcycle with the lift stand. (☞ p. 32)
- Main work**
- Remove fuel tank breather ①.
 - Release screws ②.
 - Loosen screw ③.
 - Loosen and retighten nut ④.
- Guideline
- | | | |
|--------------------|---------|--------------------|
| Nut, steering stem | M20x1.5 | 10 Nm (7.4 lbf ft) |
|--------------------|---------|--------------------|
- Using a plastic hammer, tap lightly on the upper triple clamp to avoid strains.
 - Tighten screw ③.
- Guideline
- | | | |
|-------------------------|----|---------------------|
| Screw, top triple clamp | M8 | 20 Nm (14.8 lbf ft) |
|-------------------------|----|---------------------|
- Tighten screws ②.
- Guideline
- | | | |
|-------------------------|----|---------------------|
| Screw, top triple clamp | M8 | 20 Nm (14.8 lbf ft) |
|-------------------------|----|---------------------|
- Position the fuel tank breather ①.

Finishing work

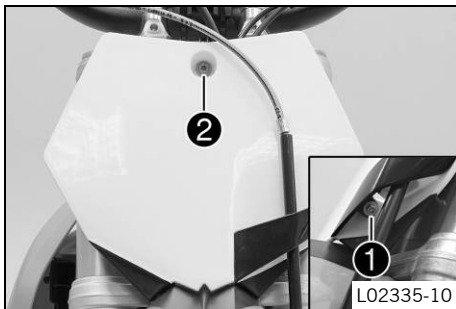
- Check the play of the steering head bearing. (☞ p. 38)
- Remove the motorcycle from the lift stand. (☞ p. 32)

11.13 Greasing the steering head bearing



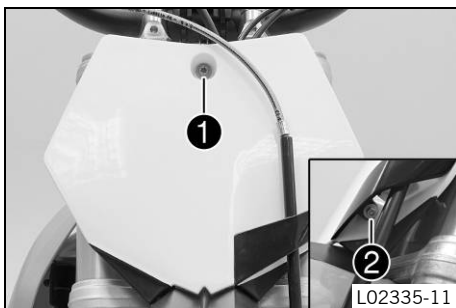
- Remove the lower triple clamp. (p. 35)
- Install the lower triple clamp. (p. 36)

11.14 Removing the start number plate



- Remove screw 1. Take off the clamp.
- Remove screw 2. Take off the start number plate.

11.15 Installing the start number plate



- Position the start number plate. Mount and tighten screw 1.

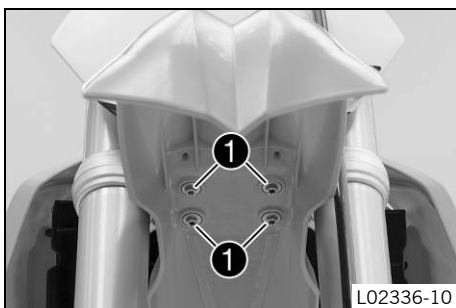
Guideline

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

✓ The holding lugs on the fender engage in the start number plate.

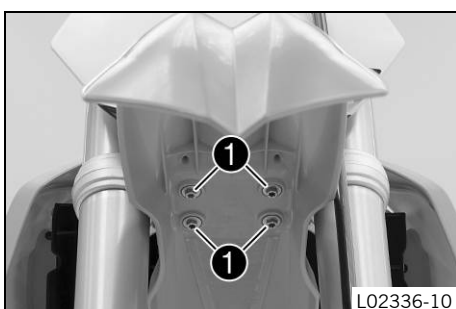
- Position the brake line and clamp. Mount and tighten screw 2.

11.16 Removing the front fender



- Remove screws 1. Remove the front fender.

11.17 Installing the front fender



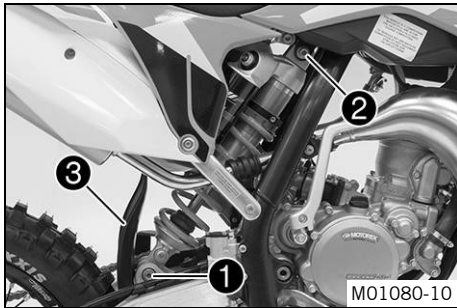
- Position the front fender. Mount and tighten screws 1.

Guideline

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

✓ The holding lugs on the fender engage in the start number plate.

11.18 Removing the shock absorber ↘



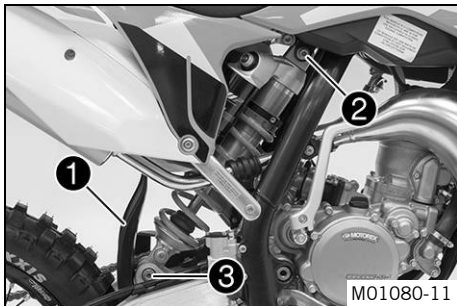
Preparatory work

- Raise the motorcycle with the lift stand. (↖ p. 32)

Main work

- Remove screw ❶ and lower the rear wheel with the swingarm as far as possible without blocking the rear wheel. Fix the rear wheel in this position.
- Remove screw ❷, push splash protector ❸ to the side, and remove the shock absorber.

11.19 Installing the shock absorber ↘



Main work

- Push splash protector ❶ to the side and position the shock absorber. Mount and tighten screw ❷.

Guideline

Screw, top shock absorber	M12	60 Nm (44.3 lbf ft)	Loctite® 2701™
---------------------------	-----	------------------------	----------------

- Mount and tighten screw ❸.

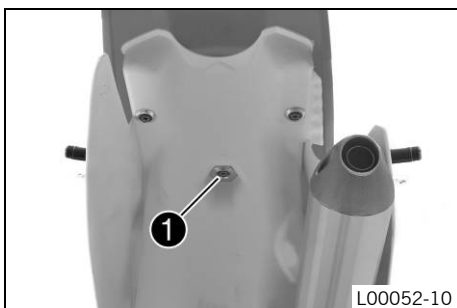
Guideline

Screw, bottom shock absorber	M12	60 Nm (44.3 lbf ft)	Loctite® 2701™
------------------------------	-----	------------------------	----------------

Finishing work

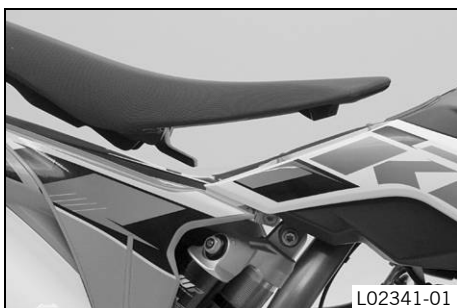
- Remove the motorcycle from the lift stand. (↖ p. 32)

11.20 Removing the seat

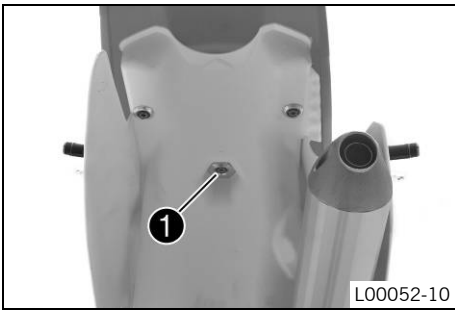


- Remove screw ❶. Lift up the seat at the rear, pull it back and then remove it from above.

11.21 Mounting the seat



- Hook in the front of the seat at the collar bushing of the fuel tank, lower it at the rear and simultaneously push it forward.
- Make sure that the seat is correctly locked in.

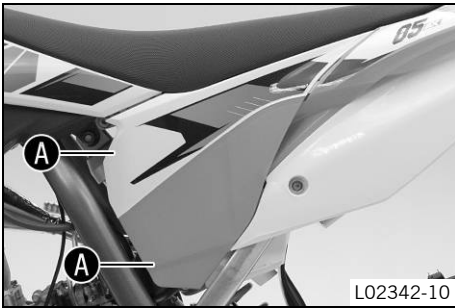


- Mount and tighten screw 1 of the seat fixing.

Guideline

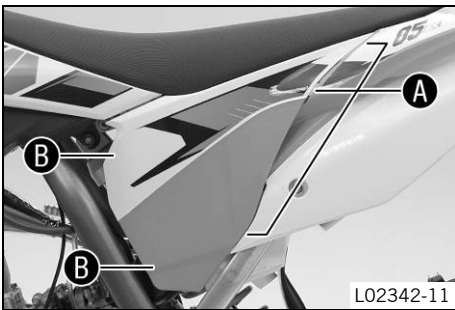
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	--------------------

11.22 Removing the air filter box lid



- Pull off the air filter box lid in area A sideways and remove it toward the front.

11.23 Installing the air filter box lid



- Insert the air filter box lid into rear area A and clip it into front area B.

11.24 Removing the air filter ↘

Note

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

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



Warning

Environmental hazard Hazardous substances cause environmental damage.

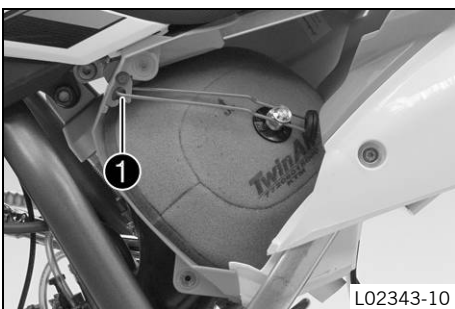
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

Preparatory work

- Remove the air filter box lid. (↙ p. 41)

Main work

- Unhook air filter holder 1 and swing it to the side. Remove the air filter with the air filter support.
- Remove the air filter from the air filter support.



11.25 Cleaning the air filter and air filter box



Warning

Environmental hazard Hazardous substances cause environmental damage.

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



Info

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



Preparatory work

- Remove the air filter box lid. (☞ p. 41)
- Remove the air filter. (☞ p. 41)

Main work

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

Air filter cleaner (☞ p. 87)



Info

Only squeeze the air filter to dry it; never wring it out.

- Oil the dry air filter with a high quality filter oil.

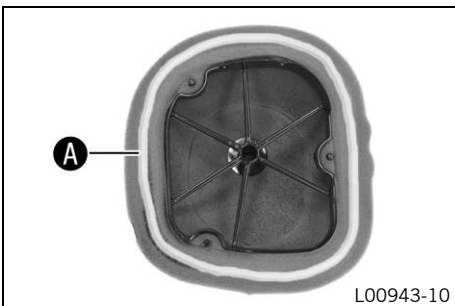
Oil for foam air filter (☞ p. 87)

- Clean the air filter box.
- Check the intake flange for damage and looseness.

Finishing work

- Install the air filter. (☞ p. 42)
- Install the air filter box lid. (☞ p. 41)

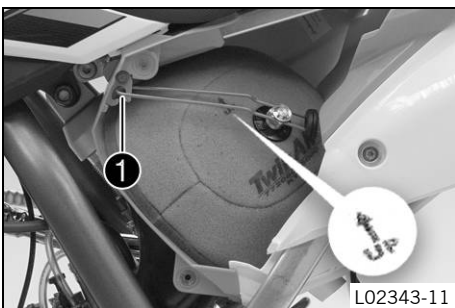
11.26 Installing the air filter



Main work

- Mount the clean air filter onto the air filter support.
- Apply grease to the air filter around area **A**.

Long-life grease (☞ p. 87)



- Put in both parts together, position them and fix them with air filter holder **1**.

✓ The arrow of the **UP** marking points upward.



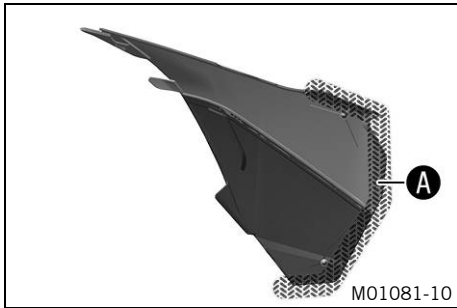
Info

If the air filter is not correctly mounted, dust and dirt can enter the engine and cause damage.

Finishing work

- Install the air filter box lid. (☞ p. 41)

11.27 Sealing the air filter box ↩



Preparatory work

- Remove the air filter box lid. (☛ p. 41)

Main work

- Seal the air filter box in marked area **A**.

Finishing work

- Install the air filter box lid. (☛ p. 41)

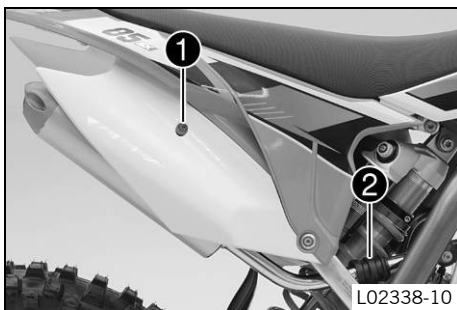
11.28 Removing the main silencer



Warning

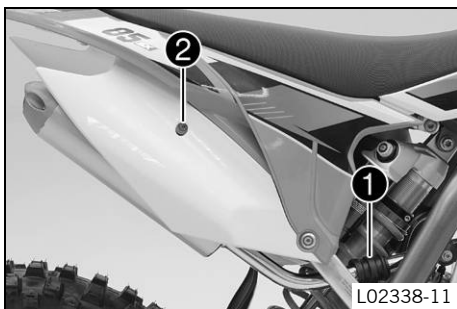
Danger of burns The exhaust system gets very hot when the vehicle is driven.

- Allow the exhaust system to cool down. Do not touch hot components.



- Remove screw **1**.
- Pull the main silencer off of the manifold at rubber sleeve **2**.

11.29 Installing the main silencer



- Mount the main silencer with rubber sleeve **1**.
- Mount and tighten screw **2**.

Guideline

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

11.30 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. Do not touch hot components.

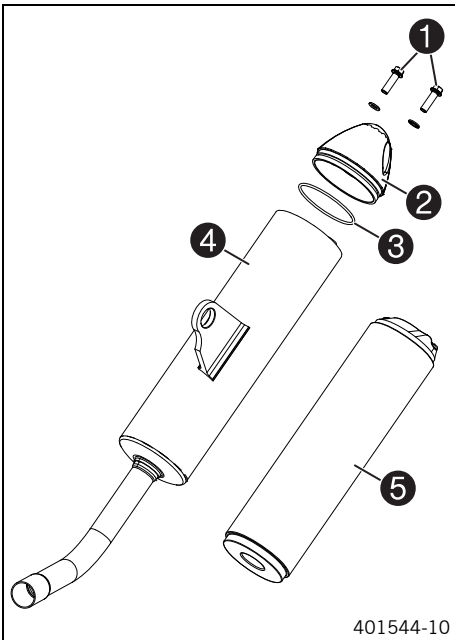


Info

Over a period, the fibers of the glass fiber yarn vanish into the air, and the silencer "burns out". Not only is the noise level higher, the performance characteristic changes.

Preparatory work

- Remove the main silencer. (☛ p. 43)



Main work

- Remove screws ①. Take off silencer cap ② with O-ring ③ and outer tube ④.
- Pull glass fiber yarn filling ⑤ from the inner tube.
- Clean the parts that are to be reinstalled.
- Mount new glass fiber yarn filling ⑤ on the inner tube.
- Slide outer tube ④ over the inner tube with the new glass fiber yarn filling.
- Insert silencer cap ② with O-ring ③ into the outer tube.
- Mount and tighten screws ① with toothed washers.

Guideline

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

Finishing work

- Install the main silencer. (☛ p. 43)

11.31 Removing the fuel tank ☛

Danger
Fire hazard Fuel is highly flammable.

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

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

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

Preparatory work

- Remove the seat. (☛ p. 40)
- Turn tap handle ① on the fuel tap to the **OFF** position. (Figure C00462-10 ☛ p. 12)

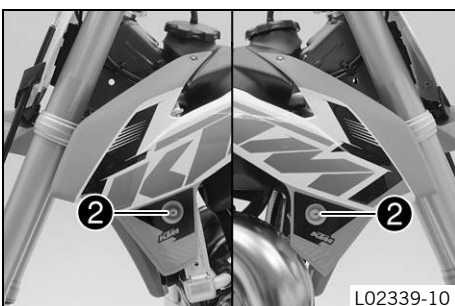
Main work

- Pull off fuel hose.

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



- Remove screw ①.
- Remove the tube from the fuel tank breather.



- Remove screws ②.
- Remove the fuel tank from above.

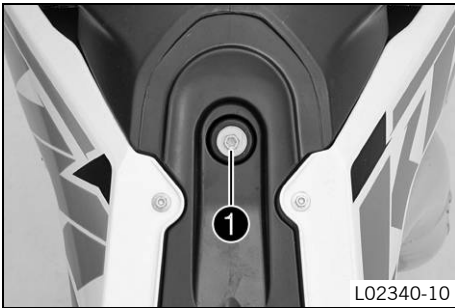
11.32 Installing the fuel tank ↗

Danger
Fire hazard Fuel is highly flammable.

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

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

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

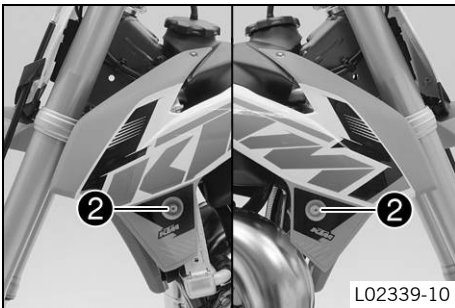


Main work

- Position the fuel tank.
- Make sure that no cables are trapped or damaged.
- Connect the fuel hose.
- Mount and tighten screw **1**.

Guideline

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



- Mount and tighten screws **2**.

Guideline

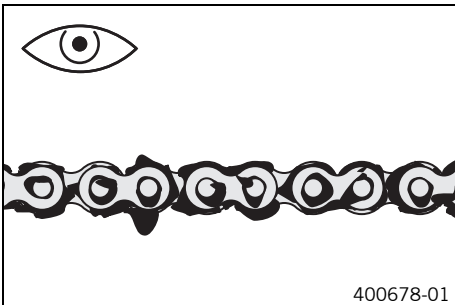
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	--------------------

- Position the fuel tank breather.

Finishing work

- Mount the seat. (↖ p. 40)

11.33 Checking for chain dirt accumulation



- Check the chain for coarse dirt accumulation.
 - » If the chain is very dirty:
 - Clean the chain. (↖ p. 45)

11.34 Cleaning the chain

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

- Remove oil and grease with a suitable cleaning material.

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

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



Warning

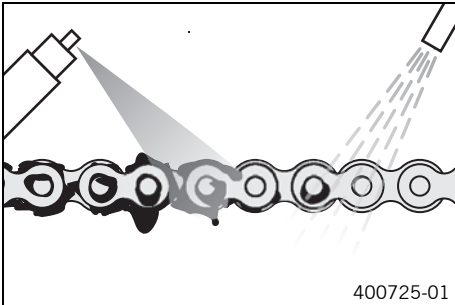
Environmental hazard Hazardous substances cause environmental damage.

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



Info

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



Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)

Main work

- Clean the chain regularly and then treat with chain spray.

Chain cleaner (☛ p. 87)
Off-road chain spray (☛ p. 87)

Finishing work

- Remove the motorcycle from the lift stand. (☛ p. 32)

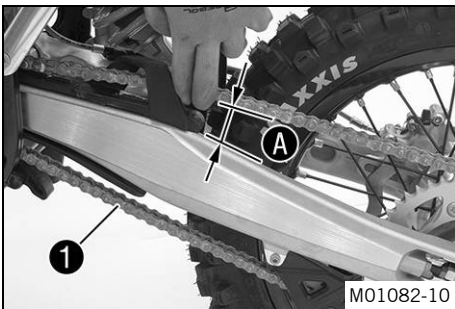
11.35 Checking the chain tension



Warning

Danger of accidents Danger caused by incorrect chain tension.

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



Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)

Main work

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



Info

Lower chain section **1** must be taut.

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

Chain tension	55... 58 mm (2.17... 2.28 in)
---------------	-------------------------------

- » If the chain tension does not meet specifications:
 - Adjust the chain tension. (☛ p. 46)

Finishing work

- Remove the motorcycle from the lift stand. (☛ p. 32)

11.36 Adjusting the chain tension



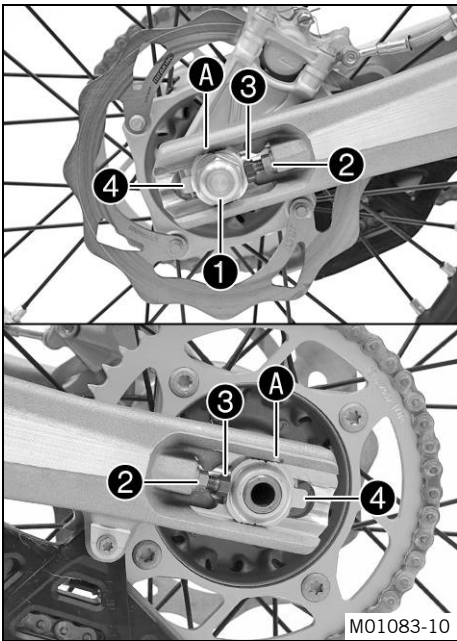
Warning

Danger of accidents Danger caused by incorrect chain tension.

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

Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)



- Check the chain tension. (☛ p. 46)

Main work

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

Guideline

Chain tension	55... 58 mm (2.17... 2.28 in)	
Turn adjusting screws ③ on the left and right so that the markings on the left and right chain adjusters are in the same position relative to reference marks A. The rear wheel is then correctly aligned.		

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

Guideline

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

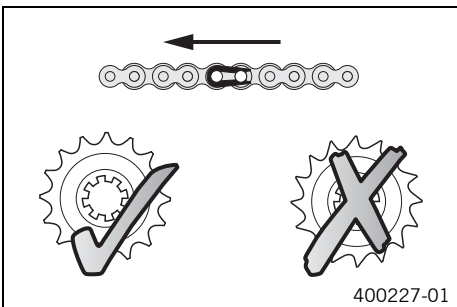


Info
The wide adjustment range of the chain adjusters (32 mm (1.18 in)) enables different secondary ratios with the same chain length. Chain adjusters ④ can be turned by 180°.

Finishing work

- Remove the motorcycle from the lift stand. (☛ p. 32)

11.37 Checking the chain, rear sprocket, engine sprocket, and chain guide



Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)

Main work

- Shift gear to neutral.
- Check the rear sprocket and engine sprocket for wear.
 - » If the rear sprocket or engine sprocket is worn:
 - Change the power set. ☛



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

- Pull on the upper part of the chain with specified weight A.

Guideline

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

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



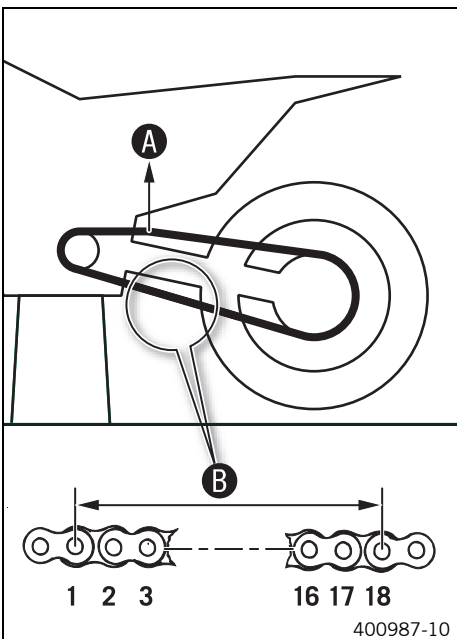
Info
Chain wear is not always even, so you should repeat this measurement at different chain positions.

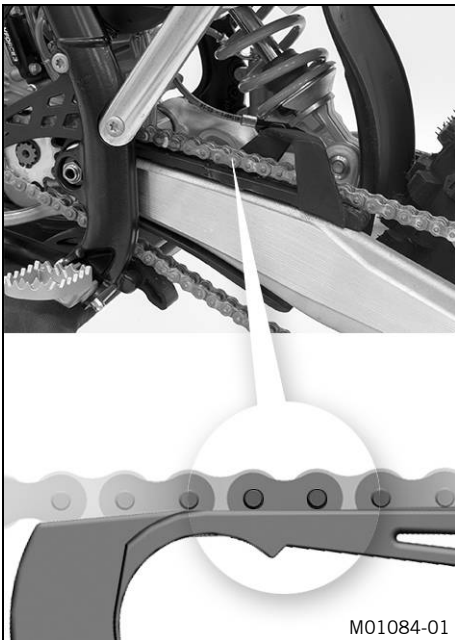
Maximum distance B at the longest chain section	219 mm (8.62 in)
---	------------------

- » If distance B is greater than the specified measurement:
 - Change the power set. ☛



Info
When you replace the chain, you should also change the rear sprocket and engine sprocket. New chains wear out faster on an old, worn rear sprocket or engine sprocket.





- Check the chain sliding guard for wear.
 - » If the lower edge of the chain pins is in line with or below the chain sliding guard:
 - Change the chain sliding guard. 🛠️
- Check the chain sliding guard for tightness.
 - » If the chain sliding guard is loose:
 - Tighten the screws on the chain sliding guard.

Guideline

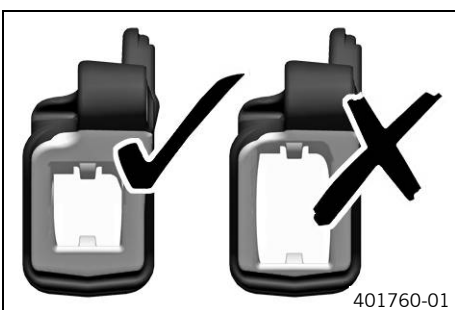
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	-----------------------



- Check the chain sliding piece for wear.
 - » If the lower edge of the chain pins is in line with or below the chain sliding piece:
 - Change the chain sliding piece. 🛠️
- Check the chain sliding piece for tightness.
 - » If the chain sliding piece is loose:
 - Tighten the screw on the chain sliding piece.

Guideline

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



- Check the chain guide for wear.



Info

Wear can be seen on the front of the chain guide.

- » If the light part of the chain guide is worn:
 - Change the chain guide. 🛠️



- Check the chain guide for tightness.
 - » If the chain guide is loose:
 - Tighten the screws on the chain guide.

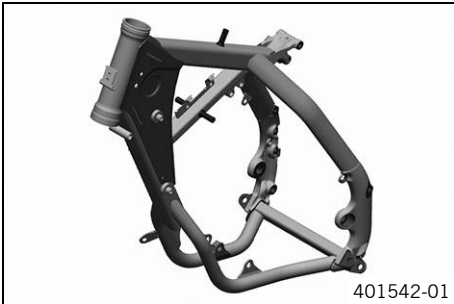
Guideline

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

Finishing work

- Remove the motorcycle from the lift stand. (👉 p. 32)

11.38 Checking the frame ↩



- Check the frame for cracking and deformation.
 - » If the frame exhibits cracking or deformation due to a mechanical impact:
 - Change the frame. ↩



Info

A frame that has been damaged due to a mechanical impact must always be changed. Repair of the frame is not authorized by KTM.

11.39 Checking the swingarm ↩



- Check the swingarm for damage, cracking, and deformation.
 - » If the swingarm shows signs of damage, cracking, or deformation:
 - Change the swingarm. ↩



Info

A damaged swingarm must always be changed. Repair of the swingarm is not authorized by KTM.

11.40 Checking the routing of the throttle cable

- Warning**
Risk of injury The throttle cable can slip out of the guide; if this happens, the throttle slide can no longer be closed and the speed cannot be controlled.
- Always ensure that the throttle cable is correctly routed and check the throttle cable play.

Preparatory work

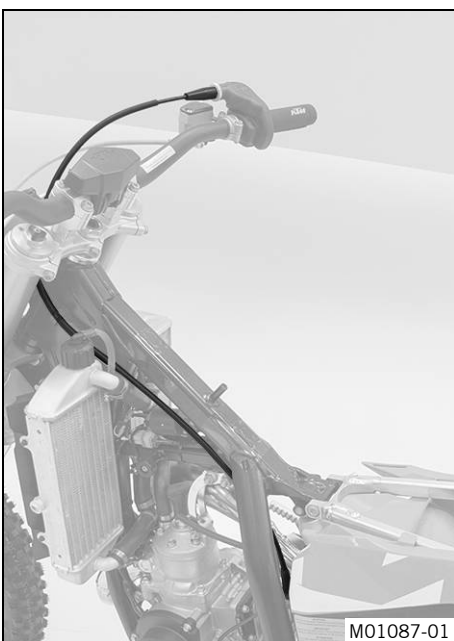
- Remove the seat. (↩ p. 40)
- Turn tap handle ❶ on the fuel tap to the **OFF** position. (Figure C00462-10 ↩ p. 12)
- Remove the fuel tank. ↩ (↩ p. 44)

Main work

- Check the routing of the throttle cable.

The throttle cable must be routed to the carburetor on the left side above the fuel tank bracket.

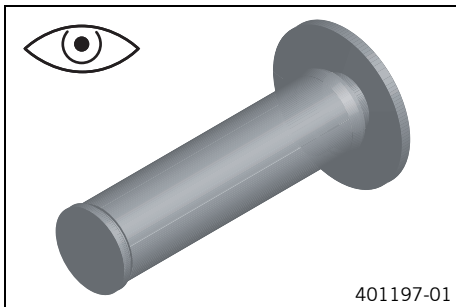
- » If the throttle cable is not routed as specified:
 - Correct the routing of the throttle cable.



Finishing work

- Install the fuel tank. ↩ (↩ p. 45)
- Mount the seat. (↩ p. 40)

11.41 Checking the rubber grip



- Check the rubber grips on the handlebar for damage and wear and to ensure they are firmly seated.
 - » If a rubber grip is damaged, worn or loose:
 - Change and secure the rubber grip.

Grip adhesive (00062030051) (☛ p. 87)

11.42 Additionally securing the rubber grip



Preparatory work

- Check the rubber grip. (☛ p. 50)

Main work

- Secure the rubber grip at two points using the securing wire.

Securing wire (54812016000)

Wire twister forceps (U6907854)

- ✓ The twisted wire ends face away from the hands and are bent toward the rubber grip.

11.43 Adjusting the basic position of the clutch lever



- Adjust the basic position of the clutch lever to the size of the rider's hand using adjusting screw ①.

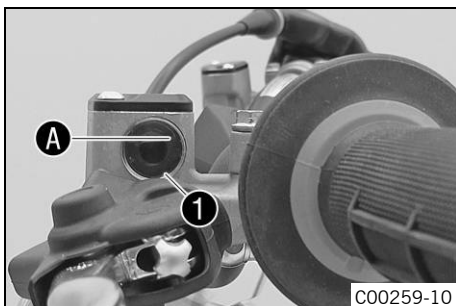
i Info

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

11.44 Checking the fluid level of the hydraulic clutch

i Info

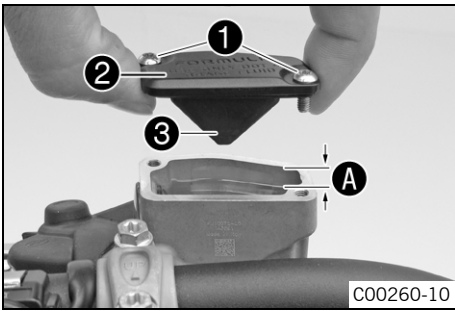
The fluid level rises with increasing wear of the clutch facing discs.



- Move the clutch fluid reservoir mounted on the handlebar to a horizontal position.
- Check the fluid level in viewer ①.
 - » If the fluid has dropped below marking A in the viewer:
 - Correct the fluid level of the hydraulic clutch. (☛ p. 51)

11.45 Correcting the fluid level of the hydraulic clutch

i Info
The fluid level rises with increasing wear of the clutch facing discs.



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

Guideline

Level A (fluid level below container rim)	4 mm (0.16 in)
---	----------------

Brake fluid DOT 4 / DOT 5.1 (☛ p. 85)

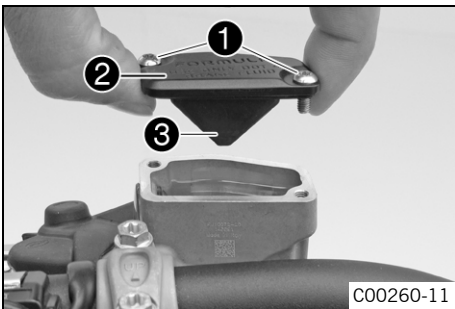
- Position the cover with the membrane. Mount and tighten the screws.

i Info
Wash off overflowed or spilled brake fluid immediately with water.

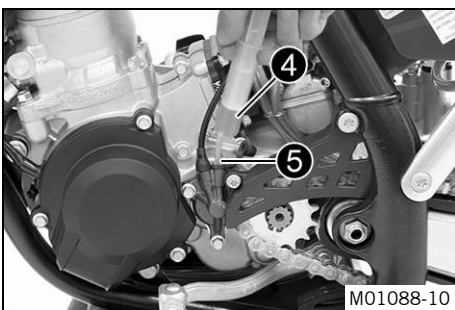
11.46 Changing the hydraulic clutch fluid

Warning
Environmental hazard Hazardous substances cause environmental damage.

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



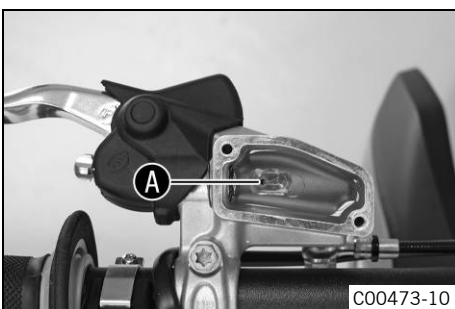
- Move the clutch fluid reservoir mounted on the handlebar to a horizontal position.
- Remove screws ①.
- Remove cover ② with membrane ③.



- Fill bleeding syringe ④ with the appropriate hydraulic fluid.

Bleed syringe (50329050000)
Brake fluid DOT 4 / DOT 5.1 (☛ p. 85)

- On the clutch slave cylinder, remove bleeder screw ⑤ and mount bleeding syringe ④.



- Inject the liquid into the system until it escapes from opening A of the master cylinder without bubbles.
- To prevent overflow, drain fluid occasionally from the master cylinder reservoir.
- Remove the bleeding syringe. Mount and tighten screws bleeder screw.
- Correct the fluid level of the hydraulic clutch.

Guideline

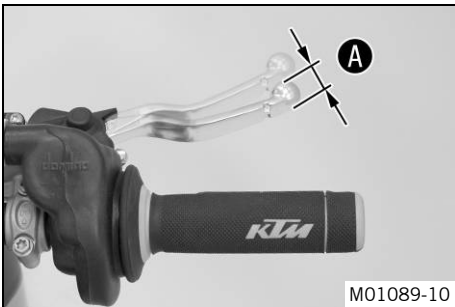
Fluid level below container rim	4 mm (0.16 in)
---------------------------------	----------------

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

12.1 Checking the free travel of the hand brake lever

Warning
Danger of accidents Brake system failure.

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

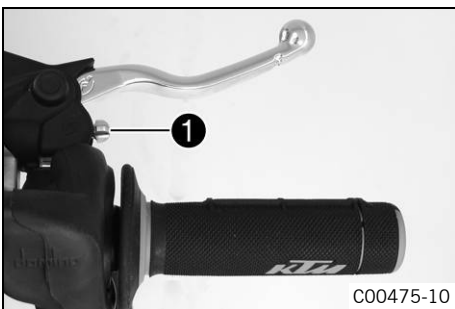


- Push the hand brake lever forward and check free travel **A**.

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

- » If the free travel does not meet specifications:
 - Adjust the free travel of the handbrake lever. (☛ p. 52)

12.2 Adjusting the free travel of the handbrake lever



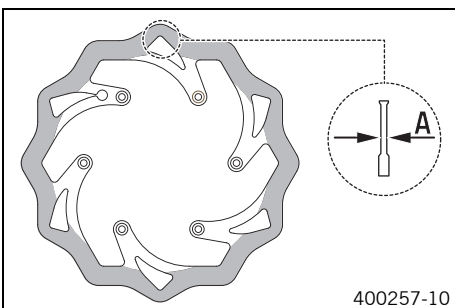
- Check the free travel of the hand brake lever. (☛ p. 52)
- Adjust the free travel of the handbrake lever with adjustment screw **1**.

i Info
 Turn the adjusting screw clockwise to reduce free travel. The pressure point moves away from the handlebar.
 Turn the adjusting screw counterclockwise to increase free travel. The pressure point moves towards the handlebar.
 The range of adjustment is limited.
 Turn the adjusting screw by hand only, and do not apply force.
 Do not make any adjustments while riding!

12.3 Checking the brake discs

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

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



- Check the thickness of the front and rear brake discs at several places on the disk to see if it conforms to measurement **A**.

i Info
 Wear reduces the thickness of the brake disc around the area used by the brake linings.

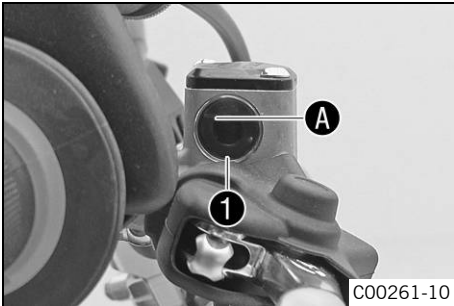
Brake discs - wear limit	
Front	2.5 mm (0.098 in)
Rear	3.5 mm (0.138 in)

- » If the brake disc thickness is less than the specified value:
 - Change the brake disc.
- Check the front and rear brake discs for damage, cracking and deformation.
 - » If the brake disc shows signs of damage, cracking, or deformation:
 - Change the brake disc.

12.4 Checking front brake fluid level

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

- Warning**
Danger of accidents Reduced braking efficiency due to old brake fluid.
- Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)



- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Check the brake fluid level in viewer **1**.
 - » If the brake fluid has dropped below marking **A**:
 - Add front brake fluid. (☞ p. 53)

12.5 Adding front brake fluid ☞

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

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

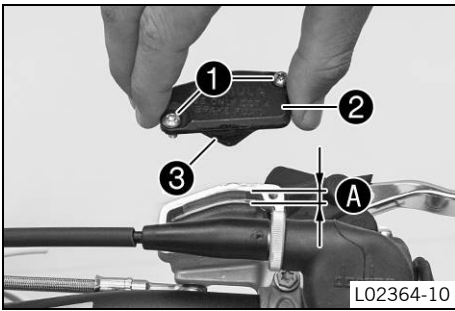
- Warning**
Danger of accidents Reduced braking efficiency due to old brake fluid.
- Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)

- Warning**
Environmental hazard Hazardous substances cause environmental damage.
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

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

Preparatory work

- Check the front brake linings. (☞ p. 54)



Main work

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

Guideline

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

Brake fluid DOT 4 / DOT 5.1 (☞ p. 85)

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



Info

Wash off overflowed or spilled brake fluid immediately with water.

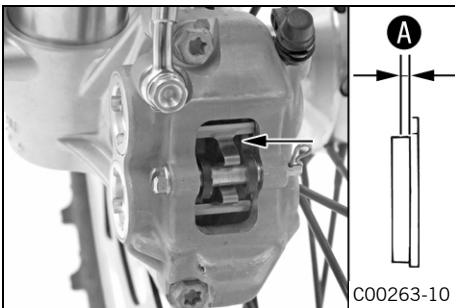
12.6 Checking the front brake linings



Warning

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

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



- Check the brake linings for minimum thickness A.

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

- » If the minimum thickness is less than specified:
 - Change the front brake linings. ☞ (☞ p. 54)
- Check the brake linings for damage and cracking.
 - » If damage or cracking is visible:
 - Change the front brake linings. ☞ (☞ p. 54)

12.7 Changing the front brake linings ☞



Warning

Danger of accident Brake system failure.

- Maintenance work and repairs must be carried out professionally. (Your authorized KTM workshop will be glad to help.)



Warning

Skin irritation Brake fluid can cause skin irritation on contact.

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



Warning

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

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



Warning

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

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



Warning

Danger of accidents Reduced braking efficiency due to use of non-approved brake linings.

- Brake linings available from accessory suppliers are often not tested and approved for use on KTM vehicles. The construction and friction factor of the brake linings and therefore the brake power can differ considerably from the original KTM brake linings. If brake linings are used that differ from the originals, there is no guarantee that they comply with the original license. The vehicle no longer corresponds to the condition at delivery, and the warranty is no longer valid.



Warning

Environmental hazard Hazardous substances cause environmental damage.

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

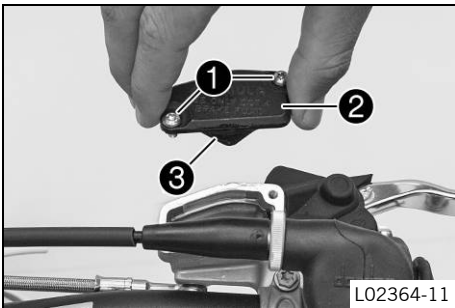


Info

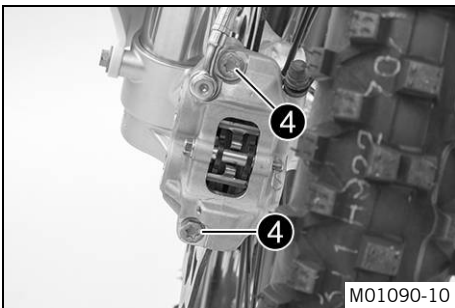
Never use DOT 5 brake fluid! It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.

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

Use only clean brake fluid from a sealed container!



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

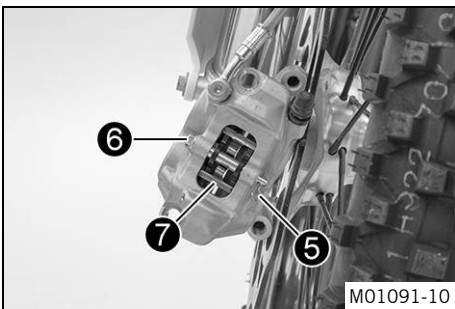


(85 SX 17/14)

- Remove screws ④.
- Press back the brake linings with a light lateral tilting of the brake caliper on the brake disc. Carefully pull the brake caliper backwards from the brake disc.
- Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake fluid reservoir.

(85 SX 19/16)

- Remove screws ④ and spacers.
- Press back the brake linings with a light lateral tilting of the brake caliper on the brake disc. Carefully pull the brake caliper backwards from the brake disc.
- Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake fluid reservoir.



- Remove cotter pin ⑤.
- Remove bolt ⑥.
- Take off retainer spring ⑦ and remove the brake linings.
- Clean the brake caliper.
- Position the new brake linings.



Info

Always change the brake linings in pairs.

- Position retainer spring ⑦.
- Mount bolt ⑥.

Guideline

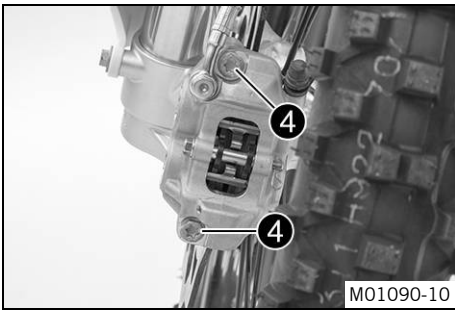
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
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Info

To make it easier to mount the pin, push the retainer spring down. Make sure the retainer spring is seated correctly.

- Mount spring connector ⑤.



(85 SX 17/14)

- Position the brake caliper. Mount screws **4** but do not tighten yet.
- Operate the hand brake lever several times until the brake linings are lying correctly against the brake disc and there is a pressure point. Fix the hand brake lever in the activated position.
- ✓ The brake caliper straightens.
- Tighten screws **4**.

Guideline

Screw of brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
------------------------	----	------------------------	---------------

- Remove the fixation of the hand brake lever.

(85 SX 19/16)

- Position the brake caliper. Mount screws **4** with the spacers but do not tighten yet.
- Operate the hand brake lever several times until the brake linings are lying correctly against the brake disc and there is a pressure point. Fix the hand brake lever in the activated position.
- ✓ The brake caliper straightens.
- Tighten screws **4**.

Guideline

Screw of brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
------------------------	----	------------------------	---------------

- Remove the fixation of the hand brake lever.

- Add brake fluid to level **A**.

Guideline

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

Brake fluid DOT 4 / DOT 5.1 (☞ p. 85)

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

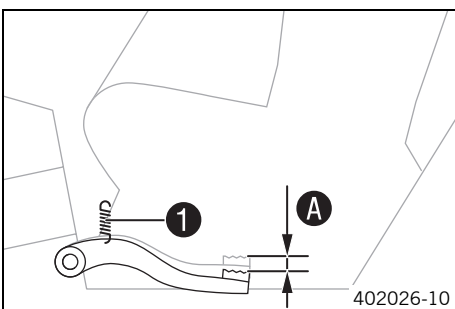
i Info
Wash off overflowed or spilled brake fluid immediately with water.



12.8 Checking the free travel of foot brake lever

Warning
Danger of accidents Brake system failure.

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



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

Guideline

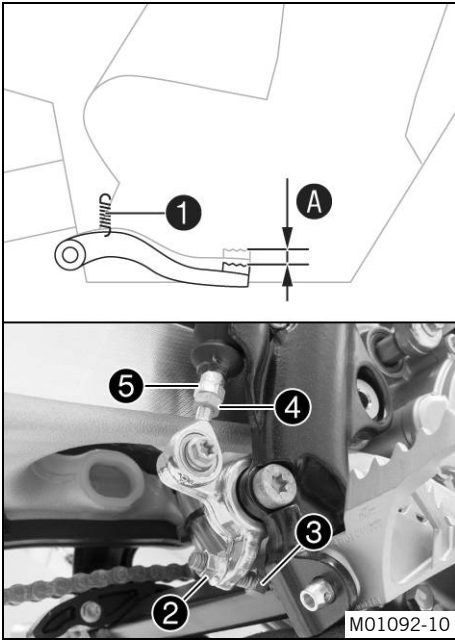
Free travel at foot brake lever	3... 5 mm (0.12... 0.2 in)
---------------------------------	----------------------------

- » If the free travel does not meet specifications:
 - Adjust the basic position of the foot brake lever. ☞ (☞ p. 57)
- Reconnect spring **1**.

12.9 Adjusting the basic position of the foot brake lever ↩

Warning
Danger of accidents Brake system failure.

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



- Disconnect spring ①.
- Loosen nut ④ and, with push rod ⑤, turn it back until you have maximum free travel.
- To adjust the basic position of the foot brake lever individually, loosen nut ② and turn screw ③ accordingly.

Info
 The range of adjustment is limited.

- Turn push rod ⑤ accordingly until you have free travel ①. If necessary, adjust the basic position of the foot brake lever.

Guideline

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

- Hold screw ③ and tighten nut ②.

Guideline

Nut, foot brake lever stop	M8	20 Nm (14.8 lbf ft)
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- Hold push rod ⑤ and tighten nut ④.

Guideline

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

- Reconnect spring ①.

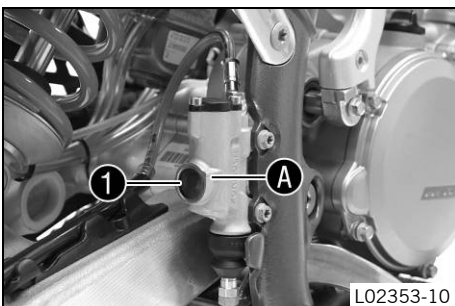
12.10 Checking the rear brake fluid level

Warning
Danger of accidents Brake system failure.

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

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

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



- Stand the vehicle upright.
- Check the brake fluid level in viewer ①.
 - » If the brake fluid has dropped below marking ①:
 - Add rear brake fluid. ↩ (p. 58)

12.11 Adding rear brake fluid **Warning****Danger of accidents** Brake system failure.

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

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

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

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

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

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

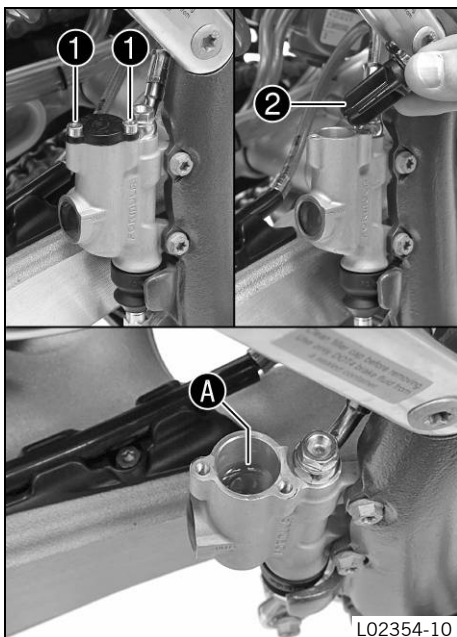
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

**Info**

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


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

Use only clean brake fluid from a sealed container!

**Preparatory work**

- Check the rear brake linings. ( p. 59)

Main work

- Stand the vehicle upright.
 - Remove screws **1**.
 - Take off the cover with the washer and membrane **2**.
 - Add brake fluid to level **A**.
- Brake fluid DOT 4 / DOT 5.1 ( p. 85)
- Mount the cover with the washer and membrane.
 - Mount and tighten the screws.

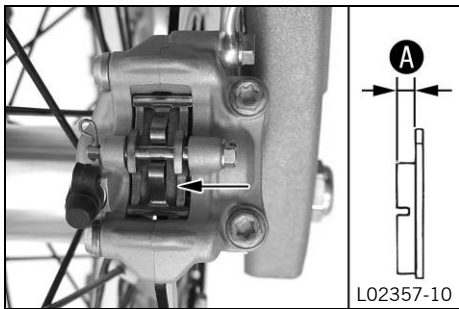
**Info**

Wash off overflowed or spilled brake fluid immediately with water.

12.12 Checking the rear brake linings

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

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



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

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

- » If the minimum thickness is less than specified:
 - Change the rear brake linings. 🛠️ (p. 59)
- Check the brake linings for damage and cracking.
 - » If damage or cracking is visible:
 - Change the rear brake linings. 🛠️ (p. 59)

12.13 Changing the rear brake linings 🛠️

Warning
Danger of accident Brake system failure.

- Maintenance work and repairs must be carried out professionally. (Your authorized KTM workshop will be glad to help.)

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

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

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

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

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

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

Warning
Danger of accidents Reduced braking efficiency due to use of non-approved brake linings.

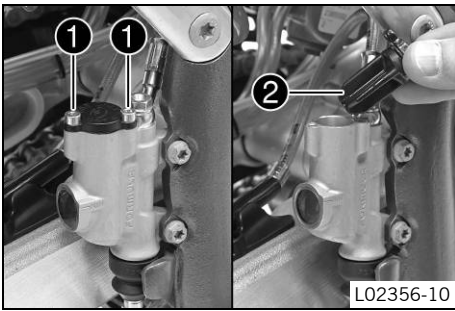
- Brake linings available from accessory suppliers are often not tested and approved for use on KTM vehicles. The construction and friction factor of the brake linings and therefore the brake power can differ considerably from the original KTM brake linings. If brake linings are used that differ from the originals, there is no guarantee that they comply with the original license. The vehicle no longer corresponds to the condition at delivery, and the warranty is no longer valid.

Warning
Environmental hazard Hazardous substances cause environmental damage.

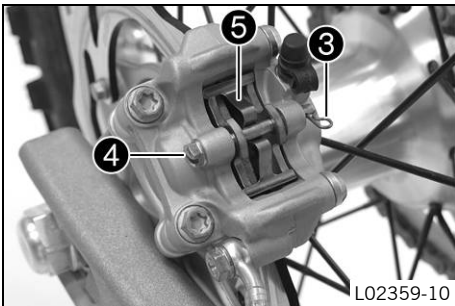
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

i Info

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



- Stand the vehicle upright.
- Remove screws 1.
- Take off the cover with the washer and membrane 2.
- Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake fluid reservoir.



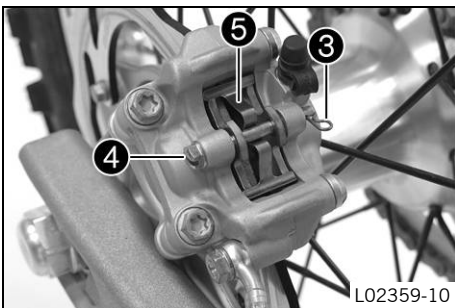
- Take off cotter pin 3 and remove pin 4.
- Take off retainer spring 5 and remove the brake linings.
- Clean the brake caliper.



- Insert new brake linings.

i Info

Always change the brake linings in pairs.



- Position retainer spring 5.
- Mount pin 4.

Guideline

Rear brake bolt	M6	12 Nm (8.9 lbf ft)
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i Info

To make it easier to mount the pin, push the retainer spring down. Make sure the retainer spring is seated correctly.

- Mount cotter pin 3.
- Operate the foot brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.

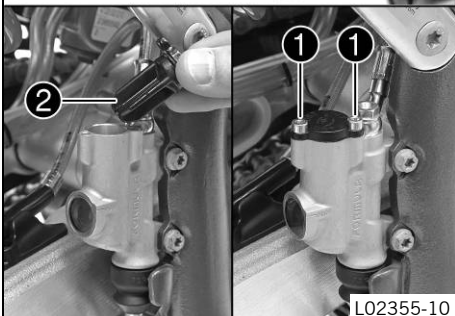
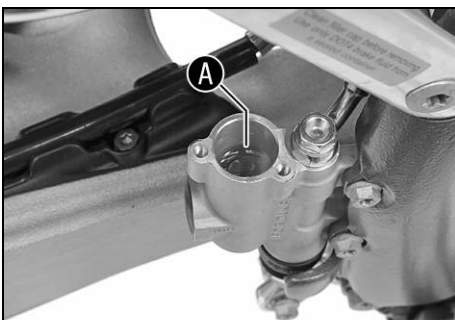
- Add brake fluid to level A.

Brake fluid DOT 4 / DOT 5.1 (☞ p. 85)

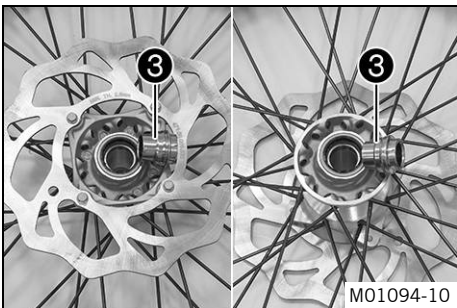
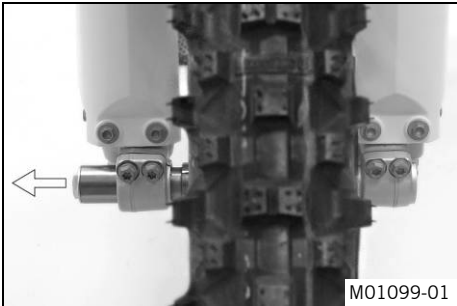
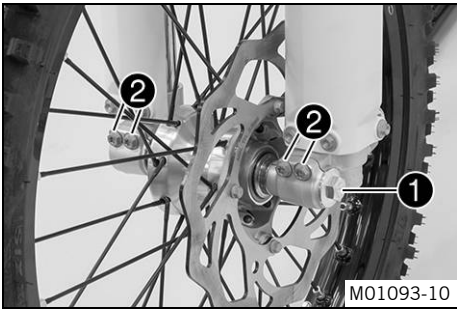
- Mount the cover with the washer and membrane 2.
- Mount and tighten screws 1.

i Info

Clean up overflowed or spilled brake fluid immediately with water.



13.1 Removing the front wheel



Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)

Main work

- Loosen screw ① by several rotations.
- Release screws ②.
- Press on screw ① to push the wheel spindle out the axle clamp.
- Remove screw ①.

- Holding the front wheel, withdraw the wheel spindle. Take the front wheel out of the fork.

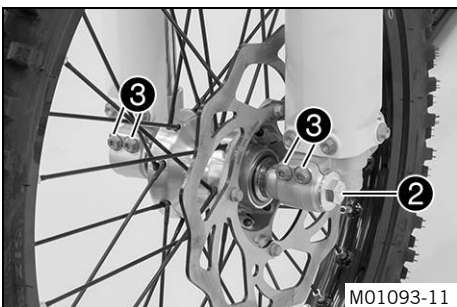
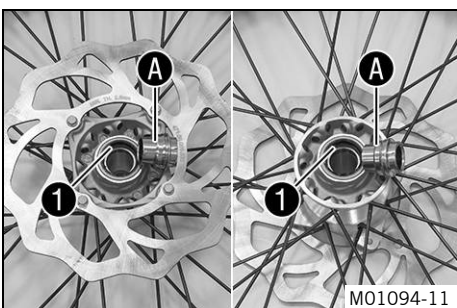
i Info

Do not pull the hand brake lever when the front wheel is removed. Always lay the wheel down in such a way that the brake disc is not damaged.

- Remove spacers ③.

13.2 Installing the front wheel

Warning
Danger of accidents Reduced braking efficiency due to oil or grease on the brake discs.
 - Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.



Main work

- Check the wheel bearing for damage and wear.
 - » If the wheel bearing is damaged or worn:
 - Change the wheel bearing. ☛
- Clean and grease shaft seal rings ① and bearing surface A of the spacers.

Long-life grease (☛ p. 87)

- Insert the spacers.
- Position the front wheel.
 - ✓ The brake linings are correctly positioned.
- Insert wheel spindle.
- Mount and tighten screw ②.

Guideline

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

- Operate the hand brake lever several times until the brake linings are lying correctly against the brake disc.
- Remove the motorcycle from the lift stand. (☛ p. 32)

- Pull the front wheel brake and push down hard on the fork several times to align the fork legs.
- Tighten screws ③.

Guideline

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

- Remove the motorcycle from the lift stand. (☛ p. 32)

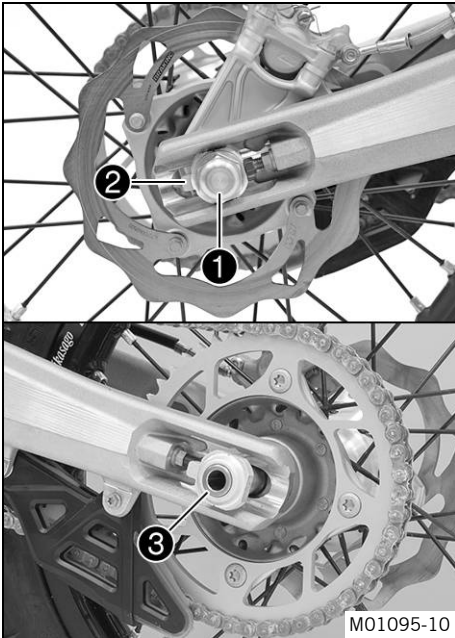
13.3 Removing the rear wheel ☛

Preparatory work

- Raise the motorcycle with the lift stand. (☛ p. 32)

Main work

- Remove nut ①.
- Remove chain adjuster ②. Withdraw wheel spindle ③ only enough to allow the rear wheel to be pushed forward.
- Push the rear wheel forward as far as possible. Remove the chain from the rear sprocket.



Info

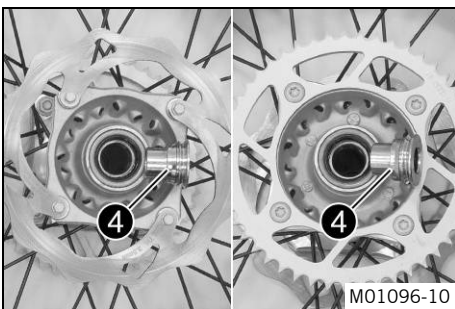
Protect the motorcycle and its attachments against damage by covering them.

- Holding the rear wheel, withdraw the wheel spindle. Take the rear wheel out of the swingarm.



Info

Do not operate the foot brake when the rear wheel is removed. Always lay the wheel down in such a way that the brake disc is not damaged.



- Remove spacers ④.

13.4 Installing the rear wheel ☛



Warning

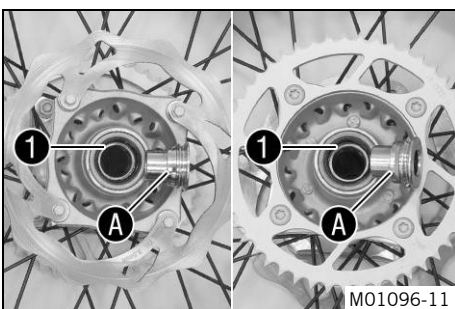
Danger of accidents Reduced braking efficiency due to oil or grease on the brake discs.

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

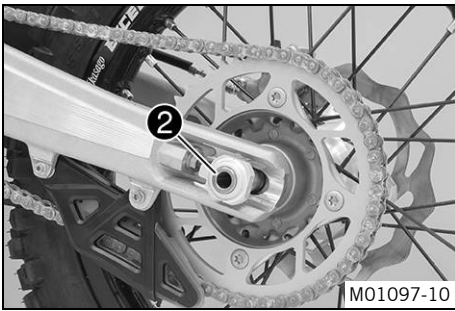
Main work

- Check the wheel bearing for damage and wear.
 - » If the wheel bearing is damaged or worn:
 - Change the wheel bearing. ☛
- Clean and grease shaft seal rings ① and bearing surface A of the spacers.

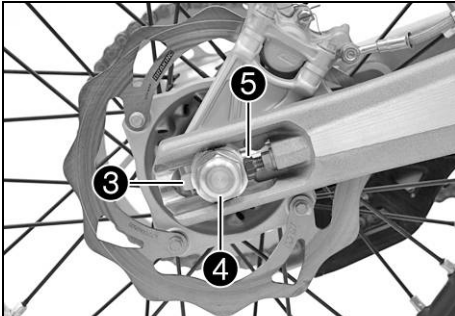
Long-life grease (☛ p. 87)



- Insert the spacers.



- Lift the rear wheel into the swingarm, position it, and attach the chain.
 - ✓ The brake linings are correctly positioned.
- Insert wheel spindle ②.

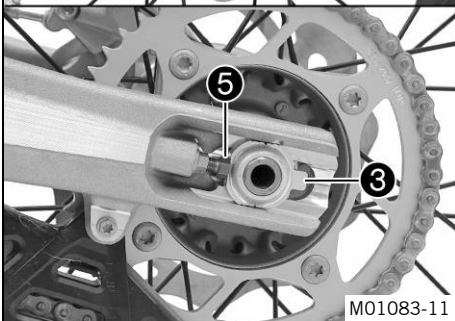


- Position chain adjuster ③. Mount nut ④, but do not tighten it yet.
- Make sure that chain adjusters ③ are fitted correctly on adjusting screws ⑤.
- Check the chain tension. (☛ p. 46)
- Tighten nut ④.

Guideline

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

i Info
 The wide adjustment range of the chain adjusters enables different secondary ratios with the same chain length.
 Chain adjusters ③ can be turned by 180°.



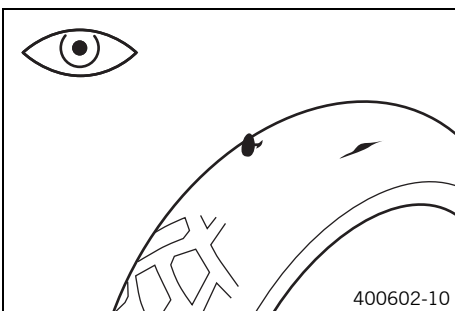
- Operate the foot brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.

Finishing work

- Remove the motorcycle from the lift stand. (☛ p. 32)

13.5 Checking the tire condition

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



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

i Info
 Note local national regulations concerning the minimum tread depth.

Minimum tread depth	≥ 2 mm (≥ 0.08 in)
---------------------	--------------------

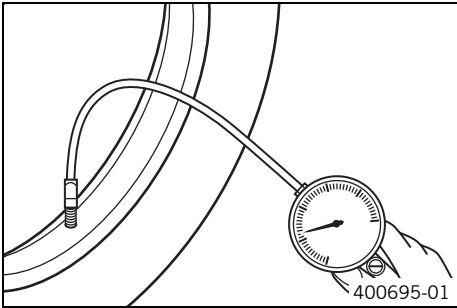
- » If the tread depth is less than the minimum permissible depth:
 - Change the tires.
- Check the age of the tires.

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

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

13.6 Checking the tire air pressure

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



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

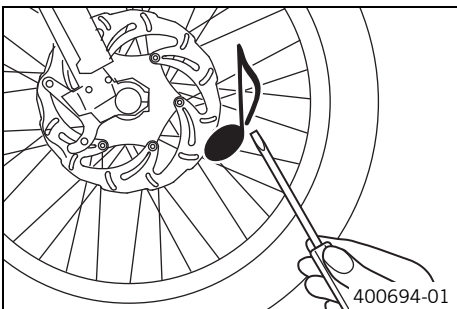
Tire air pressure off road	
Front	1.0 bar (15 psi)
Rear	1.0 bar (15 psi)

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

13.7 Checking the spoke tension

! Warning
Danger of accidents Instable handling due to incorrect spoke tension.
 - Ensure that the spoke tension is correct. (Your authorized KTM workshop will be glad to help.)

i Info
 A loose spoke causes wheel imbalance and rapidly leads to more loose spokes.
 If the spokes are too tight, they can break due to local overload.
 Check the spoke tension regularly, especially on a new motorcycle.



- Briefly strike each spoke with the tip of a screwdriver.

i Info
 The tone frequency depends on the length of the spoke and the spoke diameter.
 If you hear different tone frequencies from different spokes of equal length and diameter, this is an indication of different spoke tensions.

You should hear a high note.

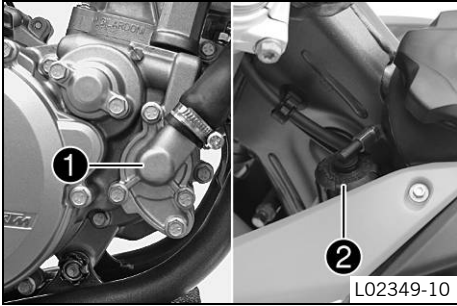
- » If the spoke tension varies:
 - Correct the spoke tension. 🛠️
- Check the spoke torque.

Guideline

Spoke nipple	M4.5	6 Nm (4.4 lbf ft)
--------------	------	-------------------

Torque wrench with various accessories in set (58429094000)

14.1 Cooling system



Water pump **1** in the engine circulates the coolant. The pressure resulting from the warming of the cooling system is regulated by a valve in radiator cap **2**. 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.

14.2 Checking the antifreeze and coolant level

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

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

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

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

Condition
 The engine is cold.

- Stand the motorcycle upright on a horizontal surface.
- Remove the radiator cap.
- Check the coolant antifreeze.

-25... -45 °C (-13... -49 °F)

- » If the antifreeze of the coolant does not meet specifications:
 - Correct the coolant antifreeze.

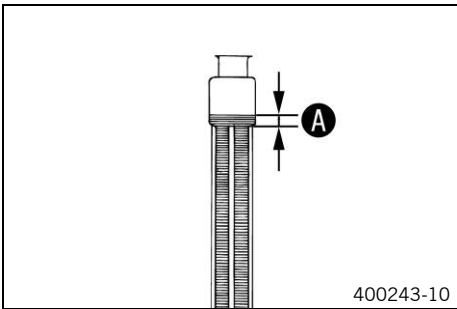
- Check the coolant level in the radiator.

Coolant level A above radiator fins.	10 mm (0.39 in)
---	-----------------

- » If the coolant level does not meet specifications:
 - Correct the coolant level.

Coolant (☛ p. 85)

- Mount the radiator cap.



14.3 Checking the coolant level

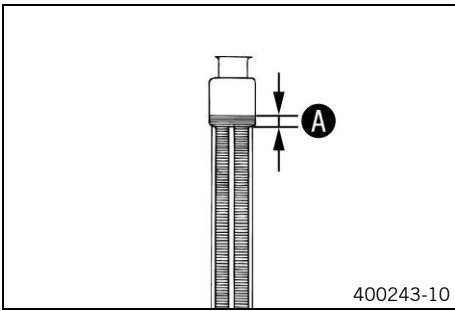
Warning
Danger of scalding During motorcycle operation, the coolant gets very hot and is under pressure.

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

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

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

Condition
 The engine is cold.



- Stand the motorcycle upright on a horizontal surface.
- Remove the radiator cap.
- Check the coolant level in the radiator.

Coolant level A above radiator fins.	10 mm (0.39 in)
---	-----------------

- » If the coolant level does not meet specifications:
 - Correct the coolant level.

Coolant (👉 p. 85)

- Mount the radiator cap.

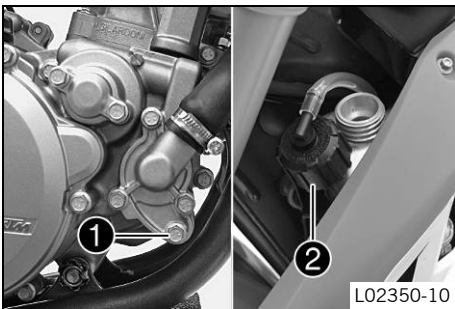
14.4 Draining the coolant 🛠️

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

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

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

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



Condition

The motor is cold.

- Position the motorcycle upright.
- Place a suitable 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.

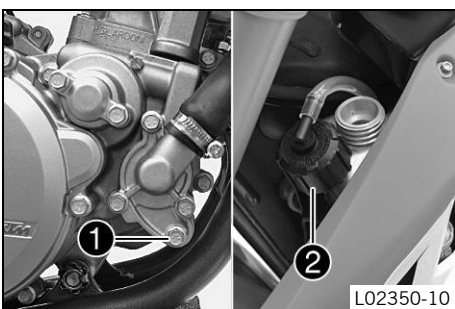
Guideline

Screw, water pump cover	M6	10 Nm (7.4 lbf ft)
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14.5 Refilling coolant 🛠️

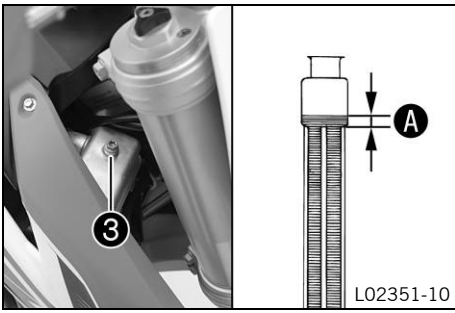
Warning
Danger of poisoning Coolant is poisonous and a health hazard.

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



Main work

- Make sure that screw **1** is tightened.
- Position the motorcycle upright.
- Take off radiator cap **2**.



- Remove bleeder screw ③.
- Pour coolant in up to measurement A above the radiator fins.

Guideline

10 mm (0.39 in)

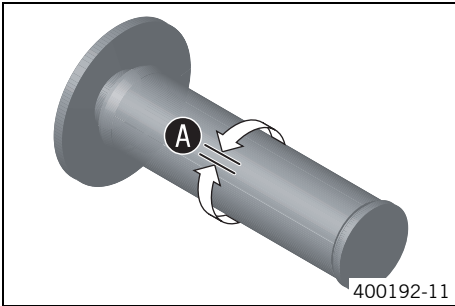
Coolant	1.0 l (1.1 qt.)	Coolant (☛ p. 85)
---------	-----------------	-------------------

- Mount and tighten screws bleeder screw ③.
- Mount the radiator cap.

Finishing work

- Take a short test ride.
- Check the cooling system for leaks.
- Check the coolant level. (☛ p. 65)

15.1 Checking the play in the throttle cable



- Check the throttle grip for smooth operation.
- Move the handlebar to the straight-ahead position. Move the throttle grip backwards and forwards to ascertain play **A** in the throttle cable.

Throttle cable play	2... 3 mm (0.08... 0.12 in)
---------------------	-----------------------------

- » If the throttle cable play does not meet specifications:
 - Adjust the play in the throttle cable. (☞ p. 68)



Danger

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

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

- Start the engine and let it idle. Move the handlebar to and fro over the entire steering range.

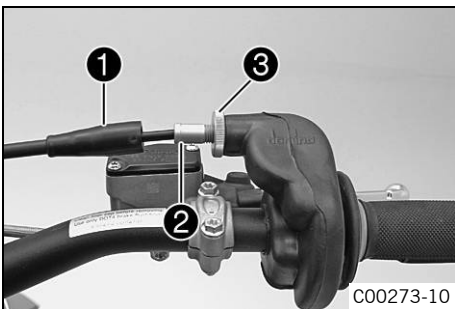
The idle speed should not change.

- » If the idle speed changes:
 - Adjust the play in the throttle cable. (☞ p. 68)

15.2 Adjusting the play in the throttle cable ☞

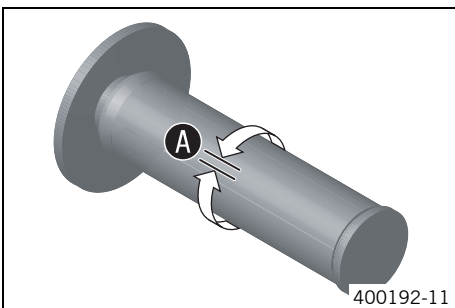
Preparatory work

- Remove the seat. (☞ p. 40)
- Turn tap handle **1** on the fuel tap to the **OFF** position. (Figure CO0462-10 ☞ p. 12)
- Remove the fuel tank. ☞ (☞ p. 44)
- Check the routing of the throttle cable. (☞ p. 49)



Main work

- Move the handlebar to the straight-ahead position.
- Push back sleeve **1**.
- Ensure that the throttle cable sleeve is pushed all the way into barrel adjuster **2**.
- Loosen nut **3**.



- Turn adjusting screw **2** in such a way there is throttle cable play **A** in the throttle grip.

Guideline

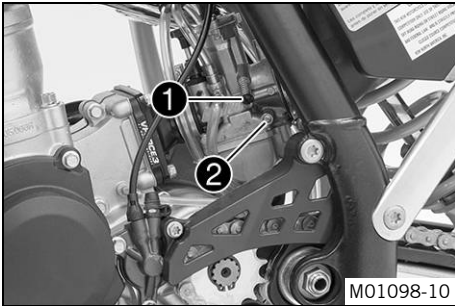
Throttle cable play	2... 3 mm (0.08... 0.12 in)
---------------------	-----------------------------

- Tighten nut **3**.
- Slide on sleeve **1**.

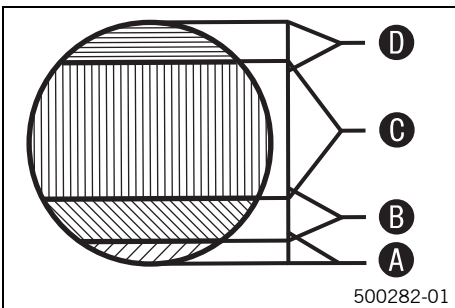
Finishing work

- Check the play in the throttle cable. (☞ p. 68)
- Install the fuel tank. ☞ (☞ p. 45)
- Mount the seat. (☞ p. 40)

15.3 Carburetor - idle



M01098-10



500282-01

The idle setting of the carburetor has a big influence on the starting behavior, stable idling and the response to throttle opening. This means that an engine with a correctly set idle speed is easier to start than if the idle is set wrongly.

Info
The carburetor and its components are subject to increased wear caused by engine vibration. Wear can result in malfunctioning.

The carburetor's factory setting matches the following values.

Height above sea level	500 m (1,640 ft)
Ambient temperature	20 °C (68 °F)
Super unleaded (98 octane) mixed with 2-stroke engine oil (1:40) (☛ p. 86)	

Idling range A

Operation when throttle side is closed. This range is affected by adjusting screw 1 and idle air adjusting screw 2.

Transitional range B

Engine behavior when the throttle slide is opened. This range is affected by the idling jet and throttle slide.

If, despite good idling and part-load settings, the engine starts to stutter and smoke heavily when the throttle slide is opened, and if it reaches full performance at high engine speeds suddenly, the carburetor is not being regulated leanly enough, the float level is too high or the float needle valve is leaky.

Part-load range C

Operation when throttle side is partially open. This range is affected by the jet needle (shape and position). In the lower range, the idle setting affects engine tuning; in the upper range, it is the main jet.

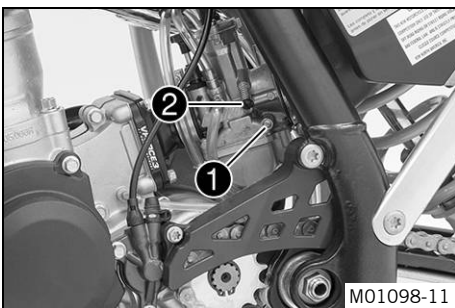
If, during acceleration with a partially opened throttle slide, the engine runs only at stuttering performance, the jet needle must be lowered by one notch. If the engine knocks, particularly during acceleration, when it is in the top-performance engine speed range, the jet needle must be raised. If the phenomena described above occur during idling or just above, the idling system is to be regulated more leanly during stuttering performance, and less so during knocking.

Full-load range D

Operating with open throttle slide (full throttle). This range is affected by the main jet and the jet needle.

If the insulator of a new spark plug is very bright or white after a short journey at full throttle, or if the engine is knocking, a larger main jet must be used. If the insulator is dark brown or sooty, a smaller main jet must be used.

15.4 Carburetor - adjusting idle speed 🛠️



M01098-11

- Screw in idle air adjusting screw 1 all the way and turn it to the specified basic position.

Guideline

Idle air adjusting screw	
Open	1.5 turns

- Run the engine until warm.

Guideline

Warm-up time	≥ 5 min
--------------	---------



Danger

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

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

- Adjust the idle speed with adjusting screw 2.

Guideline

Choke function deactivated – The choke lever is pushed in to the stop. (☛ p. 13)	
Idle speed	1,400... 1,500 rpm

- Turn idle air adjusting screw ❶ slowly in a clockwise direction until the idle speed begins to fall.
- Note the position and turn the idle air adjusting screw slowly counterclockwise until the idle speed falls again.
- Adjust to the point between these two positions with the highest idle speed.



Info

If the engine speed rises considerably, reduce the idle speed to a normal level and repeat the above steps.
 If the procedure described here does not lead to satisfactory results, the cause may be a wrongly dimensioned idling jet.
 If you can turn the idle air adjusting screw to the end without any change of engine speed, you need to install a smaller idling jet.
 After changing the idling jet, start from the beginning with the adjusting steps.
 Following extreme air temperature or altitude changes, adjust the idle speed again.

15.5 Emptying the carburetor float chamber 🛠️



Danger

Fire hazard Fuel is highly flammable.

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



Warning

Danger of poisoning Fuel is poisonous and a health hazard.

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



Warning

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

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



Info

Carry out this work with a cold engine.
 Water in the float chamber results in malfunctioning.

Preparatory work

- Turn tap handle ❶ on the fuel tap to the **OFF** position. (Figure C00462-10 p. 12)
- ✓ No more fuel flows from the fuel tank to the carburetor.

Main work

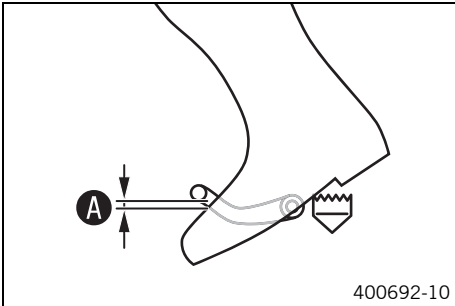
- Place a cloth beneath the carburetor to soak up emerging fuel.
- Remove plug ❶.
- Completely drain the fuel.
- Mount and tighten screw plug ❶.



15.6 Checking the basic position of the shift lever

i Info

When driving, the shift lever must not touch the driver's boot when in the basic position. When the shift lever keeps touching the boot, the transmission will be subject to an excessive load.

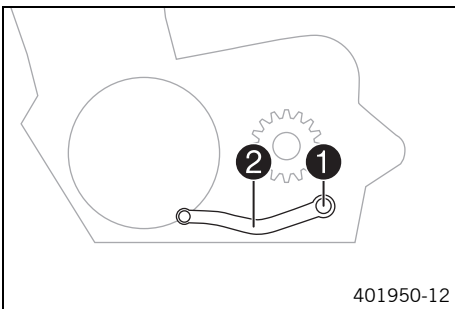


- Sit on the vehicle in the riding position and determine distance **A** between the upper edge of your boot and the shift lever.

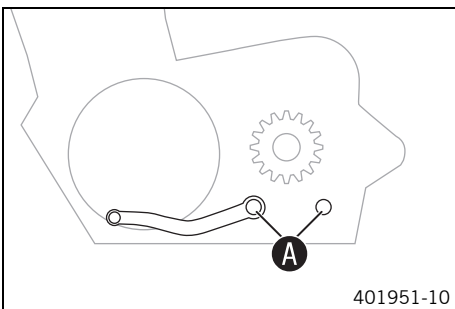
Distance between shift lever and upper edge of boot	10... 20 mm (0.39... 0.79 in)
---	-------------------------------

- » If the distance does not meet specifications:
 - Adjust the basic position of the shift lever. ↪ (p. 71)

15.7 Adjusting the basic position of the shift lever ↪



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



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

i Info

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

- Mount and tighten screw **1** with washers.

Guideline

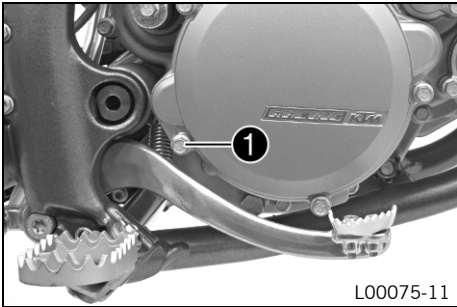
Screw, shift lever	M6	12 Nm (8.9 lbf ft)	Loctite® 243™
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16.1 Checking the gear oil level



Info

The gear oil level must be checked while the engine is cold.



L00075-11

Preparatory work

- Stand the motorcycle upright on a horizontal surface.

Main work

- Remove screw ❶.
- Check the gear oil level.

A small quantity of gear oil should flow out of the opening.

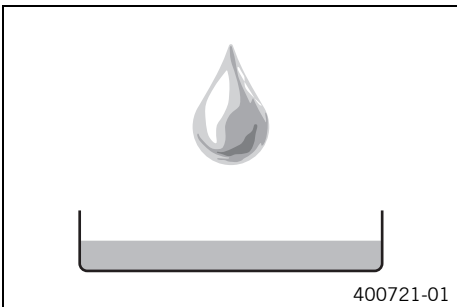
- » If gear oil does not flow out:
 - Add gear oil. 🛠️ (📖 p. 73)

- Mount and tighten screw ❶.

Guideline

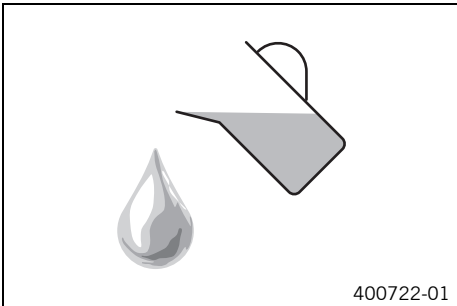
Screw, engine case	M6x25	10 Nm (7.4 lbf ft)
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16.2 Changing the gear oil 🛠️



400721-01

- Drain the gear oil. 🛠️ (📖 p. 72)



400722-01

- Fill up with gear oil. 🛠️ (📖 p. 73)

16.3 Draining the gear oil 🛠️



Warning

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

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



Warning

Environmental hazard Hazardous substances cause environmental damage.

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

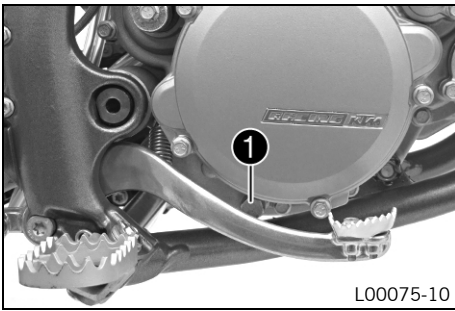


Info

Drain the gear oil while the motor is warm.

Preparatory work

- Stand the motorcycle on its side stand on a horizontal surface.
- Place a suitable container under the engine.



Main work

- Remove oil drain plug ❶ with the magnet.
- Let the gear oil drain fully.
- Thoroughly clean the oil drain plug with magnet.
- Clean the sealing surface on the engine.
- Mount the oil drain plug with the magnet and seal ring and tighten it.

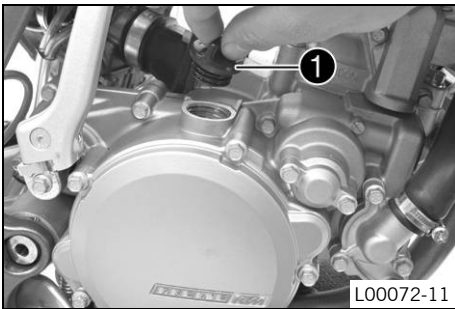
Guideline

Oil drain plug with magnet	M10	20 Nm (14.8 lbf ft)
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16.4 Filling up with gear oil

i Info

Too little gear oil or poor-quality gear oil results in premature wear of the transmission.



Main work

- Remove filler plug ❶ and fill up with gear oil.

Gear oil	0.50 l (0.53 qt.)	Engine oil (15W/50) (☛ p. 85)
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- Mount and tighten filler plug ❶.



Danger

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

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

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

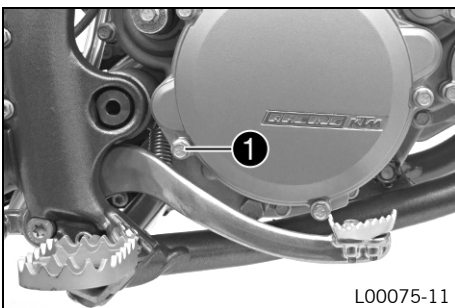
Finishing work

- Check the gear oil level. (☛ p. 72)

16.5 Adding gear oil

i Info

Too little gear oil or poor-quality gear oil results in premature wear of the transmission.

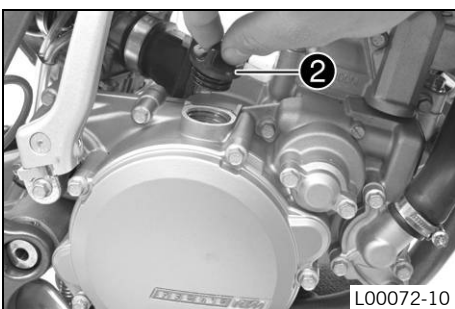


Preparatory work

- Stand the motorcycle upright on a horizontal surface.

Main work

- Remove screw ❶.



- Remove filler plug ❷.
- Add gear oil until it flows out of the bore of the gear oil level screw.

Engine oil (15W/50) (☛ p. 85)

- Mount and tighten screw ❶.

Guideline

Screw, engine case	M6x25	10 Nm (7.4 lbf ft)
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- Mount and tighten filler plug ❷.

**Danger**

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

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

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

Finishing work

- Check the gear oil level. (☛ p. 72)

17.1 Cleaning the motorcycle

Note

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

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

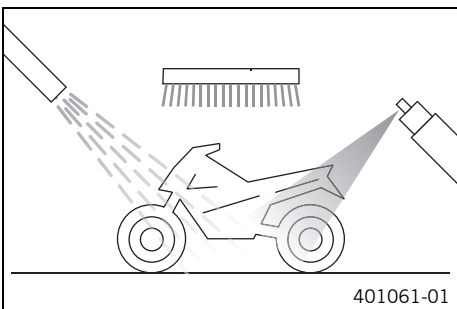
 **Warning**

Environmental hazard Hazardous substances cause environmental damage.

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

 **Info**

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



- Close off the exhaust system to keep water from entering.
- First remove coarse dirt particles with a gentle spray of water.
- Spray very dirty areas with a normal motorcycle cleaner and then clean with a paintbrush.

Motorcycle cleaner (☛ p. 87)

 **Info**

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

- After rinsing the motorcycle with a gentle spray of water, allow it to dry thoroughly.
- Remove the plug from the exhaust system.
- Empty the carburetor float chamber. ☛ (☛ p. 70)

 **Warning**

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

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

- After cleaning, let your child ride the vehicle a short distance until the engine warms up and the brakes have dried due to careful application of the brakes.

 **Info**

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

- Push back the protection covers on the handlebar controls to allow water to evaporate.
- After the motorcycle has cooled off, lubricate all moving parts and bearings.
- Clean the chain. (☛ p. 45)
- Treat bare metal parts (except for the brake discs and exhaust system) with anti-corrosion materials.

Preserving materials for paints, metal and rubber (☛ p. 87)

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

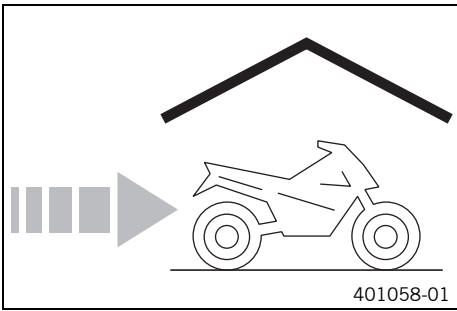
Special cleaner for glossy and matte paint finishes, metal and plastic surfaces (☛ p. 87)

18.1 Storage

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

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

Info
 If you want to garage the motorcycle for a longer period, take the following steps. Before storing the motorcycle, check all parts for function and wear. If service, repairs or replacements are necessary, you should do this during the storage period (less workshop overload). In this way, you can avoid long workshop waiting times at the start of the new season.



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

Fuel additive (☛ p. 87)

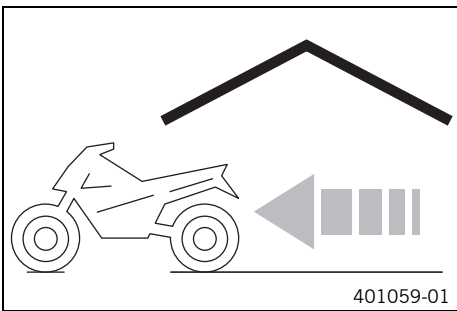
- Refuel. (☛ p. 23)
- Clean the motorcycle. (☛ p. 75)
- Change the gear oil. 🛢️ (☛ p. 72)
- Check the antifreeze and coolant level. (☛ p. 65)
- Check the tire air pressure. (☛ p. 64)
- Empty the carburetor float chamber. 🛢️ (☛ p. 70)
- Store the vehicle in a dry location that is not subject to large fluctuations in temperature.

Info
 KTM recommends raising the motorcycle.

- Raise the motorcycle with the lift stand. (☛ p. 32)
- Cover the vehicle with a tarp or similar cover that is permeable to air.

Info
 Do not use non-porous materials since they prevent humidity from escaping, thus causing corrosion. Avoid running the engine for a short time only. Since the engine cannot warm up properly, the water vapor produced during combustion condenses and causes valves and exhaust system to rust.

18.2 Preparing for use after storage



- Remove the motorcycle from the lift stand. (☛ p. 32)
- Perform checks and maintenance work when preparing the vehicle for use. (☛ p. 20)
- Take a test ride.

Faults	Possible cause	Action
Engine turns but does not start	Operating error	– Carry out the start procedure. (☞ p. 20)
	Motorcycle was out of use for a long time and there is old fuel in the float chamber	– Empty the carburetor float chamber. ☞ (☞ p. 70)
	Fuel feed interrupted	– Check the fuel tank breather. – Clean the fuel tap. – Check/set the carburetor components.
	Spark plug oily or wet	– Clean and dry the spark plug, or change it if necessary.
	Electrode distance (plug gap) of spark plug too wide	– Adjust the plug gap. Guideline Spark plug electrode gap 0.60 mm (0.0236 in)
	Fault in ignition system	– Check the ignition system. ☞ – Adjust the ignition. ☞
	Short circuit cable in wiring harness frayed, kill switch defective	– Check the kill switch. ☞
	Water in carburetor or jets blocked	– Check/set the carburetor components.
Engine has no idle	Idling jet blocked	– Check/set the carburetor components.
	Adjusting screws on carburetor distorted	– Carburetor - adjust the idle speed. ☞ (☞ p. 69)
	Spark plug defective	– Change the spark plug.
	Ignition system defective	– Check the ignition coil. ☞ – Check the spark plug connector. ☞
Engine does not speed up	Carburetor running over because float needle dirty or worn	– Check/set the carburetor components.
	Loose carburetor jets	– Check/set the carburetor components.
	Fault in ignition system	– Check the ignition system. ☞ – Adjust the ignition. ☞
Engine has too little power	Fuel feed interrupted	– Check the fuel tank breather. – Clean the fuel tap. – Check/set the carburetor components.
	Air filter is very dirty	– Clean the air filter and air filter box. ☞ (☞ p. 42)
	Exhaust system leaky, deformed or too little glass fiber yarn filling in main silencer	– Check exhaust system for damage. – Change the glass fiber yarn filling of the main silencer. ☞ (☞ p. 43)
	Fault in ignition system	– Check the ignition system. ☞ – Adjust the ignition. ☞
	Membrane or reed valve housing is damaged	– Check the membrane and reed valve housing.
Engine stalls or is popping into the carburetor	Lack of fuel	– Turn tap handle ❶ on the fuel tap to the ON position. (Figure C00462-10☞ p. 12) – Refuel. (☞ p. 23)
	Engine takes in bad air	– Check intake flange and carburetor for tightness.
	The connector or ignition coil is loose or oxidized	– Clean the connector and treat it with contact spray.
Engine overheats	Too little coolant in cooling system	– Check the cooling system for leaks. – Check the coolant level. (☞ p. 65)
	Too little air stream	– Switch off the engine when standing.
	Radiator fins very dirty	– Clean the radiator fins.
	Foam formation in cooling system	– Drain the coolant. ☞ (☞ p. 66) – Refill the coolant. ☞ (☞ p. 66)

Faults	Possible cause	Action
Engine overheats	Damaged cylinder head or cylinder head gasket	– Check the cylinder head and cylinder head gasket.
	Bent radiator hose	– Change the radiator hose. 🛠️
	Incorrect ignition point due to loose stator	– Adjust the ignition. 🛠️
White smoke emission (steam in exhaust gas)	Damaged cylinder head or cylinder head gasket	– Check the cylinder head and cylinder head gasket.
Gear oil exits at the vent hose	Too much gear oil added	– Check the gear oil level. (👉 p. 72)
Water in the gear oil	Damaged shaft seal ring or water pump	– Check the shaft seal ring and water pump.

20.1 Engine

Design	1-cylinder 2-stroke engine, water-cooled, with reed intake and exhaust control
Displacement	84.93 cm ³ (5.1828 cu in)
Stroke	48.95 mm (1.9272 in)
Bore	47 mm (1.85 in)
Idle speed	1,400... 1,500 rpm
Crankshaft bearing	1 grooved ball bearing / 1 roller bearing
Conrod bearing	Needle bearing
Piston pin bearing	Needle bearing
Pistons	Aluminum cast
Piston rings	1 rectangular ring
X-distance (distance from adjusting gauge to piston)	-0.10... 0.00 mm (-0.0039... 0 in)
Engine lubrication	Mixture oil lubrication
Primary transmission	19:66 straight cut spur gear
Clutch	Multidisc clutch in oil bath/hydraulically activated
Transmission	6-gear, claw shifted
Transmission ratio	
1st gear	11:29
2nd gear	14:28
3rd gear	16:26
4th gear	19:26
5th gear	21:25
6th gear	20:21
Ignition	Moric Digital 2M1
Ignition point (BTDC)	1.34 mm (0.0528 in)
Spark plug	NGK BR9 ECMVX
Spark plug electrode gap	0.60 mm (0.0236 in)
Cooling	Water-cooled
Starting aid	Kick starter

20.2 Engine tightening torques

Stop screw for adjustment cable	M4	4 Nm (3 lbf ft)	Loctite® 243™
Locking cap screw	M5	8 Nm (5.9 lbf ft)	-
Screw, clutch springs	M5	6 Nm (4.4 lbf ft)	-
Screw, control flap, exhaust control	M5	8 Nm (5.9 lbf ft)	Loctite® 243™
Screw, exhaust control cover	M5	6 Nm (4.4 lbf ft)	-
Screw, ignition system/stator	M5	6 Nm (4.4 lbf ft)	Loctite® 222™
Screw, water pump wheel	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Lock screw for control flap	M6	8 Nm (5.9 lbf ft)	Loctite® 243™
Nut, centrifugal timer	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, alternator cover	M6	8 Nm (5.9 lbf ft)	-
Screw, clutch intermediate cover	M6	10 Nm (7.4 lbf ft)	-
Screw, cylinder head	M6	10 Nm (7.4 lbf ft)	-
Screw, engine case	M6x25	10 Nm (7.4 lbf ft)	-
Screw, engine case	M6x40	10 Nm (7.4 lbf ft)	-
Screw, engine sprocket cover	M6	10 Nm (7.4 lbf ft)	-
Screw, exhaust flange	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, intake flange/reed valve housing	M6	10 Nm (7.4 lbf ft)	-
Screw, kick starter	M6	12 Nm (8.9 lbf ft)	Loctite® 243™
Screw, outer clutch 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	12 Nm (8.9 lbf ft)	Loctite® 243™
Screw, slave cylinder of the clutch	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)	–
Nuts, cylinder base	M8	20 Nm (14.8 lbf ft)	–
Screw, locking lever	M8	16 Nm (11.8 lbf ft)	Loctite® 243™
Oil drain plug with magnet	M10	20 Nm (14.8 lbf ft)	–
Primary gear screw	M10x1.25	80 Nm (59 lbf ft)	Loctite® 243™
Nut, rotor	M12x1	60 Nm (44.3 lbf ft)	–
Nut, inner clutch hub	M14x1.25	60 Nm (44.3 lbf ft)	Loctite® 243™
Spark plug	M14x1.25	20 Nm (14.8 lbf ft)	–

20.3 Carburetor

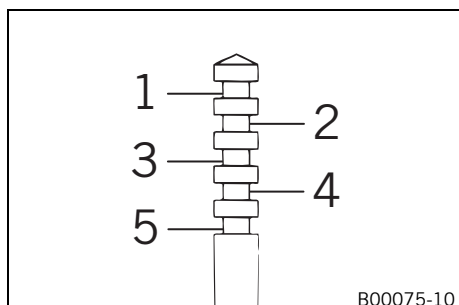
Carburetor type	KEIHIN PWK 28
Needle position	3rd position from top
Idle air adjusting screw	
Open	1.5 turns
Main jet	118
Jet needle	N5HG
Idling jet	45
Needle jet	2,6
Throttle slide	3,5
Cold start jet	62

20.3.1 Carburetor tuning ↗

KEIHIN PWK 28						
M/FT ASL ↓	TEMP →	-20°C ... -7°C	-6°C ... 5°C	6°C ... 15°C	16°C ... 24°C	25°C ... 38°C
		-2°F ... 20°F	19°F ... 41°F	42°F ... 60°F	61°F ... 78°F	79°F ... 98°F
3.000 m 10,000 ft ↑ 2.301 m 7,501 ft	ASO IJ NDL POS MJ	1,5 45 N5HG 2 118	1,75 42 N5HH 3 115	2 40 N5HH 2 115	2,25 38 N5HH 1 115	2,5 38 N5HH 1 115
2.300 m 7,500 ft ↑ 1.501 m 5,001 ft	ASO IJ NDL POS MJ	1,25 48 N5HG 3 120	1,5 45 N5HG 2 118	1,75 42 N5HH 3 115	2 40 N5HH 2 115	2,25 38 N5HH 1 115
1.500 m 5,000 ft ↑ 751 m 2,501 ft	ASO IJ NDL POS MJ	1 50 N5HF 3 122	1,25 48 N5HG 3 120	1,5 45 N5HG 2 118	1,75 42 N5HH 2 115	2 40 N5HH 2 115
750 m 2,500 ft ↑ 301 m 1,001 ft	ASO IJ NDL POS MJ	0,75 50 N5HF 4 125	1 50 N5HF 3 122	1,25 48 N5HG 3 120	1,5 45 N5HG 3 118	1,75 42 N5HH 2 115
300 m 1,000 ft ↑ 0 m 0 ft	ASO IJ NDL POS MJ	0,5 50 N5HF 5 125	0,75 50 N5HF 4 125	1 50 N5HG 3 122	1,25 48 N5HG 3 120	1,5 45 N5HG 2 118

401536-01

M/FT ASL	Above sea level
TEMP	Temperature
ASO	Idle air adjusting screw open (rotations)
IJ	Idling jet
NDL	Jet needle
POS	Needle position from above
MJ	Main jet



1... 5	Needle position from above
--------	----------------------------

The five possible needle positions are shown here.
The carburetor tuning depends on the defined ambient and operating conditions.

20.4 Capacities

20.4.1 Gear oil

Gear oil	0.50 l (0.53 qt.)	Engine oil (15W/50) (☛ p. 85)
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20.4.2 Coolant

Coolant	1.0 l (1.1 qt.)	Coolant (☛ p. 85)
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20.4.3 Fuel

Fuel tank capacity, approx.	5.0 l (1.32 US gal)	Super unleaded (98 octane) mixed with 2-stroke engine oil (1:40) (☛ p. 86)
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20.5 Chassis

Frame	Central tube frame of chrome molybdenum steel tubing, powder-coated	
Fork	WP Performance Systems 4357 MXMA	
Shock absorber	WP Performance Systems 4618 PDS DCC	
Suspension travel		
Front	270 mm (10.63 in)	
Rear	300 mm (11.81 in)	
Fork offset	14 mm (0.55 in)	
Brake system		
Front	Disc brake with four-pot brake caliper	
Rear	Disc brake with two-pot brake caliper	
Brake discs - diameter (85 SX 17/14)		
Front	220 mm (8.66 in)	
Brake discs - diameter (85 SX 19/16)		
Front	240 mm (9.45 in)	
Brake discs - diameter		
Rear	210 mm (8.27 in)	
Brake discs - wear limit		
Front	2.5 mm (0.098 in)	
Rear	3.5 mm (0.138 in)	
Tire air pressure off road		
Front	1.0 bar (15 psi)	
Rear	1.0 bar (15 psi)	
Secondary ratio (85 SX 17/14)	14:46	
Secondary ratio (85 SX 19/16)	14:49	
Chain	1/2 x 5/16"	
Rear sprockets available	44, 45, 46, 47, 48, 49, 50, 51	
Steering head angle	66°	
Wheelbase (85 SX 17/14)	1,290±10 mm (50.79±0.39 in)	
Wheelbase (85 SX 19/16)	1,290±10 mm (50.79±0.39 in)	
Seat height, unloaded (85 SX 17/14)	855 mm (33.66 in)	
Seat height, unloaded (85 SX 19/16)	890 mm (35.04 in)	
Ground clearance, unloaded (85 SX 17/14)	352 mm (13.86 in)	
Ground clearance, unloaded (85 SX 19/16)	377 mm (14.84 in)	
Weight without fuel, approx. (85 SX 17/14)	67.5 kg (148.8 lb.)	
Weight without fuel, approx. (85 SX 19/16)	68.5 kg (151 lb.)	
Maximum rider weight	75 kg (165 lb.)	

20.6 Tires

Validity	Front tires	Rear tires
(85 SX 17/14)	70/100 - 17 40M TT MAXXIS Maxxcross SI	90/100 - 14 49M TT MAXXIS Maxxcross SI
(85 SX 19/16)	70/100 - 19 42M TT MAXXIS Maxxcross SI	90/100 - 16 52M TT MAXXIS Maxxcross SI

Additional information is available in the Service section under:
<http://www.ktm.com>

20.7 Fork

Fork part number	05.18.7M.05	
Fork	WP Performance Systems 4357 MXMA	
Compression damping		
Comfort	18 clicks	
Standard	15 clicks	
Sport	12 clicks	
Rebound damping		
Comfort	18 clicks	
Standard	15 clicks	
Sport	12 clicks	
Spring length with preload spacer(s)	438 mm (17.24 in)	
Spring rate		
Weight of rider: < 45 kg (< 99 lb.)	3.2 N/mm (18.3 lb/in)	
Weight of rider: 45... 55 kg (99... 121 lb.)	3.4 N/mm (19.4 lb/in)	
Weight of rider: > 55 kg (> 121 lb.)	3.6 N/mm (20.6 lb/in)	
Fork length	835 mm (32.87 in)	
Air chamber length	110 ⁺³⁰ ₋₃₀ mm (4.33 ^{+0.78} _{-1.18} in)	
Fork oil per fork leg	378 ml (12.78 fl. oz.)	Fork oil (SAE 4) (48601166S1) (☛ p. 85)

20.8 Shock absorber

Shock absorber article number	15.18.7N.02	
Shock absorber	WP Performance Systems 4618 PDS DCC	
Compression damping, high-speed		
Comfort	2 turns	
Standard	1.5 turns	
Sport	1 turn	
Compression damping, low-speed		
Comfort	18 clicks	
Standard	15 clicks	
Sport	12 clicks	
Rebound damping		
Comfort	18 clicks	
Standard	15 clicks	
Sport	12 clicks	
Spring preload		
Standard	10 mm (0.39 in)	
Spring rate		
Weight of rider: < 45 kg (< 99 lb.)	30 N/mm (171 lb/in)	
Weight of rider: 45... 55 kg (99... 121 lb.)	35 N/mm (200 lb/in)	
Weight of rider: > 55 kg (> 121 lb.)	40 N/mm (228 lb/in)	
Spring length	215 mm (8.46 in)	

Gas pressure	10 bar (145 psi)
Static sag	30 mm (1.18 in)
Riding sag	100 mm (3.94 in)
Fitted length	397 mm (15.63 in)
Shock absorber fluid (☛ p. 86)	SAE 2.5

20.9 Chassis tightening torques

Spoke nipple	M4.5	6 Nm (4.4 lbf ft)	–
Rear brake bolt	M6	12 Nm (8.9 lbf ft)	–
Remaining nuts, chassis	M6	10 Nm (7.4 lbf ft)	–
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)	–
Screw, ball joint of push rod on foot brake cylinder	M6	10 Nm (7.4 lbf ft)	–
Screw, foot brake cylinder	M6	10 Nm (7.4 lbf ft)	–
Screw, front brake disc	M6	14 Nm (10.3 lbf ft)	Loctite® 243™
Screw, rear brake disc	M6	14 Nm (10.3 lbf ft)	Loctite® 243™
Screw, throttle grip	M6	4.5 Nm (3.32 lbf ft)	–
Nut, rim lock	M8	10 Nm (7.4 lbf ft)	–
Remaining nuts, chassis	M8	25 Nm (18.4 lbf ft)	–
Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)	–
Screw of brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
Screw, bottom triple clamp	M8	15 Nm (11.1 lbf ft)	–
Screw, fork stub	M8	15 Nm (11.1 lbf ft)	–
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)	–
Screw, rear sprocket	M8	35 Nm (25.8 lbf ft)	Loctite® 243™
Screw, subframe	M8	30 Nm (22.1 lbf ft)	–
Screw, top triple clamp	M8	20 Nm (14.8 lbf ft)	–
Engine carrying screw	M10	45 Nm (33.2 lbf ft)	–
Remaining nuts, chassis	M10	45 Nm (33.2 lbf ft)	–
Remaining screws, chassis	M10	45 Nm (33.2 lbf ft)	–
Screw, foot brake lever	M10	45 Nm (33.2 lbf ft)	Loctite® 243™
Screw, handlebar support	M10	40 Nm (29.5 lbf ft)	Loctite® 243™
Screw, bottom shock absorber	M12	60 Nm (44.3 lbf ft)	Loctite® 2701™
Screw, top shock absorber	M12	60 Nm (44.3 lbf ft)	Loctite® 2701™
Nut, seat fixing	M12x1	20 Nm (14.8 lbf ft)	–
Nut, swingarm pivot	M14x1.5	75 Nm (55.3 lbf ft)	–
Nut, rear wheel spindle	M20x1.5	80 Nm (59 lbf ft)	–
Nut, steering stem	M20x1.5	10 Nm (7.4 lbf ft)	–
Screw, front wheel spindle	M20x1.5	35 Nm (25.8 lbf ft)	–

Brake fluid DOT 4 / DOT 5.1

Standard/classification

- DOT

Guideline

- Use only brake fluid that complies with the specified standard (see specifications on the container) and that exhibits the corresponding properties.

Recommended supplier

Castrol

- **RESPONSE BRAKE FLUID SUPER DOT 4**

Motorex®

- **Brake Fluid DOT 5.1**

Coolant

Guideline

- Only use high quality coolant with corrosion inhibitor for aluminum motors (even in countries with high temperatures). Using inferior antifreeze can result in corrosion and foaming.

Mixture ratio

Antifreeze protection: -25... -45 °C (-13... -49 °F)	anti-corrosion/antifreeze distilled water
--	---

Recommended supplier

Motorex®

- **COOLANT M3.0**

Engine oil (15W/50)

Standard/classification

- JASO T903 MA (☛ p. 89)
- SAE (☛ p. 89) (15W/50)

Guideline

- Use only engine oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties.

Recommended supplier

Motorex®

- **Top Speed 4T**

Engine oil, 2-stroke

Standard/classification

- JASO FD (☛ p. 89)

Guideline

- Only use high grade 2-stroke engine oil of a reputable brand.

Fully synthetic

Recommended supplier

Motorex®

- **Cross Power 2T**

Fork oil (SAE 4) (48601166S1)

Standard/classification

- SAE (☛ p. 89) (SAE 4)

Guideline

- Use only oils that comply with the specified standards (see specifications on the container) and that exhibit the corresponding properties.

Shock absorber fluid (SAE 2.5) (50180751S1)

Standard/classification

- SAE (☛ p. 89) (SAE 2.5)

Guideline

- Use only oils that comply with the specified standards (see specifications on the container) and that exhibit the corresponding properties.

Super unleaded (ROZ 98 / RON 98 / PON 94)

Standard/classification

- DIN EN 228 (ROZ 98 / RON 98 / PON 94)

Super unleaded (98 octane) mixed with 2-stroke engine oil (1:40)

Standard/classification

- DIN EN 228
- JASO FD (☛ p. 89) (1:40)

Mixture ratio

1:40	Engine oil, 2-stroke (☛ p. 85) Super unleaded (ROZ 98 / RON 98 / PON 94) (☛ p. 86)
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Recommended supplier

Motorex®

- Cross Power 2T

Air filter cleaner

Recommended supplier

Motorex®

- Racing Bio Dirt Remover

Chain cleaner

Recommended supplier

Motorex®

- Chain Clean

Fuel additive

Recommended supplier

Motorex®

- Fuel Stabilizer

Grip adhesive (00062030051)

Recommended supplier

KTM Motorrad AG

- GRIP GLUE

High viscosity grease

Recommended supplier

SKF®

- LGHB 2

Long-life grease

Recommended supplier

Motorex®

- Bike Grease 2000

Motorcycle cleaner

Recommended supplier

Motorex®

- Moto Clean

Off-road chain spray

Recommended supplier

Motorex®

- Chainlube Offroad

Oil for foam air filter

Recommended supplier

Motorex®

- Racing Bio Liquid Power

Preserving materials for paints, metal and rubber

Recommended supplier

Motorex®

- Moto Protect

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

Recommended supplier

Motorex®

- Quick Cleaner

Universal oil spray

Recommended supplier

Motorex®

– Joker 440 Synthetic

JASO T903 MA

Different technical development directions required a new specification for 4-stroke motorcycles – the JASO T903 MA Standard. Earlier, engine oils from the automobile industry were used for 4-stroke motorcycles because there was no separate motorcycle specification. Whereas long service intervals are demanded for automobile engines, high performance at high engine speeds are in the foreground for motorcycle engines. In most motorcycles, the gearbox and the clutch are lubricated with the same oil as the engine. The JASO MA Standard meets these special requirements.

SAE

The SAE viscosity classes were defined by the Society of Automotive Engineers and are used for classifying oils according to their viscosity. The viscosity describes only one property of oil and says nothing about quality.

JASO FD

JASO FD is a classification for a 2-stroke engine oil that was specifically developed for the extreme demands of racing. Thanks to first rate synthetic esters and specially designed additives, superb combustion is achieved even under extreme operating conditions.

24 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

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