OWNER'S MANUAL 2012

525 XC ATV

Art. no. 3211727en

DEAR KTM CUSTOMER

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

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

Enter the serial numbers of your vehicle below.

Chassis number (☛ p. 16)	Dealer's stamp
Engine number (☛ p. 17)	
Key number (☛ p. 17)	

The owner's manual corresponded to the latest state of this series at the time of printing. Slight deviations resulting from continuing development and design can however not be completely excluded.

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ISO 9001(12 100 6061)
According to the international quality management standard ISO 9001, KTM uses quality assurance processes that lead to the maximum possible quality of the products.
Issued by: TÜV Management Service

KTM-Sportmotorcycle AG
5230 Mattighofen, Austria

TABLE OF CONTENTS

Symbols used

The symbols used are explained in the following.

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

Indicates an unexpected reaction (e.g. to 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 at an authorized KTM workshop! There, your vehicle will be serviced optimally by specially trained experts using the specialist tools required.

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

Formats used

The typographical and other formats used are explained below.

Specific name	Identifies a proprietary name.
Name®	Identifies a protected name.
Brand™	Identifies a brand in merchandise traffic.

Use definition

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

Warning

Danger of accidents Incorrect assessment of riding situations.

– The vehicle may only be ridden by persons over the age of 16.

Info

The ATV must be used only on secluded property remote from public road traffic.
The ATV is designed for off-road sport endurance competition (Enduro) and not predominantly for motocross use.

Service

A prerequisite for perfect operation and prevention of wear is that the service, care, and adjustment work on the engine and chassis described in the Owner's Manual are properly carried out. Poor adjustment and tuning of the engine and chassis can lead to damage and breakage of components.
Using the vehicle in difficult conditions such as on sand or very muddy or wet terrain can lead to above-average wear of components such as the drive train or the brakes. For this reason, it may be necessary to service or replace worn parts before the limit specified in the service schedule is reached.
Pay careful attention to the prescribed running-in period and inspection and service intervals. If you observe these exactly, you will ensure a much longer service life for your vehicle.

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 record and in the **KTM dealer.net**; otherwise, all warranty claims will be void. No warranty claims can be accepted for damage resulting from manipulations and/or alterations to the vehicle.

Fuel, oils, etc.

You should use the fuels, oils and greases according to specifications as listed in the owner's manual.

Spare parts, accessories

For your own safety, only use spare parts and accessories that have been 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 accessories are specified in parentheses in the descriptions. Your 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

Work rules

Special tools are needed for certain tasks. They are not included with the vehicle but can be ordered under the number in parentheses.
E.g.: valve spring mounter (59029019000)
During assembly, non-reusable parts (e.g. self-locking screws and nuts, seals, seal rings, O-rings, pins, lock washers) must be replaced by new parts.
Where thread lockers are used on screw connections (e.g., **Loctite®**), follow the instructions for use from the manufacturer.
Parts that are to be reused after disassembly must be cleaned and checked for damage and wear. Replace damaged or worn parts.
After finishing the repair and maintenance work, ensure that the vehicle is roadworthy.

Rider training

If you have never ridden an ATV before, it is important that you participate in a driver training course before you ride the vehicle for the first time.
A professional trainer will show you how to handle your ATV safely in various riding situations and on different terrain.
Your KTM dealer will be glad to advise you.

Transport

Note

Danger of damage Danger of damage from accidental rolling of vehicle.

– Park the vehicle on a surface that is as level as possible and activate the parking brake.

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.
– Turn the handle ❶ of the fuel tap to **OFF**. (Figure 100013-10☛ p. 26)
– Use straps or other suitable devices to secure the vehicle against accidents or falling over.
– Pull the hand brake lever, push the locking pawl ❷ down and release the hand brake lever. (Figure 100006-10☛ p. 20)

Environment

Off-road riding is a wonderful sport and we naturally hope that you will be able to enjoy it to the fullest. However, it is a potential problem for the environment and can lead to conflicts with other persons. But if you use your vehicle responsibly, you can ensure that such problems and conflicts do not have to occur. To protect the future of off-road sport, make sure that you use your ATV legally, display environmental consciousness, and respect the rights of others.

Notes/warnings

Pay close attention to the notes/warnings.

Info
Various information and warning labels are affixed to the vehicle. Do not remove information/warning labels. If they are missing, you or others may not recognize potential hazards and may therefore be injured.

Grades of risks

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

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

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

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

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

Owner's manual

- It is important that you read this owner's manual carefully and completely before making your first trip. It contains a lot of information and tips to help you operate and handle your vehicle. Only then will you find out how to customize the vehicle ideally for your own use and how you can protect yourself from injury. The owner's manual also contains important information on servicing the vehicle.
- 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.

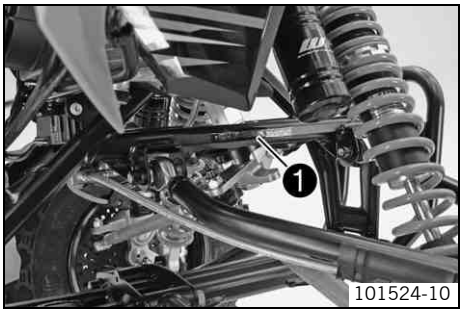
View of the vehicle from the left front (example)

1	Hand brake lever, parking brake (☛ p. 20)
2	Fuse box
3	Compression adjustment for front shock absorber
4	Front left shock absorber
5	Rebound adjustment for front shock absorber
6	Reverse gear release lever (☛ p. 19)
7	Clutch lever (☛ p. 19)
8	Filler cap
9	Emergency OFF switch with rip cord (☛ p. 24)
10	Shift lever (☛ p. 28)

View of the vehicle from the right rear (example)

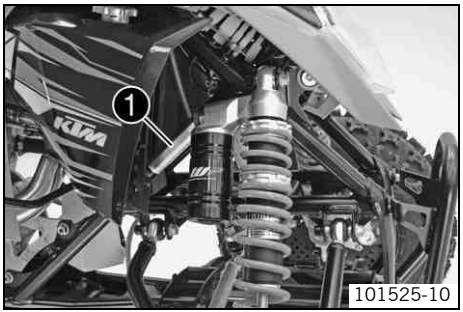
1	Ignition lock (☛ p. 23)
2	Light switch (☛ p. 21)
2	**ENG. STOP** switch (☛ p. 22)
2	Electric starter button (☛ p. 22)
3	Main silencer
4	Seat release
5	Rear shock absorber
6	Rebound adjustment for rear shock absorber
7	Rear brake
8	Throttle lever (☛ p. 21)
9	Compression adjustment for rear shock absorber
10	Foot brake lever (☛ p. 29)

Chassis number



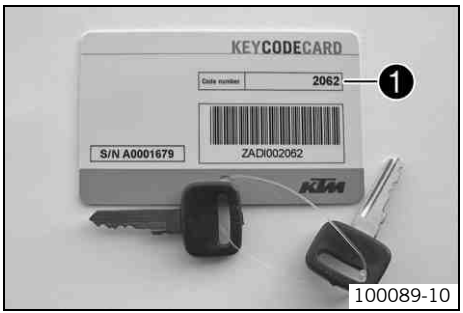
The chassis number ❶ is stamped on the right side of the frame in the vicinity of the upper A-arm.

Type label



The type label ❶ is located on the frame tube on the right in front of the radiator.

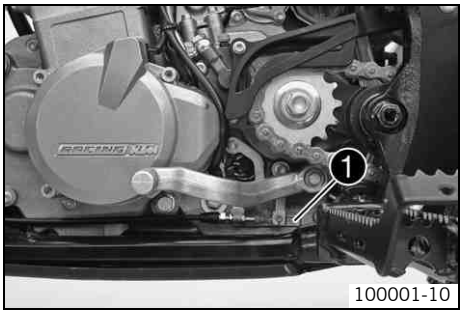
Key number



The key number ❶ is indicated on the **KEYCODECARD**.

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

Engine number

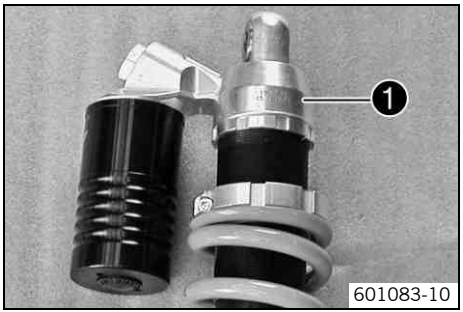


The engine number ❶ is stamped on the left side of the engine under the engine sprocket.

Setting number, front shock absorber

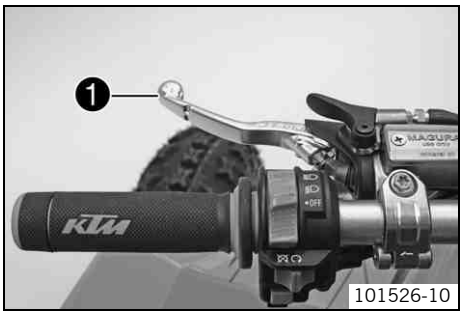
The setting number ❶ is stamped into the top of the shock absorber.

Setting number, rear shock absorber



The setting number ❶ is stamped into the top of the shock absorber.

Clutch lever



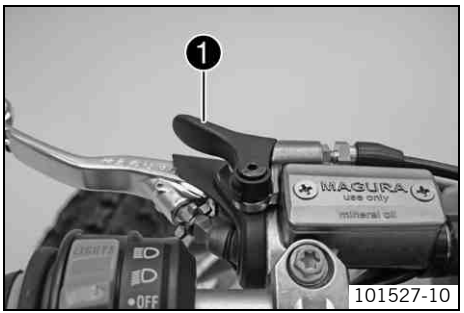
The clutch lever ❶ is fitted on the left side of the handlebar.

Possible states

- Clutch lever in neutral position – In this position, the engine is force-locked with the gear and the starting circuit is interrupted. The electric starter does not turn over when the electric starter button is pressed.
- Clutch lever pulled – In this position, the force lock between the engine and the gear is broken and the starting circuit is closed. The electric starter turns over when the electric starter button is pressed.

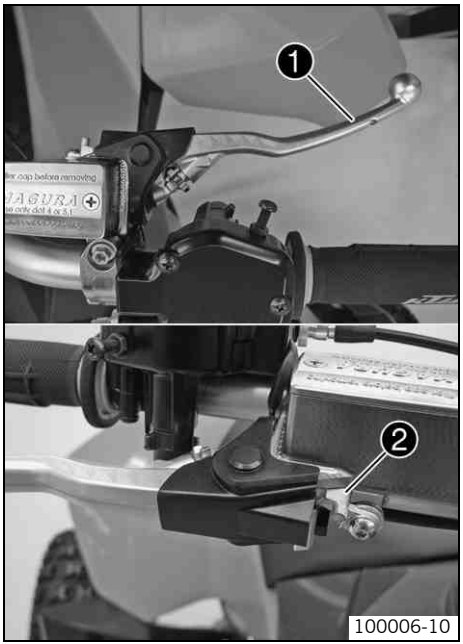
The clutch is hydraulically operated and self-adjusting.

Reverse gear release lever



The reverse gear release lever ❶ is fitted on the left side of the handlebar.
Reverse gear can only be engaged when the reverse gear release lever is activated while the vehicle is at a standstill.

Hand brake lever, parking brake

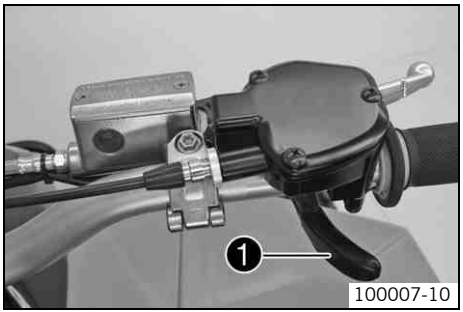


The hand brake lever ❶ is located on the right side of the handlebar and operates the front brakes.
The hand brake lever is combined with the parking brake, which blocks the front wheels to prevent the vehicle from rolling away.
To activate the parking brake, pull the hand brake lever, push the locking pawl ❷ down and release the hand brake lever.

Possible states

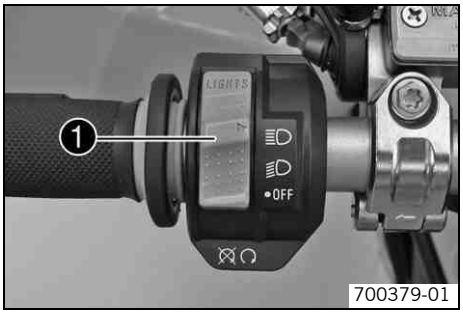
- Hand brake lever in basic position – Front wheels are not locked.
- Hand brake lever pulled and locked in position – Front wheels are locked.

Throttle lever



The throttle lever ❶ is fitted on the right side of the handlebar.
The throttle lever is used to control the engine speed.

Light switch

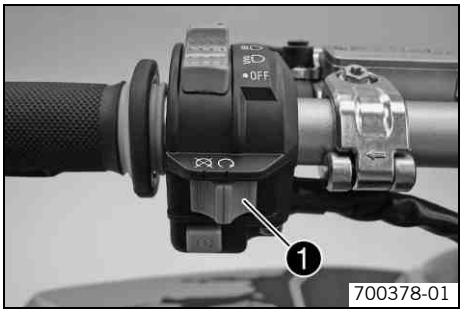


The light switch ❶ is fitted on the left side of the handlebar.

Possible states

	High beam on – Light switch is turned upwards. In this position, the high beam and the tail light are switched on.
	Low beam on – Light switch at the middle setting. In this position, the low beam and tail lights are switched on.
•OFF	Lights off – Light switch has been turned down. In this position, all lights are switched off.

ENG. STOP switch



The **ENG. STOP** switch ❶ is fitted on the left side of the handlebar.

Possible states

	**ENG. STOP** switch off – In this position, the ignition circuit is interrupted, a running engine stops, and the engine cannot be started.
	**ENG. STOP** switch on – The switch must be in this position to operate the vehicle; the ignition circuit is closed.

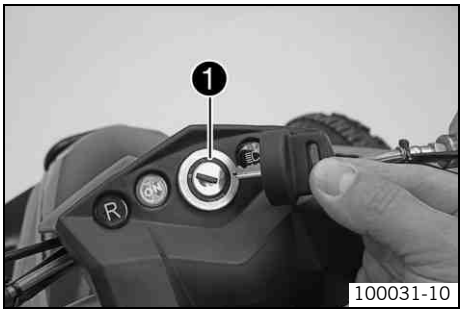
Electric starter button

Electric starter button ❶ is fitted on the left side of the handlebar.

Possible states

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

Ignition lock

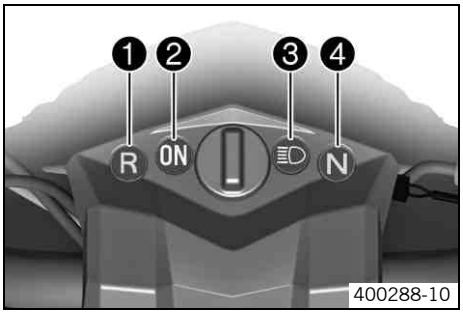


The ignition lock ❶ is located on the instrument support.

Possible states

	Ignition off – In this position, the ignition circuit is interrupted, a running engine stops, and a standing engine will not start.
	Ignition on – In this position, the ignition circuit is closed and the engine can be started.

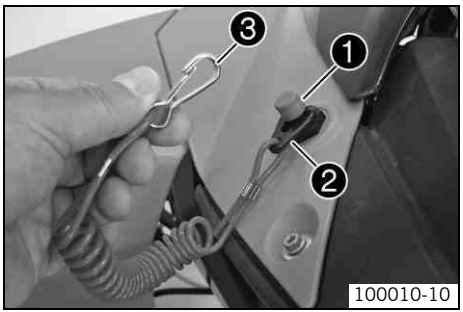
Indicator lamp overview



Possible states

	Reverse gear indicator lamp ❶ lights up red – Reverse gear is engaged.
	Ignition indicator lamp ❷ lights up yellow – Ignition is switched on.
	High beam indicator lamp ❸ lights up blue – High beam is switched on.
	Idling speed indicator lamp ❹ lights up green – Transmission is switched to idle.

Emergency OFF switch with rip cord



The emergency OFF switch ❶ is mounted on the left in front of the fuel tank. A rip cord is attached to clip ❷. It can be attached to the clothing of the rider by means of carabiner ❸. The emergency OFF switch shuts the engine off if the rider falls off the vehicle.

Possible states

- Clip is pulled off – The ignition circuit is interrupted, a running engine stops and a non-running engine will not start.
- Clip is mounted – The ignition circuit is closed and the engine can be started.

Opening 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.

– Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the notes on refueling.

Warning

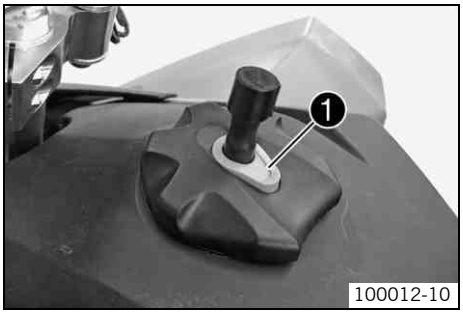
Danger of poisoning Fuel is poisonous and a health hazard.

– Avoid contact between fuel and skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact with fuel. Store fuel in a suitable canister according to regulations and keep it out of the reach of children.

Warning

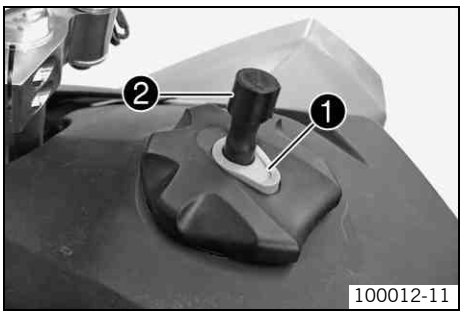
Environmental hazard Improper handling of fuel is a danger to the environment.

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



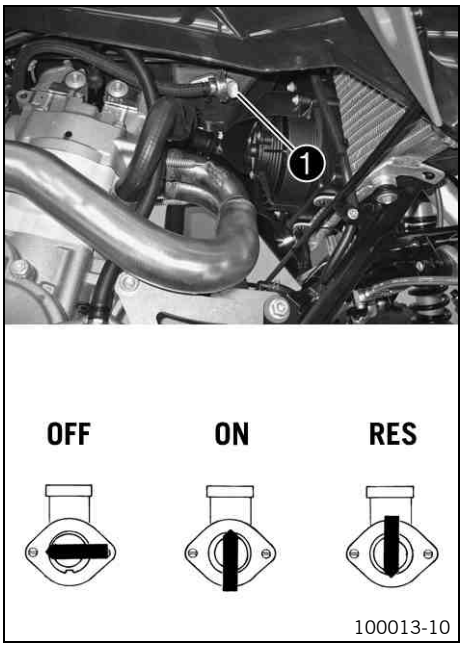
– Press release button ❶, turn filler cap counterclockwise and lift it free.

Closing filler cap



– Replace the filler cap and turn clockwise until the release button ❶ locks in place.
– Check the fuel tank breather ❷ to ensure it is properly seated.
  » If the fuel tank breather is at an angle or loose:
    – Correctly mount the fuel tank breather.

Fuel tap

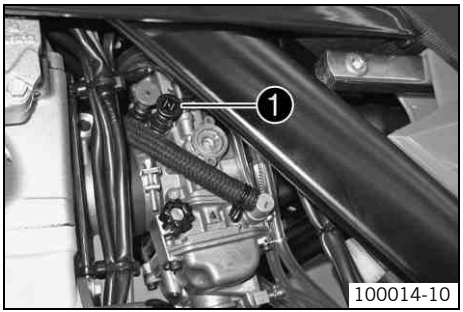


The fuel tap is on the right of the fuel tank.
With the tap handle ❶ on the fuel tap, you can open or close the supply of fuel to the carburetor.

Possible states

- Fuel supply off **OFF** – No fuel can flow from the tank to the carburetor.
- Fuel supply on **ON** – Fuel can flow from the tank to the carburetor. The fuel tank empties down to the reserve.
- Reserve fuel supply on **RES** – Fuel can flow from the tank to the carburetor. The fuel tank empties completely.

Choke

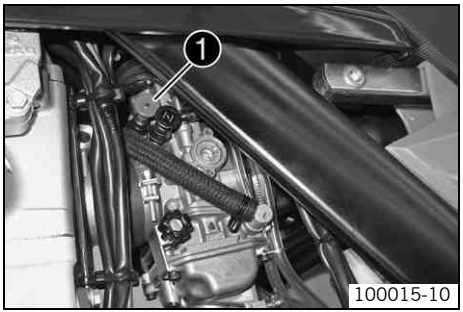


The choke ❶ is fitted on the left side of the carburetor.
Activating the choke function frees an opening through which the engine can draw extra fuel. This gives a richer fuel-air mixture, which is needed for a cold start.

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.

Hot start button

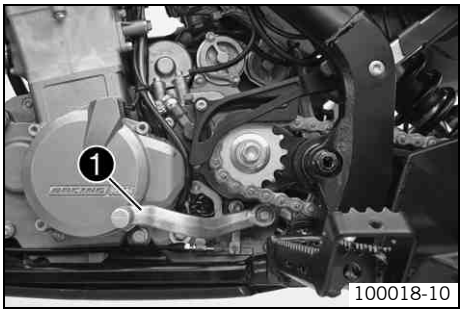


The hot start button (red) ❶ is fitted on the left side of the carburetor.
Activating the hot start function frees an opening in the carburetor through which the engine can draw extra air. This gives a leaner fuel-air mixture, which is needed for a hot start.

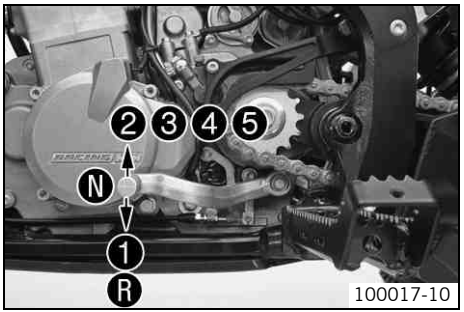
Info
If the engine is cold, the hot start function must be deactivated.

Possible states
- Hot start function activated – The hot start button is pulled out to the stop.
- Hot start function deactivated – The hot start button is pushed in as far as possible.

Shift lever

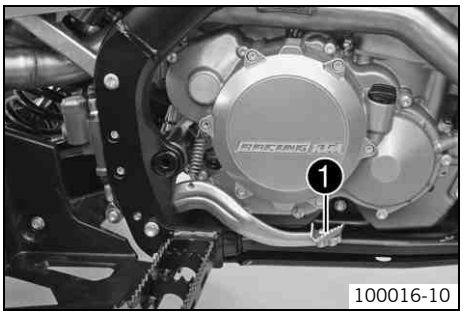


The shift lever ❶ is mounted on the left side of the engine.



The gear positions can be seen in the photograph.
The neutral or idle position is between the first and second gears.
Reverse gear can only be engaged with the vehicle at a standstill and the lever pulled.

Foot brake lever



The foot brake lever ❶ is located in front of the right footrest and operates the rear wheel brake.

Checks and maintenance measures when preparing for use

Info

Before each use, check the condition of the vehicle and its operating safety.
The vehicle must be in perfect technical condition when it is being operated.

- Check the engine oil level. (☛ p. 160)
- Check the electrical system.
- Check the front brake fluid level. (☛ p. 113)
- Check the rear brake fluid level. (☛ p. 123)
- Check the front brake linings. (☛ p. 116)
- Check the rear brake linings. (☛ p. 126)
- Check that the brake system is functioning properly.
- Check the coolant level. (☛ p. 146)
- Check the chain dirt accumulation. (☛ p. 97)
- Check the chain, rear sprocket, engine sprocket, and chain guide. (☛ p. 101)
- Check the chain tension. (☛ p. 98)
- Check the tire condition. (☛ p. 133)
- Check the tire air pressure. (☛ p. 134)
- Check the air filter.
- Check the settings of all controls and ensure that the controls can be operated smoothly.
- Check all screws, nuts, and hose clamps regularly for tightness.
- Check the fuel supply.

Running in the engine

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

Guideline

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

– Avoid fully opening the throttle!

Checks and maintenance measures when preparing for use

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- Check all screws, nuts, and hose clamps regularly for tightness.
- Check the fuel supply.

Starting

Danger

Danger of poisoning Exhaust gases are poisonous 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 engine 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.
Press the starter for a maximum of 5 seconds. Wait for a least 5 seconds before trying again.

Condition

Vehicle has not been operated: ≥ 1 week

– Empty the carburetor float chamber. 🔧 (☛ p. 157)

– Turn the handle ❶ of the fuel tap to **ON**. (Figure 100013-10☛ p. 26)

✓ Fuel can flow from the tank to the carburetor.

– Mount the vehicle.

– Insert the clip ❷ into the emergency OFF switch and fasten the rip cord to the clothing of the rider. (Figure 100010-10☛ p. 24)

– Press the **ENG. STOP** switch to the position ○.

– Turn the key in the ignition lock to the position ○.

✓ The yellow ignition indicator lamp **ON** lights up.

Info

Under no circumstances should you open the throttle when switching on the ignition!
The vehicle is equipped with a safety system that switches off the engine in case of a malfunction in the throttle lever, cable, or carburetor. When the ignition is switched on, a system check is performed during which the throttle lever must be in its basic position. If not, the safety system detects a malfunction and blocks the ignition current. When the electric starter button is activated, the electric starter turns over the engine, but the engine does not start because there is no ignition spark.

– Shift gear to neutral.

✓ The green idling speed indicator lamp **N** light up.

Condition

The engine is cold

– Pull choke lever out as far as possible.

Condition

Engine hot

– Pull the hot start button (red) all the way out.

– Pull the clutch lever.

– Press the electric starter button ⓢ.

Info

When the clutch lever is not pulled, the starting circuit is not closed. The electric starter does not turn over when the electric starter button is pressed.
Don't open the throttle.

– Release the clutch lever.

Condition

The engine is hot and running

– Push the hot start button in as far as possible when the engine is running.

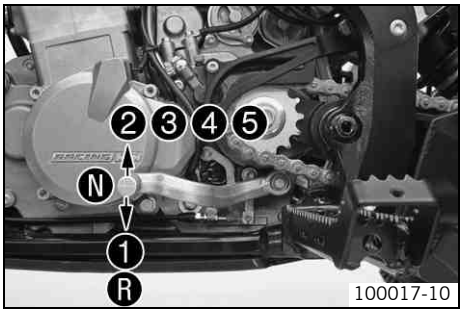
Starting off

Info
Switch on the light before riding the vehicle. You will then be seen earlier by other motorists.

– Pull the hand brake lever and release it again.
  ✓ Locking pawl moves into its basic position, parking brake is deactivated.
– Pull the clutch lever, engage 1st gear, release the clutch lever slowly, and simultaneously open the throttle carefully.

Shifting

Warning
Danger of accidents If you change down at high engine speed, the rear wheels can lock.
– Do not change into a low gear at high engine speed. The engine races and the rear wheels can lock.



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

Info
The position of the 5 forward gears can be seen in the illustration. First gear is used for starting off or for steep inclines.

– To shift down, brake if necessary and close the throttle at the same time.
– Pull the clutch lever and shift into a lower gear, release the clutch lever slowly and open the throttle or shift again.

Shifting to reverse gear

Warning

Danger of accidents Danger of accidents from blocked rear wheels if reverse gear is engaged while the vehicle is rolling.

– To engage reverse gear, it is important to stop the vehicle first and have the engine at idle speed.

Note

Transmission damage Danger of transmission damage when engaging reverse gear while the vehicle is rolling.

– To engage reverse gear, it is important to stop the vehicle first and have the engine at idle speed.

– Stop the vehicle and run the engine at idling speed.
– Activate the clutch and engage 1st gear.
– Apply light pressure to the shift lever and activate the reverse gear release lever. Press the shift lever all the way down with your foot to engage reverse gear.
– Release the reverse gear release lever.
– Look toward the rear and slowly release the clutch lever while depressing the accelerator carefully.

Info

The engine speed is limited when reverse gear is engaged.

Disengaging reverse gear

Warning

Danger of rollovers The vehicle can roll over if the clutch lever is released with the forward gear engaged while the vehicle is rolling backward.

– To disengage reverse gear, it is important that you stop the vehicle first.

Warning

Danger of accidents Danger of accidents from blocked rear wheels if reverse gear is disengaged while the vehicle is rolling.

– To disengage reverse gear, it is important that you stop the vehicle first.

Note

Transmission damage Danger of transmission damage when disengaging reverse gear while the vehicle is rolling.

– To disengage reverse gear, it is important that you stop the vehicle first.

– Activate the clutch, stop the vehicle and let the engine run at idling speed.
– Press the shift lever up until 1st gear engages.

Info

The reverse gear release lever no longer needs to be activated.

– Slowly release the clutch lever while carefully depressing the accelerator or shifting into neutral.

Braking

Warning

Danger of accidents If you brake too hard, the wheels can lock. When the front wheels lock, the vehicle can no longer be steered.

– 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 wet or dirty brakes.

– Clean or dry dirty or wet brakes by riding and braking gently.

Info

Use the hand brake lever to activate the front brakes and the foot brake pedal to activate the rear brakes.

– When braking, release the throttle and apply the front and rear brakes at the same time.
– Shift the transmission to lower gears according to the vehicle's speed.
– Braking should always be completed before you go into a bend.
– On long downhill stretches, use the braking effect of the engine. Change down one or two gears, but do not overstress the engine. In this way, you will need to apply the brakes less often and the brakes will not overheat.

Riding

Info

If you hear unusual noises while riding, stop immediately, switch off the engine and contact an authorized KTM workshop.
If the vehicle goes out of control and you fall off the vehicle, the clip of the emergency OFF switch is pulled off by the rip cord attached to your clothing. This short-circuits the ignition circuit and the engine switches off.

– During normal operation, you sit erect on the vehicle with both hands on the handlebar and both feet on the footrests.
– If the choke function was activated, deactivate it after the engine has warmed up.
– After reaching maximum speed by fully opening the throttle, close the throttle so it is 3/4 open.
  ✓ This barely reduces vehicle speed but lowers fuel consumption considerably.
– Always open the throttle only as much as the engine can handle – abrupt pressure on the throttle increases fuel consumption.
– Switch off the engine if you expect to be standing for a long time.

Guideline

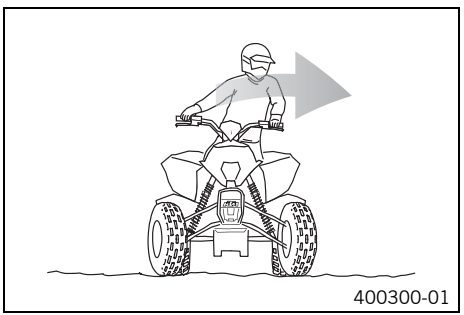
≥ 2 min

– Avoid slipping the clutch frequently and for prolonged periods. This heats the engine oil, the engine and the cooling system.
– Ride with a lower engine speed instead of with a high engine speed and a slipping clutch.

Riding in bends

Info

When riding in bends, the outer wheels cover a greater distance than the inner wheels. Because the rear axle of the ATV is rigid in design, the rear wheels turn at the same speed. The difference in distance is compensated by slippage of the tires.


400300-01

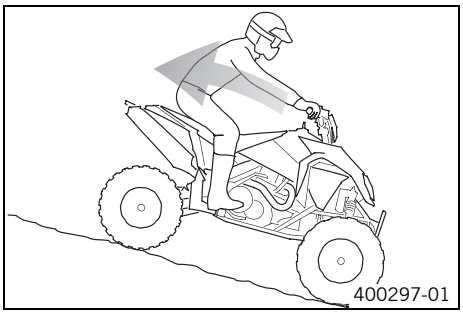
Warning

Danger of accidents Excessive speed and turning at sharp angles can cause the vehicle to roll over.

– Decrease your speed before entering into bends.

– Handling of the ATV is strongly influenced by shifts in the position of your body weight. Always shift your body weight toward the inside of the bend and forward.
– The faster you ride and the tighter the bend, the more you need to shift your body weight.
– Always exert pressure on the footrest on the inside of the bend.
– Look in the direction of the bend while you are riding.
– The farther back you are sitting, the more the vehicle has the tendency to move straight ahead. The farther forward you shift your weight, the more pressure is applied to the front axle and the more easily the vehicle can take the bend.

Riding downhill



Warning

Danger of accidents Danger of accidents when riding on slopes.

- Always check the terrain before riding onto a slope.
- Never ride on a slope with an inclination of more than 25°.
- Never ride on a slope that exceeds your driving skills.
- Never ride down a slope backward. If you activate the rear brake, the vehicle will roll over.
- When you come to a standstill, always dismount from the vehicle and turn it.
- Never ride on a slope with a slippery surface. The vehicle can easily go out of control and roll over.

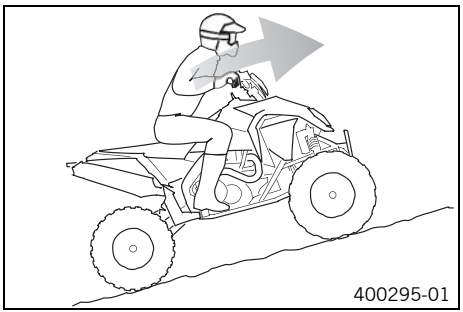
Note

Material damage Damage to vehicle after fall or rollover.

- Perform a vehicle check as is done every time before you start to ride.

- Always ride straight up or down a slope and never at a slant.
- Engage a gear with which you can ride all the way down the slope without shifting.
- Shift your body weight to the rear and ride cautiously without opening the throttle.
- Keep your vehicle speed and engine speed as constant as possible.
- Always be prepared to jump sideways off the vehicle should it go out of control.
- Brake by mainly applying the rear brake; the rear wheels should not become locked.

Riding uphill



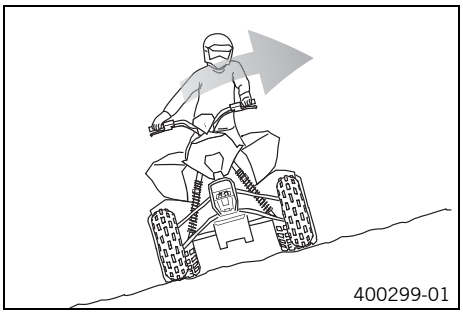
Warning

Danger of accidents Danger of accidents when riding on slopes.

- Always check the terrain before riding onto a slope.
- Never ride on a slope with an inclination of more than 25°.
- Never ride on a slope that exceeds your driving skills.
- Never ride down a slope backward. If you activate the rear brake, the vehicle will roll over.
- When you come to a standstill, always dismount from the vehicle and turn it.
- Never ride on a slope with a slippery surface. The vehicle can easily go out of control and roll over.

- Always ride straight up or down a slope and never at a slant.
- Engage a gear with which you can ride all the way up the slope without shifting. Shifting on the slope can cause the vehicle to roll over.
- Shift your body weight to the front and ride cautiously.
- Keep your vehicle speed and engine speed as constant as possible.
- Always be prepared to jump sideways off the vehicle should it go out of control.
- Drive slowly over hilltops to give yourself the opportunity to react to obstacles and changes in terrain.
- If the vehicle comes to a stop, immediately activate both brakes to prevent the vehicle from rolling backward. Dismount from the vehicle and turn it.

Riding perpendicular to the slope



Warning

Danger of accidents When riding perpendicular to a slope, the vehicle can tip easily and roll over.

- Avoid riding perpendicular to the slope if possible.
- Ride slowly and shift you weight toward the slope.

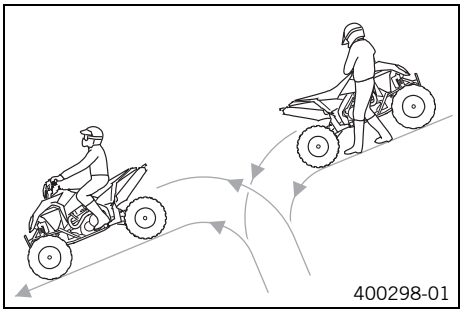
- When the vehicle first begins tipping, steer the vehicle downhill and immediately dismount on the uphill side.

Turning on slopes

Warning

Danger of accidents Danger of accidents from turning the vehicle on a slope.

- Never ride down a slope backward. The vehicle can roll over easily.
- Always position yourself next to the vehicle in a location where you cannot be caught by a wheel.
- When turning on a slope, always stand on the uphill side of the vehicle to avoid injury should the vehicle tip.
- If the slope is too steep or slippery to turn the vehicle, you should leave it where it is and get assistance in retrieving it.

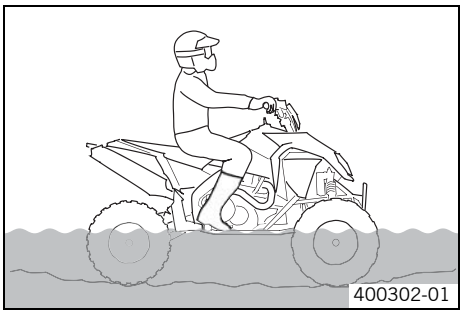


– After coming to a stop on a slope with your vehicle, dismount from the vehicle and turn it.
– Switch off the engine and activate the parking brake.

Info
A gear must be engaged.

– Dismount from the vehicle on the uphill side.
– Grasp the handlebar with both hands, release the parking brake, and carefully pull the clutch.
– Let the vehicle roll downhill carefully until you reach a location where you can turn it. Control its speed using the clutch.
– To turn the vehicle, steer it to the side. When doing so, you should always stand on the uphill side and apply pressure to the footrest on the uphill side.
– When the vehicle is standing perpendicular to the slope or slightly downhill, apply the parking brake.
– Sit on the vehicle, pull the clutch lever, start the engine, carefully loosen the parking brake, and ride down the hill in 1st gear.
– Ride downhill. (☛ p. 40)
– If you lose control over the vehicle, you should get away from the vehicle as fast as possible.

Riding through water



Warning

Danger of accidents The vehicle can roll over when riding through deep water with a strong current.

– Avoid riding through deep water with a strong current.

Warning

Danger of accidents Reduced braking efficiency due to wet or dirty brakes.

– Clean or dry dirty or wet brakes by riding and braking gently.

Note

Engine failure When riding through deep water, water can enter into the engine through the air filter and cause engine damage.

– Only ride through water if it reaches no higher than the upper edge of the footrest.

– Before riding through water, determine the depth and current of the water.
– Ride slowly and negotiate around obstacles.
– After riding through water, dry the brakes by lightly activating both brakes until normal braking power is available again.
– If the vehicle became submerged, an authorized KTM workshop must perform a thorough check and comprehensive service. Do not start the engine.

Switching off the engine

Info

There are three ways to switch off the engine.

Alternative 1

Switch off the engine using the ignition key.

– Turn the key in the ignition lock to the position ⊠.

Info
All power consumers are switched off.

Alternative 2

Switch off the engine using the **ENG. STOP** switch.

– Press the **ENG. STOP** switch to the position ⊠.

Info
All power consumers are switched off.

Alternative 3

Switch off the engine using the emergency OFF switch with a rip cord.

– Pull off clip ❷. (Figure 100010-10☛ p. 24)

Info
When the engine is switched off using the emergency OFF switch, the power consumers are not switched off. All power consumers that are switched on (headlights, tail lights, etc.) continue consuming electricity. This uses battery power and causes the battery to discharge.

Stopping, parking

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 brakes. Allow these components to cool down before starting work on them.

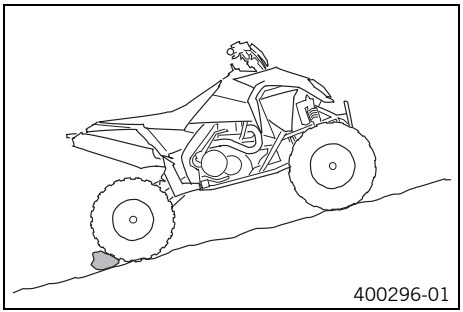
Note
Danger of damage Danger of damage from accidental rolling of vehicle.

– Park the vehicle on a surface that is as level as possible and activate the parking brake.

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.



– Stop the vehicle and park it on a surface that is as level as possible.
– Shift gear to neutral.
  ✔ The green idling speed indicator lamp **N** light up.
– Switch off the engine. (☛ p. 44)
– Remove the ignition key and the clip from the emergency OFF switch.
– Pull the hand brake lever, push the locking pawl ❷ down and release the hand brake lever. (Figure 100006-10☛ p. 20)
  ✔ The front wheels are locked.
– Turn the handle ❶ of the fuel tap to **OFF**. (Figure 100013-10☛ p. 26)
  ✔ No more fuel flows from the tank to the carburetor.
– If the vehicle must be parked on an incline, additionally secure the rear wheels against rolling (see illustration).

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.
– Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the notes on refueling.

Warning

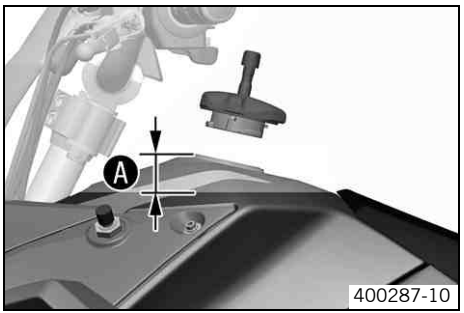
Danger of poisoning Fuel is poisonous and a health hazard.

– Avoid contact of the fuel with skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact 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. 24)
– Fill the fuel tank with fuel up to measurement Ⓐ.

Guideline

Measurement of Ⓐ		35 mm (1.38 in)
Total fuel tank capacity approx.	13.5 l (3.57 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (☛ p. 194)

– Close the filler cap. (☛ p. 25)

Service schedule

	S1N	S15A	S30A
Check that the electrical equipment is functioning properly.	•	•	•
Check and charge the battery. 🔧		•	•
Change the engine oil and oil filter, clean the oil screens. 🔧 (☛ p. 161)	•	•	•
Check the front brake linings. (☛ p. 116)		•	•
Check the rear brake linings. (☛ p. 126)		•	•
Check the brake discs. (☛ p. 111)		•	•
Check the brake lines for damage and leakage.		•	•
Check the rear brake fluid level. (☛ p. 123)		•	•
Check the free travel of the foot brake lever. (☛ p. 121)		•	•
Check the frame and swingarm. 🔧		•	•
Check the swingarm bearing. 🔧			•
Check the heim joints on the upper and lower shock absorbers. 🔧		•	•
Check the tire condition. (☛ p. 133)	•	•	•
Check the tire air pressure. (☛ p. 134)	•	•	•
Check the wheel bearing for play. 🔧		•	•
Check the wheel hubs. 🔧		•	•
Check for rim run-out. 🔧	•	•	•
Check the front wheel suspension. 🔧		•	•
Check the chain, rear sprocket, engine sprocket, and chain guide. (☛ p. 101)		•	•
Check the chain tension. (☛ p. 98)	•	•	•
Lubricate the rear wheel eccentric element. 🔧		•	•

	S1N	S15A	S30A
Lubricate all moving parts (e. g. hand levers, chain, ...) and check for smooth operation.		•	•
Check the fluid level of the hydraulic clutch. (☛ p. 109)		•	•
Check the front brake fluid level. (☛ p. 113)		•	•
Check the free travel of the hand brake lever. (☛ p. 112)		•	•
Check the bearing clearance of the steering column.	•	•	•
Check the bearing of the handlebar bridge.		•	•
Check the valve clearance.	•	•	•
Check the clutch.			•
Check all hoses (e. g. fuel, cooling, bleeding, drainage) and sleeves for tearing, leaks, and incorrect routing.	•	•	•
Check the antifreeze and coolant level. (☛ p. 145)	•	•	•
Check cables for damage and routing without sharp bends.		•	•
Check the cables for damage, routing without sharp bends, and correct adjustment.	•	•	•
Clean the air filter and air filter box. (☛ p. 86)		•	•
Change glass fiber yarn filling of main silencer.			•
Check the screws and nuts for tightness.	•	•	•
Check the headlight setting. (☛ p. 142)	•	•	•
Check the idle.	•	•	•
Check that the radiator fan is functioning properly.	•	•	•
Final inspection: check the vehicle for operating safety and take a test ride.	•	•	•
Create a service entry in the **KTM DEALER.NET** and in the service record.	•	•	•

S1N: Once after 1 operating hour - corresponds to about 7 liters of fuel (1.8 US gal)
S15A: Every 15 operating hours - corresponds to about 105 liters of fuel (27.7 US gal)
S30A: Every 30 operating hours - corresponds to about 210 liters of fuel (55.5 US gal) / after every race

Maintenance work (as an additional order)

	S45A	S90A	S180A	J1A
Change the front brake fluid.				•
Change the rear brake fluid.				•
Change the sealing sleeves of the foot brake cylinder.				•
Change the hydraulic clutch fluid.				•
Lubricate the steering column bearing.				•
Check/adjust the carburetor components.		•	•	•
Change the oil in the front shock absorber.		•	•	
Service the front shock absorber.			•	
Change the oil in the rear shock absorber.	•	•	•	
Service the rear shock absorber.		•	•	
Change the spark plug and spark plug connector.	•	•	•	
Change the piston.		•	•	
Check/measure the cylinder.		•	•	
Check the cylinder head.		•	•	
Check the valves, valve springs, and valve spring seats.		•	•	
Check the camshaft and rocker arm.		•	•	
Change the connecting rod, conrod bearing, and crank pin.		•	•	

	S45A	S90A	S180A	J1A
Check the transmission and shift mechanism. 🔧		•	•	
Check the oil pressure regulator valve. 🔧		•	•	
Check the oil pumps and lubrication system. 🔧		•	•	
Check the timing assembly. 🔧		•	•	
Change all engine bearings. 🔧		•	•	

S45A: Every 45 operating hours - corresponds to about 315 liters of fuel (83.2 US gal)
S90A: Every 90 operating hours - corresponds to about 630 liters of fuel (166.5 US gal) / every 45 operating hours after sporting use - corresponds to about 315 liters of fuel (83.2 US gal)
S180A: Every 180 operating hours - corresponds to about 1260 liters of fuel (333 US gal)
J1A: Annually

Basic information on changing the chassis settings

The standard setting of the chassis is the result of many fine tuning tests. It is laid out for the weight of the average rider (with a full set of protective clothing) and for a sporty driving style.

Average rider weight	75... 85 kg (165... 187 lb.)

By making a variety of adjustments to the chassis, you can set it to better match your body weight and riding style.
The left and right front shock absorbers should have the same settings.
If your weight is above or below the average, you have to adjust the standard setting of the suspension components 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.

Tip

When changing the chassis settings, always start with the standard setting.
Between test rides, always change only one setting. This will enable you to better assess the effect of the setting on vehicle handling.
Do not make radical changes to the settings; proceed in small steps instead. Even small changes can have a large impact on vehicle handling.

Rear shock absorber - adjusting the compression damping

Warning

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

- Extreme modifications to the adjustment of the spring elements can cause a serious deterioration in the handling characteristics and overload some components.
- Only make adjustments within the recommended range.
- After making adjustments, ride slowly at first to get the feel of the new ride behavior.

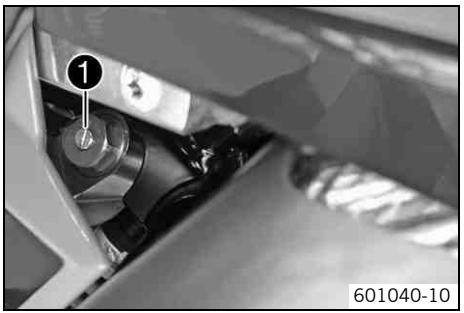
Caution

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

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

Info

The compression damping setting has an impact on the compression of the shock absorber.



– Remove the rear fender. (☛ p. 79)
– Turn adjusting screw ❶ clockwise up to the last perceptible click.
– Turn back counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

Compression damping	
Comfort	20 clicks
Standard	15 clicks
Sport	15 clicks

Tip

Experience has shown that settings outside of this range are detrimental to vehicle handling. When changing the chassis settings, always start with the standard setting.

Info

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

Rear shock absorber - adjusting the rebound damping

Warning

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

- Extreme modifications to the adjustment of the spring elements can cause a serious deterioration in the handling characteristics and overload some components.
- Only make adjustments within the recommended range.
- After making adjustments, ride slowly at first to get the feel of the new ride behavior.

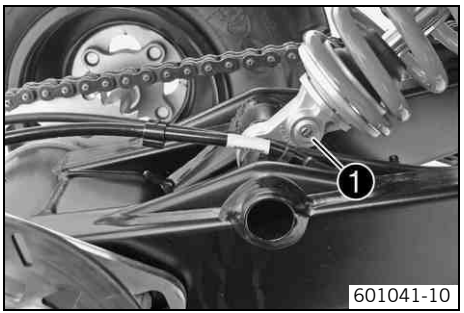
Caution

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

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

Info

The rebound damping setting has an impact on the rebound of the shock absorber.



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

Guideline

Rebound damping	
Comfort	20 clicks
Standard	15 clicks
Sport	15 clicks

Tip
Experience has shown that settings outside of this range are detrimental to vehicle handling. When changing the chassis settings, always start with the standard setting.

Info
Turning to the right increases damping, while turning to the left lessens damping.

Rear shock absorber - adjusting the spring preload

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

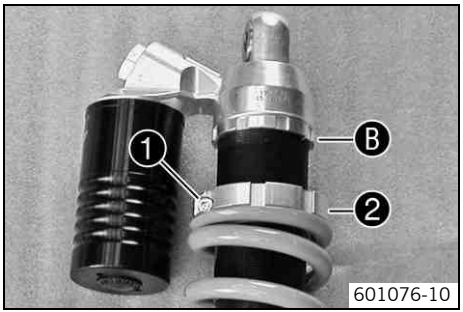
- Extreme modifications to the adjustment of the spring elements can cause a serious deterioration in the handling characteristics and overload some components.
- Only make adjustments within the recommended range.
- After making adjustments, ride slowly at first to get the feel of the new ride behavior.

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

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

Info
Increasing the spring preload raises the center of gravity of the vehicle. This can have a large impact on vehicle handling.

Tip
Before changing the spring preload, make a note of the present setting, e.g., by measuring the length of the spring.

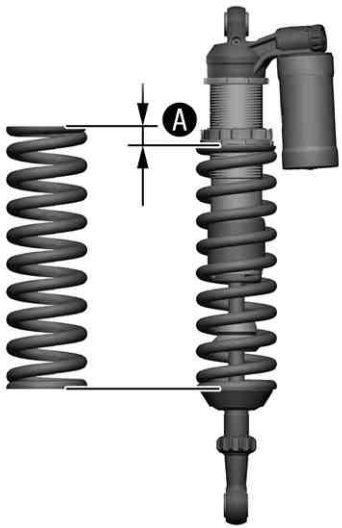


– Remove the rear shock absorber. (p. 72)
– After removing the shock absorber, clean it thoroughly.
– Loosen screw ❶.

Info
Do not loosen lock nut Ⓑ at the top of the shock absorber.

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

Hook wrench (T106S)



400363-11

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

Info
The spring preload Ⓐ is the difference in length between the spring when it is unloaded and when it is installed.

– Tighten the spring by turning the adjusting ring to the specified measurement.

Guideline

Spring preload	
Comfort	0 mm (0 in)
Standard	3 mm (0.12 in)
Sport	3 mm (0.12 in)

– Tighten screw ❶.

Guideline

Screw, shock absorber adjusting ring	M6	5 Nm (3.7 lbf ft)

Info
If you increase the spring preload, you should also slightly increase the rebound damping.

– Install the rear shock absorber. (p. 73)

Front shock absorber - adjusting the compression damping

Warning

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

- Extreme modifications to the adjustment of the spring elements can cause a serious deterioration in the handling characteristics and overload some components.
- Only make adjustments within the recommended range.
- After making adjustments, ride slowly at first to get the feel of the new ride behavior.

Caution

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

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

Info

The compression damping setting has an impact on the compression of the shock absorber.

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

Guideline

Compression damping	
Comfort	20 clicks
Standard	15 clicks
Sport	15 clicks

Tip

Experience has shown that settings outside of this range are detrimental to vehicle handling. When changing the chassis settings, always start with the standard setting.

Info

Turn clockwise to increase damping; turn counterclockwise to reduce damping. The left and right shock absorbers should have the same settings.

Front shock absorber - adjusting the rebound damping

Warning

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

- Extreme modifications to the adjustment of the spring elements can cause a serious deterioration in the handling characteristics and overload some components.
- Only make adjustments within the recommended range.
- After making adjustments, ride slowly at first to get the feel of the new ride behavior.

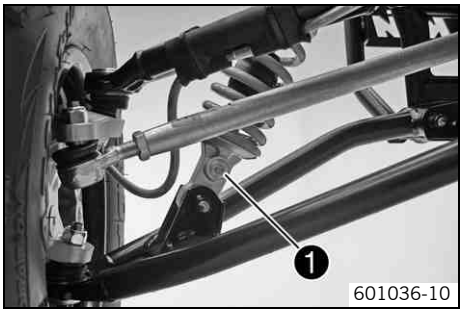
Caution

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

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

Info

The rebound damping setting has an impact on the rebound of the shock absorber.



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

Guideline

Rebound damping	
Comfort	20 clicks
Standard	15 clicks
Sport	15 clicks

Tip
Experience has shown that settings outside of this range are detrimental to vehicle handling. When changing the chassis settings, always start with the standard setting.

Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping. The left and right shock absorbers should have the same settings.

Front shock absorber - adjusting the cross over

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

– Extreme modifications to the adjustment of the spring elements can cause a serious deterioration in the handling characteristics and overload some components.
– Only make adjustments within the recommended range.
– After making adjustments, ride slowly at first to get the feel of the new ride behavior.

Caution

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

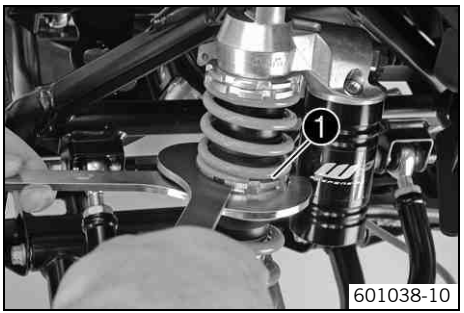
– The shock absorber is filled with high density nitrogen. Adhere to the description provided. (Your authorized KTM workshop will be glad to help.)

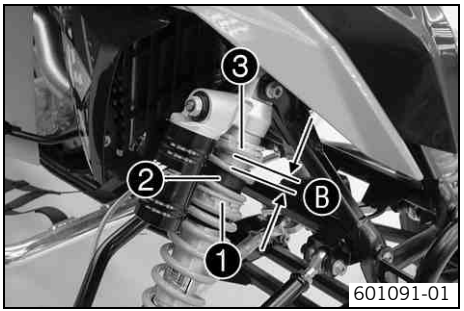
Info

The cross over setting is used to adjust the suspension travel of the short (soft) spring.
Greater cross over makes the spring action at the front softer and the front of the vehicle lies lower. The suspension travel and the progressive part of the long (hard) spring is not fully utilized.
Less cross over makes the spring action at the front harder and the front of the vehicle lies higher.

– Adjust the spring preload for the front shock absorbers. (☛ p. 62)
– Raise the vehicle with the lifting gear. (☛ p. 69)
– Clean the shock absorber thoroughly.
– Loosen adjusting rings ❶.

Hook wrench (83019001000)





– Measure the cross over setting ❽ between sliding bushing ❷ and the collar of adjusting ring ❸.

Guideline

Cross over	19 mm (0.75 in)

– Tighten the spring by turning adjusting rings ❶ to measurement ❽.

Info

The sliding bushing is made of plastic. Therefore, do not lock it too tightly to avoid damaging the thread.
The left and right shock absorbers should have the same settings.

– Lock the adjusting rings.
– Remove the vehicle from the lifting gear. (☛ p. 69)

Front shock absorber - adjusting the spring preload

Warning

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

– Extreme modifications to the adjustment of the spring elements can cause a serious deterioration in the handling characteristics and overload some components.
– Only make adjustments within the recommended range.
– After making adjustments, ride slowly at first to get the feel of the new ride behavior.

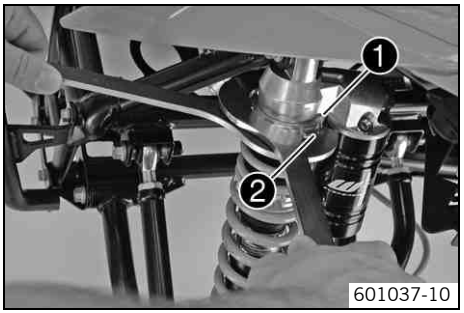
Caution

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

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

Info
Increasing the spring preload raises the center of gravity of the vehicle. This can have a large impact on vehicle handling.

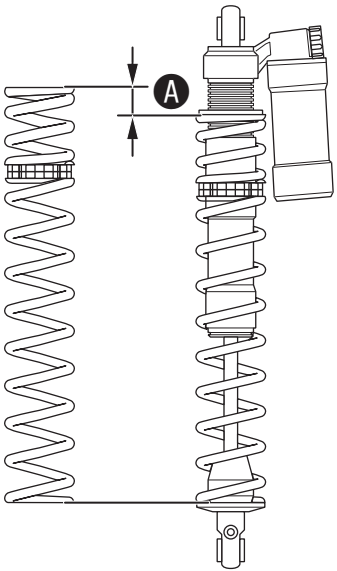
Tip
Before changing the spring preload, make a note of the present setting, e.g., by measuring the length of the spring.



– Raise the vehicle with the lifting gear. (☛ p. 69)
– Clean the shock absorber thoroughly.
– Release retaining ring ❶.

Hook wrench (83019001000)

– Turn adjusting ring ❷ until the spring pack is no longer under tension.
– Measure the overall spring pack when not under tension.



– Tighten the spring pack by turning adjusting ring ❷ to measurement Ⓐ.

Guideline

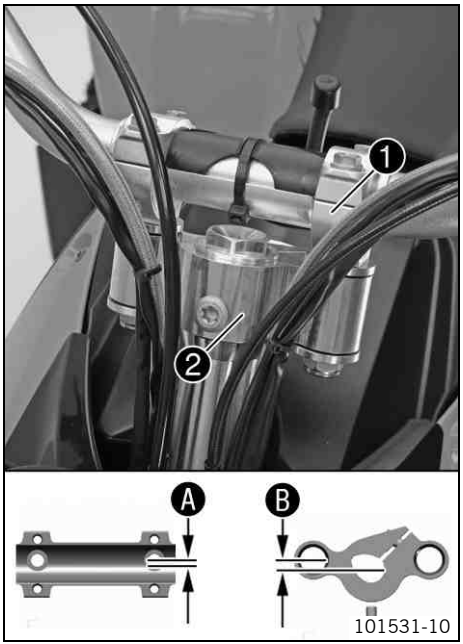
Spring preload	
Comfort	4 mm (0.16 in)
Standard	5 mm (0.2 in)
Sport	8 mm (0.31 in)

Info

Spring preload Ⓐ is the difference in length between the spring pack when it is unloaded and when it is installed.
The spring pack should never be installed loosely (without preload). The comfort setting is the lowest permissible spring preload.
If you increase the spring preload, you should also slightly increase the rebound damping.
The left and right shock absorbers should have the same settings.

– Tighten the retaining ring and adjusting ring.
– Remove the vehicle from the lifting gear. (☛ p. 69)

Handlebar position



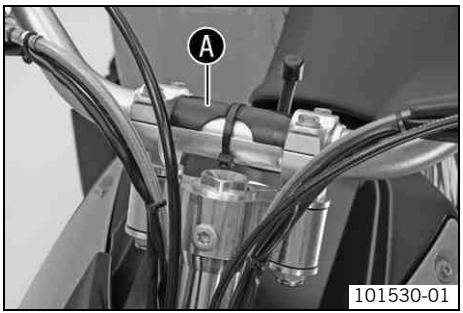
The handlebar position can be adjusted 4-fold by turning the handlebar support ❶ and the handlebar support ❷.
The holes on the handlebar support are placed at a distance of Ⓐ from the center.

Distance Ⓐ between holes	3.5 mm (0.138 in)

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

Distance Ⓑ between holes	7.5 mm (0.295 in)

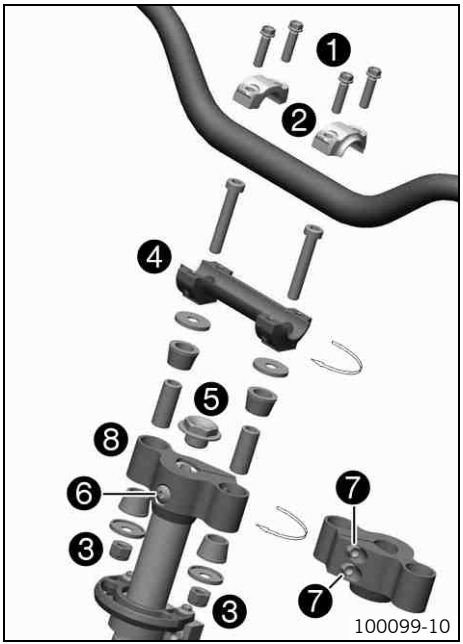
Adjusting the handlebar position



– Pull the instrument support off the handlebar and swing it to the side.

Info
Protect the vehicle and its attachments from damage by covering them.
Do not kink the cables and lines.

– Remove handlebar attachment Ⓐ.



– Remove the four screws ❶. Remove handlebar clamps ❷, swing the handlebar forward and set it down.
– Remove nuts ❸ and remove handlebar support ❹ with the screws.
– Remove screws ❺ and ❻.
– Remove screws ❼. Remove handlebar bridge ❽.
– Place handlebar bridge ❽ onto the steering column in the desired position. Mount and tighten screw ❻.

Guideline

Screw, steering bridge	M8	20 Nm (14.8 lbf ft)

– Mount and tighten screw ❺.

Guideline

Screw, steering column, top	M20x1.5	25 Nm (18.4 lbf ft)

– Mount and tighten screws ❼.

Guideline

Screw, steering bridge	M8	20 Nm (14.8 lbf ft)

– Mount handlebar support ❹ in the desired position using the screws. Mount new self-locking nuts ❸ and tighten.

Guideline

Nut, handlebar support	M10	45 Nm (33.2 lbf ft)

– Position the handlebar and fix it with handlebar clamps ❷. Mount and tighten screws ❶.

Guideline

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

Info
Make sure the cables and wiring are positioned correctly.

– Mount the handlebar attachment.
– Position the instrument support on the handlebar.

Raising the vehicle with the lifting gear

Note

Danger of damage Danger of damage from tipping of vehicle.

– Jack up the vehicle on a firm and horizontal surface. Use a flex-free work stand.

– Raise the vehicle on the frame underneath the engine.

✔ The wheels must no longer touch the ground.

– Secure the vehicle.

Removing the vehicle from the lifting gear

Note

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

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

– Lower the vehicle.

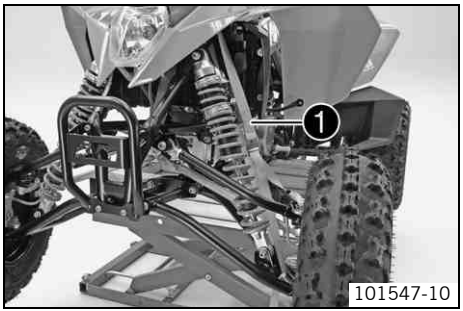
– Remove the lifting gear.

Removing the front shock absorber

Info

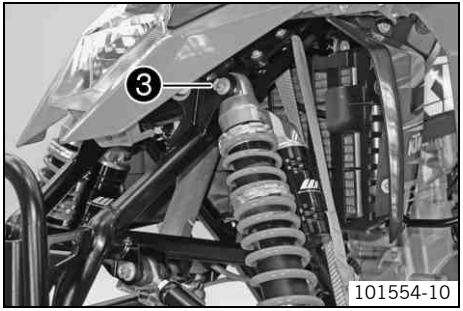
The operations are the same on the left and right sides.

– Raise the vehicle with the lifting gear. (☛ p. 69)



– Secure the upper A-arm on the frame using tension belt ❶.

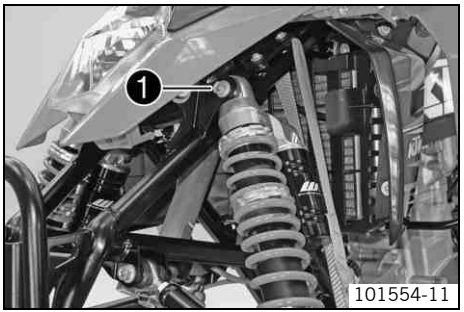
– Remove screw ❷.



– Remove screw ❸. Remove the shock absorber.

Installing the front shock absorber

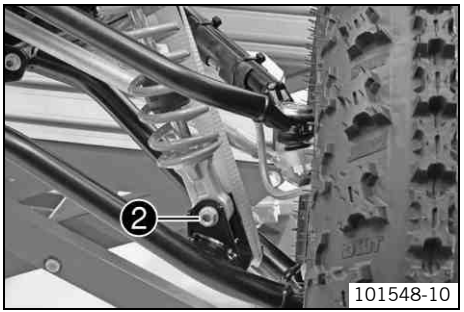
Info
The operations are the same on the left and right sides.



– Position the front shock absorber with the reservoir toward the rear. Mount and tighten screw ❶.

Guideline

Screw, front shock absorber	M10	45 Nm (33.2 lbf ft)



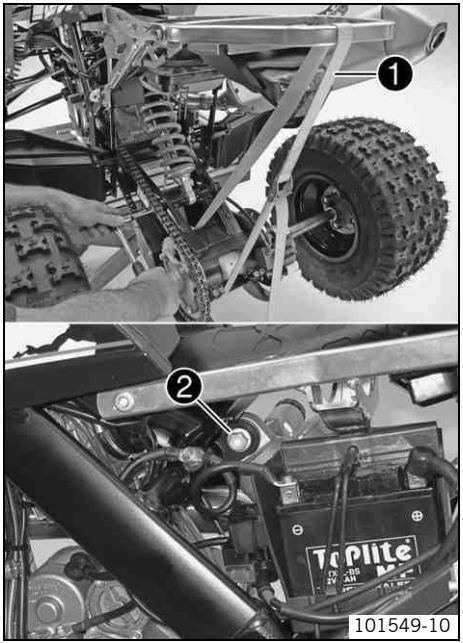
– Position the shock absorber in the lower A-arm. Mount and tighten screw ❷.

Guideline

Screw, front shock absorber	M10	45 Nm (33.2 lbf ft)

– Remove the tension belt.
– Remove the vehicle from the lifting gear. (☛ p. 69)

Removing the rear shock absorber



– Raise the vehicle with the lifting gear. (☛ p. 69)
– Remove the rear fender. (☛ p. 79)

Note

Danger of damage The chain sliding piece and frame can be damaged from incorrect handling.

– When removing the rear shock absorber, secure the swingarm with a tension belt to prevent it from swinging down further.

– Attach the swingarm to the subframe with a tension belt ❶ to relieve the shock absorber.
– Remove the bottom screw of the shock absorber.

Tip

Press the screw out of the swingarm with a screw driver while moving the tension belt.

– Remove the top screw ❷ of the shock absorber and carefully remove the shock absorber out of the vehicle toward the rear.

Installing the rear shock absorber

– Position the shock absorber in the vehicle with the reservoir on the right. Mount and tighten the top screw ❶.

Guideline

Screw, rear top shock absorber	M12	60 Nm (44.3 lbf ft)

– Position the shock absorber in the swingarm. Mount and tighten the bottom screw.

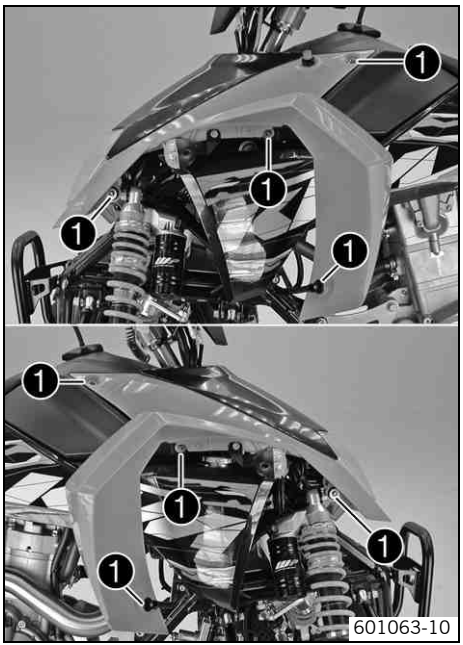
Guideline

Screw, rear bottom shock absorber	M12	70 Nm (51.6 lbf ft)

– Remove the tension belt.
– Install the rear fender. (☛ p. 80)
– Remove the vehicle from the lifting gear. (☛ p. 69)

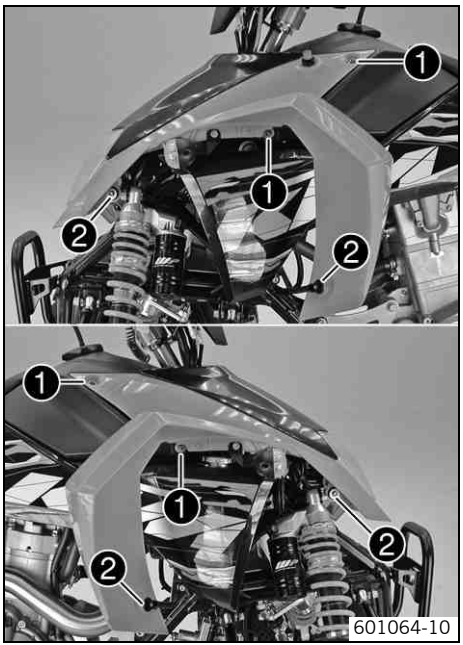
Removing the front trim

– Remove the front cover. (☛ p. 78)



– Remove screws ❶.
– Raise the front trim and disconnect the plug-in connectors from the head light and the emergency OFF switch with the rip cord.
– Remove the front trim.

Installing the front trim



– Connect the plug-in connectors of the head light and the emergency OFF switch with the rip cord and position the front trim.
– Mount all screws.
– Fully tighten screws ❶.

Guideline

Screw on fuel tank	M6	6 Nm (4.4 lbf ft)

– Fully tighten screws ❷.

Guideline

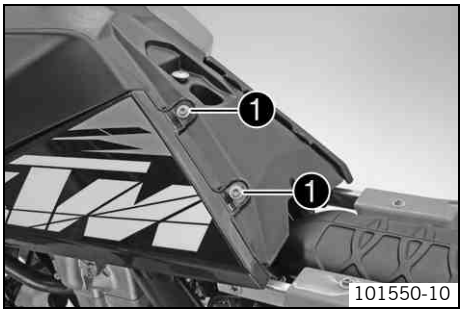
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)

– Install the front cover. (☛ p. 78)

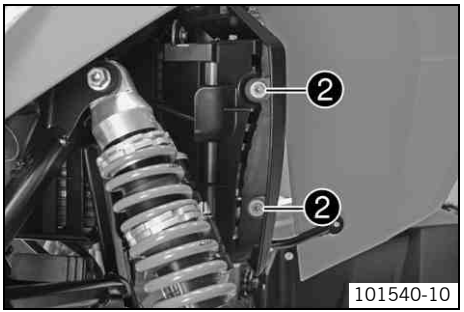
Removing the radiator spoiler

Info
The operations are the same on the left and right.

– Remove the seat (☛ p. 82)



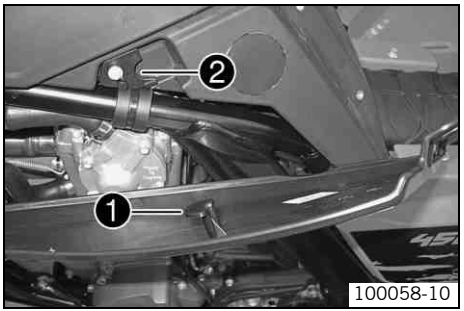
– Remove the screws ❶ on the fuel tank.



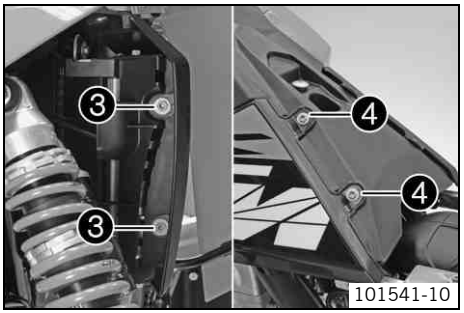
– Remove the screws ❷ on the radiator.
– Detach the radiator spoiler and remove it.

Installing the radiator spoiler

Info
The operations are the same on the left and right.



– Hook catch ❶ of the radiator spoiler into holder ❷ of the fuel tank and position it on the radiator.



– Mount and tighten screws ❸ on the radiator.

Guideline

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

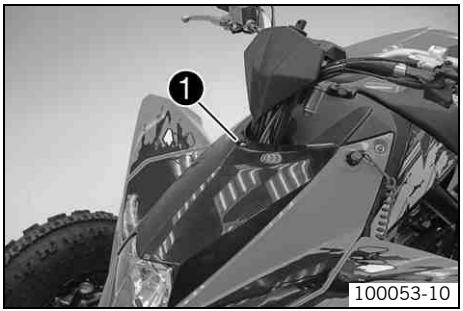
– Mount and tighten screws ❹ on the fuel tank.

Guideline

Screw on fuel tank	M6	6 Nm (4.4 lbf ft)

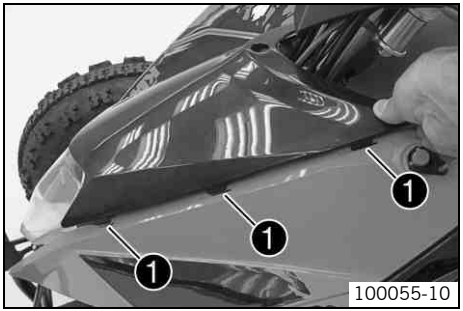
– Mount the seat. (☛ p. 82)

Removing the front cover



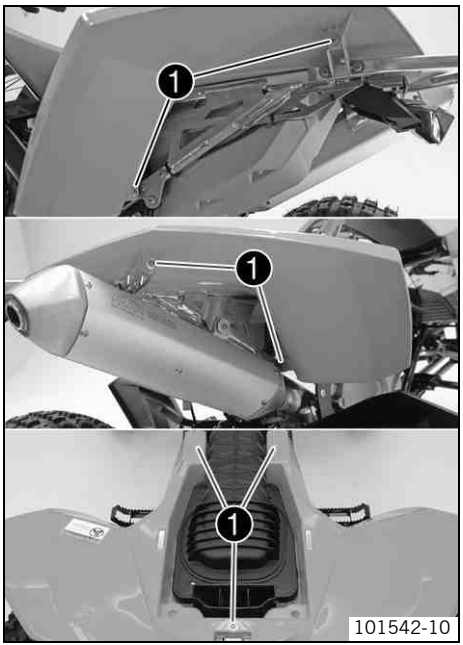
– Remove screw ❶.
– Slide the front cover up and remove it.

Installing the front cover

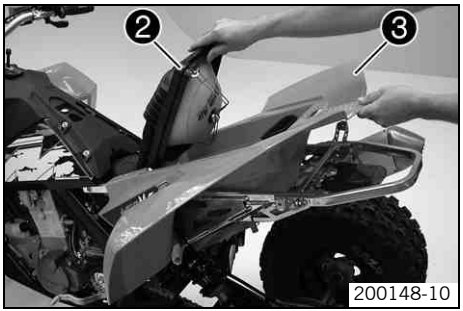


– Position the front cover in slots ❶ on both sides of the front trim.
– Mount and tighten the screw.

Removing the rear fender



– Remove the seat (☛ p. 82)
– Remove screws ❶.

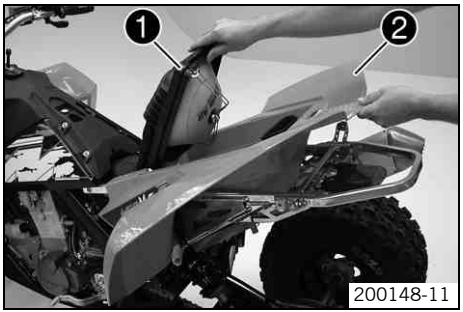


– Raise the rear of the air filter box lid ❷. At the same time, use your other hand to press on the carburetor connection boot to kink it at that location.

Info
This prevents the carburetor connection boot from disconnecting from the carburetor.

– Raise fender ❸ at the rear and remove it.

Installing the rear fender

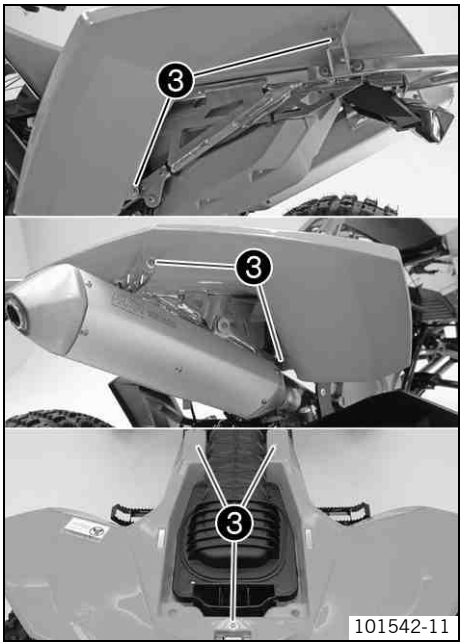


– Raise the rear of the air filter box lid ❶. At the same time, use your other hand to press on the carburetor connection boot to kink it at that location.

Info
This prevents the carburetor connection boot from disconnecting from the carburetor.

– Position front fender ❷.
– Fix the air filter box lid in the fender.

Info
If the air filter box lid is not correctly mounted, dust and dirt can penetrate into the engine and cause damage.



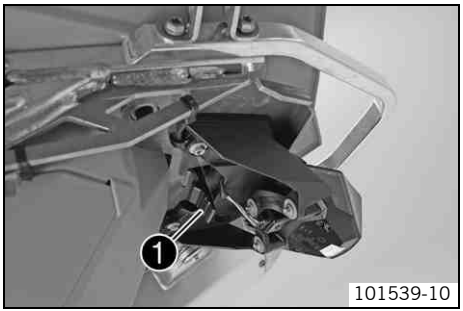
– Mount and tighten screws ❸.

Guideline

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

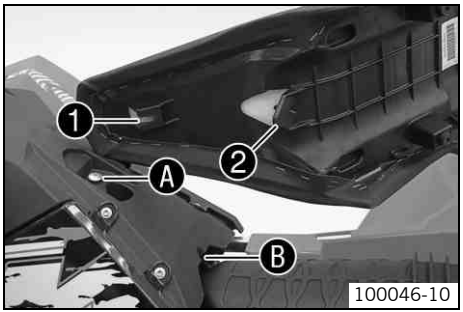
– Mount the seat. (☛ p. 82)

Removing the seat

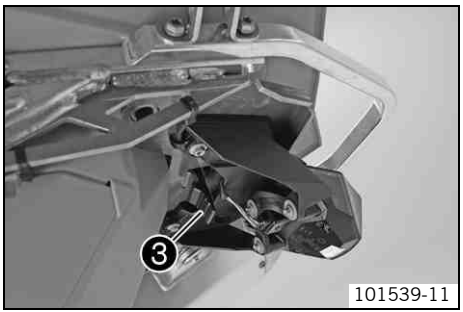


– Pull the release hook ❶ back. Lift up the seat at the rear, pull it back and then remove from above.

Mounting the seat



– Hook slot ❶ on the seat into collar sleeve Ⓐ of the fuel tank, lower the rear of the seat and slide tab ❷ under fuel tank Ⓑ.



– Push down the rear of the seat until release hook ❸ engages.
– Make sure that the seat is correctly locked in.

Removing the air filter

Note

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

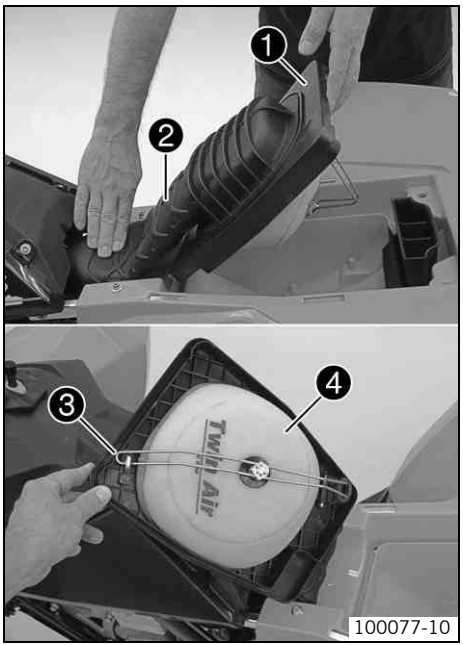
– Never ride the vehicle without an air filter since dust and dirt can get into the engine and result in increased wear.

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.

– Remove the seat (☛ p. 82)



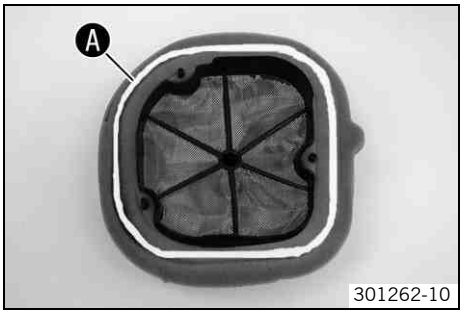
– Raise the rear of the air filter box lid ❶. At the same time, use your other hand to press on the carburetor connection boot ❷ to kink it at that location.

Info

This prevents the carburetor connection boot from disconnecting from the carburetor.

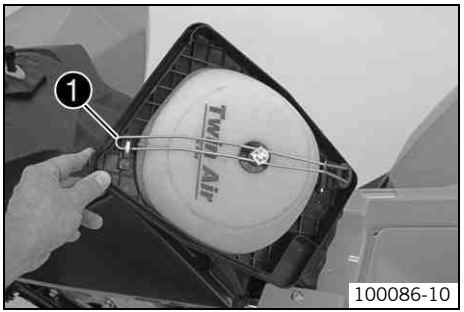
– Unhook the air filter holder ❸ and swing it to the side. Remove the air filter ❹ with the air filter support.
– Remove the air filter from the air filter support.

Installing the air filter



– Mount the clean air filter onto the air filter support.
– Grease the air filter in area ❹.

Long-life grease (☛ p. 196)



– Put in both parts together, position them and fix them with the air filter support ❶.

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

– Mount the air filter box lid.

Info
If the air filter box lid is not correctly mounted, dust and dirt can penetrate into the engine and cause damage.

– Mount the seat. (☛ p. 82)

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.

– Remove the air filter. (p. 83)
– Wash the air filter thoroughly in special cleaning liquid and allow it to dry properly.

Air filter cleaner (p. 196)

Info

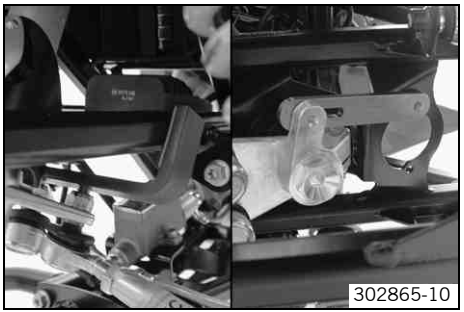
Only press the air filter to dry it; never wring it out.

– Oil the dry air filter with a high/quality filter oil.

Oil for foam air filter (p. 197)

– Clean the air filter box.
– Check carburetor connection boot for damage and tightness.
– Install the air filter. (p. 85)

Checking the toe



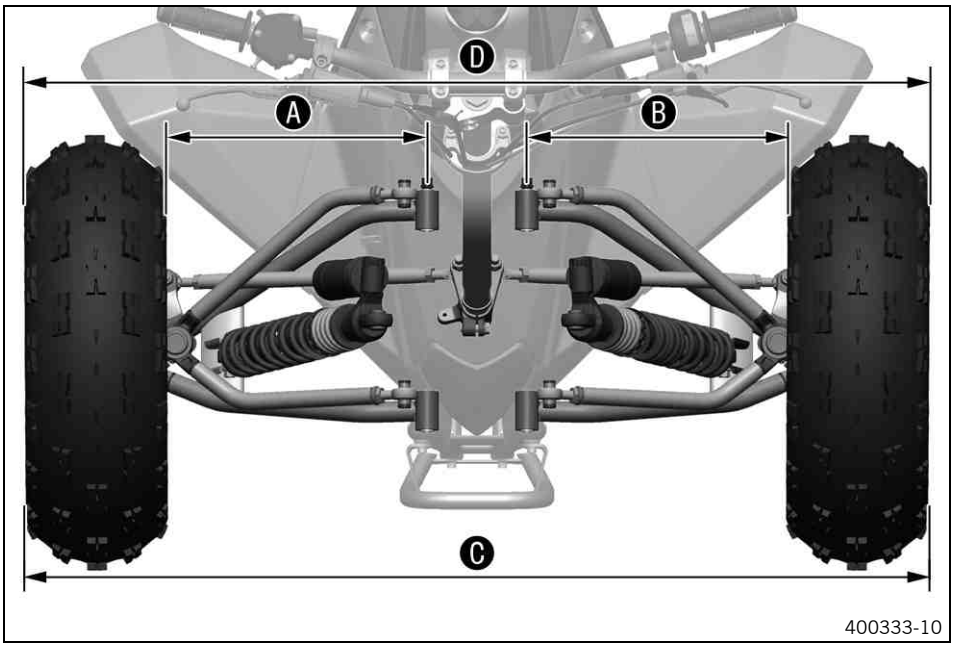
– Park the vehicle on a horizontal surface.
– Check the tire condition. (☛ p. 133)
– Check the tire air pressure. (☛ p. 134)
– Check the chassis parts for damage, play and wear.
– Load the vehicle with the specified weight.

  Guideline

Average rider weight	75... 85 kg (165... 187 lb.)

– Move the handlebar into the straight-ahead position and fix it.

Handlebar fixation for straight-ahead position (83019015100)



– Measure distances Ⓐ and Ⓑ.
  » If distances Ⓐ and Ⓑ are not equal:
    – Adjust the toe. 🔧 (☛ p. 89)
– Measure distances Ⓒ and Ⓓ.

Guideline

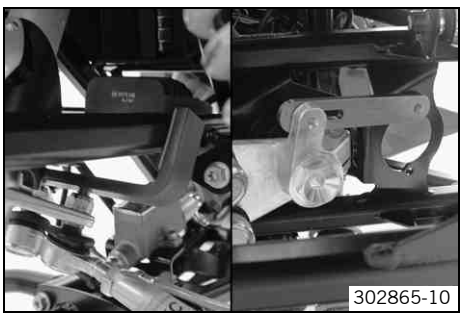
Toe	
Front	0 mm (0 in)

Info

The toe is the difference in length between distances Ⓓ and Ⓒ by which the wheels are spaced at the front or rear when driving straight ahead. The distance is measured at the height of the wheel center from rim flange to rim flange.

» If the toe does not meet specifications:
  – Adjust the toe. (☛ p. 89)

Adjusting the toe



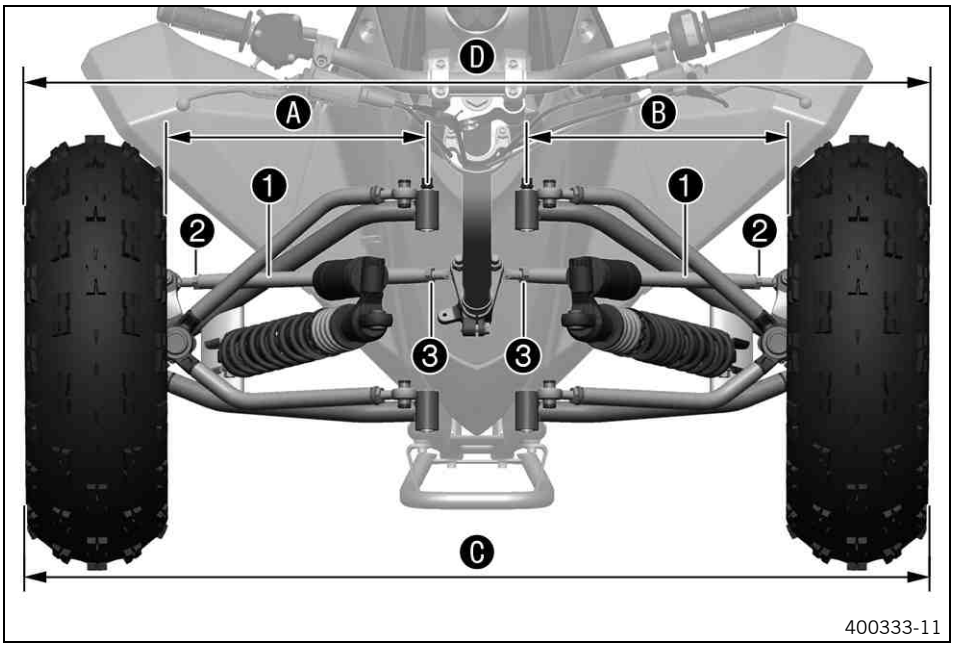
– Park the vehicle on a horizontal surface.
– Check the tire condition. (☛ p. 133)
– Check the tire air pressure. (☛ p. 134)
– Check the chassis parts for damage, play and wear. Replace damaged or worn parts.
– Load the vehicle with the specified weight.

  Guideline

Average rider weight	75... 85 kg (165... 187 lb.)

– Move the handlebar into the straight-ahead position and fix it.

Handlebar fixation for straight-ahead position (83019015100)



– Loosen nuts ❷ and ❸.
– Adjust the distances Ⓐ and Ⓑ to the same value by rotating the tie rods ❶.
– Adjust the distances Ⓒ and Ⓓ to the specified value by evenly rotating the tie rods ❶.

Guideline

Toe	
Front	0 mm (0 in)

Info
The toe is the difference in length between distances ❶ and ❻ by which the wheels are spaced at the front or rear when driving straight ahead. The distance is measured at the height of the wheel center from rim flange to rim flange.

– Tighten nuts ❷ and ❸.

Guideline

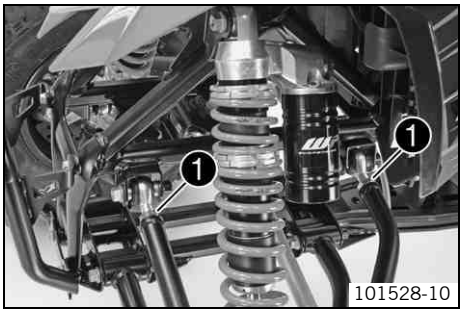
Lock nut, tie rod, outside	M12x1.25	20 Nm (14.8 lbf ft)
Lock nut, tie rod, inside	M12LHx1.25	20 Nm (14.8 lbf ft)

Info
The tie rods ❶ must still be freely movable.

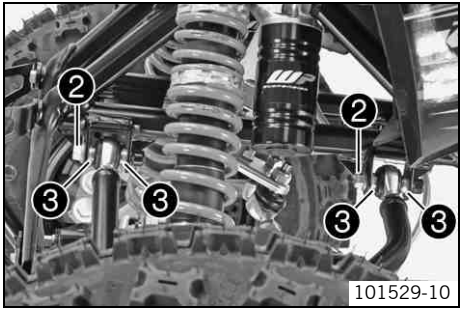
Checking/adjusting the camber

Info
The left and right camber should have the same settings.
The operations are the same on the left and right.

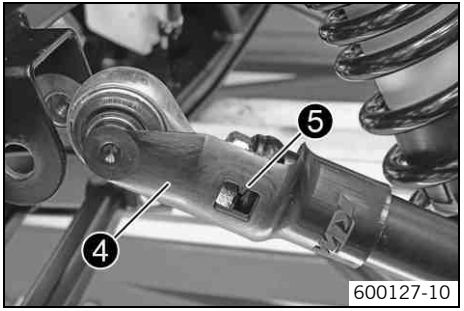
– Raise the vehicle with the lifting gear. (☛ p. 69)



– Loosen nuts ❶.



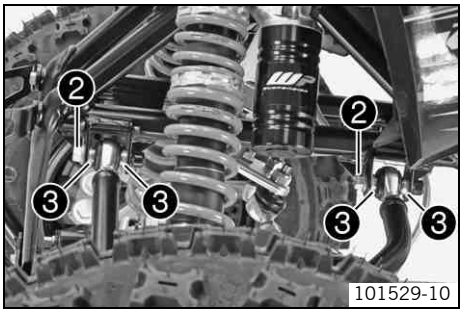
– Remove screws ❷ with bushings ❸.



– Insert tool ❹ in the heim joint and clip onto the A-arm.

Camber gauge (83019014000)

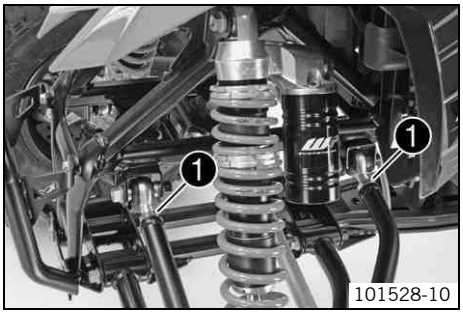
– Check the camber on both heim joints.
  » If marking ❺ is not aligned with the top edge of the A-arm:
    – Turn tool ❹ with the heim joint in steps of 180° until the marking is in line with the top edge of the A-arm.
– Remove tool ❹.



– Position the A-arm with bushings ❸. Mount and tighten screws ❷.

Guideline

Screw, A-arm top	M10x52	45 Nm (33.2 lbf ft)



– Align the heim joint at right angles to screws ❷ and tighten nut ❶.

Guideline

Nut, A-arm top	M12x1.25	30 Nm (22.1 lbf ft)

Info
All four heim joints must be checked and adjusted if necessary.

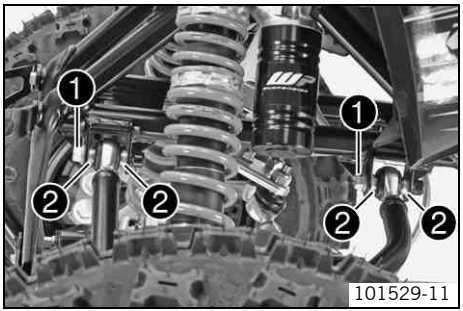
– Remove the vehicle from the lifting gear. (☛ p. 69)

Fork offset

The fork offset has an impact on the handling of the vehicle.
The fork offset can optionally be adjusted.
Fork offset is defined as the slanted position of the swivel axis in the direction of the longitudinal axis of the vehicle in relation to a vertical line to the driving surface.
When both sleeves are installed in front of the A-arms, the fork offset increases. This enhances driving stability on fast raceways.
When both bushings are installed behind the A-arms, the fork offset decreases. This improves handling in bends.
Upon delivery one bushing is installed in front of the A-arm and one behind it.

Adjusting the fork offset

Info
The left and right fork offset should have the same settings.
The operations are the same on the left and right.

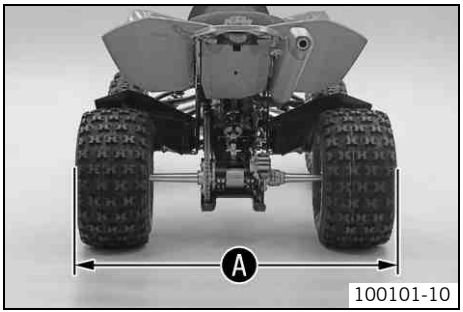


– Raise the vehicle with the lifting gear. (☛ p. 69)
– Remove screws ❶ with bushings ❷.
– Place the A-arm with bushings ❷ in the desired position. Mount and tighten screws ❶.
Guideline

Screw, A-arm top	M10x52	45 Nm (33.2 lbf ft)

– Remove the vehicle from the lifting gear. (☛ p. 69)

Toe width of rear axle



The toe width Ⓐ can be adjusted by installing the spacer in various ways.

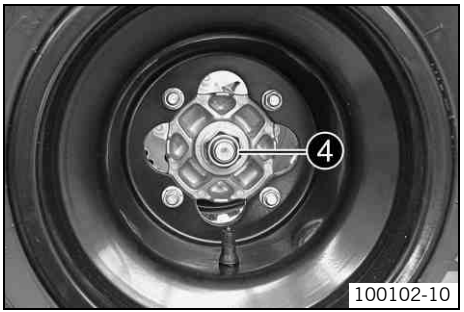
Difference between narrow/wide toe	76 mm (2.99 in)

Adjusting the toe width of rear axle

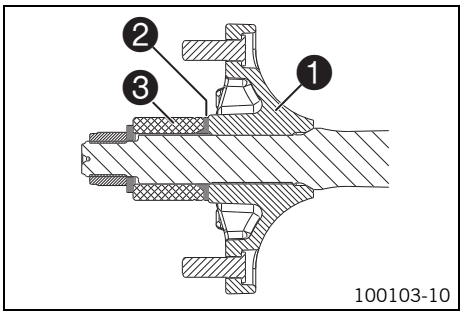
Warning

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.

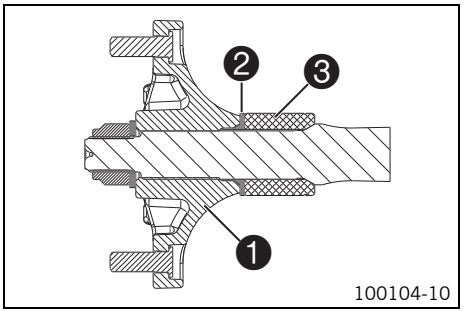


– Engage 1st gear.
– Loosen nuts ❹ of the wheel hubs on both sides.
– Raise the vehicle with the lifting gear. (☛ p. 69)
– Remove the nuts ❹ on both sides and take all parts off of the rear axle.



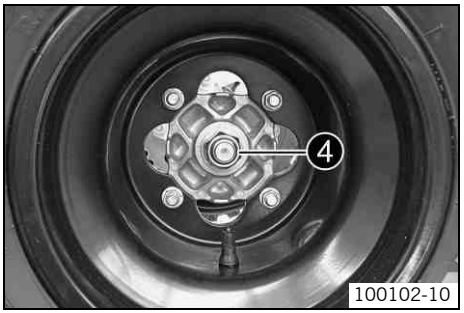
Setting a narrow toe width:

– Mount the wheel hub ❶.
– Mount the conical ring ❷ with the cone facing outward.
– Mount the spacer ❸ with the cone facing inward.
– Mount the washer and the new self-locking nut.



Setting a wide toe width:

- Mount the spacer ❸ with the cone facing inward.
- Mount the conical ring ❷ with the cone facing outward.
- Mount the wheel hub ❶.
- Mount the washer and the new self-locking nut.



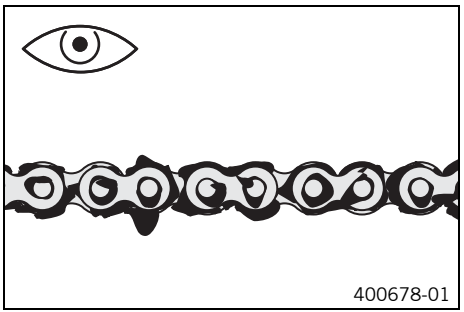
- Remove the vehicle from the lifting gear. (☛ p. 69)
- Tighten nuts ❹ on both sides.

  Guideline

Nut, rear wheel hub	M18x1.5	130 Nm (95.9 lbf ft)

- Shift gear to neutral.

Checking chain dirt



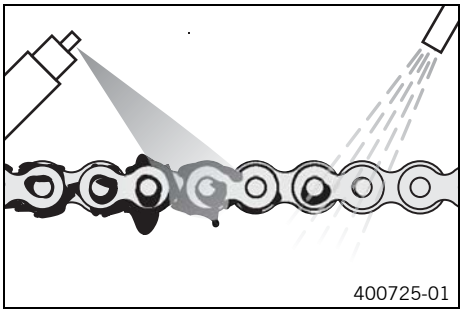
– Check the chain for heavy soiling.
  » If the chain is very dirty:
    – Clean the chain. (☛ p. 97)

Cleaning the chain

Warning
Environmental hazard Hazardous substances cause environmental damage.

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

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



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

Chain cleaner (☛ p. 196)
Off-road chain spray (☛ p. 197)

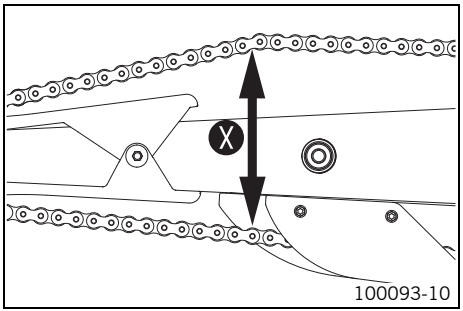
Checking the chain tension

Warning

Danger of accidents Danger caused by incorrect chain tension.

– If the chain tension is too high, the components of the secondary power train (chain, engine sprocket, rear sprocket, bearings in transmission and rear wheel eccentric element) are under additional load. Apart from premature wear, in extreme transmission output shaft or the drive chain may snap. Conversely, if the chain is too loose it may jump off the engine and rear sprockets, causing the rear wheel to lock up or even leading to engine damage. Check for correct chain tension and adjust if necessary.

– Park the vehicle on a horizontal surface and shift gears to neutral.



– Push the upper chain section at the end of the chain sliding component upwards to measure the chain tension Ⓧ.

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

Chain tension	140... 145 mm (5.51... 5.71 in)

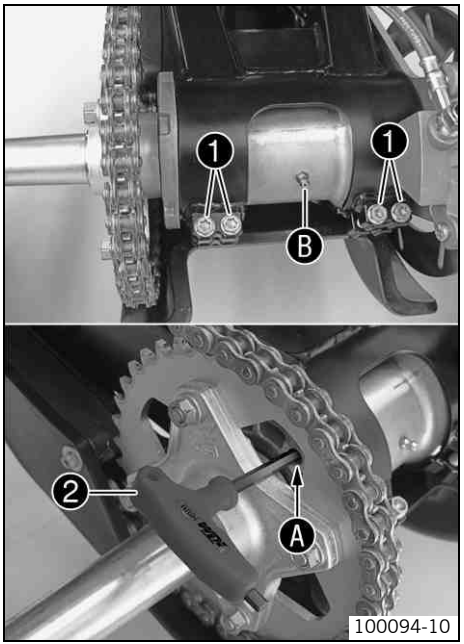
» If the chain tension does not meet specifications:
– Adjust the chain tension. (☛ p. 99)

Adjusting chain tension

Warning
Danger of accidents Danger caused by incorrect chain tension.

– If the chain tension is too high, the components of the secondary power train (chain, engine sprocket, rear sprocket, bearings in transmission and rear wheel eccentric element) are under additional load. Apart from premature wear, in extreme transmission output shaft or the drive chain may snap. Conversely, if the chain is too loose it may jump off the engine and rear sprockets, causing the rear wheel to lock up or even leading to engine damage. Check for correct chain tension and adjust if necessary.

– Check the chain tension. (☛ p. 98)



– Loosen the screws ❶ by four turns.

Alternative 1

– Insert the tool ❷ from the tool set into the hole Ⓐ of the rear wheel eccentric element.

Alternative 2

– Position the special tool at the rear wheel eccentric element.

Hook wrench (83019011000)

– To adjust the chain tension, slowly turn the element at the rear wheel or using the special tool to rotate the rear wheel eccentric element forward or backward.

Guideline

Chain tension	140... 145 mm (5.51... 5.71 in)

Info

Rotating the rear wheel eccentric element forward increases chain tension.
Rotating the rear wheel eccentric element backward reduces chain tension.
The rear wheel eccentric element should always be positioned such that the grease nipple Ⓑ is visible. This ensures that the vehicle has the greatest ground clearance.

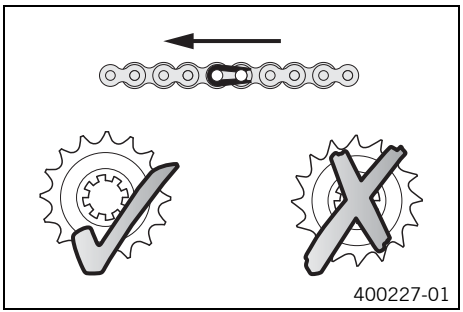
– Remove the tool.

– Fully tighten screws ❶.

Guideline

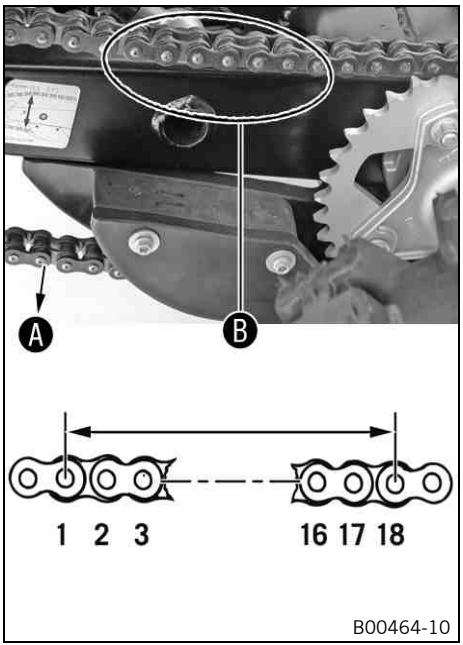
Screw, rear wheel eccentric element	M8	20 Nm (14.8 lbf ft)

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


400227-01

– Shift gear to neutral.
– Check the rear sprocket and engine sprocket for wear.
  » If the rear sprocket and engine sprocket are worn:
    – Change the rear sprocket or engine sprocket.

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



– Pull on the lower part of the chain with the specified weight Ⓐ.

Guideline

Chain-wear measuring weight	10... 15 kg (22... 33 lb.)

– Measure the distance Ⓑ of 18 chain links in the upper chain section.

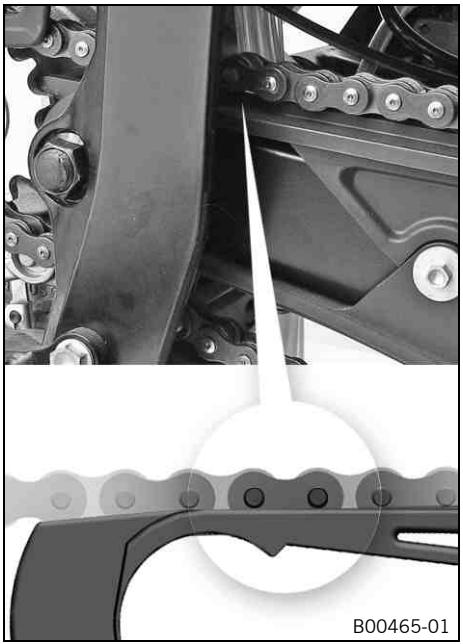
Info
Chain wear is not always even, so you should repeat this measurement at different chain positions.

Maximum distance Ⓑ at the longest chain section	272 mm (10.71 in)

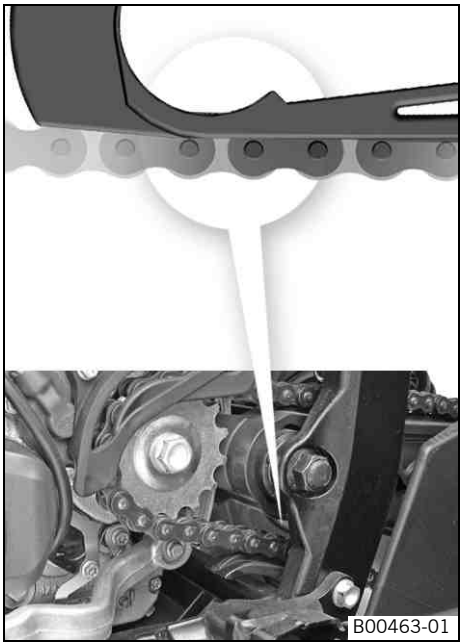
» If the distance Ⓑ is greater than the specified measurement:

– Replace the chain.

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



– Check the chain sliding guard at the top 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 at the bottom 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 chain sliding guard.

    Guideline

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

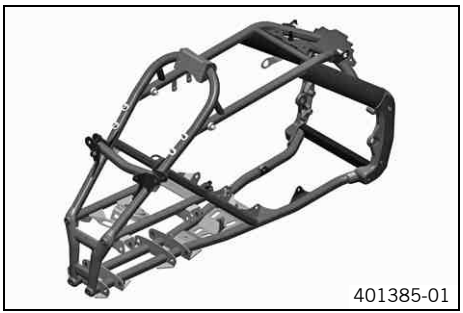

B00466-01

– 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 chain sliding piece.

    Guideline

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

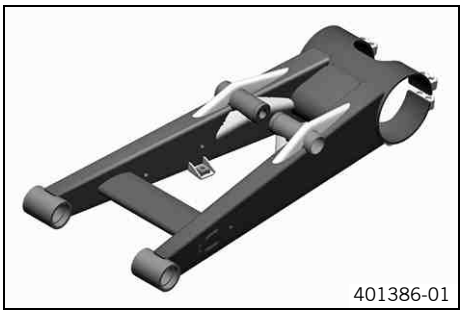
Checking the frame


401385-01

– 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.

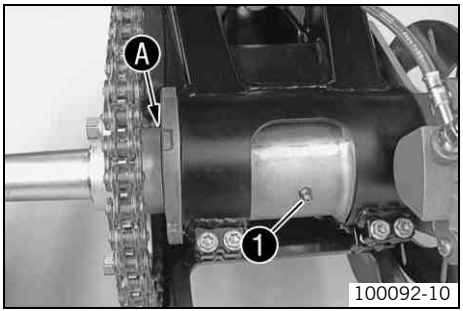
Checking the swingarm


401386-01

– 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.

Greasing the rear wheel eccentric element

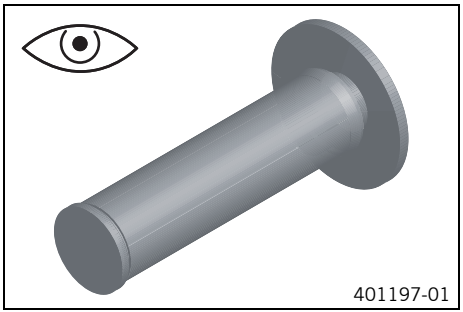


– Use a grease gun to fill the rear wheel eccentric element via grease nipple ❶ until grease emerges from the left shaft seal ring Ⓐ.

Long-life grease (☛ p. 194)

– Remove excess grease.

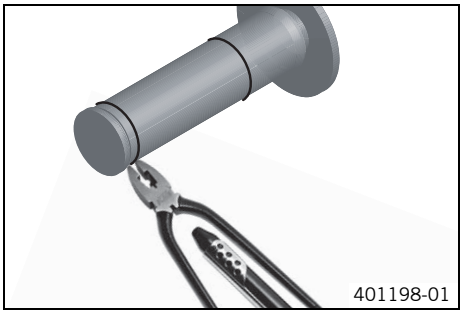
Checking the rubber grip



– 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.

Rubber grip adhesive (00062030051) (☛ p. 198)

Additionally securing the rubber grip

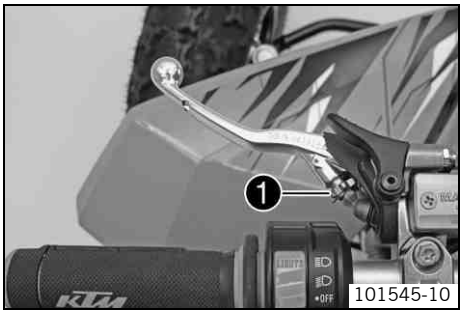


– Check the rubber grip. (☛ p. 107)
– Secure the rubber grip at two points using the securing wire.

Securing wire (54812016000)
Wire twister forceps (U6907854)

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

Adjusting basic position of clutch lever



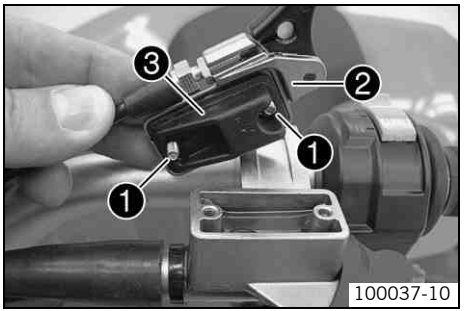
– Adjust the basic setting of the clutch lever to your hand size by turning adjusting screw ❶.

Info

Turn the adjusting screw counterclockwise to increase the distance between the clutch lever and the handlebar.
Turn the adjusting screw clockwise 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 any force.
Do not make any adjustments while riding!

Checking fluid level of hydraulic clutch

Info
The fluid level rises with increasing wear of the clutch lining disc.
Do not use brake fluid.



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

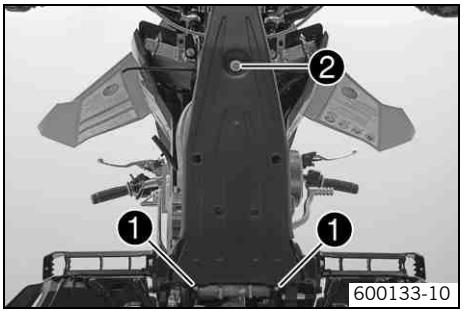
Fluid level under top level of container	4 mm (0.16 in)

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

Hydraulic fluid (15) (☛ p. 194)

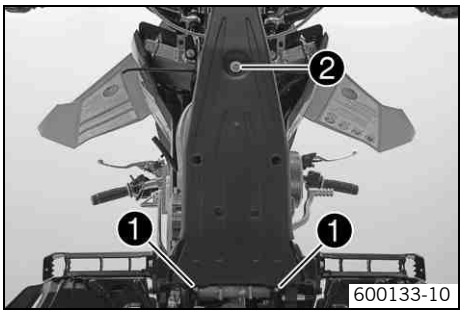
– Position the cover with the membrane. Mount and tighten screws.

Removing the engine guard



– Remove screws ❶ and ❷. Remove the engine guard.

Installing the engine guard



– Position the engine guard on the frame bearer. Mount and tighten screws ❶ and ❷.
Guideline

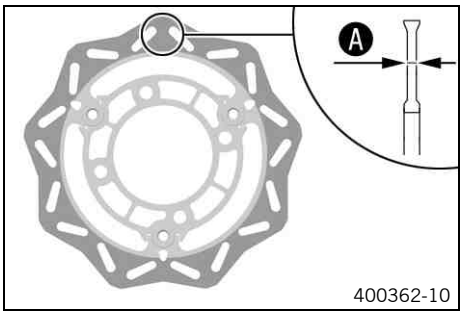
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)

Checking 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 disc to see if it conforms to measurement Ⓐ.

Info

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

Brake discs - wear limit	
Front	3.5 mm (0.138 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 exhibits damage, cracking or deformation:

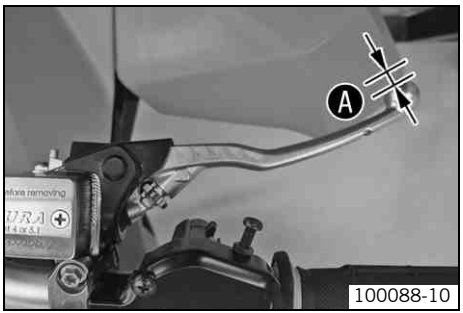
– Change the brake disc.

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 in the front brake circuit. The front brake can fail due to overheating. Adjust free travel on hand brake lever according to specifications.



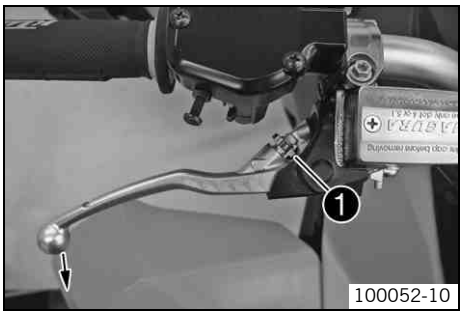
– Push the hand brake lever forward and check free travel Ⓐ.

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

» If the free travel does not meet specifications:

– Adjust the basic position of hand brake lever. (☛ p. 112)

Adjusting basic position of hand brake lever



– Check the free travel of the hand brake lever. (☛ p. 112)

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

Info

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

Checking front brake fluid level

Warning

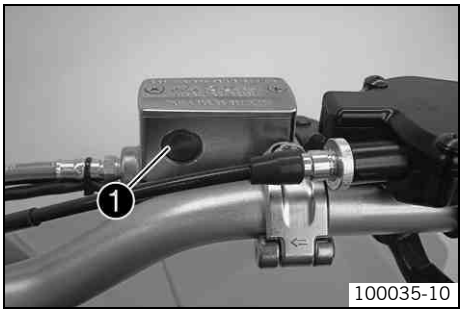
Danger of accidents Brake system failure.

– If the brake fluid level falls below the bottom of the viewer, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and 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 the viewer ❶.
  » When the brake fluid level has dropped below the bottom of the viewer:
    – Top up the brake fluid of the front brake. 🔧 (☛ p. 114)

Topping up the front brake fluid 🔧

Warning
Danger of accidents Brake system failure.

– If the brake fluid level falls below the bottom of the viewer, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and 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.)

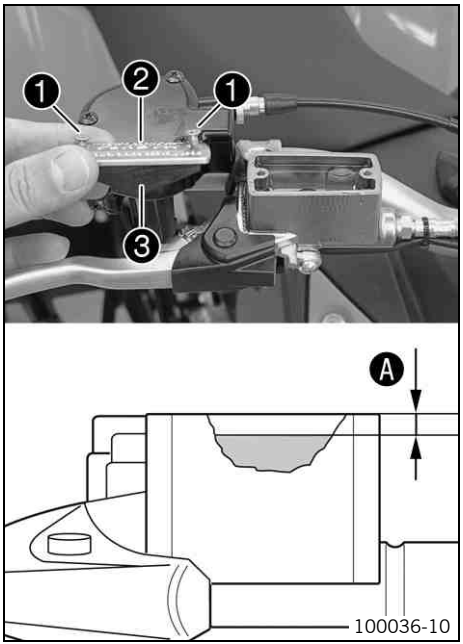
Warning

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 is corrosive!
Use only clean brake fluid from a sealed container.



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

Guideline

Dimension Ⓐ (brake fluid level below top edge of container)	5 mm (0.2 in)

Brake fluid DOT 4 / DOT 5.1 (☛ p. 192)

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

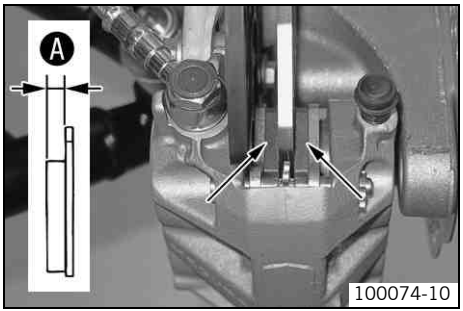
Info
Clean up overflowed or spilt brake fluid immediately with water.

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.)

– Remove the wheel/wheels. (☛ p. 132)



– Check the brake linings of both front brake calipers for minimum thickness Ⓐ.

Minimum thickness Ⓐ	≥ 1 mm (≥ 0.04 in)

» If the minimum thickness is less than specified:
– Change the front brake linings. (☛ p. 119)

– Check the brake linings for damage and cracking.

» If damage or cracking is visible:
– Change the front brake linings. (☛ p. 119)

– Mount the wheel/wheels. (☛ p. 132)

Removing front brake linings

Warning

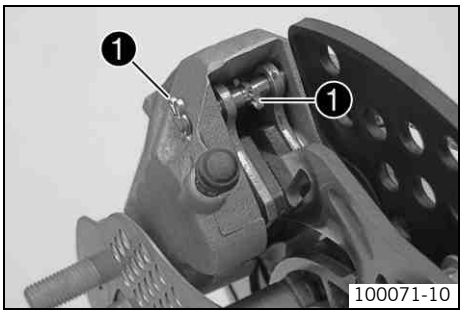
Danger of accident Brake system failure.

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

Info

The operations are the same on the left and right.

– Remove the wheel/wheels. (☛ p. 132)
– Pull the hand brake lever and release it again.
✓ Locking pawl moves into its basic position, parking brake is deactivated.



– Push the brake piston back to release pressure on the brake linings.
– Remove the locking split pins ❶, withdraw the bolt, and take out the brake linings.
– Clean the brake caliper and bolts.

Mounting front brake linings

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

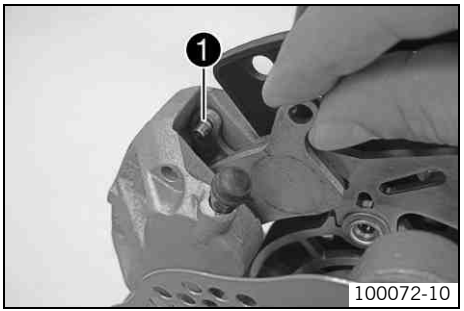
– Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.

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

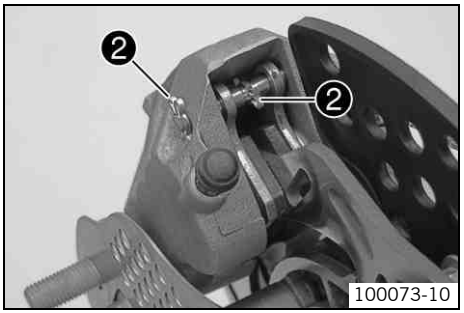
– Brake linings available from accessory suppliers are often not tested and approved for use on KTM vehicles. The construction and friction factor of the brake linings and therefore the brake power can differ considerably from the original KTM brake linings. If brake linings are used that differ from 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.

Info
The operations are the same on the left and right.

– Check the brake discs. (☛ p. 111)



– Insert the inside brake lining into the brake caliper and fix with bolt ❶.
– Insert the external brake lining into the brake caliper and slide the bolts in all the way.



– Mount the locking split pins ❷.
– Operate the hand brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.
– Mount the wheel/wheels. (☛ p. 132)

Changing the front brake linings

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.)

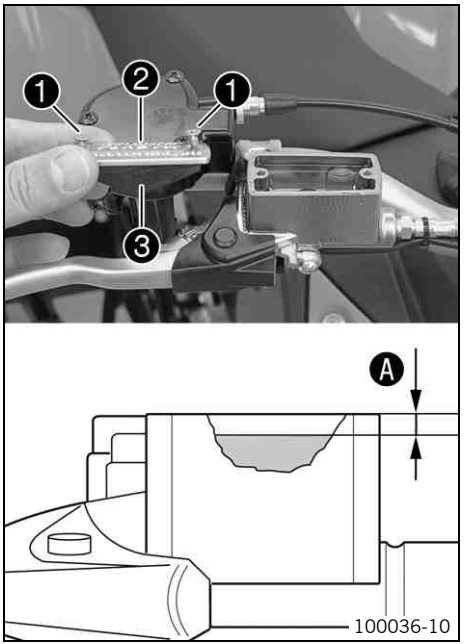
Warning

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 is corrosive!
Use only clean brake fluid from a sealed container.



– Remove the front brake linings. 🔧 (☛ p. 117)
– Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
– Remove screws ❶.
– Remove cover ❷ with membrane ❸.
– Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake fluid reservoir.
– Mount the front brake linings. 🔧 (☛ p. 118)
– Correct the brake fluid level to level Ⓐ.

Guideline

Dimension Ⓐ (brake fluid level below top edge of container)	5 mm (0.2 in)

Brake fluid DOT 4 / DOT 5.1 (☛ p. 192)

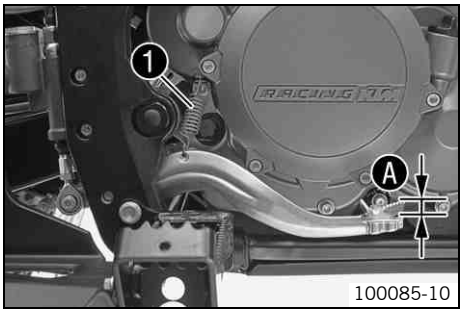
– Position the cover with the membrane. Mount and tighten screws.

Info
Clean up overflowed or spilt brake fluid immediately with water.

Checking 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 free travel on foot brake lever according to specifications.



– Disconnect spring ❶.
– Move the foot brake lever backwards and forwards between the end stop and the foot brake cylinder piston bracket and check free travel Ⓐ.

  Guideline

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

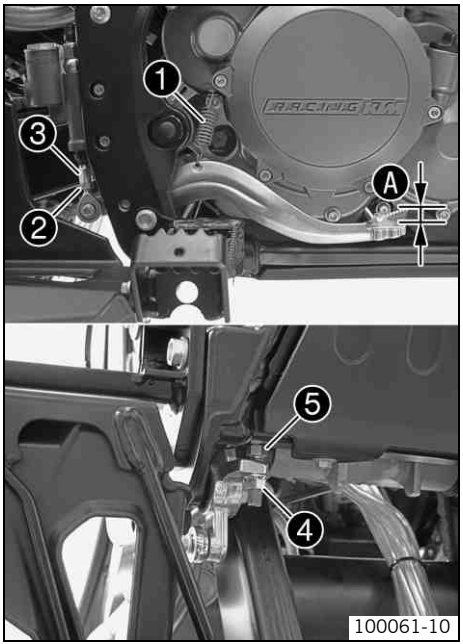
  » If the free travel does not meet specifications:
    – Adjust the basic position of the foot brake lever. 🔧 (☛ p. 122)
– Reconnect spring ❶.

Adjusting basic position 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 free travel on foot brake lever according to specifications.



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

Info
The range of adjustment is limited.

– Turn push rod ❸ accordingly until you have free travel Ⓐ. If necessary, adjust the basic position of the foot brake lever.

Guideline

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

– Hold screw ❺ and tighten nut ❹.

Guideline

Remaining nuts, chassis	M8	30 Nm (22.1 lbf ft)

– Hold push rod ❸ and tighten nut ❷.

Guideline

Remaining nuts, chassis	M6	15 Nm (11.1 lbf ft)

– Reconnect spring ❶.

Checking rear brake fluid level

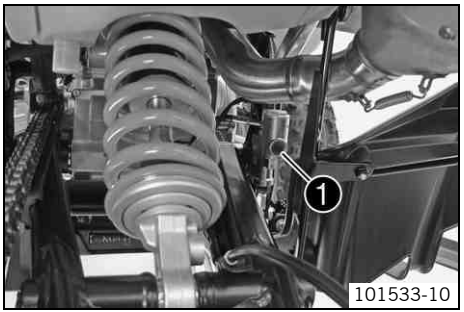
Warning
Danger of accidents Brake system failure.

– If the brake fluid level falls below the bottom of the viewer, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and 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.)



– Park the vehicle on a horizontal surface.
– Check the brake fluid level in the viewer ❶.
  » When the brake fluid level has dropped to the bottom of the viewer ❶:
    – Top up the brake fluid of the rear brake. (☛ p. 124)

Topping up brake fluid of rear brake

Warning

Danger of accidents Brake system failure.

– If the brake fluid level falls below the bottom of the viewer, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and 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.)

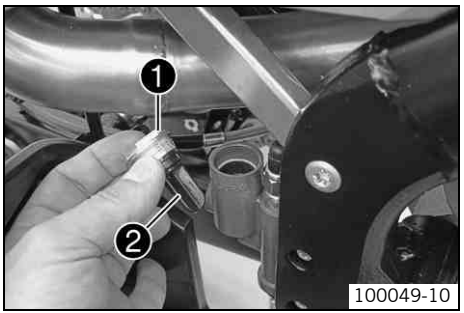
Warning

Environmental hazard Hazardous substances cause environmental damage.

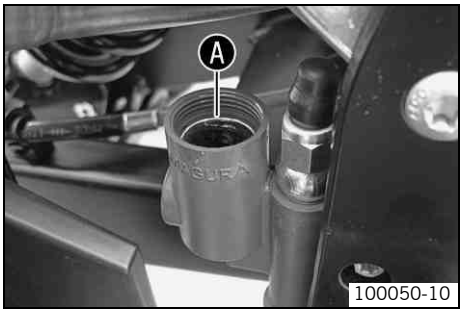
– Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

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 is corrosive!
Use only clean brake fluid from a sealed container.



– Remove screw cap ❶ with membrane ❷.



– Add brake fluid to level ❶.

Brake fluid DOT 4 / DOT 5.1 (☛ p. 192)

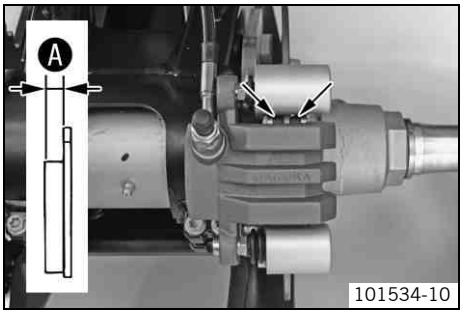
– Mount the screw cap with the membrane and tighten.

Info
Clean up overflowed or spilt brake fluid immediately with water.

Checking 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 ❶.

Minimum thickness ❶	≥ 1 mm (≥ 0.04 in)

» If the minimum thickness is less than specified:
– Change the rear brake linings. 🔧 (☛ p. 130)

– Check the brake linings for damage and cracking.

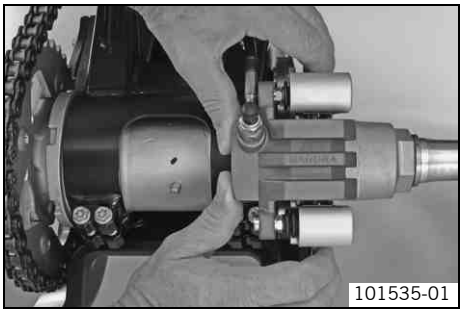
» If damage or cracking is visible:
– Change the rear brake linings. 🔧 (☛ p. 130)

Removing rear brake linings

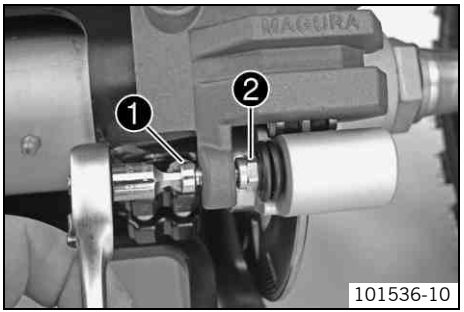
Warning

Danger of accident Brake system failure.

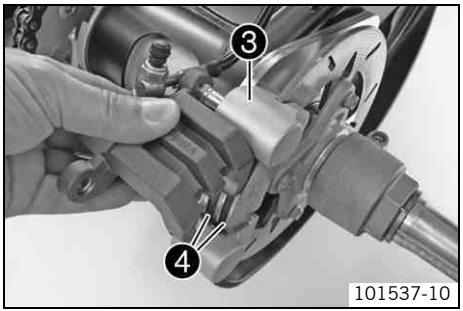
– Maintenance work and repairs must be carried out professionally. (Your authorized KTM workshop will be glad to help.)



– Press the brake caliper onto the brake disc by hand in order to push back the brake piston.



– Loosen the screw ❶ while holding the hexagonal head ❷ of the bearing bolt. Unscrew the screw by approx. 10 turns and use the screw to press the bearing bolt out of the brake caliper. Remove screw.



Note

Danger of damage Kinking of brake line.

– Position and handle the brake line without straining it. The brake line must be replaced if it is kinked.

– Swing the brake caliper up, unhook it from the brake caliper support ❸ and set it down.
– Remove the brake linings ❹.
– Clean brake caliper and brake caliper support.

Installing the rear brake linings

Warning

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

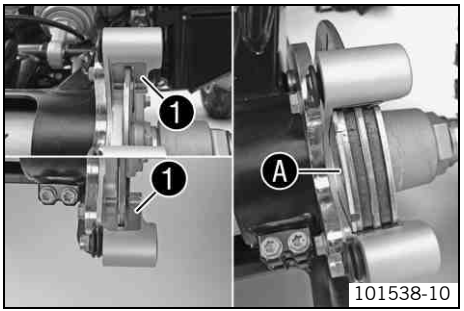
– Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.

Warning

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

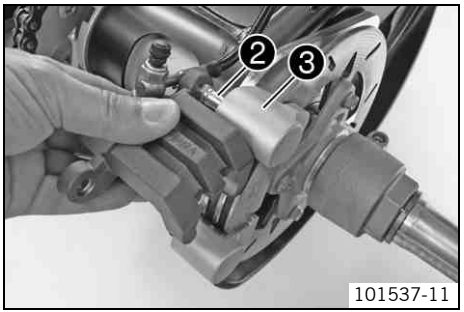
– Brake linings available from accessory suppliers are often not tested and approved for use on KTM vehicles. The construction and friction factor of the brake linings and therefore the brake power can differ considerably from the original KTM brake linings. If brake linings are used that differ from 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.

– Check the brake discs. (☛ p. 111)



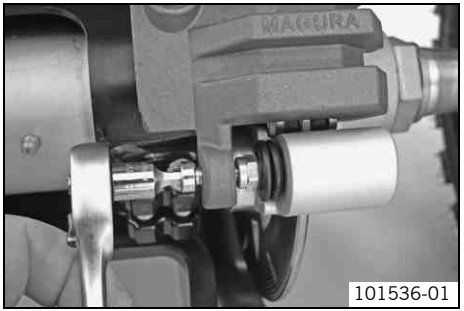
– Check that sliding plates ❶ are seated correctly in the brake caliper support and insert the brake linings.

Info
Make sure that decoupling plate Ⓐ is mounted on the piston side of the brake lining.



– Grease bearing bolt ❷ and insert the brake caliper with the bearing bolt into the brake caliper support ❸.

Lubricant (T625) (☛ p. 197)



– Swing the brake caliper downward. Mount and tighten the screw.

Guideline

Screw, rear brake caliper	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**

– Operate the foot brake lever repeatedly until the brake linings lie on the brake disc and there is a pressure point.

Changing rear brake linings

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.)

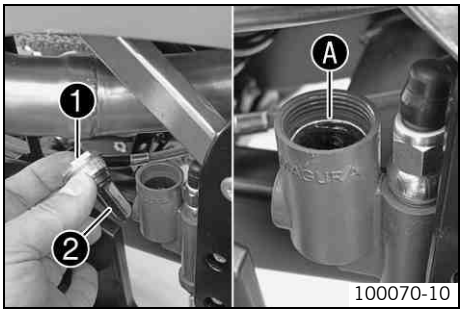
Warning

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 is corrosive!
Use only clean brake fluid from a sealed container.



– Remove the rear brake linings. 🔧 (☛ p. 127)
– Remove screw cap ❶ with membrane ❷.
– Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake fluid reservoir.
– Install the rear brake linings. 🔧 (☛ p. 128)
– Add brake fluid to level Ⓐ.

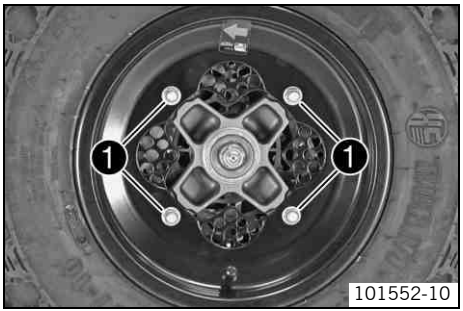
Brake fluid DOT 4 / DOT 5.1 (☛ p. 192)

– Mount the screw cap with the membrane and tighten.

Info
Clean up overflowed or spilt brake fluid immediately with water.

Removing wheel/wheels

Info
Proceed in the same way on the other wheels if necessary.



– Pull the hand brake lever, push the locking pawl ❷ down and release the hand brake lever. (Figure 100006-10☛ p. 20)
– Loosen the wheel nuts ❶.
– Raise the vehicle with the lifting gear. (☛ p. 69)
– Remove the wheel nuts. Remove the wheel.

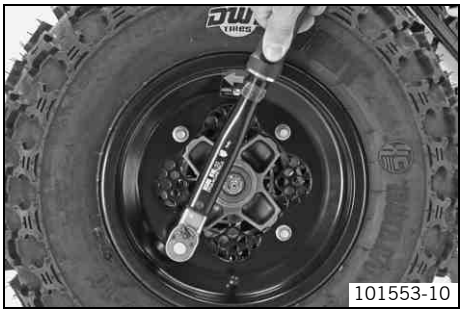
Info
Carefully remove the wheel, making sure it does not become jammed with the threads of the screws.

Mounting wheel/wheels

Note
Material damage Damage and destruction of components from incorrect positioning and mounting.

– Do not swap the wheels; the tire valves must always be on the outside when the wheels are positioned and mounted.

Info
Proceed in the same way on the other wheels if necessary.



– Position the wheel on the hub.

Info
Carefully position the wheel on the hub, being careful not to damage the threads of the screws.

– Mount the wheel nuts but do not tighten yet.

Guideline

Wheel nut	M10x1.25	45 Nm (33.2 lbf ft)

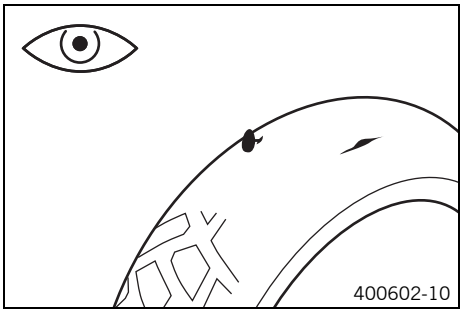
– Remove the vehicle from the lifting gear. (☛ p. 69)
– Pull the hand brake lever, push the locking pawl ❷ down and release the hand brake lever. (Figure 100006-10☛ p. 20)
– Tighten the wheel nuts crosswise.

Guideline

Wheel nut	M10x1.25	45 Nm (33.2 lbf ft)

Checking the tire condition

Info
Only mount tires that have been approved and/or recommended by KTM.
Other tires could have a negative effect on vehicle handling.
The type, condition and air pressure of the tires all have an important impact on the handling characteristics of the vehicle.
The tires mounted on the front and rear wheels must have similar profiles.
Worn tires have a negative effect on vehicle handling, especially on wet surfaces.



– Check the front and rear tires for cuts, impacted foreign bodies and other damage.
  » If the tires exhibit cuts, impacted foreign bodies or other damage:
    – Change the tire.
– Check the depth of the tread.

Minimum tread depth	≥ 2 mm (≥ 0.08 in)

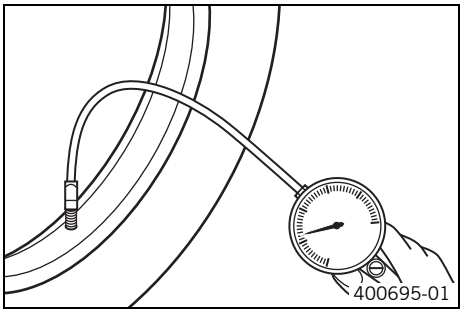
  » If the tread depth is less than the minimum value:
    – Change the tire.
– Check the tire age.

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 indicate the week of manufacture and the last two digits the year of manufacture.
KTM recommends that the tires be changed after 5 years at the latest, regardless of the actual state of wear.

  » If the tire is older than five years:
    – Change the tire.

Checking the tire air pressure

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.
Check the tire pressure on all wheels and correct it if necessary.



– Remove the dust cap.
– Check the tire air pressure when the tires are cold.

Tire pressure gauge (83519001000)	
Tire air pressure off road	0.3 bar (4 psi)

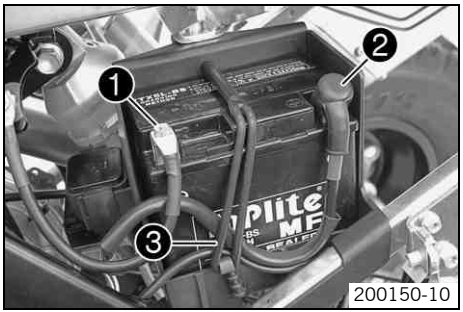
» If the tire pressure does not meet specifications:
  – Correct the tire pressure.
– Mount the dust cap.

Removing the battery

Warning

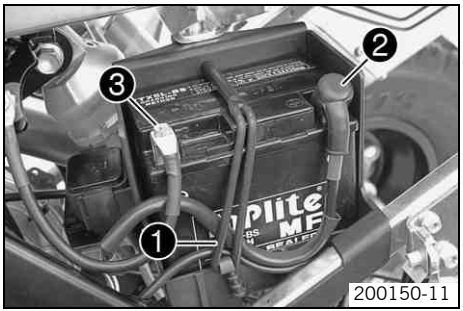
Risk of injury Battery acid and battery gases cause serious chemical burns.

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



- Switch off all power consumers and switch off the engine.
- Remove the rear fender. (☛ p. 79)
- Disconnect the negative (minus) cable ❶ of the battery.
- Pull back the plus pole cover and disconnect the positive (plus) cable ❷ of the battery.
- Loosen the rubber band ❸.
- Remove the battery.

Installing the battery



– Place the battery in the battery holder.

Battery (YTX5L-BS) (☛ p. 186)

– Reconnect rubber band ❶.
– Attach the positive (plus) cable and replace the plus pole cover ❷.
– Connect the negative (minus) cable ❸ of the battery.
– Install the rear fender. (☛ p. 80)

Recharging the battery

Warning

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

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

Warning

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

– Do not discard batteries with the household trash. Dispose of a defective battery in an environmentally compatible manner. Give the battery to your KTM dealer or to a recycling center that accepts used batteries.

Warning

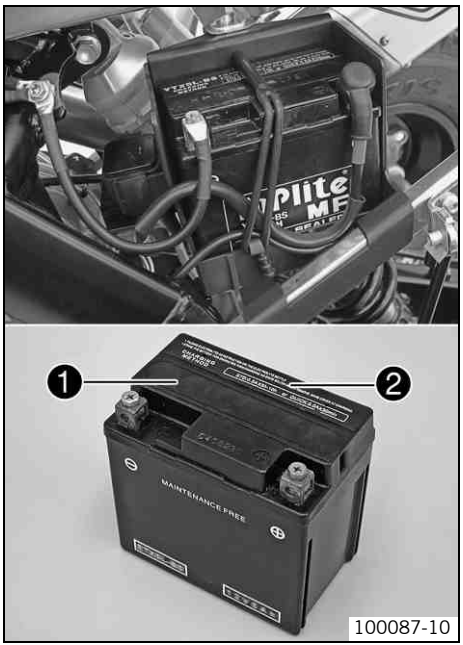
Environmental hazard Hazardous substances cause environmental damage.

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

Info

Even if there is no load on the battery, it still loses power steadily.
The charge state and the type of charge are very important for the service life of the battery.
Rapid charging with a high charging current has a negative impact on the service life.
If the charging current, charging voltage and charging time are exceeded, electrolyte escapes via the safety valves. This reduces the battery capacity.
If the vehicle is started repeatedly until the battery is depleted, the battery must be charged immediately.
If the battery is left in a discharged state for an extended period, it will drain completely and sulfate, destroying the battery.
The battery is maintenance-free, which means that the acid level does not need to be checked.

– Switch off all power consumers and switch off the engine.
– Remove the rear fender. (☛ p. 79)
– Disconnect the minus (negative) cable of the battery to avoid damage to the vehicle's electronics.



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

Battery charger (58429074000)

In addition, this battery charger can be used to test the quiescent current, the start ability of the battery and the alternator. With this device, you cannot overcharge the battery.

Info

Never remove the lid ❶.
Charge the battery to a maximum of 10% of the capacity specified on the battery housing ❷.

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

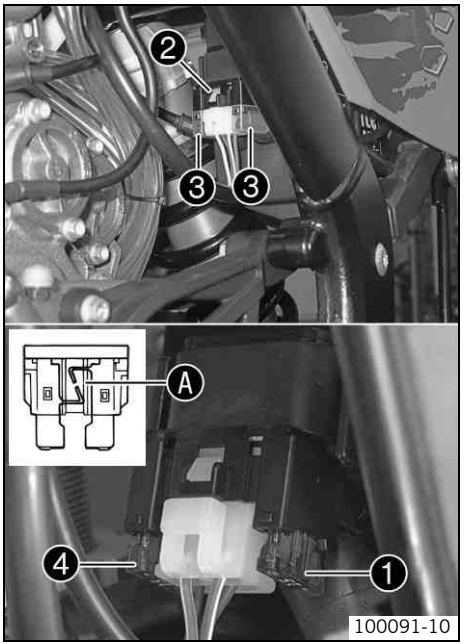
Guideline

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

– Install the rear fender. (☛ p. 80)

Changing the main fuse

– Switch off all power consumers and the engine.



– The main fuse ❶ is located in the starter relay ❷ in front of the battery.
– Remove protection covers ❸.
– Remove the faulty main fuse.

Info
You can recognize a blown fuse by its broken filament Ⓐ.

Warning
Fire hazard The electrical system can be overloaded if the wrong fuses are used.
– Use only fuses with the prescribed amperage. Never by-pass or repair fuses.

– Insert the new fuse.

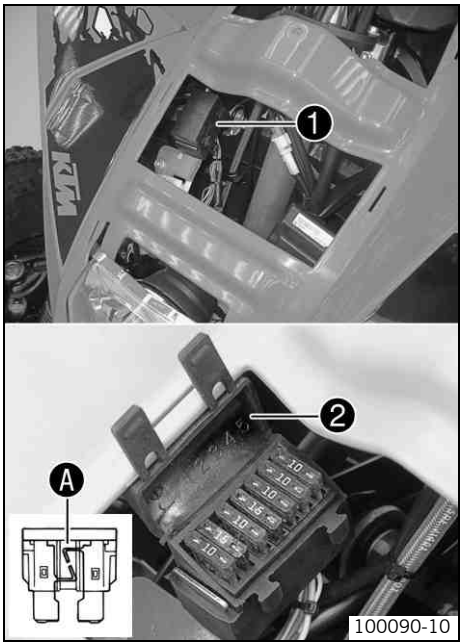
Fuse (58011109120) (☛ p. 186)

Tip
Replacement fuse ❹ should always be present in the starter relay to make sure it is available when needed.

– Replace the protection covers.

Changing the fuses of individual power consumers

– Remove the front cover. (☛ p. 78)
– Switch off all power consumers and switch off the engine.



– Open the cover ❷ of the fuse box ❶.

Info
The designation of the fuses is located on the inside cover of fuse box ❷.

– Remove the faulty fuse.

Guideline

Fuse **1** - 10 A - ignition, CDI controller, indicator lamps ON, N, R
Fuse **2** - 15 A - high beam, low beam, parking light, tail light, brake light, high beam indicator lamp
Fuse **3** - 10 A - radiator fan
Fuse **4** - 10 A - for auxiliary devices (permanent positive)
Fuse **5** - 10 A - for auxiliary devices (plus switched on with ignition lock)
Fuse **res.** - 10 A/15 A - replacement fuses

Info
You can recognize a blown fuse by its broken filament ❹.

Warning
Fire hazard The electrical system can be overloaded if the wrong fuses are used.
– Use only fuses with the prescribed amperage. Never by-pass or repair fuses.

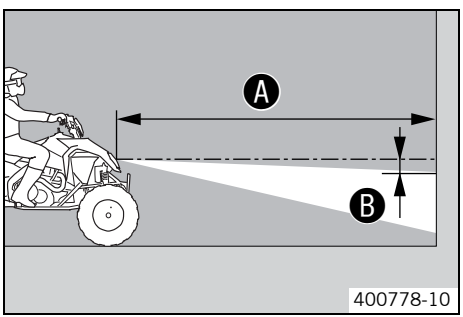
– Insert a new fuse of the appropriate strength.

Fuse (58011109110) (☛ p. 186)
Fuse (58011109115) (☛ p. 186)

Tip
The replacement fuses should always be present in the fuse box to make sure they are available when needed.

– Close the cover of the fuse box.
– Install the front cover. (☛ p. 78)

Checking the headlight setting



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

Guideline

Distance Ⓑ	5 cm (2 in)

– Position the vehicle vertically a distance Ⓐ away from the wall.
– Now the rider, wearing a full set of protective clothing, sits on the vehicle in the normal sitting position (feet on the footrests).

Guideline

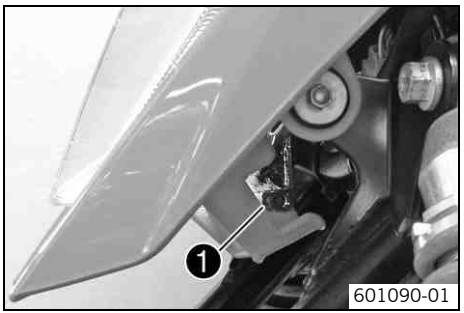
Distance Ⓐ	5 m (16 ft)

– Switch on the low beam. Check the headlight setting.

The boundary between light and dark must be exactly at the lower mark when the vehicle is operational and complete with a rider.

» If the light-dark border does not meet specifications:
  – Adjust the headlight range of the headlight. (☛ p. 143)

Adjusting the headlight range of the headlight



– Check the headlight setting. (☛ p. 142)
– Loosen screw ❶.
– Adjust the headlight range of the headlight by moving it up or down.

Guideline

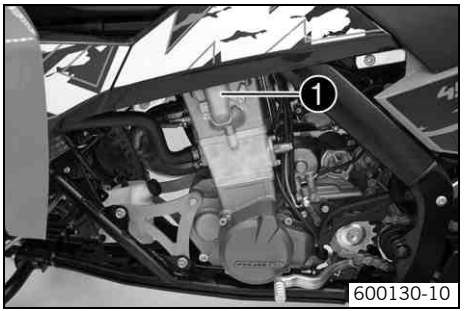
The boundary between light and dark must be exactly on the lower mark for an operational vehicle with a rider (to prepare the mark, see: Checking the headlight setting).

Info

A change in weight on the vehicle may require a correction of the headlight range.

– Tighten screw ❶.

Cooling system



The water pump ❶ in the engine forces the coolant to flow.
The pressure resulting from the warming of the cooling system is regulated by a valve in the radiator cap . 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 radiator fan provides extra cooling.
The lower the speed, the less the cooling effect. Dirty cooling fins also reduce the cooling effect.

Radiator fan

The radiator fan ❶ is located on the radiator under the fuel tank.

Working range within which radiator fan is switched on and off.

Thermoswitch	
Switch-off temperature	80 °C (176 °F)
Switch-on temperature	85 °C (185 °F)

Checking the antifreeze and coolant level

Warning

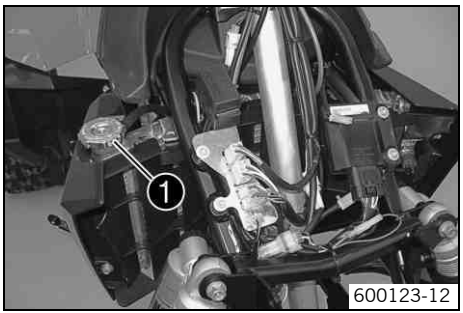
Danger of scalding The coolant gets very hot and is under high pressure when the vehicle is operated.

– Do not remove the radiator cap or remove radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. If you scald yourself, hold the affected area under lukewarm water immediately.

Warning

Danger of poisoning Coolant is poisonous and a health hazard.

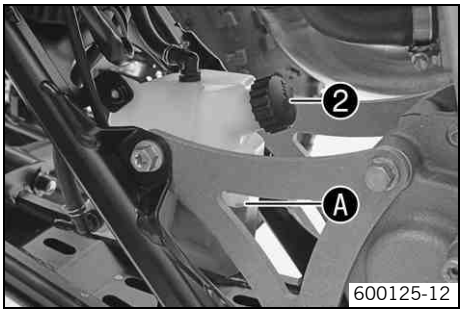
– Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.



– Remove the front trim. (☛ p. 73)
– Remove the radiator cap ❶.
– Check antifreeze of coolant.

−25... −45 °C (−13... −49 °F)

» If the coolant antifreeze does not meet specifications:
  – Correct the coolant antifreeze.
– Completely fill the radiator with coolant and close the ❶ radiator cap.



– Open the compensating tank cover ❷.
– Check antifreeze of coolant.

−25... −45 °C (−13... −49 °F)

» If the coolant antifreeze does not meet specifications:
– Correct the coolant antifreeze.
– Coolant level Ⓐ must be between **MIN** and **MAX**.
» If the coolant level does not meet specifications:
– Correct the coolant level.

Alternative 1

Coolant (☛ p. 192)

Alternative 2

Coolant (mixed ready to use) (☛ p. 192)

– Mount the compensating tank cover ❷.
– Install the front trim. (☛ p. 75)

Checking the coolant level

Warning

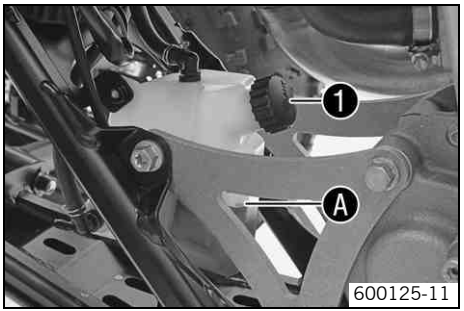
Danger of scalding The coolant gets very hot and is under high pressure when the vehicle is operated.

– Do not remove the radiator cap or remove radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. If you scald yourself, hold the affected area under lukewarm water immediately.

Warning

Danger of poisoning Coolant is poisonous and a health hazard.

– Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.



Condition

The radiator must be completely full.

– Coolant level Ⓐ must be between **MIN** and **MAX**.
  » If the coolant level does not meet specifications:
    – Open the compensating tank cover ❶ and correct the coolant level.

      Alternative 1

      Coolant (☛ p. 192)

      Alternative 2

      Coolant (mixed ready to use) (☛ p. 192)

– Mount the compensating tank cover ❶.

Draining coolant

Warning

Danger of scalding The coolant gets very hot and is under high pressure when the vehicle is operated.

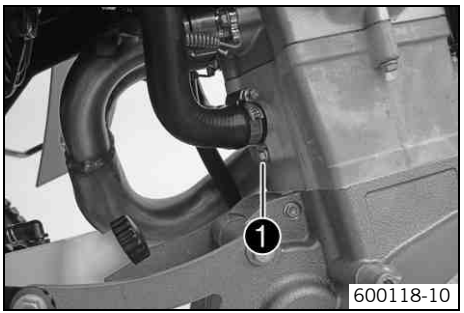
– Do not remove the radiator cap or remove radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. If you scald yourself, hold the affected area under lukewarm water immediately.

Warning

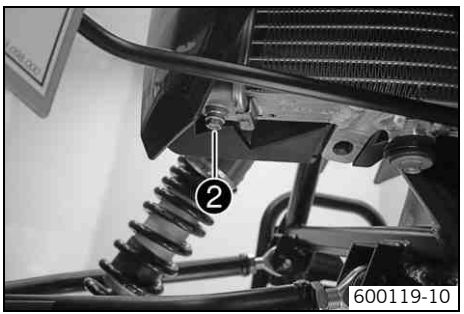
Danger of poisoning Coolant is poisonous and a health hazard.

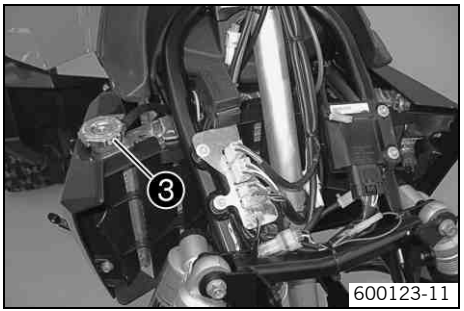
– Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.

– Remove the front trim. (☛ p. 73)
– Place a suitable container under the vehicle.
– Remove screw ❶.

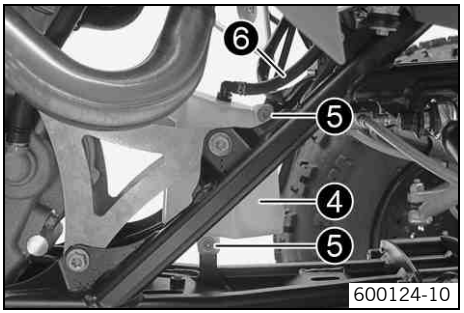


– Remove screw ❷.





– Remove the radiator cap ❸. Completely drain the coolant.



– Open the plug of the compensation tank ❹.
– Remove the screws ❺ and empty the compensating tank ❹.
– Position the compensating tank ❹. Mount and tighten screws ❺.

Guideline

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

– Move the ventilation hose ❻ up.
– Mount and tighten the screws ❶ and ❷ with new seal rings.

Guideline

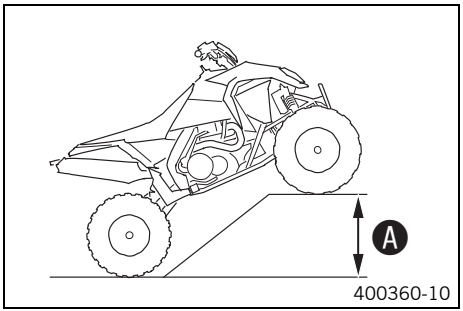
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)

Filling coolant / bleeding cooling system

Warning

Danger of poisoning Coolant is poisonous and a health hazard.

– Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.



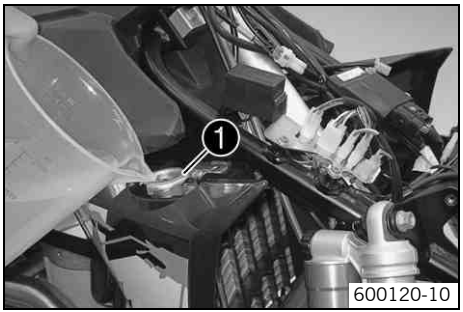
– Position the vehicle as shown and secure it against rolling away. The height difference ❹ must be achieved.

Guideline

Height difference ❹	50 cm (19.7 in)

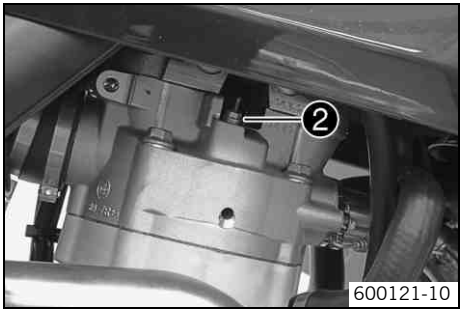
– Pull the hand brake lever, push the locking pawl ❷ down and release the hand brake lever. (Figure 100006-10☛ p. 20)

✓ The front wheels are blocked.



– Fill the coolant into the radiator ❶.

Coolant		
With compensating tank	1.50 l (1.59 qt.)	Coolant (☛ p. 192)
		Coolant (mixed ready to use) (☛ p. 192)
Without compensating tank	1.30 l (1.37 qt.)	Coolant (☛ p. 192)
		Coolant (mixed ready to use) (☛ p. 192)



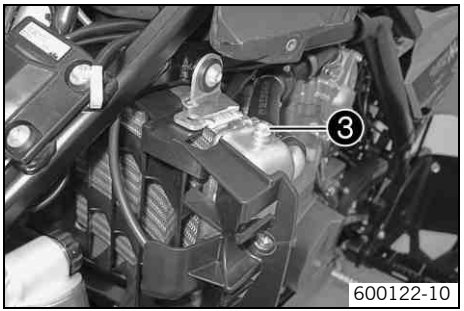
– Open the screw ❷ to bleed the cylinder head. Tighten the screw ❷ when coolant emerges from the opening.

Guideline

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

Info

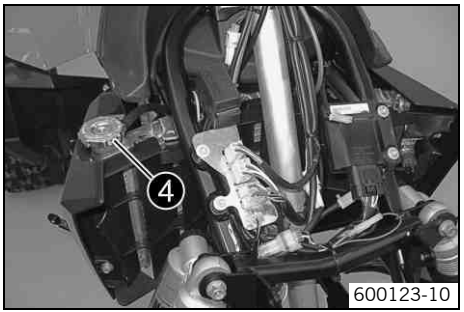
Ensure that the radiator is always filled with a sufficient amount of coolant.



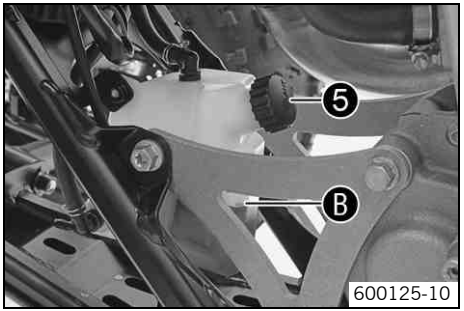
– Open the screw ❸ to bleed the radiator. Tighten the screw ❸ when coolant emerges from the opening.

Guideline

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

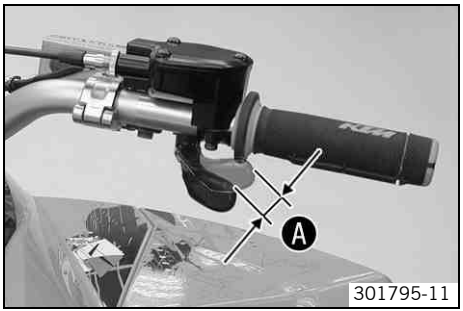


– Completely fill the radiator and close the radiator cap ❹.
– Place the vehicle on the ground.



– Top up the compensating tank to level Ⓑ. Mount the cap ❺.
– Install the front trim. (☛ p. 75)
– Make a short test ride.
– Check the coolant level. (☛ p. 146)

Checking the play in the throttle cable



– Check the throttle lever for smooth operation.
– Move the handlebar to the straight-ahead position. Move the throttle lever back and forth slightly to ascertain the play in the throttle cable Ⓐ.

Guideline

Play in throttle cable	3... 5 mm (0.12... 0.2 in)

» If the throttle cable play does not meet specifications:
– Adjust the play in the throttle cable. (☛ p. 152)

Danger

Danger of poisoning Exhaust gases are poisonous 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.

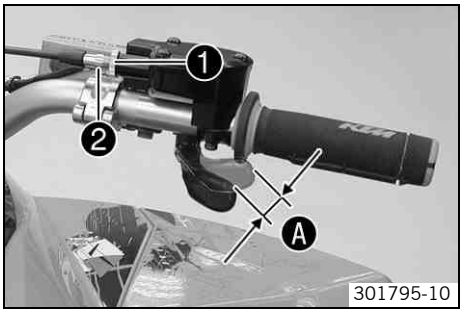
– Start the engine and let it run idle. Move the handlebar to and fro over the entire steering range.

The idle speed must not change.

» If the idle speed changes:
– Adjust the play in the throttle cable. (☛ p. 152)

Adjusting play in throttle cable

– Check the throttle cable routing.



– Move the handlebar to the straight-ahead position.
– Loosen the nut ❶ and use the screw ❷ to adjust the play in the throttle cable Ⓐ.

Guideline

Play in throttle cable	3... 5 mm (0.12... 0.2 in)

– Tighten nut ❶.

Checking the play in the cable using the reverse gear release lever

– Move the handlebar to the straight-ahead position. Move the reverse gear release lever back and forth slightly to ascertain the play in the cable Ⓐ.

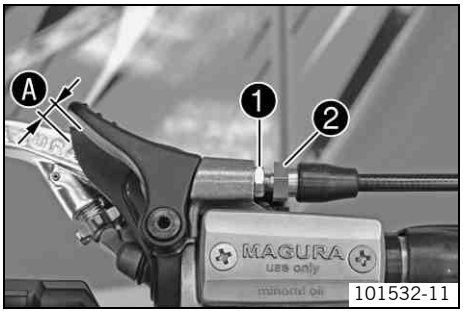
Guideline

Play in the cable on the reverse gear release lever	10 mm (0.39 in)

» If the cable play on the reverse gear release lever does not agree with the specifications:
  – Adjust the cable play on the reverse gear release lever. (☛ p. 153)

Adjusting the cable play on the reverse gear release lever

– Check the play in the cable using the reverse gear release lever. (☛ p. 153)



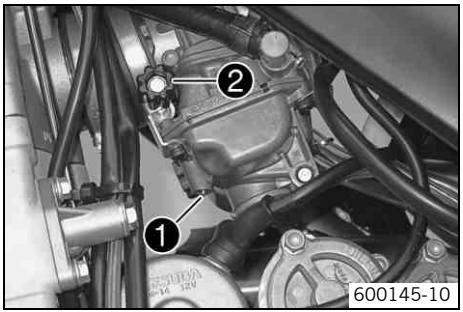
– Move the handlebar to the straight-ahead position.
– Release nut ❶ and use screw ❷ to adjust cable play Ⓐ on the reverse gear release lever.

  Guideline

Play in the cable on the reverse gear release lever	10 mm (0.39 in)

– Tighten nut ❶.

Carburetor - idle



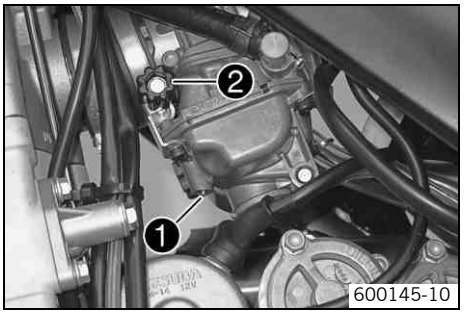
The idle setting of the carburetor has a big influence on the starting behavior, stable idling and the response to throttle opening. That means that an engine with a correctly set idle speed is easier to start than if the idle is set wrongly.

Info

The carburetor and its components are subject to increased wear caused by engine vibration. Wear can result in malfunctioning.
If the idle speed is set significantly higher, the engine does not start. When the electric starter button is activated, the electric starter turns over the engine, but the engine does not start because there is no ignition spark.

The idle speed is adjusted with the adjustment screw ❷.
The idle mixture is adjusted with the idle mixture adjustment screw ❶.

Carburetor - adjusting idle



– Screw in the idle adjusting screw ❶ until it stops and then to the prescribed basic setting.

Guideline

Idle mixture adjusting screw	
Open	1.0 turn

Adjustment tool for mixture control screw (59029034000)

– Run the engine until warm.

Guideline

Warm-up time	≥ 5 min

– Adjust the idle speed with the adjusting screw ❷.

Guideline

Choke function deactivated – The choke lever is pushed in to the stop. (☛ p. 27)	
Idle speed	1,500... 1,600 rpm

Info

If the idle speed is set significantly higher, the engine does not start. When the electric starter button is activated, the electric starter turns over the engine, but the engine does not start because there is no ignition spark.

– Turn the idle mixture control screw ❶ slowly clockwise until the idle speed begins to fall.
– Note the position and turn the idle adjusting screw slowly counterclockwise until the idle speed falls.
– Adjust to the point between these two positions with the highest idle speed.

Info

If there is a large increase in the engine speed, reduce the idle speed to a normal level and repeat the above steps.
The extremely sporty rider will set the mixture about 1/4 of a turn back from this ideal value (leaner, clockwise) since the engine has a higher operating temperature in sporting use.
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 adjusting screw to the end without any change of engine speed, you have to fit a smaller idling jet.
The idle adjusting screw must not be opened more than two turns. If more than two turns are necessary (rich mixture), use a larger idling jet.
After changing the idling jet, start from the beginning with the adjusting steps.

– Adjust the idle speed with the adjusting screw ❷.

Guideline

Choke function deactivated – The choke lever is pushed in to the stop. (☛ p. 27)	
Idle speed	1,500... 1,600 rpm

Info

Following extreme air temperature or altitude changes, adjust the idle speed again.

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.

– Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the notes on refueling.

Warning

Danger of poisoning Fuel is poisonous and a health hazard.

– Avoid contact between fuel and skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact with fuel. Store fuel in a suitable canister according to regulations and keep it out of the reach of children.

Warning

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

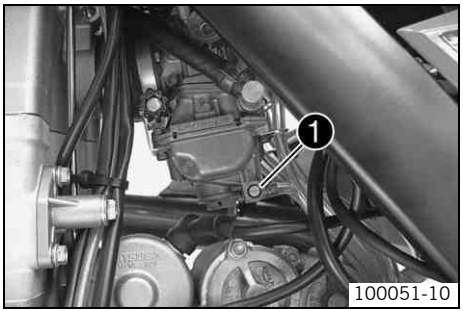
– Do not allow fuel to get into the ground water, the ground, or the sewage system.

Info

Carry out this work with a cold engine.

– Turn the handle ❶ of the fuel tap to **OFF**. (Figure 100013-10☛ p. 26)

✓ No more fuel flows from the tank to the carburetor.

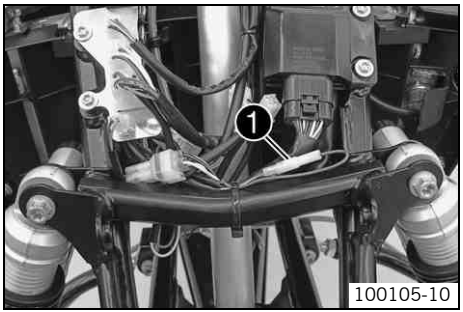


– Guide the hose coming down behind the engine into a suitable container.

Info
Water in the float chamber results in malfunctioning.

– Undo the screw ❶ (turn it counterclockwise) a few turns and drain the fuel from the float chamber.
– Tighten screw ❶.

Ignition curve plug connection



Plug-in connector ❶ is located under the trim at the front on the frame tube.

Possible states
- Performance – The plug-in connector is connected to achieve better performance.
- Soft – The plug-in connector is disconnected for better driveability.

Changing the ignition curve

– Remove the front trim. (☛ p. 73)

Changing the ignition curve from Performance to Soft.
– Disconnect plug-in connector ❶. (Figure 100105-10☛ p. 158)
✓ Soft – The plug-in connector is disconnected for better driveability. (☛ p. 158)

Changing the ignition curve from Soft to Performance.

– Connect the plug-in connector ❶. (Figure 100105-10☛ p. 158)

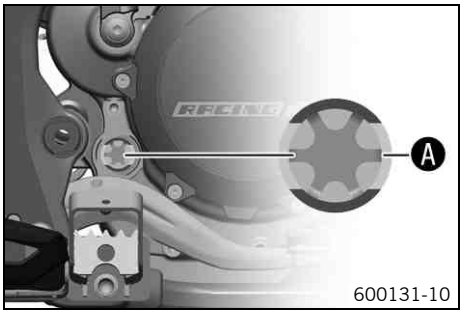
✓ Performance – The plug-in connector is connected to achieve better performance. (☛ p. 158)

– Install the front trim. (☛ p. 75)

Checking the engine oil level

Info
The engine oil level can be checked on a cold or hot engine.

– Park the vehicle on a horizontal surface.



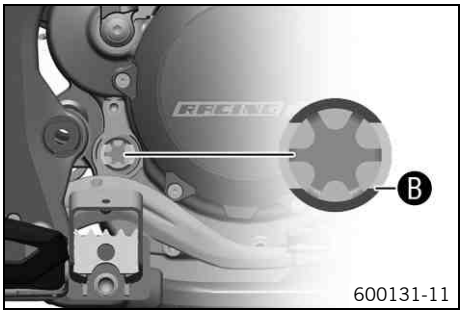
Condition
The engine is at operating temperature.

– Check the engine oil level.

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

The engine oil reaches the middle of the viewer Ⓐ.

» When the engine oil does not reach the middle of the viewer Ⓐ:
– Add engine oil. (☛ p. 167)



Condition
The engine is cold.

– Check the engine oil level.

The engine oil reaches the bottom of the viewer Ⓑ.

» When the engine oil does not reach the bottom of the viewer Ⓑ:
– Add engine oil. (☛ p. 167)

Changing engine oil and oil filter, cleaning oil screens


601086-01

- Drain engine oil, clean oil screens. (p. 161)
- Remove the oil filter. (p. 164)
- Install the oil filter. (p. 166)
- Fill up with engine oil. (p. 166)

Draining engine oil, cleaning oil screens

Warning
Danger of scalding Engine oil and gear oil get very hot when the vehicle is driven.

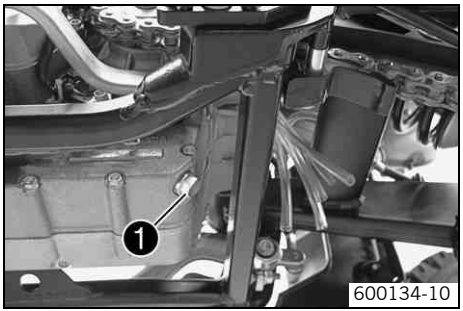
- Wear suitable protective clothing and gloves. If you scald yourself, hold the affected area under lukewarm water immediately.

Warning
Environmental hazard Hazardous substances cause environmental damage.

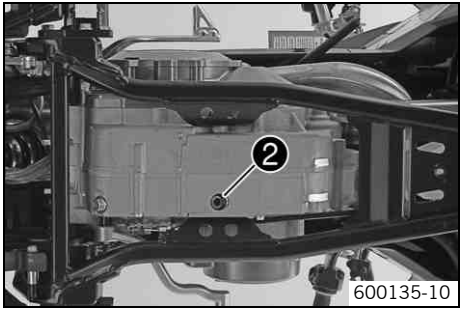
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

Info
Drain the engine oil only when the engine is warm.

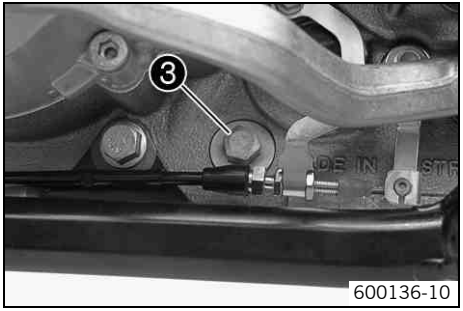
- Park the vehicle on a horizontal surface.
- Remove the engine guard. (p. 109)



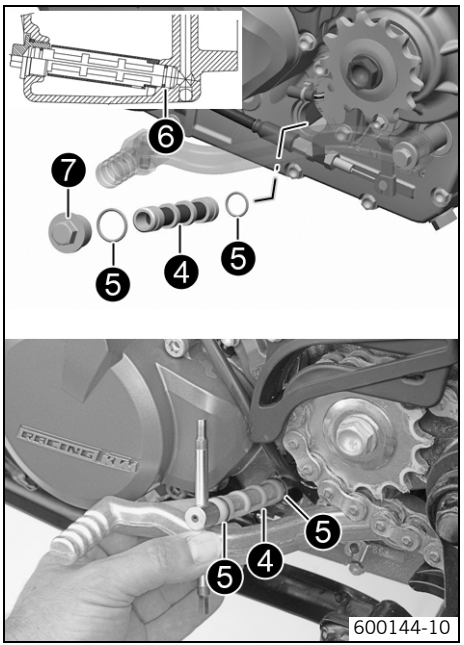
– Place a suitable container under the engine.
– Remove the oil drain plug ❶.



– Remove screw plug ❷ and the small oil screen with both O-rings.



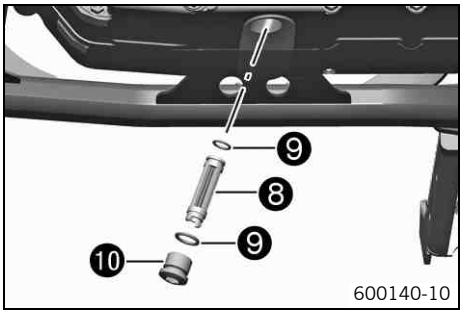
– Remove screw plug ❸ and the large oil screen with both O-rings.
– Completely drain the engine oil.



– Thoroughly clean the parts and sealing area.
– Oil O-rings ❺, mount them on oil screen ❹ and, using a long hexagon key, insert them until the O-ring is seated in the housing ❻ with the oil screen.
– Mount screw plug ❼ with the seal ring and tighten it.

Guideline

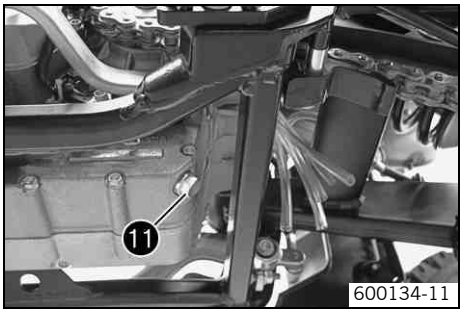
Locking screw, oil screen, long	M20x1.5	15 Nm (11.1 lbf ft)



– Insert oil screen ❽ with O-rings ❾ into screw plug ❿ and tighten.

Guideline

Locking screw, oil screen, short	M16x1.5	10 Nm (7.4 lbf ft)	Lubricated with engine oil



– Mount oil drain plug ⓫ with the seal ring and tighten it.
Guideline

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

– Install the engine guard. (☛ p. 110)

Removing the oil filter

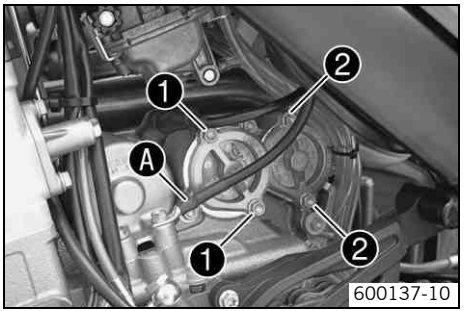
Warning
Danger of scalding Engine oil and gear oil get very hot when the vehicle is driven.

– Wear suitable protective clothing and gloves. If you scald yourself, hold the affected area under lukewarm water immediately.

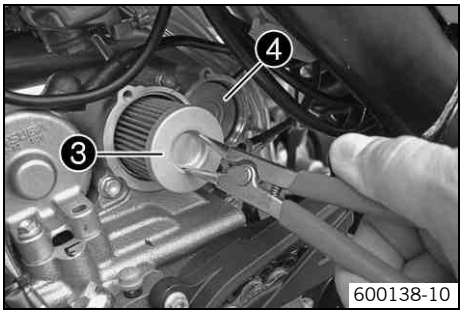
Warning
Environmental hazard Hazardous substances cause environmental damage.

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

– Place a suitable container under the engine.



– Disconnect the ground cable ❶ from the engine.
– Remove screws ❶ and ❷. Take off the oil filter covers with the O-ring.

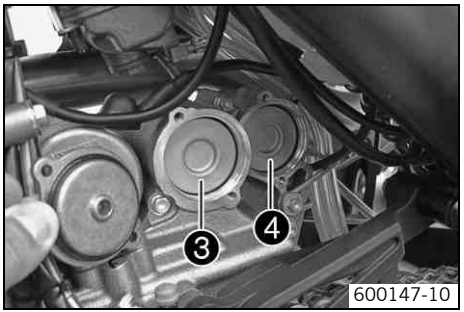


– Pull the oil filters ❸ and ❹ out of the engine case.

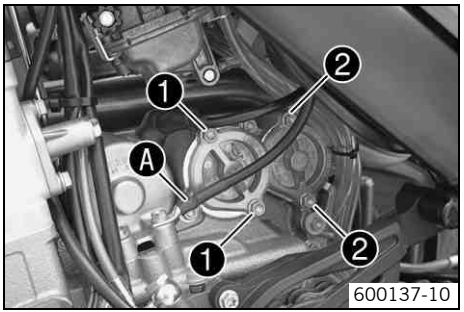
Circlip pliers reverse (51012011000)

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

Installing the oil filter



– Fill oil filters ❸ and ❹ with engine oil and insert them in the oil filter housing.



– Oil the O-rings of the oil filter covers and mount them with the oil filter covers. Mount and tighten screws ❶ and ❷.

Guideline

Screw, oil filter cover	M5	6 Nm (4.4 lbf ft)

– Connect ground wire Ⓐ to the engine and tighten the screw.

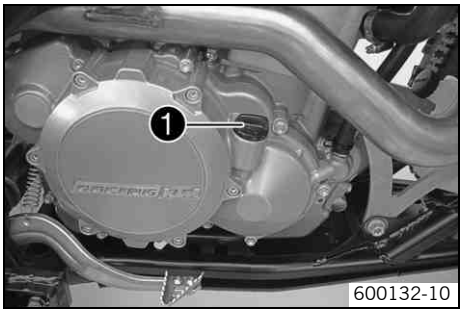
Guideline

Screw, starter engine	M6	10 Nm (7.4 lbf ft)

Filling up with engine oil

Info

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



– Remove the screw cap ❶ on the clutch cover and fill up with engine oil.

Engine oil	1.7 l (1.8 qt.)	External temperature: ≥ 0 °C (≥ 32 °F)	Engine oil (SAE 10W/50) (☛ p. 193)
		External temperature: < 0 °C (< 32 °F)	Engine oil (SAE 5W/40) (☛ p. 193)

– Mount and tighten screw cap ❶.

Danger

Danger of poisoning Exhaust gases are poisonous 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.

Guideline

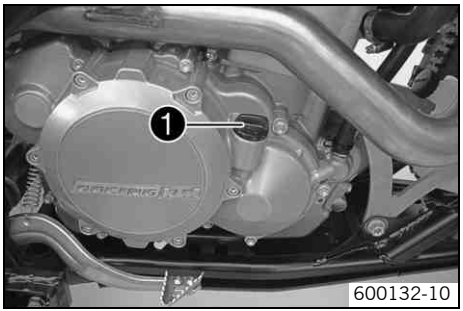
Switch off the engine when the radiator fan switches on.

– Check the engine oil level. (☛ p. 160)

Adding engine oil

Info

A lack of engine oil or poor-quality engine oil results in premature wear to the engine.



– Check the engine for leakage.
– Remove the filler cap ❶ on the clutch cover and fill up with engine oil.

Condition

External temperature: ≥ 0 °C (≥ 32 °F)

Engine oil (SAE 10W/50) (☛ p. 193)

Condition

External temperature: < 0 °C (< 32 °F)

Engine oil (SAE 5W/40) (☛ p. 193)

Info

To ensure optimal engine oil performance, it is advisable to not use different engine oils.
We recommend making an oil change in this case.

– Mount and tighten filler cap ❶.

Cleaning the vehicle

Note

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

– Never clean the vehicle with high-pressure cleaning equipment or a strong water-jet. The excessive pressure can penetrate electrical components, socket connects, throttle cables, and bearings, etc., and can damage 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.

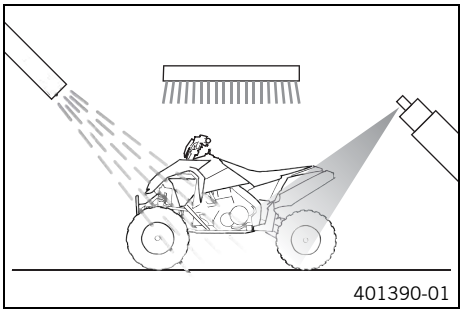
Info

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

Info

Do not place the vehicle onto the rear frame bracket to clean it since it could fall over.
Never raise the vehicle on your own, even if a gear is engaged.
Fuel can leak out of the fuel tank.

– Close off the exhaust system to prevent water from entering.


401390-01

– First remove coarse dirt particles with a gentle spray of water.
– Spray very dirty areas with a normal motorcycle cleaner and then clean with a brush.

Motorcycle cleaner (☛ p. 197)

Info
Clean the vehicle using a soft sponge and warm water containing normal motorcycle cleaner.

– After rinsing the vehicle with a gentle spray of water, allow it to dry thoroughly.
– Clean the air filter box.
– Empty the carburetor float chamber. (☛ p. 157)

Warning
Danger of accidents Reduced braking efficiency due to wet or dirty brakes.
– Clean or dry dirty or wet brakes by riding and braking gently.

– After cleaning, take a short ride until the engine reaches operating temperature.

Info
The heat produced causes water at inaccessible locations in the engine and the brakes to evaporate.

– Push back the protection caps from the handlebar controls to allow any water that may have entered there to evaporate.
– After the vehicle has cooled off, lubricate all moving parts and bearings.
– Clean the chain. (☛ p. 97)
– Treat bare metal parts (except for brake discs and exhaust system) with anti-corrosion materials.

Cleaning and preserving materials for metal, rubber and plastic (☛ p. 196)

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

Paint cleaner and polish for high-gloss and matte finishes, bare metal and plastic surfaces (☛ p. 198)

Storage

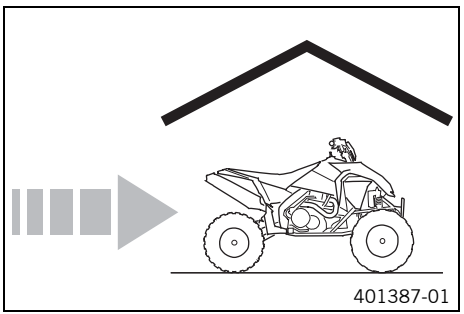
Warning

Danger of poisoning Fuel is poisonous and a health hazard.

– Avoid contact between fuel and skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact with fuel. Store fuel in a suitable canister according to regulations and keep it out of the reach of children.

Info

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


401387-01

– Clean the vehicle. (☛ p. 169)
– Change the engine oil and oil filter, clean the oil screens. 🔧 (☛ p. 161)
– Check the antifreeze and coolant level. (☛ p. 145)
– Drain the fuel from the tank into a suitable container.
– Empty the carburetor float chamber. 🔧 (☛ p. 157)
– Check the tire air pressure. (☛ p. 134)
– Remove the battery. (☛ p. 136)
– Recharge the battery. 🔧 (☛ p. 137)

Guideline

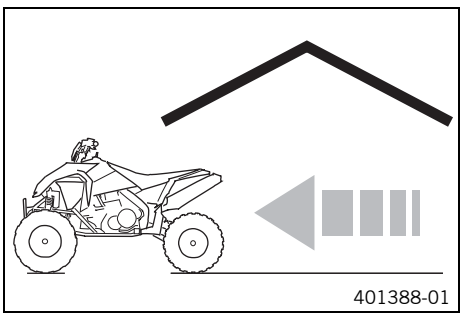
Storage temperature of battery without direct sunlight	0... 35 °C (32... 95 °F)

– Store the vehicle in a dry location that is not subject to large fluctuations in temperature.
– 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 of a vehicle in storage for a short time only. Because the engine will not warm up sufficiently, the water vapor produced during combustion will condense, causing engine parts and the exhaust system to rust.

Preparing the vehicle for use after storage


401388-01

– Recharge the battery. (☛ p. 137)
– Install the battery. (☛ p. 137)
– Fill up with fuel. (☛ p. 46)
– Perform checks and maintenance measures when preparing for use. (☛ p. 32)
– Take a test ride.

Faults	Possible cause	Action
Engine turns but does not start.	Operating error	– Follow the instructions on starting the engine. (☛ p. 33)
	Vehicle was out of use for a long time and there is old fuel in the float chamber	– Empty the carburetor float chamber. 🔧 (☛ p. 157)
	Fuel supply interrupted	– Check the fuel tank breather. – Clean the fuel tap. – Check/adjust the carburetor components. 🔧
	Spark plug oily or wet	– Clean and dry spark plug or replace if necessary.
	Electrode distance (plug gap) of spark plug too wide	– Adjust the plug gap. Guideline Spark plug electrode gap 0.6 mm (0.024 in)
	Fault in ignition system	– Check the ignition system. 🔧
	Socket connector of CDI control device, pulse generator or ignition coil oxidized	– Clean the plug-in connector and treat it with contact spray.
	Water in carburetor or jets is blocked	– Check/adjust the carburetor components. 🔧
	Idle speed is set too high	– Carburetor - adjust the idle speed. 🔧 (☛ p. 155)
	Adjusting screws on carburetor distorted	– Carburetor - adjust the idle speed. 🔧 (☛ p. 155)
	Idling jet blocked	– Check/adjust the carburetor components. 🔧
	Loose carburetor jets	– Check/adjust the carburetor components. 🔧

Faults	Possible cause	Action
Engine turns but does not start.	Emergency OFF switch with rip cord faulty	– Check the wiring harness. (visual check) – Check the electrical system.
	Throttle lever activated	– Do not activate the throttle lever. – Follow the instructions on starting the engine. (☛ p. 33)
	Switch for throttle lever faulty	– Check the wiring harness. (visual check) – Check the electrical system.
	Blown fuse	– Change the fuses of individual power consumers. (☛ p. 140)
The engine cannot be cranked (electric starter).	Operating error	– Follow the instructions on starting the engine. (☛ p. 33)
	Battery discharged	– Recharge the battery. 🔧 (☛ p. 137) – Check the charging voltage. 🔧 – Check the quiescent current. 🔧 – Check the stator winding of the alternator. 🔧
	Blown fuse	– Change the main fuse. (☛ p. 139)
Engine does not speed up.	Carburetor running over because float needle is dirty or worn	– Check/adjust the carburetor components. 🔧
	Loose carburetor jets	– Check/adjust the carburetor components. 🔧
Engine has no idle	Idling jet blocked	– Check/adjust the carburetor components. 🔧
	Adjusting screws on carburetor distorted	– Carburetor - adjust the idle speed. 🔧 (☛ p. 155)
	Spark plug defective	– Change spark plug.

Faults	Possible cause	Action
Engine has no idle	Ignition system defective	– Check the spark plug connector. – Check the ignition coil. – Check the ignition pulse generator. – Check the stator winding of the alternator.
Engine stalls or is backfiring into the carburetor.	Lack of fuel	– Turn the handle ❶ of the fuel tap to **ON**. (Figure 100013-10 p. 26) – Fill up with fuel. (p. 46)
	Intake system air leak	– Check rubber sleeves and carburetor for tightness.
	Loose contact or oxidized connector	– Check the electrical system. – Clean the plug-in connector and treat it with contact spray.
Engine overheats	Coolant level low	– Check the cooling system for leakage. – Check the coolant level. (p. 146)
	Radiator fins excessively dirty	– Clean radiator fins.
	Foam formation in cooling system	– Drain the coolant. (p. 147) – Fill coolant/bleed cooling system. (p. 149)
	Bent radiator hose	– Change the radiator hose.
	Thermostat defective	– Check the thermostat.
	Radiator fan system faulty	– Check the radiator fan system.
Engine has a lack of power	Fuel supply interrupted	– Check the fuel tank breather. – Clean the fuel tap. – Check/adjust the carburetor components.

Faults	Possible cause	Action
Engine has a lack of power	Air filter excessively dirty	– Clean the air filter and air filter box. (☛ p. 86)
	Exhaust system leaky, deformed or too little glass fiber yarn filling in main silencer	– Check exhaust system for damage.
	Valve clearance too little	– Adjust the valve clearance.
High oil consumption	Engine vent hose bent	– Route the vent hose without bends or replace it if necessary.
	Engine oil level too high	– Check the engine oil level. (☛ p. 160)
	Engine oil too thin (low viscosity)	– Change the engine oil and oil filter, clean the oil screens. (☛ p. 161)
	Piston or cylinder worn	– Piston/cylinder - determine the mounting clearance.
Parts of the electrical system are not functional	Fault in the electrical system	– Change the fuses of individual power consumers. (☛ p. 140) – Check the electrical system.
Battery discharged	Battery is not charged by alternator	– Check the charging voltage. – Check the stator winding of the alternator.

Design	1-cylinder 4-stroke engine with balancer, water-cooled
Displacement	510 cm³ (31.12 cu in)
Stroke	72 mm (2.83 in)
Bore	95 mm (3.74 in)
Compression ratio	11:1
Idle speed	1,500... 1,600 rpm
Control	4 valves controlled via rocker arm and overhead camshaft, camshaft drive via simplex chain
Valve diameter, intake	35 mm (1.38 in)
Valve diameter, exhaust	30 mm (1.18 in)
Valve clearance, cold, intake	0.10... 0.15 mm (0.0039... 0.0059 in)
Valve clearance, cold, exhaust	0.10... 0.15 mm (0.0039... 0.0059 in)
Crankshaft bearing	2 cylinder roller bearing
Conrod bearing	Needle bearing
Piston pin bearing	Bronze bush
Pistons	Forged light alloy
Piston rings	1 compression ring, 1 oil scraper ring
Engine lubrication	Pressure circulation lubrication with 2 rotor pumps
Primary transmission	31:78 straight tooth spur gears
Clutch	Multidisc clutch in oil bath / hydraulically activated
Transmission ratio	
1st gear	14:35
2nd gear	17:33
3rd gear	19:30
4th gear	21:28

5th gear	23:26
Reverse gear	14:19:34
Alternator	12 V, 200 W
Ignition	Contactless controlled fully electronic ignition with digital ignition adjustment, type Kokusan
Spark plug	NGK DCPR 8 E
Spark plug electrode gap	0.6 mm (0.024 in)
Cooling	Water cooling, permanent circulation of coolant by water pump
Starting aid	Electric starter

Capacity - engine oil

Engine oil	1.7 l (1.8 qt.)	External temperature: ≥ 0 °C (≥ 32 °F)	Engine oil (SAE 10W/50) (☛ p. 193)
		External temperature: < 0 °C (< 32 °F)	Engine oil (SAE 5W/40) (☛ p. 193)

Capacity - coolant

Coolant		
With compensating tank	1.50 l (1.59 qt.)	Coolant (☛ p. 192)
		Coolant (mixed ready to use) (☛ p. 192)
Without compensating tank	1.30 l (1.37 qt.)	Coolant (☛ p. 192)
		Coolant (mixed ready to use) (☛ p. 192)

Screw, cable holder in alternator cover	M4	4 Nm (3 lbf ft)	**Loctite® 243™**
Locking screw for bearing	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, gear sensor	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, ignition pulse generator	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, locking lever	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, locking shaft lever	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, oil filter cover	M5	6 Nm (4.4 lbf ft)	–
Screw, oil pump cover	M5	6 Nm (4.4 lbf ft)	**Loctite® 222**
Screw, rocker arm shaft	M5	6 Nm (4.4 lbf ft)	–
Screw, stator bracket	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, timing chain securing guide	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw on cylinder head top section	M6x45	10 Nm (7.4 lbf ft)	–
Screw on cylinder head top section	M6x50	10 Nm (7.4 lbf ft)	–
Screw on cylinder head top section	M6x55 – 10.9	10 Nm (7.4 lbf ft)	–
Screw on cylinder head top section	M6x75	10 Nm (7.4 lbf ft)	–
Screw, bearing stud, starter engine	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, clutch cover	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch spring	M6	8 Nm (5.9 lbf ft)	**Loctite® 243™**
Screw, cylinder head	M6	10 Nm (7.4 lbf ft)	–
Screw, cylinder head top section	M6x30	10 Nm (7.4 lbf ft)	–
Screw, drive wheel for balancer	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, engine case	M6x30	10 Nm (7.4 lbf ft)	–
Screw, engine case	M6x45	10 Nm (7.4 lbf ft)	–
Screw, engine case	M6x60	10 Nm (7.4 lbf ft)	–

Screw, engine case	M6x65	10 Nm (7.4 lbf ft)	–
Screw, engine case	M6x75	10 Nm (7.4 lbf ft)	–
Screw, exhaust flange	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, shift drum locating	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, shift lever	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, starter engine	M6	10 Nm (7.4 lbf ft)	–
Screw, timing chain guide rail	M6	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, timing chain tensioning rail	M6	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, timing-chain tensioner	M6	10 Nm (7.4 lbf ft)	–
Screw, valve cover	M6	10 Nm (7.4 lbf ft)	–
Screw, vent hose bracket	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)	–
Nut, adjusting screw, valve clearance	M6x0.75	11 Nm (8.1 lbf ft)	–
Oil jet, piston cooling	M6x0.75	4 Nm (3 lbf ft)	**Loctite® 243™**
Banjo bolt, oil line	M8	10 Nm (7.4 lbf ft)	–
Jet screw, oil line	M8	10 Nm (7.4 lbf ft)	–
Plug, crankshaft location	M8	10 Nm (7.4 lbf ft)	–
Plug, timing chain tensioner	M8	10 Nm (7.4 lbf ft)	–
Screw, alternator cover	M8	10 Nm (7.4 lbf ft)	–
Screw, camshaft gear	M8	28 Nm (20.7 lbf ft)	**Loctite® 243™**
Screw, cylinder head	M10	Step 1 40 Nm (29.5 lbf ft) Step 2 50 Nm (36.9 lbf ft)	–
Screw, engine sprocket	M10	60 Nm (44.3 lbf ft)	**Loctite® 243™**

Nut, rotor	M12x1	60 Nm (44.3 lbf ft)	–
Spark plug	M12x1.25	17 Nm (12.5 lbf ft)	–
Bleeder flange, engine case	M12x1.5		**Loctite® 243™**
Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)	–
Plug, oil pressure regulator valve	M12x1.5	20 Nm (14.8 lbf ft)	–
Locking screw, oil screen, short	M16x1.5	10 Nm (7.4 lbf ft)	Lubricated with engine oil
Nut, inner clutch hub	M18x1.5	120 Nm (88.5 lbf ft)	**Loctite® 243™**
Locking screw, oil screen, long	M20x1.5	15 Nm (11.1 lbf ft)	–
Nut, primary gear	M20LHx1.5	150 Nm (110.6 lbf ft)	**Loctite® 243™**
Screw-in fitting, cooling system in cylinder head top	M20x1.5		**Loctite® 577**

Carburetor type	KEIHIN FCR-MX 39
Carburetor identification number	3925H
Needle position	3rd position from top
Idle mixture adjusting screw	
Open	1.0 turn
Pump membrane stop	2.15 mm (0.0846 in)
Main jet	170
Jet needle	OBEKR
Idling jet	42
Main air jet	200
Idle air jet	100
Cold start jet	85
Throttle slide	15

Frame	Double cradle of chromium molybdenum steel tubes, powder-coated
Wheel suspension	
Front	Single wheel suspension with double transverse control arm
Rear	Rigid axle
Suspension travel	
Front	275 mm (10.83 in)
Rear	272 mm (10.71 in)
Fork offset	
Front	46 mm (1.81 in)
Toe	
Front	0 mm (0 in)
Camber	
Front	0°
Toe width	
Front	1,115 mm (43.9 in)
Rear	1,148 mm (45.2 in)
Wheelbase	1,280±10 mm (50.39±0.39 in)
Turning radius	5,625 mm (221.46 in)
Fording depth	330 mm (12.99 in)
Seat height unloaded	820 mm (32.28 in)
Ground clearance unloaded	290 mm (11.42 in)
Weight	
fuel tank empty	163 kg (359 lb.)
fuel tank full	173 kg (381 lb.)

Maximum allowable axle load	
Front	144 kg (317 lb.)
Rear	149 kg (328 lb.)
Maximum permissible overall weight	293 kg (646 lb.)
Vehicle length	1,810 mm (71.26 in)
Vehicle width	1,148 mm (45.2 in)
Vehicle height	1,125 mm (44.29 in)
Brake system	
Front	Disc brakes, brake calipers fixed, 4 brake pistons per brake caliper
Rear	Disc brake, brake caliper floating, 1 brake piston
Brake discs - diameter	
Front	180 mm (7.09 in)
Rear	200 mm (7.87 in)
Brake discs - wear limit	
Front	3.5 mm (0.138 in)
Rear	3.5 mm (0.138 in)
Tire air pressure off road	0.3 bar (4 psi)
Rim	
Front	5x10" DWT Al 6061
Rear	8x9" DWT Al 6061
Rear wheel gearing	14:38
Chain	5/8 x 1/4"
Rear sprockets available	37, 38, 39

Battery	YTX5L-BS	Battery voltage: 12 V Nominal capacity: 4 Ah Maintenance-free
Fuse	58011109120	20 A
Fuse	58011109115	15 A
Fuse	58011109110	10 A

Lighting equipment

Headlight	S2/socket BA20d	12 V 35/35 W
Parking light	W5W/socket W2.1x9.5d	12 V 5 W
Indicator lights	W1.2W/socket W2x4.6d	12 V 1.2 W
Brake / tail light	LED	

Tires

Front tire	Rear tire
AT 21 x 7 - 10 DWT XCF RCR V1	**AT 20 x 11 - 9** DWT XCF RCR V1
Additional information is available in the Service section under: http://www.ktm.com	

Capacity - fuel

Total fuel tank capacity approx.	13.5 l (3.57 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (☛ p. 194)

Fuel reserve approx.	3 l (3 qt.)

Shock absorber part number	03.18.7J.13
Shock absorber	**WP Suspension** 3612 BAVP MCC
Compression damping	
Comfort	20 clicks
Standard	15 clicks
Sport	15 clicks
Rebound damping	
Comfort	20 clicks
Standard	15 clicks
Sport	15 clicks
Cross over	19 mm (0.75 in)
Spring preload	
Comfort	4 mm (0.16 in)
Standard	5 mm (0.2 in)
Sport	8 mm (0.31 in)
Spring rate, main spring	
Weight of rider: 64... 75 kg (141... 165 lb.)	21... 26 N/mm (120... 148 lb/in)
Weight of rider: 75... 85 kg (165... 187 lb.)	24... 29 N/mm (137... 166 lb/in)
Weight of rider: 85... 95 kg (187... 209 lb.)	27... 32 N/mm (154... 183 lb/in)
Spring rate, auxiliary spring	40 N/mm (228 lb/in)
Spring length, main spring	275 mm (10.83 in)
Spring length, auxiliary spring	60 mm (2.36 in)
Fitted length	460 mm (18.11 in)

Shock absorber part number	15.18.7J.13
Shock absorber	**WP Suspension** 4618 BAVP MCC
Compression damping	
Comfort	20 clicks
Standard	15 clicks
Sport	15 clicks
Rebound damping	
Comfort	20 clicks
Standard	15 clicks
Sport	15 clicks
Spring preload	
Comfort	0 mm (0 in)
Standard	3 mm (0.12 in)
Sport	3 mm (0.12 in)
Spring rate	
Rider weight: 65... 75 kg (143... 165 lb.)	45 N/mm (257 lb/in)
Rider weight: 75... 85 kg (165... 187 lb.)	48 N/mm (274 lb/in)
Rider weight: 85... 95 kg (187... 209 lb.)	50 N/mm (286 lb/in)
Spring length	260 mm (10.24 in)
Fitted length	435.5 mm (17.146 in)

Remaining nuts, chassis	M6	15 Nm (11.1 lbf ft)	–
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)	–
Screw on fuel tank	M6	6 Nm (4.4 lbf ft)	–
Screw, clamping nut, rear axle	M6	10 Nm (7.4 lbf ft)	–
Screw, foot brake cylinder	M6	7 Nm (5.2 lbf ft)	**Loctite® 243™**
Screw, rear brake caliper	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, shock absorber adjusting ring	M6	5 Nm (3.7 lbf ft)	–
Remaining nuts, chassis	M8	30 Nm (22.1 lbf ft)	–
Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)	–
Screw, bearing support, steering	M8	25 Nm (18.4 lbf ft)	–
Screw, front brake caliper	M8	20 Nm (14.8 lbf ft)	**Loctite® 243™**
Screw, front brake disc	M8	25 Nm (18.4 lbf ft)	**Loctite® 243™**
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)	–
Screw, rear brake caliper	M8	20 Nm (14.8 lbf ft)	**Loctite® 243™**
Screw, rear brake disc	M8	25 Nm (18.4 lbf ft)	**Loctite® 243™**
Screw, rear wheel eccentric element	M8	20 Nm (14.8 lbf ft)	–
Screw, steering bridge	M8	20 Nm (14.8 lbf ft)	–
Screw, subframe	M8	35 Nm (25.8 lbf ft)	**Loctite® 243™**
Engine bracket screw	M10	60 Nm (44.3 lbf ft)	–
Engine mounting bolt	M10	60 Nm (44.3 lbf ft)	–
Nut, handlebar support	M10	45 Nm (33.2 lbf ft)	–
Remaining nuts, chassis	M10	50 Nm (36.9 lbf ft)	–
Remaining screws, chassis	M10	45 Nm (33.2 lbf ft)	–
Screw, A-arm bottom	M10x70	45 Nm (33.2 lbf ft)	–

Screw, A-arm top	M10x52	45 Nm (33.2 lbf ft)	–
Screw, footrest	M10	45 Nm (33.2 lbf ft)	–
Screw, front shock absorber	M10	45 Nm (33.2 lbf ft)	–
Screw, steering column at bottom of steering lever	M10	25 Nm (18.4 lbf ft)	–
Nut, ball head, A-arm top	M10x1.25	35 Nm (25.8 lbf ft)	–
Nut, rear sprocket screw	M10x1.25	45 Nm (33.2 lbf ft)	**Loctite® 243™**
Nut, tie rod end	M10x1.25	45 Nm (33.2 lbf ft)	–
Wheel nut	M10x1.25	45 Nm (33.2 lbf ft)	–
Nut, front wheel hub	M12	70 Nm (51.6 lbf ft)	–
Screw, rear bottom shock absorber	M12	70 Nm (51.6 lbf ft)	–
Screw, rear top shock absorber	M12	60 Nm (44.3 lbf ft)	–
Lock nut, tie rod, inside	M12LHx1.25	20 Nm (14.8 lbf ft)	–
Lock nut, tie rod, outside	M12x1.25	20 Nm (14.8 lbf ft)	–
Nut, A-arm top	M12x1.25	30 Nm (22.1 lbf ft)	–
Nut, ball head, A-arm bottom	M12x1.5	40 Nm (29.5 lbf ft)	–
Nut, swingarm pivot	M16x1.5	100 Nm (73.8 lbf ft)	–
Nut, rear wheel hub	M18x1.5	130 Nm (95.9 lbf ft)	–
Screw, steering column, bottom	M20x1.5	40 Nm (29.5 lbf ft)	–
Screw, steering column, top	M20x1.5	25 Nm (18.4 lbf ft)	–
Clamping nut, rear axle	2"-10UNS-2B-LH	25 Nm (18.4 lbf ft)	Only applies when using: Open-end wrench attachment, 46 mm (83019010461)

Brake fluid DOT 4 / DOT 5.1

According to
– DOT

Guideline
– Use only brake fluid that complies with the specified standard (see specifications on the container) and that possesses the corresponding properties. KTM recommends **Castrol** and **Motorex®** products.

Supplier
Castrol
– **RESPONSE BRAKE FLUID SUPER DOT 4**

Motorex®
– **Brake Fluid DOT 5.1**

Coolant

Guideline
– Use only suitable coolant (also in countries with high temperatures). Use of low-quality antifreeze can lead to corrosion and foaming. KTM recommends **Motorex®** products.

Mixture ratio

Antifreeze protection: −25... −45 °C (−13... −49 °F)	50 % corrosion inhibitor/antifreeze 50 % distilled water

Coolant (mixed ready to use)

Antifreeze	−40 °C (−40 °F)

Supplier
Motorex®
– **Anti Freeze**

Engine oil (SAE 10W/50)

According to

– JASO T903 MA (☛ p. 199)

– SAE (☛ p. 199) (SAE 10W/50)

Guideline

– Use only engine oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties. KTM recommends **Motorex®** products.

Synthetic engine oil

Supplier
Motorex®

– **Cross Power 4T**

Engine oil (SAE 5W/40)

According to

– JASO T903 MA (☛ p. 199)

– SAE (☛ p. 199) (SAE 5W/40)

Guideline

– Use only engine oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties. KTM recommends **Motorex®** products.

Synthetic engine oil

Supplier
Motorex®

– **Power Synt 4T**

Hydraulic fluid (15)

According to
– ISO VG (15)

Guideline
– Use only hydraulic oil that complies with the specified standard (see specifications on the container) and that possesses the corresponding properties. KTM recommends **Motorex®** products.

Supplier
Motorex®
– **Hydraulic Fluid 75**

Long-life grease

According to
– NLGI

Guideline
– Use only grease that complies with the specified standards (see specifications on the container) and that possesses the corresponding properties. KTM recommends **Motorex®** products.

Supplier
Motorex®
– **Fett 2000**

Super unleaded (ROZ 95/RON 95/PON 91)

According to
– DIN EN 228 (ROZ 95/RON 95/PON 91)

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

Info

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

Air filter cleaner

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Twin Air Dirt Bio Remover**

Chain cleaner

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Chain Clean**

Cleaning and preserving materials for metal, rubber and plastic

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Protect & Shine**

Long-life grease

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Bike Grease 2000**

Lubricant (T625)

Guideline

– KTM recommends **Molykote®** products.

Supplier

Molykote®

– **33 Medium**

Motorcycle cleaner

Guideline

– KTM recommends **Motorex®** products.

Supplier

Motorex®

– **Moto Clean 900**

Off-road chain spray

Guideline

– KTM recommends **Motorex®** products.

Supplier

Motorex®

– **Chainlube Offroad**

Oil for foam air filter

Guideline

– KTM recommends **Motorex®** products.

Supplier

Motorex®

– **Twin Air Liquid Bio Power**

Paint cleaner and polish for high-gloss and matte finishes, bare metal and plastic surfaces

Guideline

– KTM recommends **Motorex®** products.

Supplier

Motorex®

– **Clean & Polish**

Rubber grip adhesive (00062030051)

Supplier

KTM-Sportmotorcycle AG

– **GRIP GLUE**

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. With most motorcycles, the gearbox and the clutch are lubricated with the same oil as the engine. The JASO MA Standard meets these special requirements.

SAE

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

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