

# OWNER'S MANUAL 2011

**450 SX-F EU**  
**450 SX-F USA**

Art. no. 3211599en



**KTM**



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

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

Enter the serial numbers of your vehicle below.

Chassis number (☛ p. 9)	Dealer's stamp
Engine number (☛ p. 9)	

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 of our motorcycles can however not be completely excluded.

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










REG.NO. 12 100 6061
















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

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## 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 done in an authorized KTM workshop! There, your motorcycle 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.

- 
- |                          |   |
|--------------------------|---|
| <b>Proprietary name</b>  | Denotes a proprietary name.                   |
| <b>Name<sup>®</sup></b>  | Denotes a protected name.                     |
| <b>Brand<sup>™</sup></b> | Denotes a brand available on the open market. |
-

## Use definition

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



### Info

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

## Service

A prerequisite for perfect operation and prevention of premature wear is that the service, care and tuning work on the engine and chassis is properly carried out as described in the owner's manual. 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 service intervals. If you observe these exactly, you will ensure a much longer service life for your motorcycle.

## 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 claim can be honored for damage resulting from manipulation and/or other changes 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 accessory products 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. Some spare parts and accessories are specified in brackets in the respective descriptions. Your KTM dealer will be happy to advise you.

You will find the current **KTM PowerParts** for your vehicle on the KTM website.  
International KTM Website: <http://www.ktm.com>

## Work rules

Special tools are necessary for some of the work. These are not included with the vehicle and can be ordered under the number in parentheses. Ex: valve spring compressor (59029019000)

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

If thread lock (e.g. **Loctite**<sup>®</sup>) is used for screw connections, be sure to comply with the manufacturer's specific instructions on its usage.

Parts that you want to reuse following repairs and servicing should be cleaned and checked for damage and wear. Change damaged or worn parts.

Following repairs or servicing, the vehicle must be checked for roadworthiness.

## Transport

### Note

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

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

### Note

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

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

- Switch off the engine.
- Turn handle ❶ of the fuel tap to the **OFF** position. (Figure 500178-10 p. 11)
- Use straps or other suitable devices to secure the motorcycle against accidents or falling over.

## Environment

Motorcycling is a wonderful sport and we naturally hope that you can enjoy it to the full. However, it is a potential problem for the environment and can lead to conflicts with other persons. But if you use your motorcycle responsibly, you can ensure that such problems and conflicts do not have to occur. To protect the future of motorcycle sport, make sure that you use your motorcycle 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 information and tips to help you operate and handle your motorcycle. Only then will you learn how to best adjust the motorcycle for your own use and how to protect yourself from injury. The owner's manual also contains important information on servicing the motorcycle.
- The owner's manual is an important component of the motorcycle and should be handed over to the new owner if the vehicle is sold.



## View of the vehicle from the left front (example)



B00403-10

1	Hand brake lever (☛ p. 10)
2	Clutch lever (☛ p. 10)
3	Filler cap
4	Air filter box lid
5	Fuel tap (☛ p. 11)
6	Choke (☛ p. 12)
7	Chain guide
8	Shift lever (☛ p. 12)

## View of the vehicle from the right rear (example)



- |   |                                       |
|---|---------------------------------------|
| 1 | Short circuit button (☛ p. 10)        |
| 2 | Electric starter button (☛ p. 11)     |
| 3 | Fork compression adjustment           |
| 4 | Fork rebound adjustment               |
| 5 | Level viewer, engine oil              |
| 6 | Foot brake lever (☛ p. 12)            |
| 7 | Level viewer for brake fluid, rear    |
| 8 | Shock absorber rebound adjustment     |
| 9 | Shock absorber compression adjustment |

## Chassis number



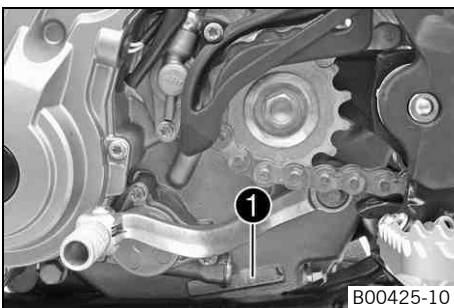
The chassis number ❶ is stamped on the steering head on the right.

## Type label



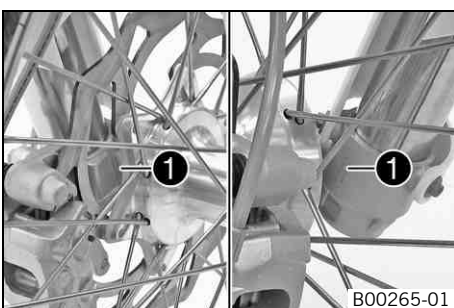
The type label ❶ is fixed to the front of the steering head.

## Engine number



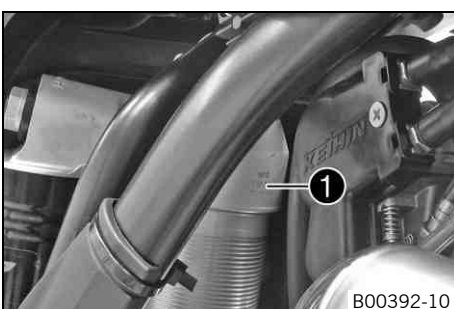
The engine number ❶ is stamped on the left side of the engine under the engine sprocket.

## Fork part number



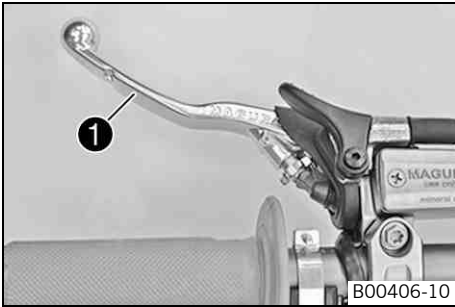
The fork part number ❶ is stamped on the inner side of the fork stub.

## Shock absorber part number



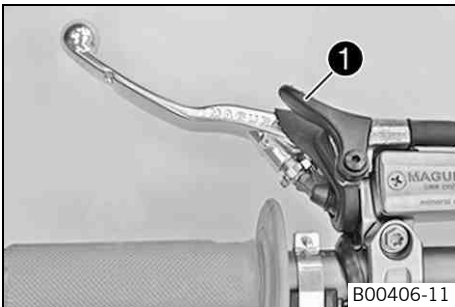
The shock absorber part number ❶ is stamped on the top of the shock absorber above the adjusting ring on the engine side.

## Clutch lever



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

## Hot start lever

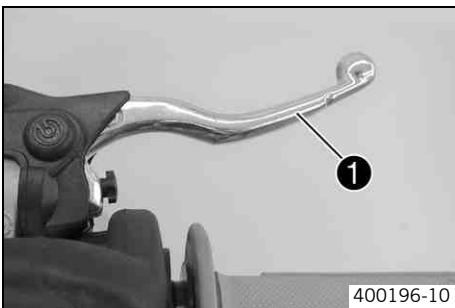


The hot start lever ❶ is fitted on the left side of the handlebar. If you pull the hot start lever to the handlebar during the start procedure, a bore is opened in the carburetor through which the engine can draw in extra air. This gives a leaner fuel-air mixture, which is needed for a hot start.

### Possible states

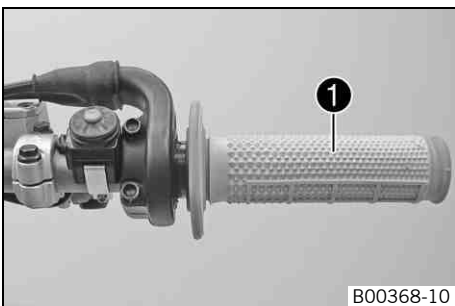
- Hot start function activated – Hot start lever is pulled out to the stop.
- Hot start function deactivated – Hot start lever is pushed back to the stop.

## Hand brake lever



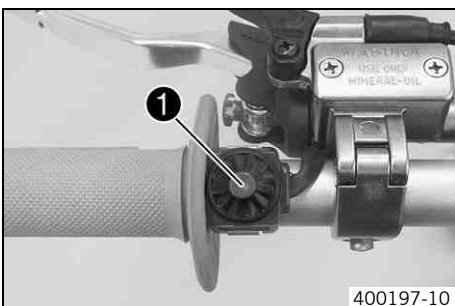
Hand brake lever ❶ is located on the right side of the handlebar. The hand brake lever is used to activate the front brake.

## Throttle grip



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

## Short circuit button

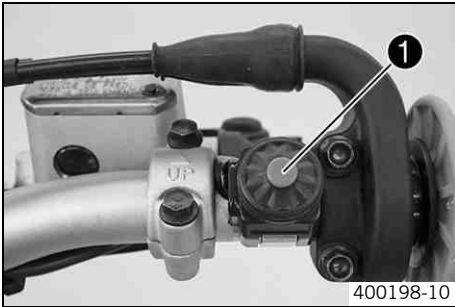


Short circuit button ❶ is fitted on the left side of the handlebar.

### Possible states

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

## Electric starter button

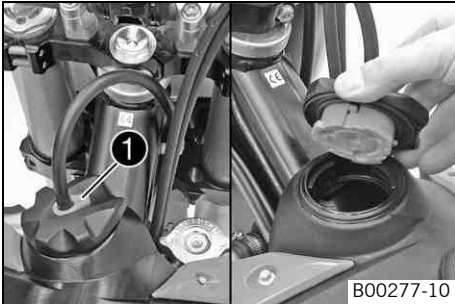


Electric starter button ❶ is fitted on the right side of the handlebar.

### Possible states

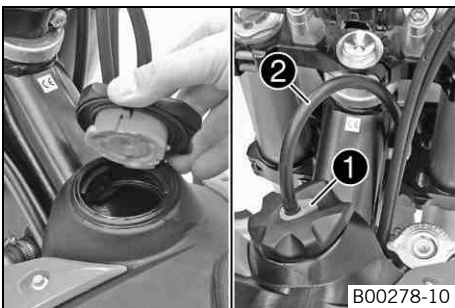
- Electric starter button ❶ in basic position
- Electric starter button ❶ pressed – In this position, the electric starter is actuated.

## Opening filler cap



- Press release button ❶, turn filler cap counterclockwise and lift it upwards and remove.

## Closing filler cap



- Replace the filler cap and turn clockwise until the release button ❶ locks in place.

### Info

Route the fuel tank breather hose ❷ without kinking.

## Fuel tap



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

Using tap handle ❶ on the fuel tap, you can open or close the supply of fuel to the carburetor.

### Possible states

- Fuel supply closed **OFF** – No fuel can flow from the tank to the carburetor.
- Fuel supply open **ON** – Fuel can flow from the tank to the carburetor. The fuel tank empties completely.

**ON**

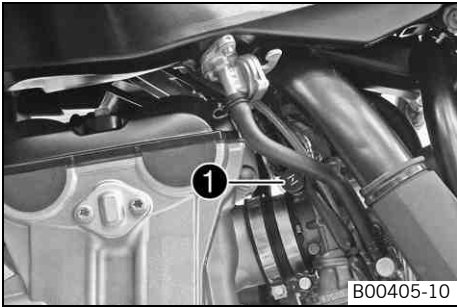


**OFF**



500178-10

## Choke



B00405-10

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.

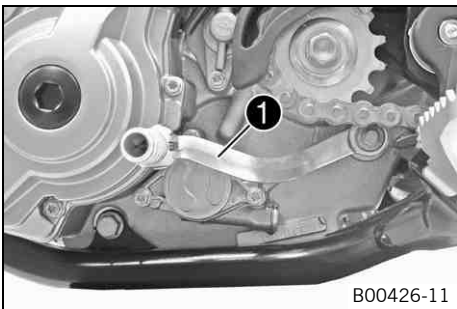
**i Info**

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

**Possible states**

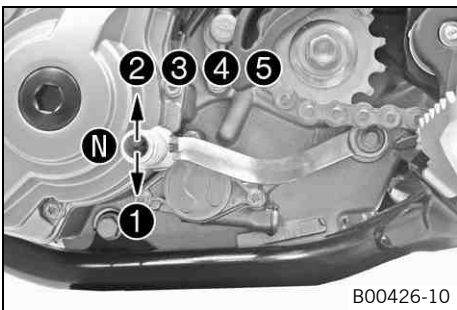
- Choke function activated – The choke lever is pulled out to the stop.
- Choke function deactivated – The choke lever is pushed in to the stop.

## Shift lever



B00426-11

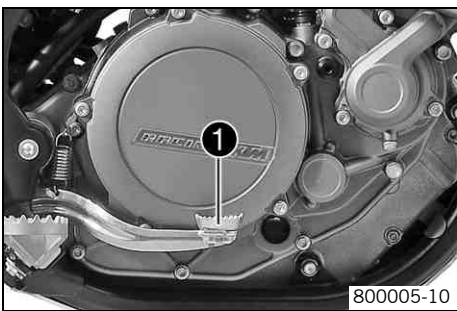
Shift lever ❶ is mounted on the left side of the engine.



B00426-10

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

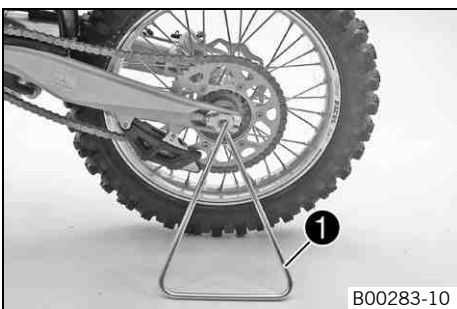
## Foot brake lever



800005-10

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

## Plug-in stand



B00283-10

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

**i Info**

Remove the plug-in stand before starting on a trip.

## Advice on first use



### Danger

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

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



### Warning

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

- Wear protective clothing (helmet, boots, gloves, pants and jacket with protectors) every time you ride the vehicle. Always wear protective clothing, which must be undamaged and meet legal requirements.



### Warning

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

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



### Warning

**Danger of accidents** Critical riding behavior due to inappropriate riding.

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



### Warning

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

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



### Warning

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

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



### Warning

**Danger of accidents** Unstable riding behavior.

- Do not exceed the maximum permissible weight and axle loads.



### Warning

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

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



### Info

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

- Make sure that the pre-delivery inspection work has been carried out by an authorized KTM workshop.
  - ✓ You receive a delivery certificate and the service record at vehicle handover.
- Before your first trip, read the entire operating instructions carefully.
- Get to know the controls.
- Adjust the basic position of clutch lever. (☞ p. 46)
- Adjust the basic position of the hand brake lever. (☞ p. 48)
- Adjust the basic position of the foot brake lever. ☞ (☞ p. 52)
- Get used to handling the motorcycle on a suitable piece of land before making a longer trip.



### Info

Your motorcycle is not authorized for riding on public roads.

Offroad, you should be accompanied by another person on another machine so that you can help each other.

- Try also to ride as slowly as possible and in a standing position to get a better feeling for the vehicle.
- Do not make any offroad trips that over-stress your ability and experience.
- Hold the handlebar firmly with both hands and keep your feet on the footrests when riding.
- Do not transport luggage.
- Do not exceed the overall maximum permitted weight and the axle loads.

Guideline

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

- Run in the engine. (☛ p. 14)

## 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 service hours	≤ 75 %

- Avoid fully opening the throttle!

## Preparing vehicle for arduous riding conditions

- Using a motorcycle in arduous conditions can lead to excessive wear of components such as the power train or brakes. For this reason, it may be necessary to service or replace worn parts before the limit specified in the service schedule is reached.

**Arduous riding conditions are:**

- Rides on dry sand. (☛ p. 14)
- Rides on wet sand. (☛ p. 15)
- Rides on wet and muddy surfaces. (☛ p. 15)
- Rides at high temperatures and low speeds. (☛ p. 16)
- Rides at low temperatures or in snow. (☛ p. 16)

## Preparing for rides on dry sand

- Seal the air filter box. ☛

**i Tip**

Seal the air filter box on the edges against dirt.

- Clean the air filter and air filter box. ☛ (☛ p. 39)

**i Info**

Check the air filter approx. every 30 minutes.

- Fit a dust protection device on the air filter.

Dust protection device for air filter (77206920000)

**i Info**

See the **KTM PowerParts** fitting instructions.



B00435-01

- Fit a sand protection device on the air filter.

Sand protection device for air filter (77206922000)

**i Info**

See the **KTM PowerParts** fitting instructions.

- Adjust the carburetor jetting and settings.

**i Info**

Your authorized KTM workshop has the recommended carburetor tuning settings.



B00436-01





- Clean the chain.

Chain cleaner (🔧 p. 89)

- Fit the steel sprocket.

**i** **Tip**

Do not grease the chain.

- Clean radiator fins.
- Straighten bent radiator fins carefully.

## Preparing for rides on wet sand

- Seal the air filter box. 🛠️

**i** **Tip**

Seal the air filter box on the edges against dirt.

- Clean the air filter and air filter box. 🛠️ (🔧 p. 39)

**i** **Info**

Check the air filter approx. every 30 minutes.

- Fit a waterproofing device on the air filter.

Waterproofing device for air filter (77206921000)

**i** **Info**

See the **KTM PowerParts** fitting instructions.

- Adjust the carburetor jetting and settings.

**i** **Info**

Your authorized KTM workshop has the recommended carburetor tuning settings.



- Clean the chain.

Chain cleaner (🔧 p. 89)

- Fit the steel sprocket.

**i** **Tip**

Do not grease the chain.

- Clean radiator fins.
- Straighten bent radiator fins carefully.



## Preparing for rides on wet and muddy surfaces

- Seal the air filter box. 🛠️

**i** **Tip**

Seal the air filter box along the edges to prevent the ingress of dirt.

- Clean the air filter and air filter box. 🛠️ (🔧 p. 39)

**i** **Info**

Check the air filter approx. every 30 minutes.



- Fit a waterproofing device on the air filter.

Waterproofing device for air filter (77206921000)

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

- Adjust the carburetor jetting and settings.

**i Info**  
Your authorized KTM workshop has the recommended carburetor tuning settings.



- Fit the steel sprocket.
- Clean the motorcycle. (🔧 p. 73)
- Straighten bent radiator fins carefully.

## Preparing for rides at high temperatures and low speeds

- Seal the air filter box. 🐾

**i Tip**  
Seal the air filter box on the edges against dirt.

- Clean the air filter and air filter box. 🐾 (🔧 p. 39)

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

- Adjust the secondary drive to the road conditions.

**i Info**  
The engine oil quickly gets hot if the clutch has to be operated very often due to an excessively high secondary drive.

- Clean the chain.

Chain cleaner (🔧 p. 89)

- Clean radiator fins.
- Straighten bent radiator fins carefully.
- Check the coolant level. (🔧 p. 63)



## Preparing for rides at low temperatures or in snow

- Seal the air filter box. 🐾

**i Tip**  
Seal the air filter box on the edges against dirt.

- Clean the air filter and air filter box. 🐾 (🔧 p. 39)

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



- Fit a waterproofing device on the air filter.

Waterproofing device for air filter (77206921000)

**Info**

See the **KTM PowerParts** fitting instructions.

- Adjust the carburetor jetting and settings.

**Info**

Your authorized KTM workshop has the recommended carburetor tuning settings.

## Checks and maintenance before putting into operation



### Info

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

- Check the engine oil level. (☛ p. 70)
- Check the brake fluid level of the front brake. (☛ p. 49)
- Check the rear brake fluid level. (☛ p. 53)
- Check the front brake linings. (☛ p. 50)
- Check the rear brake linings. (☛ p. 54)
- Check that the brake system is functioning properly.
- Check the coolant level. (☛ p. 63)
- Check for chain dirt accumulation. (☛ p. 42)
- Check the chain, rear sprocket, engine sprocket and chain guide. (☛ p. 44)
- Check the chain tension. (☛ p. 43)
- Check the tire condition. (☛ p. 58)
- Check the tire air pressure. (☛ p. 59)
- Clean the dust boots of the fork legs. (☛ p. 30)
- Bleed fork legs. (☛ p. 30)
- Check the air filter.
- Check the settings of all controls and ensure that they can be operated smoothly.
- Check all screws, nuts and hose clamps regularly for tightness.
- Check the fuel reserves.

## 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.

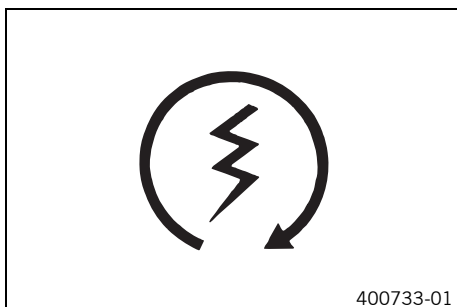


### Info

If the motorcycle is unwilling to start, the cause may 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 at least 5 seconds before trying again.



### Engine has been out of use for more than 1 week

- Empty the carburetor float chamber. ☛ (☛ p. 67)
- Turn handle ❶ of the fuel tap to the **ON** position. (Figure 500178-10☛ p. 11)
- ✓ Fuel can flow from the fuel tank to the carburetor.
- Remove the motorcycle from the stand.
- Shift transmission to neutral.

### The engine is cold

- Pull choke lever out as far as possible.

### The engine is hot

- Pull the hot start lever out to the stop.
- Press the electric starter button ❸.



### Info

Do not open the throttle.

**The engine is hot and running**

- Push back the hot start lever to the stop with the engine running.

**Starting up**

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

**Shifting, riding****Warning**

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

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

**Info**

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

- When conditions allow (incline, road situation, etc.), you can shift into a higher gear. To do so, release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch and open the throttle.
- If the choke function was activated, deactivate it after the engine has warmed up.
- When you reach maximum speed after fully opening the throttle, turn back the throttle to about  $\frac{3}{4}$  of its range. This barely reduces vehicle speed but lowers fuel consumption considerably.
- Always open the throttle only as much as the engine can handle – abrupt throttle opening increases fuel consumption.
- To shift down, brake and close the throttle at the same time.
- Pull the clutch lever and shift into a lower gear, release the clutch lever slowly and open the throttle or shift again.
- Switch off the engine if you expect to be stationary for a long time.

Guideline

≥ 2 min

- Avoid frequent and prolonged slipping of the clutch. This causes heat build-up in the engine oil, the engine and the cooling system.
- Ride at lower engine speeds instead of high revs and a slipping clutch.

**Braking****Warning**

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

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

**Warning**

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

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

**Warning**

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

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

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

## Stopping, parking

- Warning**  
**Risk of misappropriation** Usage by unauthorized persons.
  - Never leave the vehicle while the engine is running. Secure the vehicle against use by unauthorized persons.
- Warning**  
**Danger of burns** Some vehicle components become very hot when the vehicle is operated.
  - Do not touch hot components such as exhaust system, radiator, engine, shock absorber and brakes. Allow these components to cool down before starting work on them.

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

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

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

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

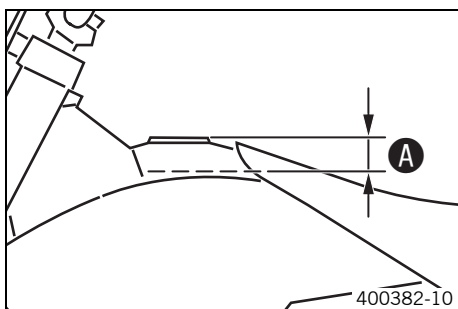
- Brake the motorcycle.
- Shift transmission to neutral.
- Press the Press and hold the short circuit button ☒ while the engine is idling until the engine stops.
- Turn handle ❶ of the fuel tap to the **OFF** position. (Figure 500178-10 p. 11)
- Park the motorcycle on firm ground.

## 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 engine.
- Open the filler cap. (p. 11)
- Fill the fuel tank with fuel up to measurement A.

Guideline

Measurement of A	35 mm (1.38 in)	
Total fuel tank capacity, approx.	7.5 l (1.98 US gal)	Super unleaded (ROZ 95 / RON 95 / PON 91) (p. 88)

- Close the filler cap. (p. 11)

## Service schedule

	S1N	S10A	S20A	S30A
Check and charge the battery. 🛠️		•	•	•
Change the engine oil and oil filter, clean the oil screen. 🛠️ (📖 p. 70)	•	•	•	•
Check the front brake linings. (📖 p. 50)		•	•	•
Check the rear brake linings. (📖 p. 54)		•	•	•
Check the brake discs. (📖 p. 48)		•	•	•
Check the brake lines for damage and leakage.		•	•	•
Check the rear brake fluid level. (📖 p. 53)		•	•	•
Change the foot brake cylinder seals. 🛠️			•	
Check the free travel of the foot brake lever. (📖 p. 52)		•	•	•
Check the frame and swingarm. 🛠️		•	•	•
Check the swingarm bearing. 🛠️			•	
Check the heim joints at the top and bottom of the shock absorber. 🛠️		•	•	•
Check the shock absorber linkage. 🛠️		•	•	•
Conduct a minor fork service. 🛠️		•	•	•
Conduct a major fork service. 🛠️				•
Check the tire condition. (📖 p. 58)	•	•	•	•
Check the tire air pressure. (📖 p. 59)	•	•	•	•
Check the wheel bearing for play. 🛠️		•	•	•
Check the wheel hubs. 🛠️		•	•	•
Check the rim run-out. 🛠️	•	•	•	•
Check the spoke tension. (📖 p. 59)	•	•	•	•
Check the chain, rear sprocket, engine sprocket and chain guide. (📖 p. 44)		•	•	•
Check the chain tension. (📖 p. 43)	•	•	•	•
Lubricate all moving parts (e.g., hand lever, chain, ...) and check for smooth operation. 🛠️		•	•	•
Check the fluid level of the hydraulic clutch. (📖 p. 46)		•	•	•
Check the brake fluid level of the front brake. (📖 p. 49)		•	•	•
Check the free travel on the hand brake lever. (📖 p. 48)		•	•	•
Check the steering head bearing play. (📖 p. 35)	•	•	•	•
Check the valve clearance. 🛠️	•		•	
Check the clutch. 🛠️		•	•	•
Check all hoses (e.g. fuel, cooling, bleeder, drainage, etc.) and sleeves for cracking, leaks and correct routing. 🛠️	•	•	•	•
Check the anti-freeze and coolant level. (📖 p. 63)	•	•	•	•
Check the cables for damage and routing without sharp bends. 🛠️		•	•	•
Check that the cables are undamaged, routed without sharp bends and set correctly.	•	•	•	•
Clean the air filter and air filter box. 🛠️ (📖 p. 39)	•	•	•	•
Change the glass fiber yarn filling of the main silencer. 🛠️ (📖 p. 40)		•	•	•
Check the screws and nuts for tightness. 🛠️	•	•	•	•
Check idle. 🛠️	•	•	•	•
Final check: Check the vehicle for safe operation and take a test ride.	•	•	•	•
Make the service entry in <b>KTM DEALER.NET</b> and in the service record. 🛠️	•	•	•	•

**S1N:** Once after 1 service hour - corresponds to about 7 liters of fuel (1.8 US gal)

**S10A:** Every 10 service hours - corresponds to about 70 liters of fuel (18.5 US gal) / after every race

**S20A:** Every 20 service hours - corresponds to about 140 liters of fuel (37 US gal)

**S30A:** Every 30 service hours - corresponds to about 210 liters of fuel (55.5 US gal)

## Service work (as additional order)

	S20N	S20A	S40A	S80A	J1A
Change the front brake fluid. 🛠️					•
Change the rear brake fluid. 🛠️					•
Change the hydraulic clutch fluid. 🛠️ (📄 p. 47)					•
Grease the steering head bearing. 🛠️ (📄 p. 35)					•
Check/set the carburetor components.			•	•	•
Service the shock absorber. 🛠️	•		•	•	
Change the spark plug and spark plug connector. 🛠️			•	•	
Change the piston. 🛠️			•	•	
Change the piston. (in difficult operating conditions) 🛠️		•	•	•	
Check/measure the cylinder. 🛠️			•	•	
Check the cylinder head. 🛠️			•	•	
Change the valves, valve springs and valve spring seats. 🛠️			•	•	
Check the camshaft and cam lever. 🛠️			•	•	
Change the connecting rod, conrod bearing and crank pin. 🛠️			•	•	
Change the crankshaft bearing. 🛠️			•	•	
Check the transmission and shift mechanism. 🛠️			•	•	
Change the outer clutch hub. 🛠️			•	•	
Check the oil pressure regulator valve. 🛠️			•	•	
Check the oil pumps and lubrication system. 🛠️			•	•	
Check the timing assembly. 🛠️			•	•	
Change all engine bearings. 🛠️				•	

**S20N:** Once after 20 service hours - corresponds to about 140 liters of fuel (37 US gal)

**S20A:** Every 20 service hours - corresponds to about 140 liters of fuel (37 US gal)

**S40A:** Every 40 service hours - corresponds to about 280 liters of fuel (74 US gal)

**S80A:** Every 80 service hours - corresponds to about 560 liters of fuel (148 US gal)

**J1A:** Annually

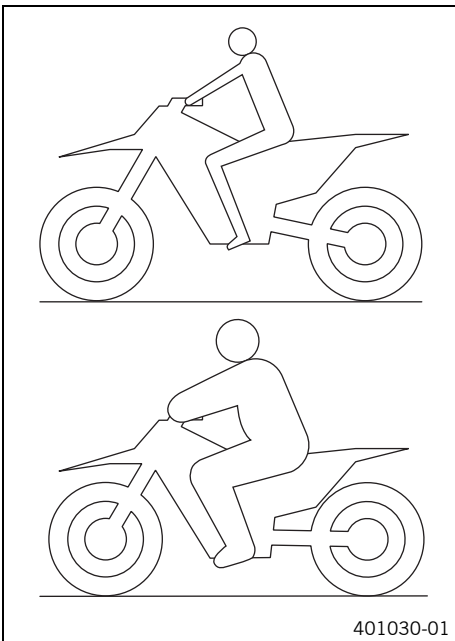


## Checking the basic suspension setting against the rider's weight



### Info

When adjusting the basic suspension setting, first adjust the shock absorber and then the fork.



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

### Guideline

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

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

## Compression damping of shock absorber

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

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

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

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

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

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



### Caution

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

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



### Info

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



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



### Info

Do not loosen nut ❷!

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

Guideline

Compression damping, low-speed (450 SX-F EU)	
Comfort	17 clicks
Standard	15 clicks
Sport	13 clicks
Compression damping, low-speed (450 SX-F USA)	
Comfort	17 clicks
Standard	15 clicks
Sport	13 clicks

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

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

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

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

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



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

**i Info**  
Do not loosen nut ❷!

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

Guideline

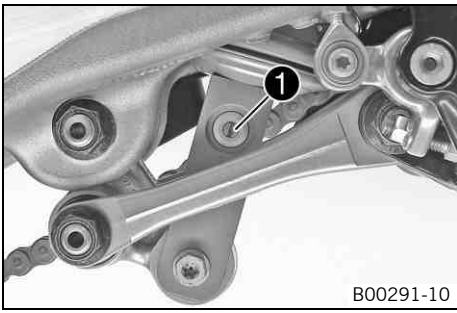
Compression damping, high-speed (450 SX-F EU)	
Comfort	2.5 turns
Standard	2 turns
Sport	1.5 turns
Compression damping, high-speed (450 SX-F USA)	
Comfort	2.5 turns
Standard	2 turns
Sport	1.5 turns

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

## Adjusting the rebound damping of the shock absorber

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

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



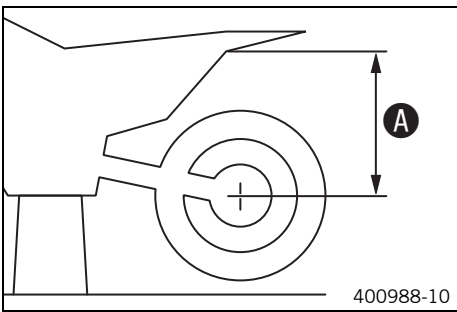
- Turn adjusting screw ❶ clockwise up to the last perceptible click.
- Turn back counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

Rebound damping (450 SX-F EU)	
Comfort	17 clicks
Standard	15 clicks
Sport	13 clicks
Rebound damping (450 SX-F USA)	
Comfort	17 clicks
Standard	15 clicks
Sport	13 clicks

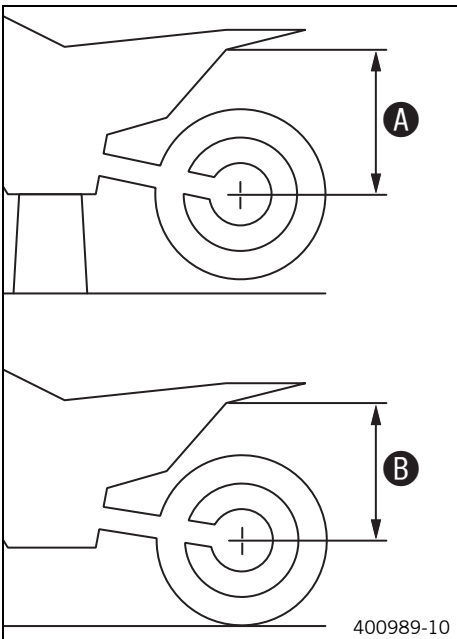
**i Info**  
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

### Measuring rear wheel sag unloaded



- Raise the motorcycle with the lift stand. (☞ p. 30)
- Measure the distance – as vertically as possible – between the rear axle and a fixed point, such as a mark on the side cover.
- Make note of the value as measurement ❶.
- Remove the motorcycle from the lift stand. (☞ p. 30)

### Checking the static sag of the shock absorber



- Measure distance ❶ of rear wheel unloaded. (☞ p. 25)
- Hold the motorcycle upright with the aid of an assistant.
- Measure the distance between the rear axle and the fixed point again.
- Note down the value as dimension ❷.

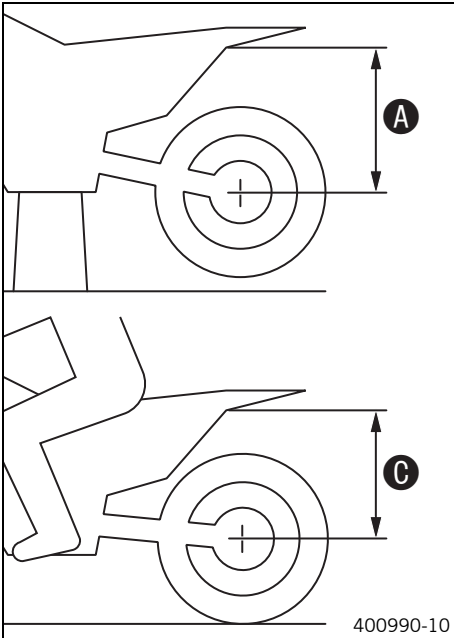
**i Info**  
The static sag is the difference between measurements ❶ and ❷.

- Check the static sag.

Static sag (450 SX-F EU)	30 mm (1.18 in)
Static sag (450 SX-F USA)	34 mm (1.34 in)

- » If the static sag is less or more than the specified value:
  - Adjust the spring preload of the shock absorber. ☞ (☞ p. 26)

## Checking the riding sag of the shock absorber



- Measure distance **A** of rear wheel unloaded. (☞ p. 25)
- With another person holding the motorcycle, the rider, wearing full protective clothing, sits on the seat in a normal sitting position (feet on footrests) and bounces up and down a few times.
  - ✓ The rear wheel suspension levels out.
- Another person now measures the distance between the rear axle and a fixed point.
- Note down the value as dimension **C**.

### **i** Info

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

- Check the riding sag.

Riding sag (450 SX-F EU)	90 mm (3.54 in)
--------------------------	-----------------

Riding sag (450 SX-F USA)	100 mm (3.94 in)
---------------------------	------------------

- » If the riding sag differs from the specified measurement:
  - Adjust the riding sag. ☞ (☞ p. 27)

## Adjusting the spring preload of the shock absorber ☞

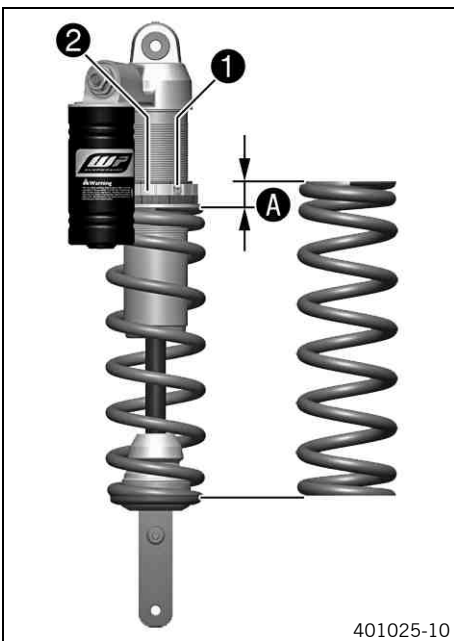
### **!** Caution

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

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

### **i** Info

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



- Remove the shock absorber. ☞ (☞ p. 36)
- After removing the shock absorber, clean it thoroughly.
- Loosen screw **1**.
- Turn adjusting ring **2** until the spring is no longer under tension.

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

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

Guideline

Spring preload (450 SX-F EU)	15 mm (0.59 in)
Spring preload (450 SX-F USA)	12 mm (0.47 in)

### **i** Info

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

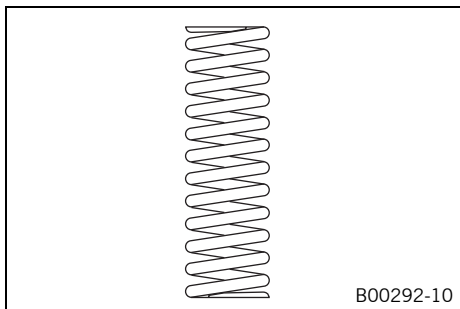
- Tighten screw **1**.

Guideline

Screw, shock absorber adjusting ring (450 SX-F EU)	M5	7 Nm (5.2 lbf ft)
Screw, shock absorber adjusting ring (450 SX-F USA)	M5	7 Nm (5.2 lbf ft)

- Install the shock absorber. ☞ (☞ p. 37)

## Adjusting the riding sag 🛠️



- Remove the shock absorber. 🛠️ (📖 p. 36)
- After removing the shock absorber, clean it thoroughly.
- Choose and mount a suitable spring.

Guideline

Spring rate (450 SX-F EU)	
Weight of rider: 65... 75 kg (143... 165 lb.)	54 N/mm (308 lb/in)
Weight of rider: 75... 85 kg (165... 187 lb.)	57 N/mm (325 lb/in)
Weight of rider: 85... 95 kg (187... 209 lb.)	60 N/mm (343 lb/in)
Spring rate (450 SX-F USA)	
Weight of rider: 65... 75 kg (143... 165 lb.)	54 N/mm (308 lb/in)
Weight of rider: 75... 85 kg (165... 187 lb.)	57 N/mm (325 lb/in)
Weight of rider: 85... 95 kg (187... 209 lb.)	60 N/mm (343 lb/in)



### Info

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

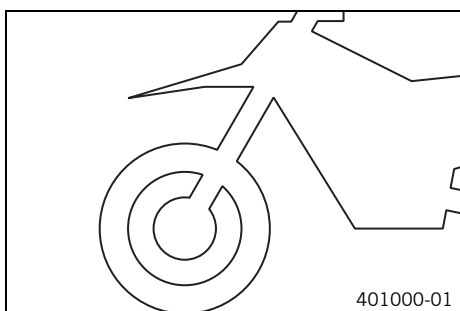
- Install the shock absorber. 🛠️ (📖 p. 37)
- Check the static sag of the shock absorber. (📖 p. 25)
- Check the riding sag of the shock absorber. (📖 p. 26)
- Adjust the rebound damping of the shock absorber. (📖 p. 24)

## Checking basic setting of fork



### Info

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



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

## Adjusting the compression damping of the fork



### Info

The hydraulic compression damping determines the fork suspension behavior.



- Turn adjusting screws ❶ clockwise all the way.



### Info

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

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

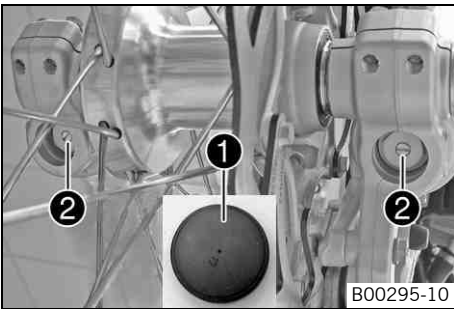
Guideline

Compression damping (450 SX-F EU)	
Comfort	14 clicks
Standard	12 clicks
Sport	10 clicks
Compression damping (450 SX-F USA)	
Comfort	14 clicks
Standard	12 clicks
Sport	10 clicks

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

## Adjusting the rebound damping of the fork

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



- Remove protection caps ❶.
- Turn adjusting screws ❷ clockwise all the way.

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

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

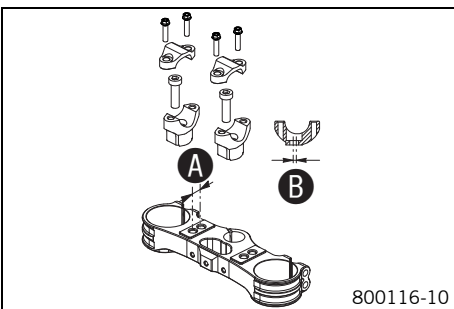
Guideline

Rebound damping (450 SX-F EU)	
Comfort	14 clicks
Standard	12 clicks
Sport	10 clicks
Rebound damping (450 SX-F USA)	
Comfort	14 clicks
Standard	12 clicks
Sport	10 clicks

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

- Mount protection covers ❶.

## Handlebar position



On the upper triple clamp, there are 2 holes at a distance of ❶ to each other.

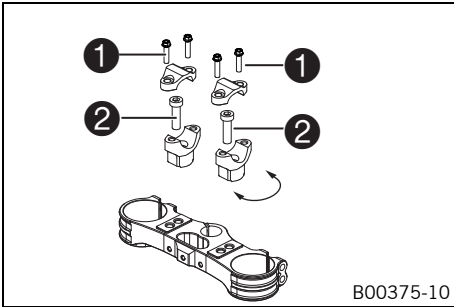
Hole distance A	15 mm (0.59 in)
-----------------	-----------------

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

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

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

## Adjusting handlebar position ↩



- Remove the four screws ❶. Remove the handlebar clamp. Remove the handlebar and lay it to one side.

**i** **Info**

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

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

Guideline

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

**i** **Info**

Position the left and right handlebar supports evenly.

- Position the handlebar.

**i** **Info**

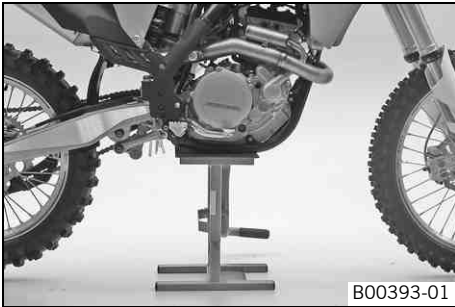
Make sure cables and wiring are positioned correctly.

- Position the handlebar clamp. Fit and evenly tighten the four screws ❶.

Guideline

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

## Raising the motorcycle with the lift stand



### Note

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

- Always place the vehicle on a firm and even surface.
- Raise the motorcycle at the frame underneath the engine.

Lift stand (54829055000)

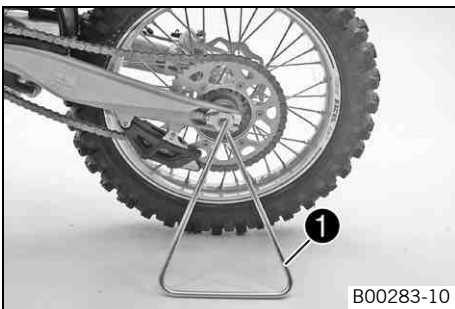
- ✓ The wheels should no longer touch the ground.
- Secure the motorcycle against falling over.

## Removing the motorcycle from the lift stand

### Note

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

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



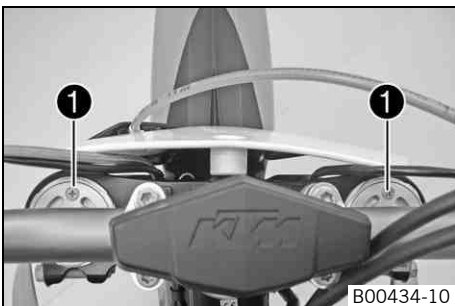
- Remove the motorcycle from the lift stand.
- Remove the lift stand.
- To park the motorcycle, insert plug-in stand ❶ into the left side of the wheel spindle.



### Info

Remove the plug-in stand before starting on a trip.

## Bleeding fork legs



- Raise the motorcycle with the lift stand. (☞ p. 30)
- Remove bleeder screws ❶ briefly.
- ✓ Any excess pressure escapes from the interior of the fork.
- Mount and tighten bleeder screws.
- Remove the motorcycle from the lift stand. (☞ p. 30)

## Cleaning the dust boots of the fork legs



- Raise the motorcycle with the lift stand. (☞ p. 30)
- Loosen the fork protector. (☞ p. 31)
- Push dust boots ❶ of both fork legs downwards.



### Info

The dust boots should remove dust and coarse dirt particles from the fork tubes. Over time, there is an ingress of dirt inside the boots. If this dirt is not removed, it may cause the oil seals to leak.



### Warning

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

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

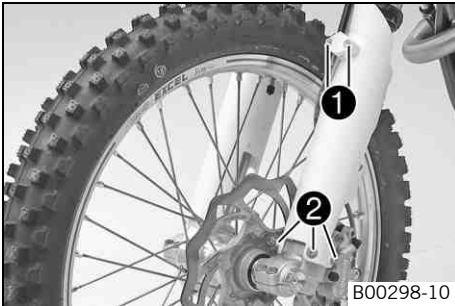
- Clean and oil the dust boots and inner fork tube of both fork legs.

Universal oil spray (☞ p. 90)



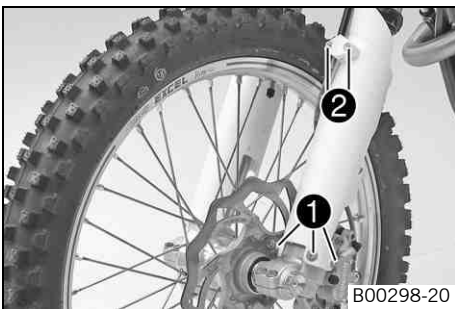
- Press the dust boots back into their normal position.
- Remove excess oil.
- Position the fork protection. (☛ p. 31)
- Remove the motorcycle from the lift stand. (☛ p. 30)

## Loosening the fork protector



- Remove screws ❶ and remove the clamp.
- Remove screws ❷ on the left fork leg. Push the fork protector downwards.
- Remove the screws on the right fork leg. Push the fork protector downwards.

## Positioning the fork protection



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

Guideline

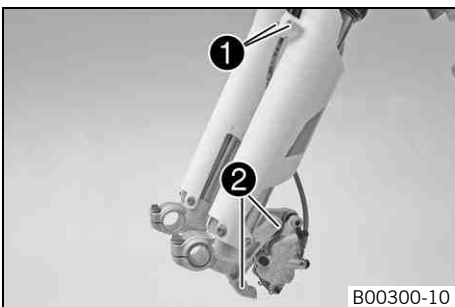
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	--------------------

- Position brake line. Put the clamp on, mount and tighten screws ❷.
- Position the fork protection on the right fork leg. Mount and tighten screws.

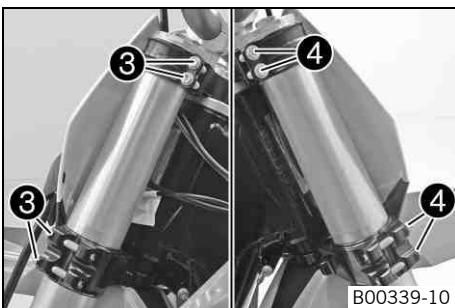
Guideline

Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
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## Removing the fork legs ☛

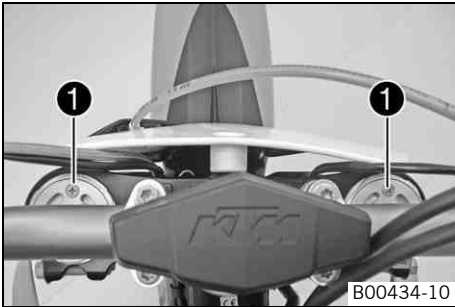


- Remove front wheel. ☛ (☛ p. 56)
- Remove screws ❶ and take off clamp.
- Remove screws ❷ and take off brake caliper.
- Hang the brake caliper and the brake line loosely to the side.



- Loosen screw ❸. Remove the fork leg on the left.
- Loosen screw ❹. Remove the fork leg on the right.

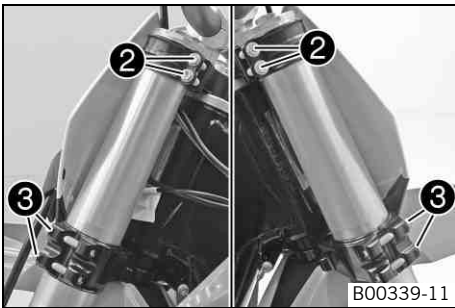
## Installing the fork legs



- Position the fork legs.

**i Info**

The upper milled groove in the fork leg must be flush with the top edge of the upper triple clamp.  
Position bleeder screws 1 toward the front.



- Tighten screws 2.

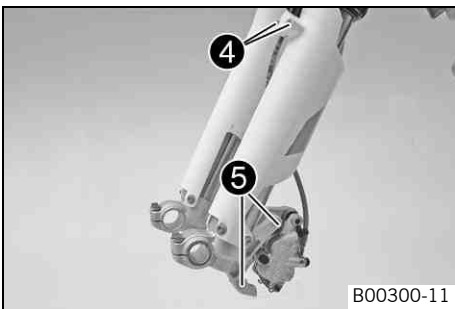
Guideline

Screw, top triple clamp	M8	17 Nm (12.5 lbf ft)
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- Tighten screws 3.

Guideline

Screw, bottom triple clamp	M8	12 Nm (8.9 lbf ft)
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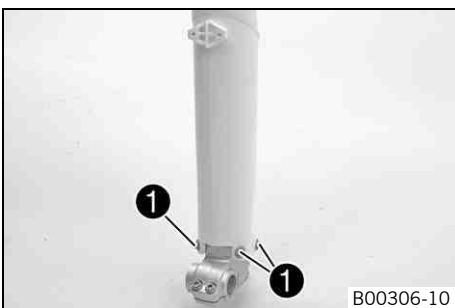
- Position the brake caliper. Mount and tighten screws 5.

Guideline

Screw, front brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
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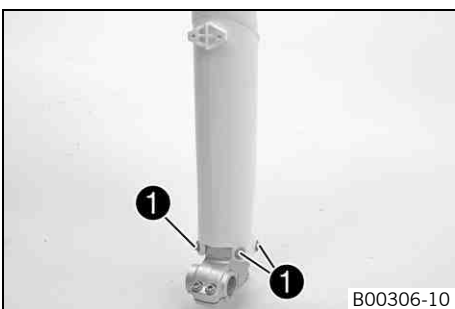
- Position the brake line and clamp. Mount and tighten screws 4.
- Install the front wheel. (☞ p. 56)

## Removing the fork protector



- Remove the fork legs. (☞ p. 31)
- Remove screws 1 on the left fork leg. Remove the fork protector upwards.
- Remove the screws on the right fork leg. Remove the fork protector upwards.

## Installing the fork protector



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

Guideline

Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
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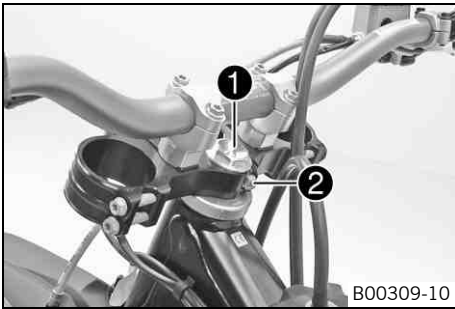
- Position the fork protection on the right fork leg. Mount and tighten the screws.

Guideline

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

- Install the fork legs. (☞ p. 32)

## Removing the lower triple clamp



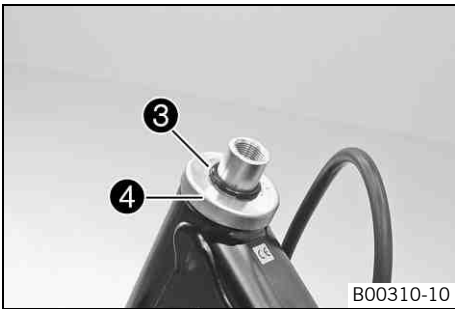
B00309-10

- Remove the fork legs. (☞ p. 31)
- Dismount the start number plate (☞ p. 36)
- Remove the front fender. (☞ p. 36)
- Remove screw ①.
- Remove screw ②.
- Take off the top triple clamp with the handlebar and set it aside.



### Info

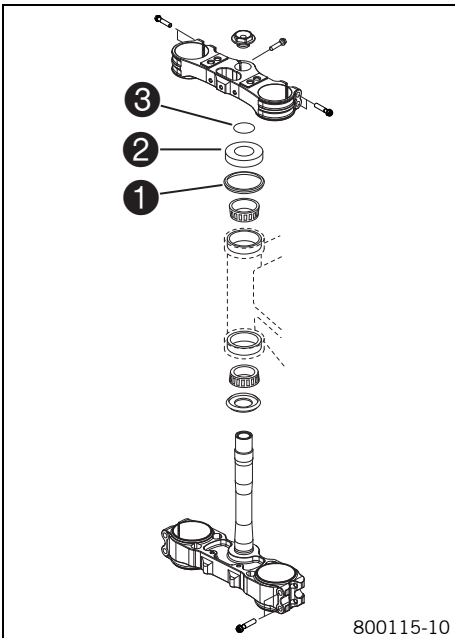
Protect the motorcycle and its attachments against damage by covering them.  
Do not bend the cables and lines.



B00310-10

- Remove O-ring ③. Remove protective ring ④.
- Take out the lower triple clamp with the steering stem.
- Remove the upper steering head bearing.

## Installing the lower triple clamp



800115-10

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

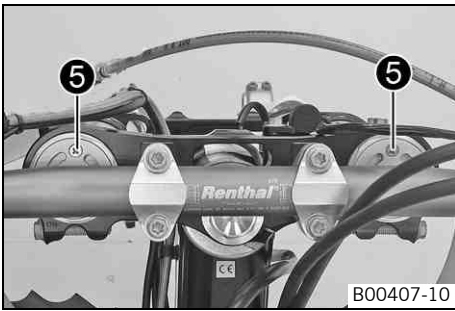
High viscosity grease (☞ p. 89)

- Insert the lower triple clamp with the steering stem. Mount the upper steering head bearing.
- Check whether the top steering head seal ① is correctly positioned.
- Slide on protective ring ② and O-ring ③.



B00376-10

- Position the upper triple clamp with the steering.
- Mount screw ④ but do not tighten yet.

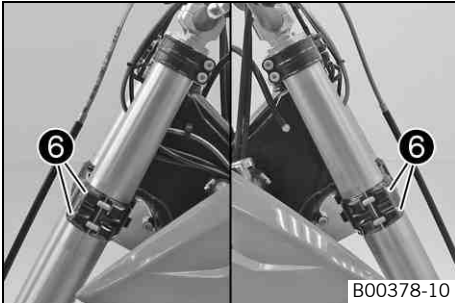


- Position the fork legs.



**Info**

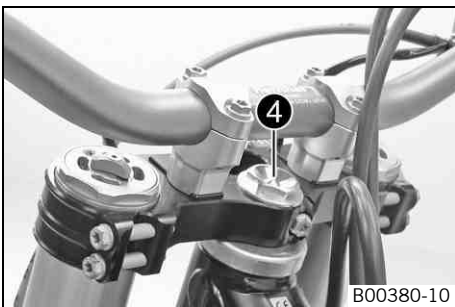
The upper milled groove in the fork leg must be flush with the top edge of the upper triple clamp.  
Position bleeder screws 5 toward the front.



- Fully tighten screws 6.

Guideline

Screw, bottom triple clamp	M8	12 Nm (8.9 lbf ft)
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- Tighten screw 4.

Guideline

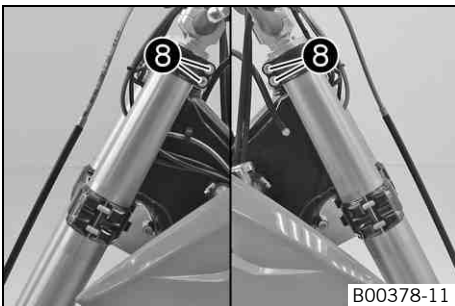
Screw, top steering head	M20x1.5	10 Nm (7.4 lbf ft)
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- Mount and tighten screw 7.

Guideline

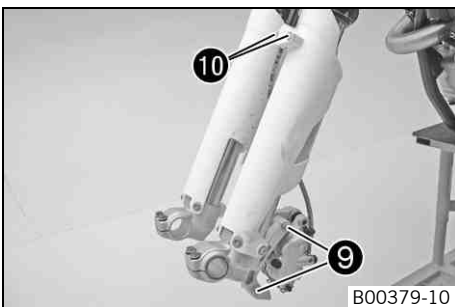
Screw, top steering stem	M8	17 Nm (12.5 lbf ft)	Loctite® 243™
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- Fully tighten screws 8.

Guideline

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



- Position the brake caliper. Mount and tighten screws 9.

Guideline

Screw, front brake caliper	M8	25 Nm (18.4 lbf ft)	Loctite® 243™
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- Position the brake line and clamp. Mount and tighten screws 10.
- Install the front fender. (☛ p. 36)
- Install the start number plate. (☛ p. 36)
- Check that the wiring harness, cables, and brake and clutch lines can move freely and are routed correctly.
- Install the front wheel. ☛ (☛ p. 56)
- Check the steering head bearing play. (☛ p. 35)

## Checking steering head bearing play



### Warning

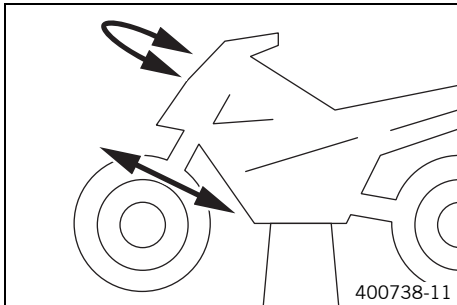
**Danger of accidents** Unstable vehicle handling from incorrect steering head bearing play.

- Adjust the steering head bearing play without delay. (Your authorized KTM workshop will be glad to help.)



### Info

If the bike is ridden for a longer time with play in the steering head bearing, the bearing and the bearing seats in the frame can be damaged after time.



- Raise the motorcycle with the lift stand. (☞ p. 30)
- Move the handlebar to the straight-ahead position. Move the fork legs to and fro in the direction of travel.

No play should be noticeable in the steering head bearing.

» If there is noticeable play present:

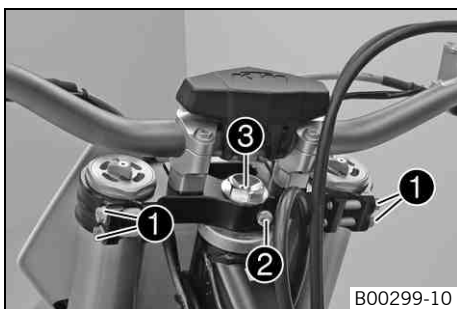
- Adjust play of the steering head bearing ☞ (☞ p. 35)
- Move the handlebar to and fro over the entire steering range.

The handlebar must be able to move easily over the entire steering range. No resting locations should be noticeable.

» If click positions are noticeable:

- Adjust play of the steering head bearing ☞ (☞ p. 35)
- Check the steering head bearing and replace if required.
- Remove the motorcycle from the lift stand. (☞ p. 30)

## Adjusting play of steering head bearing ☞



- Raise the motorcycle with the lift stand. (☞ p. 30)
- Loosen screw ❶. Remove screw ❷.
- Loosen and retighten screw ❸.

Guideline

Screw, top steering head	M20x1.5	10 Nm (7.4 lbf ft)
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- Using a plastic hammer, tap lightly on the upper triple clamp to avoid strains.
- Fully tighten screw ❶.

Guideline

Screw, top triple clamp	M8	17 Nm (12.5 lbf ft)
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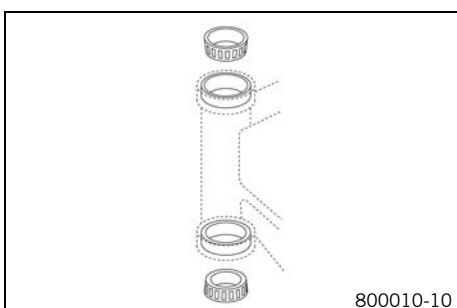
- Mount and tighten screw ❷.

Guideline

Screw, top steering stem	M8	17 Nm (12.5 lbf ft)	Loctite® 243™
--------------------------	----	---------------------	---------------

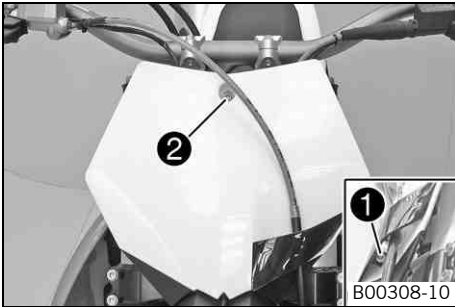
- Check the steering head bearing play. (☞ p. 35)

## Greasing the steering head bearing ☞



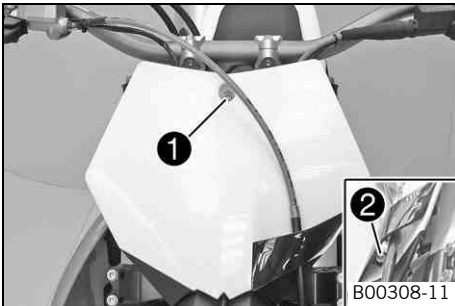
- Remove the lower triple clamp. ☞ (☞ p. 33)
- Install the lower triple clamp. ☞ (☞ p. 33)

## Dismount the start number plate



- Remove screw ❶ and take off clamp.
- Remove screw ❷. Remove the start number plate.

## Installing the start number plate



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

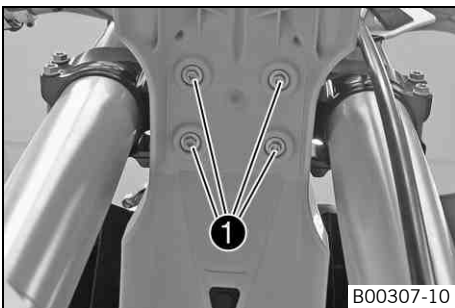
Guideline

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

**i Info**  
Take care with the contact of the holding lug at the fender.

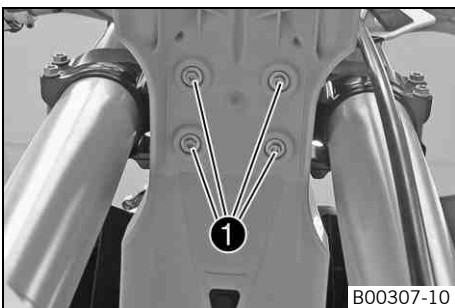
- Position the brake line. Put the clamp on, and mount and tighten screw ❷.

## Removing the front fender



- Remove screws ❶. Remove the front fender.
- Make sure the spacers remain in place.

## Installing the front fender



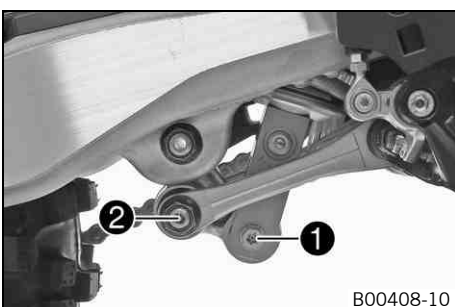
- Ensure that the spacers are mounted in the fender.
- Position the front fender. Mount and tighten screws ❶.

Guideline

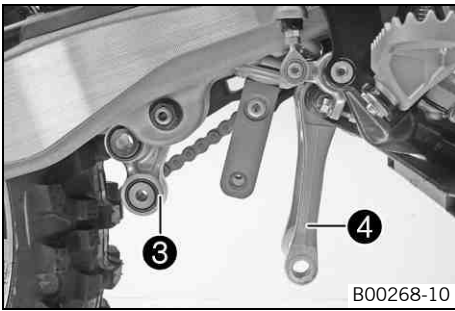
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
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**i Info**  
Make sure the holding lugs engage in the start number plate.

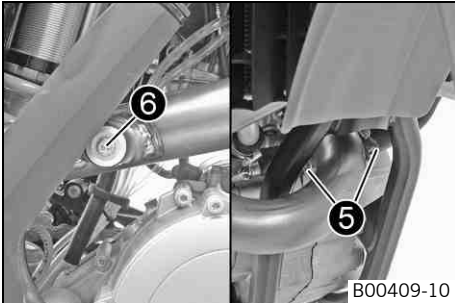
## Removing the shock absorber



- Raise the motorcycle with the lift stand. (☛ p. 30)
- Remove the main silencer. (☛ p. 40)
- Remove screw ❶.
- Remove screw cap ❷.



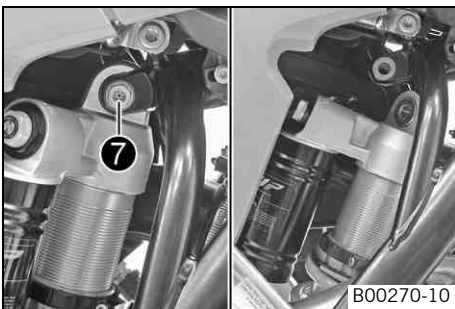
- Press angle lever ③ toward the rear.
- Press linkage lever ④ downward.



- Detach springs ⑥.

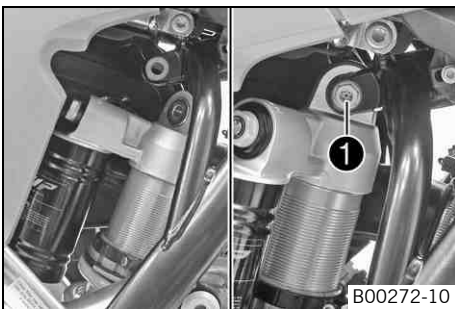
Spring hooks (50305017000)
----------------------------

- Remove screw ⑦.



- Remove screw ⑦.
- Turn the shock absorber toward the rear and remove the exhaust manifold.
- Remove the shock absorber from the top.

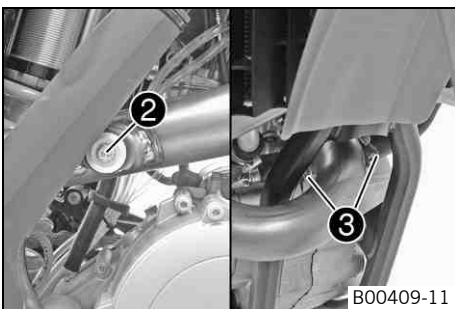
## Installing the shock absorber ↩



- Insert the shock absorber from above.
- Turn the shock absorber toward the rear and position the exhaust manifold.
- Position the shock absorber.
- Mount and tighten screw ①.

Guideline

Screw, top shock absorber	M10	60 Nm (44.3 lbf ft)	Loctite® 2701
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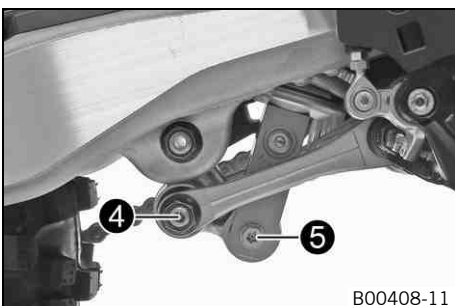
- Mount and tighten screw ②.

Guideline

Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)
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- Attach springs ③.

Spring hooks (50305017000)
----------------------------



- Position the angle lever and linkage lever.
- Mount and tighten screw cap ④.

Guideline

Nut, linkage lever to angle lever	M14x1.5	80 Nm (59 lbf ft)
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- Mount and tighten screw ⑤.

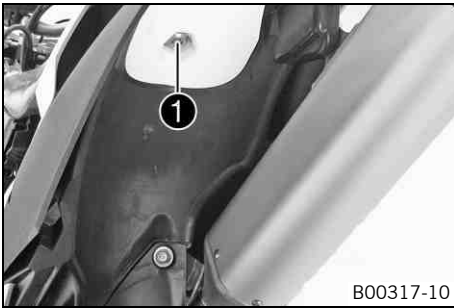
Guideline

Screw, bottom shock absorber	M10	60 Nm (44.3 lbf ft)	Loctite® 2701
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- Install the main silencer. (☛ p. 40)

- Remove the motorcycle from the lift stand. (☛ p. 30)

## Removing the seat



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

## Mounting the seat

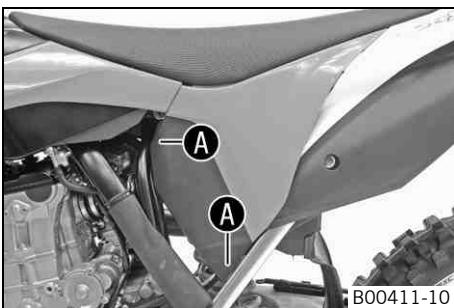


- Hook in the front of the seat at the collar sleeve of the fuel tank, lower it at the rear and simultaneously push it forward.
- Make sure that the seat is correctly locked in.
- Mount and tighten the screw of the seat fixing.

### Guideline

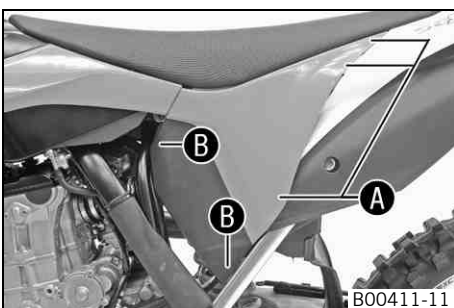
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
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## Removing the air filter box lid



- Pull off the air filter box lid in area ❶ to the side and remove to the front.

## Installing the air filter box lid



- Insert the air filter box lid into the rear area ❶ and clip it into the front area ❷.

## 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.

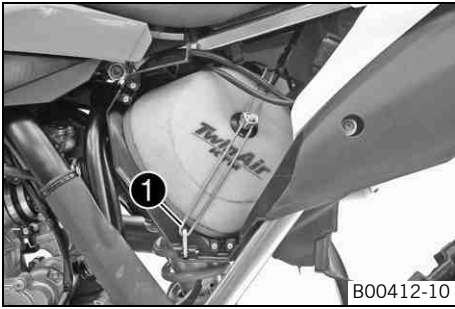


### Warning

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

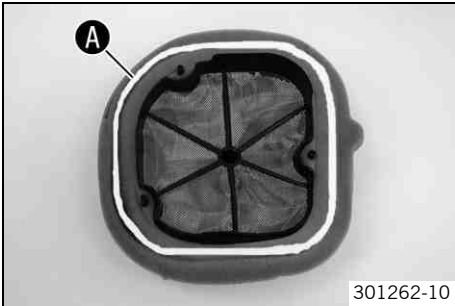
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.





- Remove the air filter box lid. (☞ p. 38)
- Detach air filter holder ❶ at the bottom and swing it to one side. Remove the air filter 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.
- Apply grease to the section ❶ of the air filter.

Long-life grease (☞ p. 89)



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

### **i** Info

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

- Install the air filter box lid. (☞ p. 38)

## Clean 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 gasoline since these substances attack the foam.



- Remove the air filter. ☞ (☞ p. 38)
- Wash the air filter thoroughly in special cleaning liquid and allow it to dry properly.

Air filter cleaner (☞ p. 89)

### **i** Info

Only squeeze the air filter when drying it out, never wring it out.

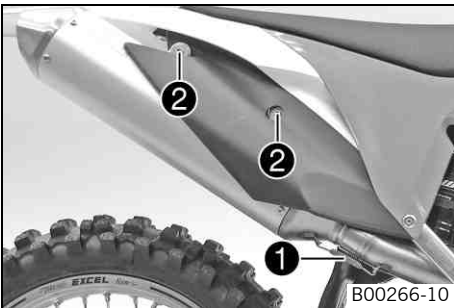
- Oil the dry air filter with a high/quality filter oil.

Oil for foam air filter (☞ p. 89)

- Clean the air filter box.
- Check carburetor connection boot for damage and tightness.
- Install the air filter. ☞ (☞ p. 39)

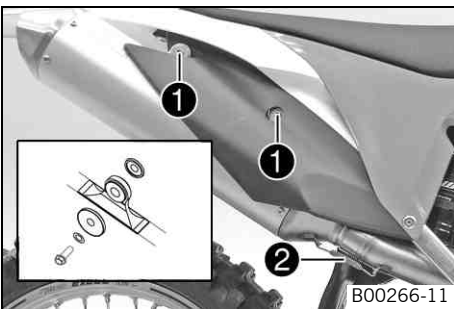
## Removing main silencer

- Warning**  
**Danger of burns** The exhaust system gets very hot when the vehicle is driven.
- Allow the exhaust system to cool down. Do not touch hot components.



- Disconnect spring ❶.
- Remove screws ❷ and take off main silencer.

## Installing the main silencer



- Mount the main silencer. Mount and tighten screws ❶.

Guideline

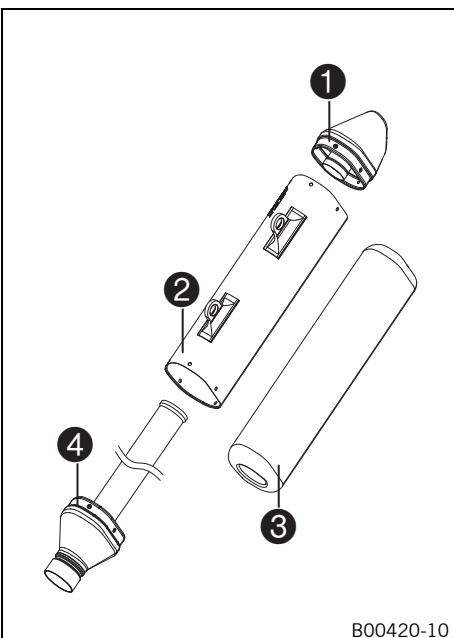
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	--------------------

- Reconnect spring ❷.

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

- Warning**  
**Danger of burns** The exhaust system gets very hot when the vehicle is driven.
- Allow the exhaust system to cool down. Do not touch hot components.

- i Info**  
 Over a period, the fibers of the insulating material vanish into the air, and the silencer "burns out". Not only is the noise level higher, the performance characteristic changes.



- Remove the main silencer. (☛ p. 40)
- Remove the screws of locking cap ❶. Remove the locking cap and outer tube ❷.
- Pull the glass fiber yarn filling ❸ from the inner tube ❹.
- Clean the parts that are to be reinstalled.
- Mount the new glass fiber yarn filling on the inner tube.
- Slide the outer tube over the glass fiber yarn filling.
- Insert the locking cap into the outer tube.
- Mount and tighten all screws.
- Install the main silencer. (☛ p. 40)

## Removing the fuel tank



### Danger

**Fire hazard** Fuel is highly flammable.

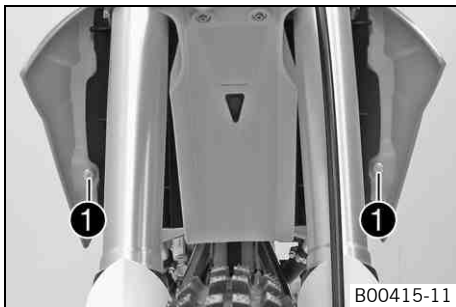
- Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
- Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the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



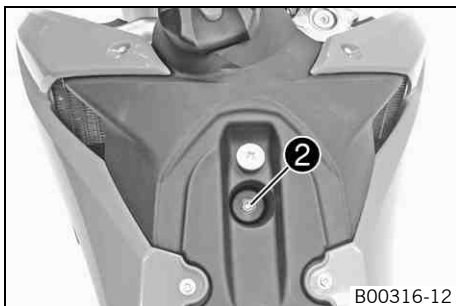
- Remove the seat. (p. 38)
- Turn handle ❶ of the fuel tap to the **OFF** position. (Figure 500178-10 p. 11)
- Pull off the fuel hose.



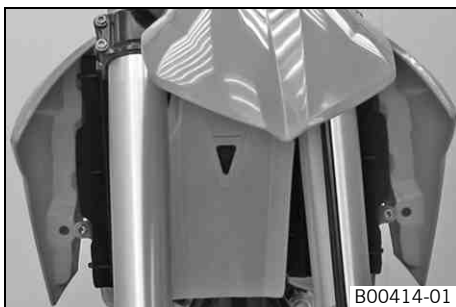
### Info

Remaining fuel may flow out of the fuel hose.

- Remove screws ❶ with the collar sleeve.



- Remove screw ❷ with the rubber bushing.
- Remove the tube from the fuel tank breather.



- Pull both spoilers off of the sides of the radiator bracket and lift off the fuel tank.

## Installing the fuel tank



### Danger

**Fire hazard** Fuel is highly flammable.

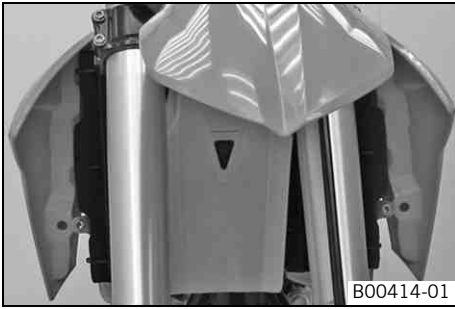
- Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
- Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the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



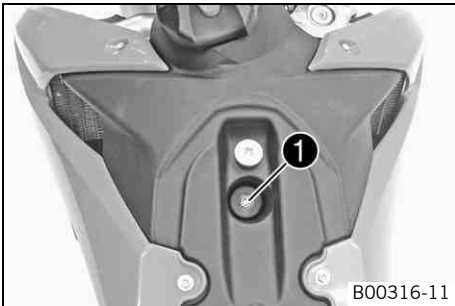
### Warning

**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.



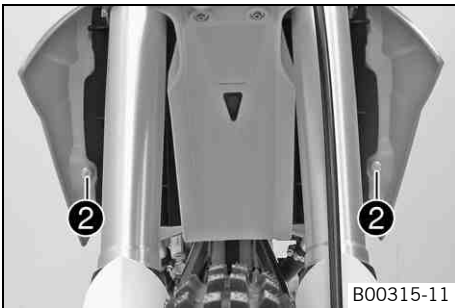
- Check the throttle cable routing. (☛ p. 46)
- Position the fuel tank and fit the two spoilers to the sides of the radiator bracket.
- Make sure that no cables are trapped or damaged.



- Mount the fuel tank vent hose.
- Mount and tighten screw ❶ with the rubber bushing.

Guideline

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



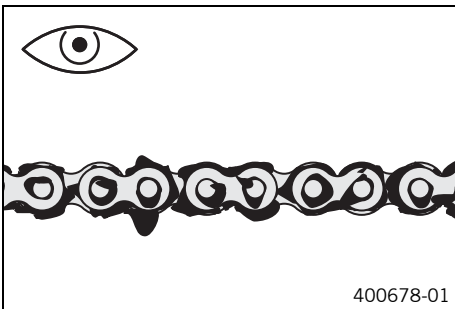
- Mount and tighten screws ❷ with the collar bushing.

Guideline

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

- Connect the fuel hose.
- Mount the seat. (☛ p. 38)

## Checking for chain dirt accumulation



- Check the chain for coarse dirt accumulation.
  - » If the chain is very dirty:
    - Clean the chain. (☛ p. 42)

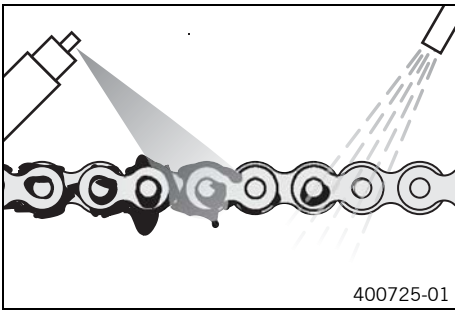
## Cleaning the chain

**Warning**  
**Danger of accidents** Oil or grease on the tires reduces their grip.  
 - Remove oil and grease with a suitable cleaning material.

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

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

**i 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. 89)
-------------------------

Off-road chain spray (☛ p. 89)
--------------------------------

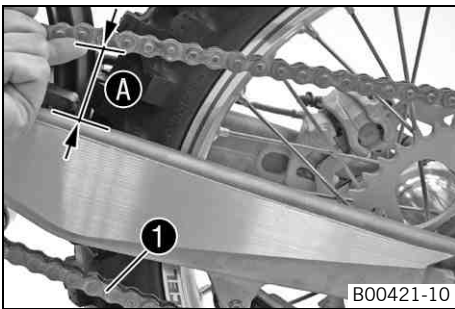
## Checking the chain tension



### 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) are under additional load. Apart from premature wear, in extreme cases the chain can rupture or the countershaft of the transmission can break. On the other hand, if the chain is loose, it can fall off the engine sprocket or the rear sprocket and block the rear wheel or damage the engine. Check the chain tension and correct if necessary.



- Raise the motorcycle with the lift stand. (☛ p. 30)
- Push the chain at the end of the chain sliding component upwards to measure the chain tension **A**.



### Info

The lower chain section **1** must be taut.

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

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

- » If the chain tension does not meet specifications:
  - Adjust the chain tension. (☛ p. 43)
- Remove the motorcycle from the lift stand. (☛ p. 30)

## Adjusting the chain tension

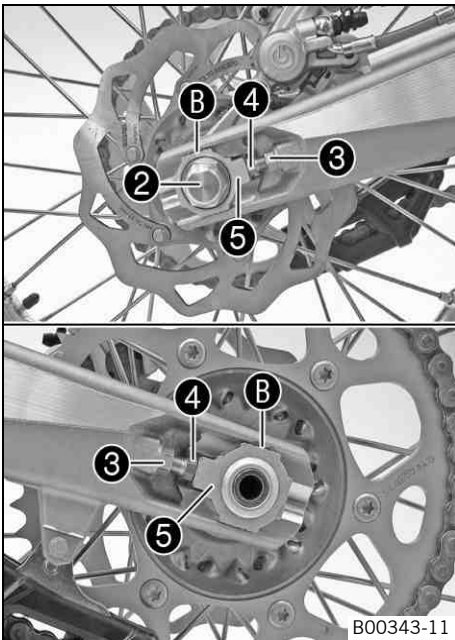


### Warning

**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) are under additional load. Apart from premature wear, in extreme cases the chain can rupture or the countershaft of the transmission can break. On the other hand, if the chain is loose, it can fall off the engine sprocket or the rear sprocket and block the rear wheel or damage the engine. Check the chain tension and correct if necessary.

- Raise the motorcycle with the lift stand. (☛ p. 30)
- Check the chain tension. (☛ p. 43)



- Loosen nut ②.
- Loosen nuts ③.
- Adjust the chain tension by turning the adjusting screws ④ left and right.

Guideline

Chain tension	55... 58 mm (2.17... 2.28 in)
Turn adjusting screws ④ on the left and right so that the markings on the left and right chain adjusters are in the same position relative to the reference marks ③. The rear wheel is then correctly aligned.	

- Tighten nuts ③.
- Make sure that chain adjusters ⑤ are fitted correctly on adjusting screws ④.
- Tighten nut ②.

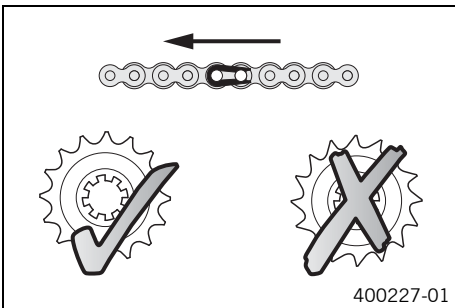
Guideline

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

**i Info**  
The wide adjustment range of the chain adjusters (32 mm (1.18 in)) enables different secondary ratios with the same chain length. Chain adjusters ⑤ can be turned by 180°.

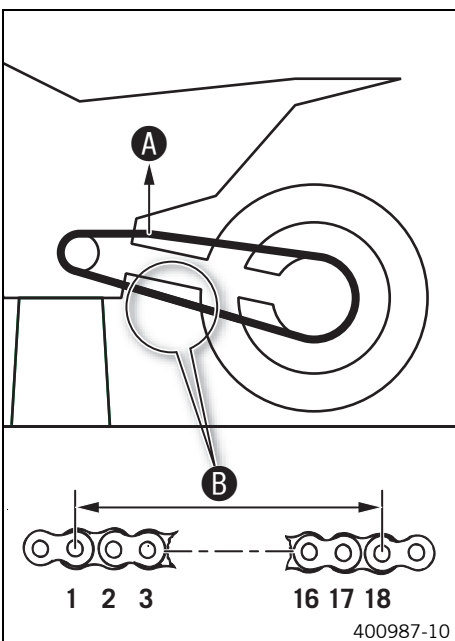
- Remove the motorcycle from the lift stand. (☛ p. 30)

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



- Raise the motorcycle with the lift stand. (☛ p. 30)
- 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. ☛

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



- Pull on the upper part of the chain with the specified weight ①.

Guideline

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

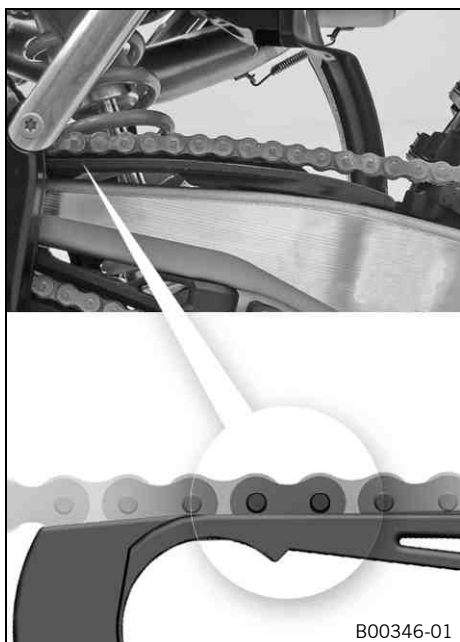
- Measure the distance ② of 18 chain links in the lower chain section.

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

Maximum distance ② at the longest chain section	272 mm (10.71 in)
---	-------------------

- » If the distance ② is greater than the specified measurement:
  - Change the chain. ☛

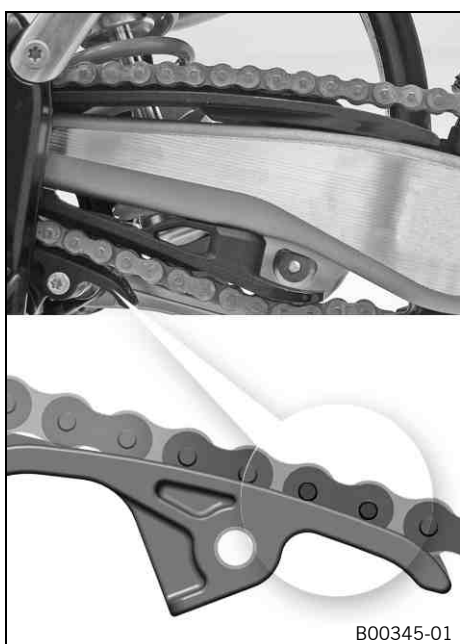
**i Info**  
When the chain is replaced, the rear sprocket and engine sprocket should also be changed.  
New chains wear out faster on old, worn sprockets.



- Check the chain sliding guard for wear.
  - » If the bottom edge of the chain bolt is in line with or below the chain sliding guard:
    - Change the chain sliding guard. 🛠️
- Check that the chain sliding guard is firmly seated.
  - » If the chain sliding guard is loose:
    - Tighten the chain sliding guard.

Guideline

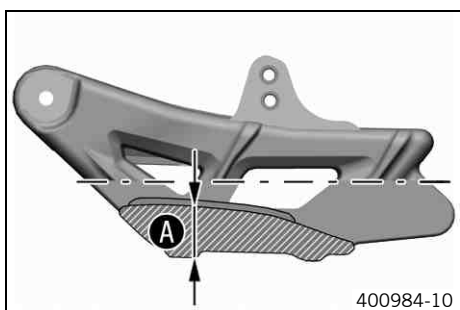
Screw, chain sliding guard	M6	6 Nm (4.4 lbf ft)	Loctite® 243™
----------------------------	----	----------------------	---------------



- Check the chain sliding piece for wear.
  - » If the bottom edge of the chain bolt is in line with or below the chain sliding piece:
    - Change the chain sliding piece. 🛠️
- Check that the chain sliding piece is firmly seated.
  - » If the chain sliding piece is loose:
    - Tighten the chain sliding piece.

Guideline

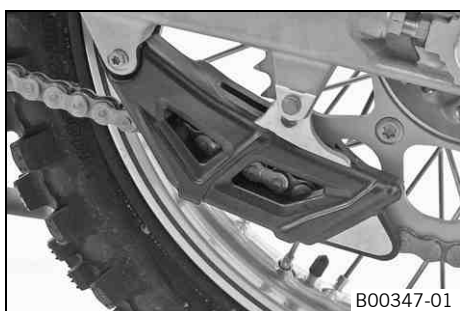
Screw, chain sliding piece	M8	15 Nm (11.1 lbf ft)
----------------------------	----	------------------------



- Measure material thickness **A** at the bottom of the chain guide.

Minimum distance <b>A</b> at the lowest point	12 mm (0.47 in)
---	-----------------

- » If distance **A** is less than the specified measurement:
  - Change the chain guide. 🛠️



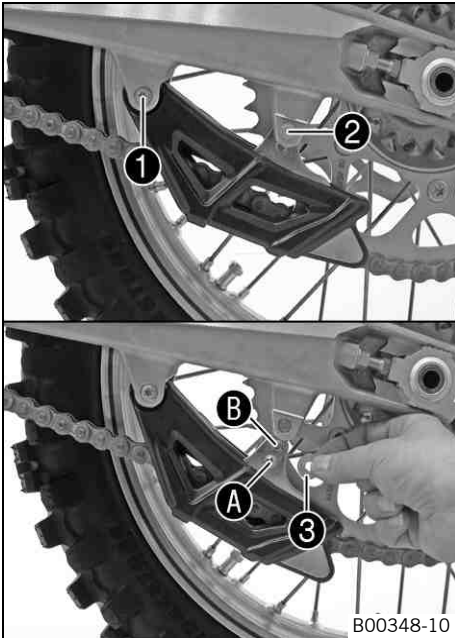
- Check that the chain guide is firmly seated.
  - » If the chain guide is loose:
    - Tighten the chain guide.

Guideline

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

- Remove the motorcycle from the lift stand. (🔧 p. 30)

## Adjusting the chain guide



B00348-10

- Loosen screw ❶. Remove screw ❷. Push the chain guide down.

### Condition

Number of teeth:  $\leq 44$  teeth

- Insert collar sleeve ❸ in hole ❹. Position the chain guide.
- Mount and tighten screw ❷. Tighten screw ❶.

### Guideline

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

### Condition

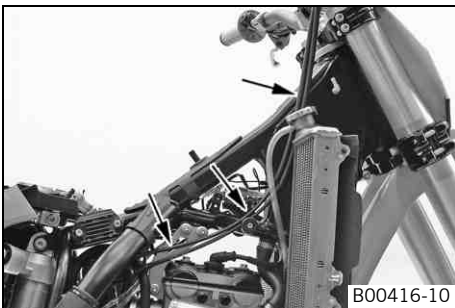
Number of teeth:  $\geq 45$  teeth

- Insert collar sleeve ❸ in hole ❹. Position the chain guide.
- Mount and tighten screw ❷. Tighten screw ❶.

### Guideline

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

## Checking the throttle cable routing



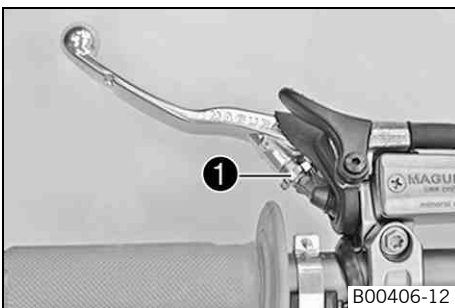
B00416-10

- Remove the fuel tank. (p. 41)
- Check the throttle cable routing.

Both throttle cables must be routed to the carburetor side by side behind the handlebars and above the tank bearing.

- » If the throttle cable is not routed as specified:
  - Correct the throttle cable routing.
- Install the fuel tank. (p. 41)

## Adjusting basic position of clutch lever



B00406-12

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

### **i** Info

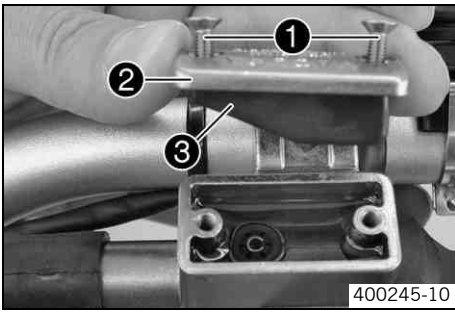
Turn the adjusting screw clockwise to increase the distance between the clutch lever and the handlebar.  
Turn the adjusting screw counterclockwise to decrease the distance between the clutch lever and the handlebar.  
The range of adjustment is limited.  
Turn the adjusting screw by hand only, and do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

## Checking the fluid level of hydraulic clutch

### **i** 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 below container rim	4 mm (0.16 in)
---------------------------------	----------------

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

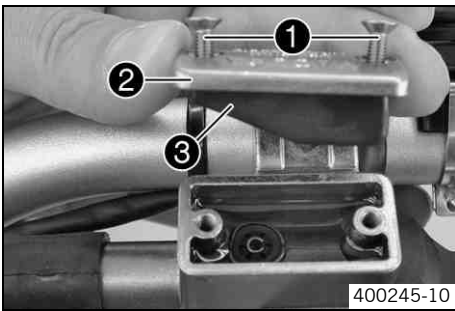
Hydraulic fluid (15) (☛ p. 87)
--------------------------------

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

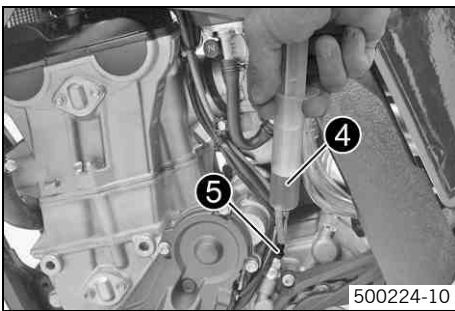
## Changing the hydraulic clutch fluid ☛

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

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



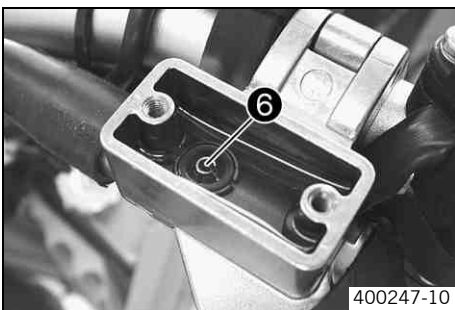
- Move the clutch fluid reservoir mounted on the handlebar to a horizontal position.
- Remove screws ❶.
- Remove cover ❷ with membrane ❸.



- Fill bleeding syringe ❹ with the appropriate hydraulic fluid.

Bleed syringe (50329050000)
Hydraulic fluid (15) (☛ p. 87)

- On the slave cylinder, remove bleeder screw ❺ and mount bleeding syringe ❹.



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

Guideline

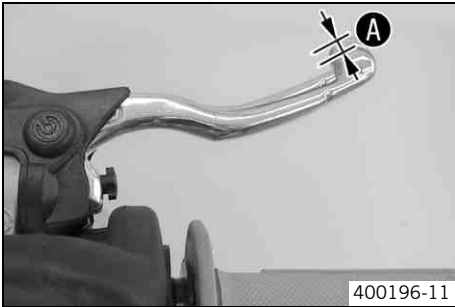
Fluid level below container rim	4 mm (0.16 in)
---------------------------------	----------------

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

## Checking free travel on 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.

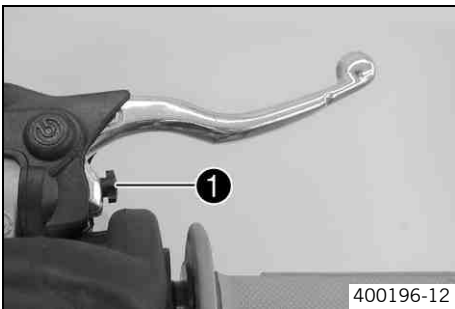


- Push the hand brake lever forwards and check the free travel **A**.

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

- » If the free travel does not meet specifications:
  - Adjust the basic position of the hand brake lever. (☛ p. 48)

## Adjusting the basic position of the hand brake lever



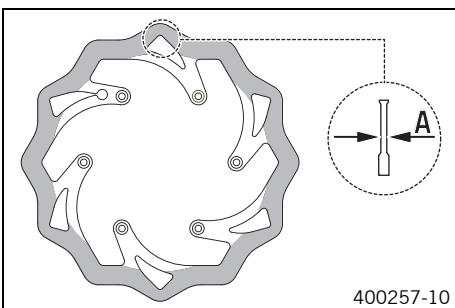
- Check the free travel on the hand brake lever. (☛ p. 48)
- Adjust the basic setting of the hand brake lever to your hand size by turning adjusting screw **1**.

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

## Checking the brake discs

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

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



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

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

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

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

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



#### Warning

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

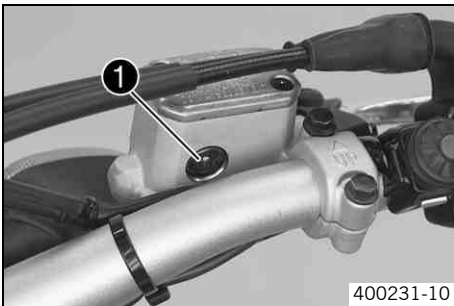
- If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)



#### Warning

**Danger of accidents** Reduced braking effect caused by old brake fluid.

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



- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Check the brake fluid level in viewer ❶.
  - » If the brake fluid is below the **MIN** mark:
    - Add front brake fluid. 🛠️ (p. 49)

### Adding front brake fluid 🛠️



#### Warning

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

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



#### Warning

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

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



#### Warning

**Danger of accidents** Reduced braking effect caused by 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.

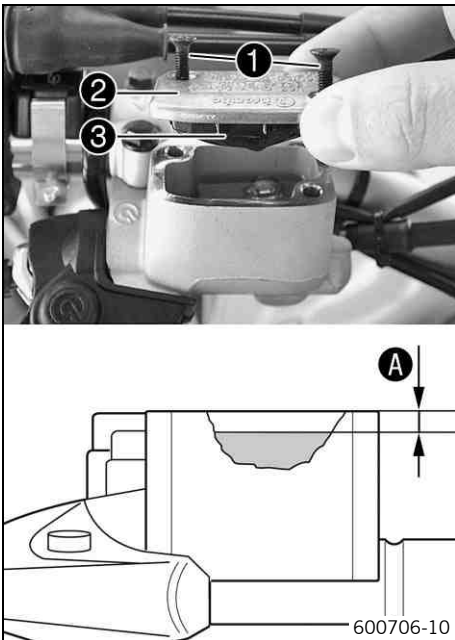


#### Info

Never use DOT 5 brake fluid! This is based on silicone oil and is colored purple. Oil seals and brake lines are not designed for DOT 5 brake fluid.

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

Use only clean brake fluid from a sealed container.



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

Guideline

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

Brake fluid DOT 4 / DOT 5.1 (☞ p. 87)

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

**i Info**

Clean up overflowed or spilt brake fluid immediately with water.

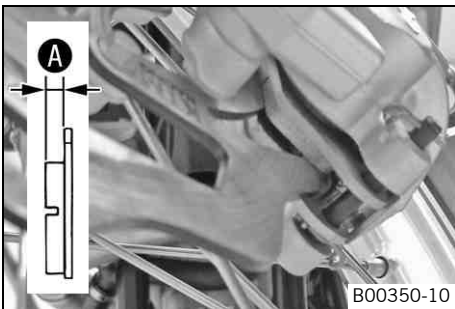
## Checking the front brake linings



### 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.)



- Check the brake linings for minimum thickness A.

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

- » If the minimum thickness is less than specified:
  - Change the front brake linings. ☞ (☞ p. 50)
- Check the brake linings for damage and cracking.
  - » If damage or cracking is visible:
    - Change the front brake linings. ☞ (☞ p. 50)

## Changing the front brake linings ☞



### Warning

**Danger of accident** Brake system failure.

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



### Warning

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

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



### Warning

**Danger of accidents** Reduced braking effect caused by old brake fluid.

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



### Warning

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

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



**Warning**

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

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



**Warning**

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

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

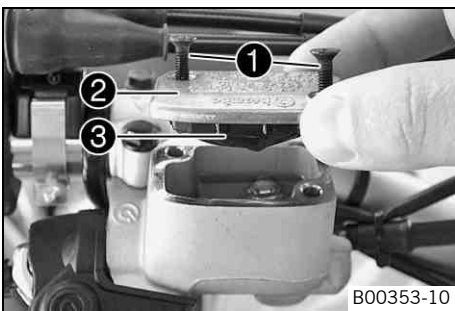


**Info**

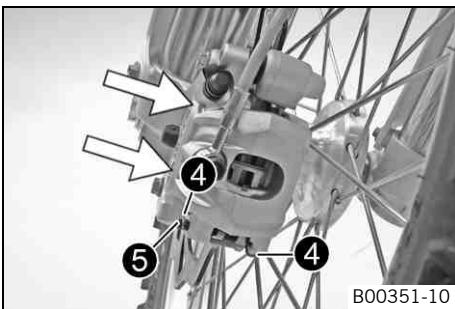
Never use DOT 5 brake fluid! It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.

Avoid contact between brake fluid and painted parts. Brake fluid 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 ①.
- Remove cover ② with membrane ③.



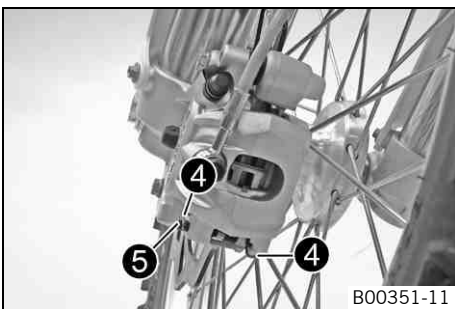
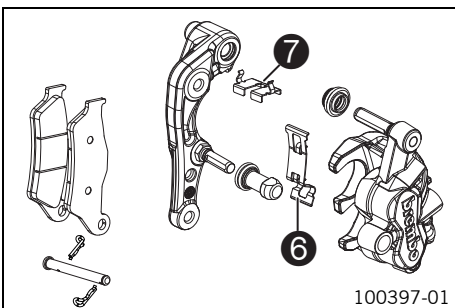
- Press the brake caliper by hand on to the brake disc in order to press back the brake pistons. Ensure that brake fluid does not overflow from the brake fluid reservoir, using suction to remove it if it does.



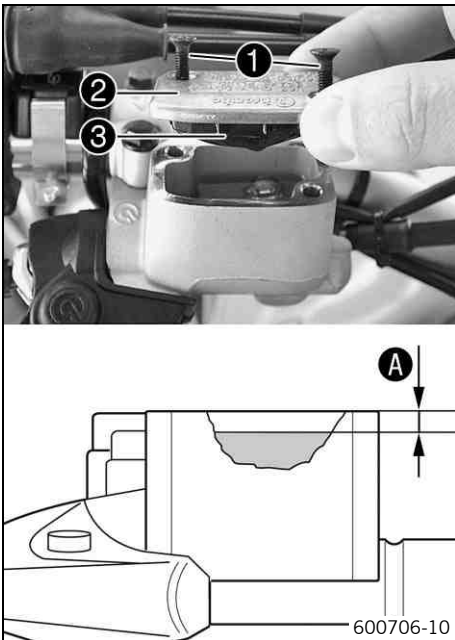
**Info**

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

- Remove the locking split pins ④, pull out the pin ⑤ and remove the brake linings.
- Clean the brake caliper and brake caliper support.
- Check that leaf spring ⑥ in the brake caliper and sliding plate ⑦ in the brake caliper support are seated correctly.



- Insert the brake linings, insert pin ⑤, and mount locking split pins ④.
- Operate the hand brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.



- Correct the brake fluid quantity to level **A**.

Guideline

Dimension <b>A</b> (brake fluid level below top edge of container)	5 mm (0.2 in)
--	---------------

Brake fluid DOT 4 / DOT 5.1 (☞ p. 87)
---------------------------------------

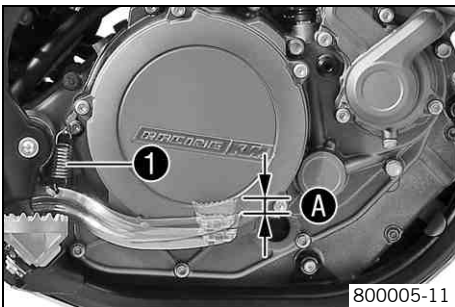
- Position cover **2** with membrane **3**.
- Mount and tighten screws **1**.

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

## Checking the free travel of the foot brake lever

**Warning**  
**Danger of accidents** Brake system failure.

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



- Disconnect spring **1**.
- Move the foot brake lever backwards and forwards between the end stop and the foot brake cylinder piston bracket and check free travel **A**.

Guideline

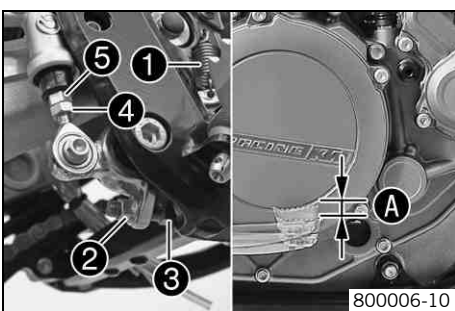
Free travel at foot brake lever	3... 5 mm (0.12... 0.2 in)
---------------------------------	----------------------------

- » If the free travel does not meet specifications:
  - Adjust the basic position of the foot brake lever. ☞ (☞ p. 52)
- Reconnect spring **1**.

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

**Warning**  
**Danger of accidents** Brake system failure.

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



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

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

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

Guideline

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

- Hold screw ③ and tighten nut ②.

Guideline

Nut, foot brake lever stop	M8	20 Nm (14.8 lbf ft)
----------------------------	----	------------------------

- Hold push rod ⑤ and tighten nut ④.

Guideline

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

- Reconnect spring ①.

### Checking rear brake fluid level



#### Warning

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

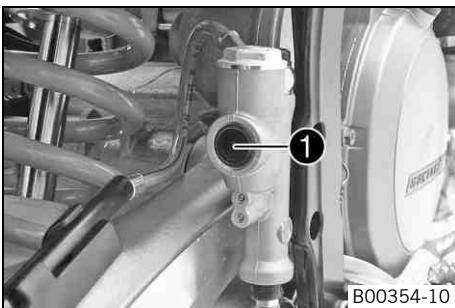
- If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)



#### Warning

**Danger of accidents** Reduced braking effect caused by old brake fluid.

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



- Stand the vehicle upright.
- Check the brake fluid level in the sight glass ①.
  - » If there is an air bubble in the sight glass ① visible:
    - Add brake fluid to the rear brake circuit. (p. 53)

### Adding brake fluid to the rear brake circuit



#### Warning

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

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



#### Warning

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

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



#### Warning

**Danger of accidents** Reduced braking effect caused by 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.

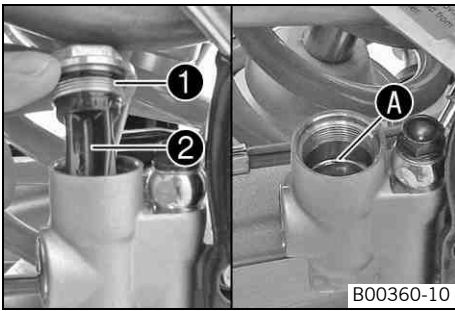


#### Info

Never use DOT 5 brake fluid! This is based on silicone oil and is colored purple. Oil seals and brake lines are not designed for DOT 5 brake fluid.

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

Use only clean brake fluid from a sealed container.



- Stand the vehicle upright.
- Remove screw cap ① with membrane ② and the O-ring.
- Add brake fluid to level A.

Brake fluid DOT 4 / DOT 5.1 (☞ p. 87)

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



**Info**

Clean up overflowed or spilt brake fluid immediately with water.

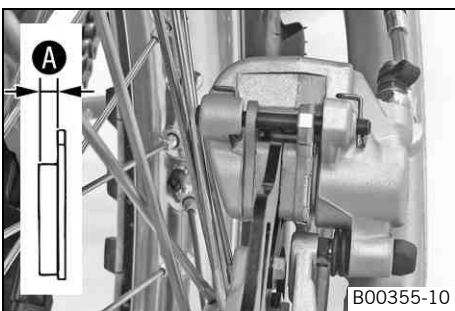
**Checking rear brake linings**



**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 A.

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

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

**Changing the 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 effect caused by 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.

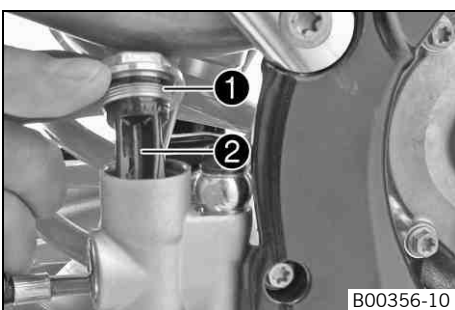


**Info**

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.

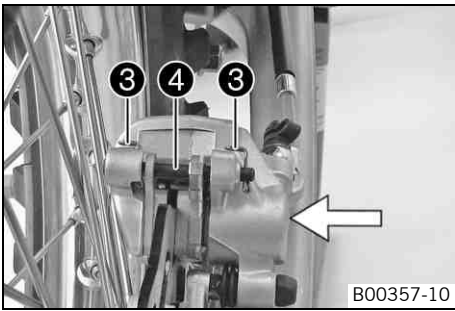
Avoid contact between brake fluid and painted parts. Brake fluid is corrosive!

Use only clean brake fluid from a sealed container.



- Stand the vehicle upright.
- Remove screw cap ① with membrane ② and the O-ring.

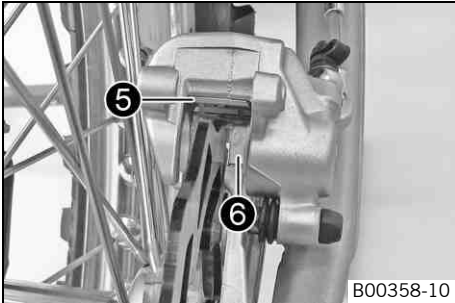




- Press the brake caliper toward the brake disc to push back the brake piston and ensure that no brake fluid runs out of the brake fluid reservoir, sucking it off if it does.

**i Info**

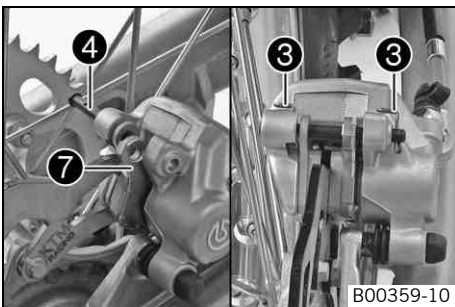
Make sure when pushing back the brake piston that you do not press the brake caliper against the spokes.



- Remove locking split pins 3, withdraw pin 4, and take out the brake linings.
- Clean the brake caliper and brake caliper support.
- Check that leaf spring 5 in the brake caliper and sliding plate 6 in the brake caliper support are seated correctly.

**i Info**

The arrow on the leaf spring points in the rotation direction of the brake disc.

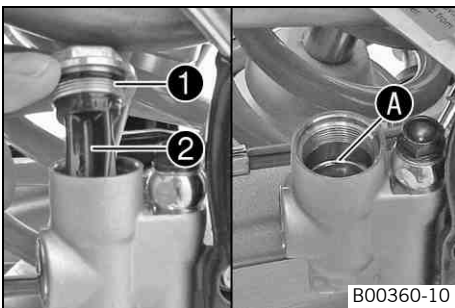


- Insert the brake linings, insert pin 4, and mount locking split pins 3.

**i Info**

Make sure that the decoupling plate 7 is mounted on the piston side of the brake lining.

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



- Add brake fluid to level A.

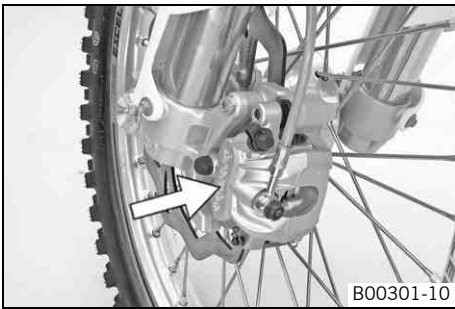
Brake fluid DOT 4 / DOT 5.1 (☞ p. 87)

- Mount and tighten screw cap 1 with membrane 2 and the O-ring.

**i Info**

Clean up overflowed or spilt brake fluid immediately with water.

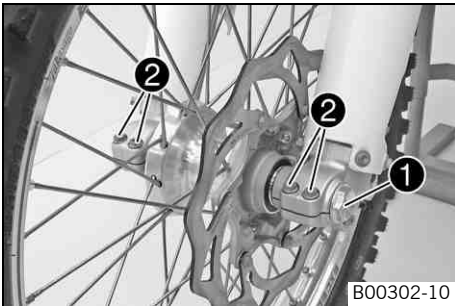
## Removing front wheel ↩



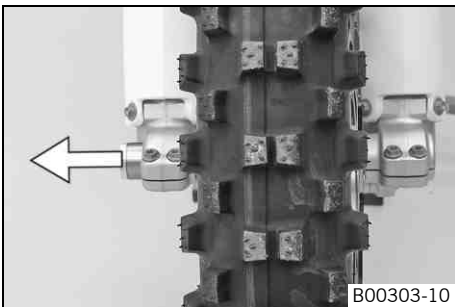
- Raise the motorcycle with the lift stand. (☛ p. 30)
- Press the brake caliper by hand on to the brake disc in order to press back the brake pistons.

**i Info**

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



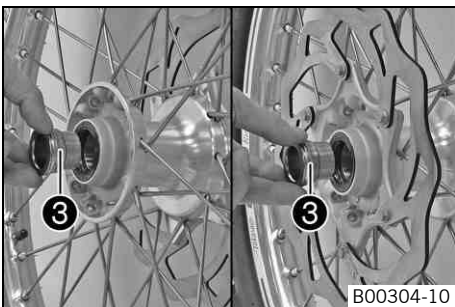
- Remove screw ❶.
- Loosen screw ❷.



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

**i Info**

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



- Remove spacers ❸.

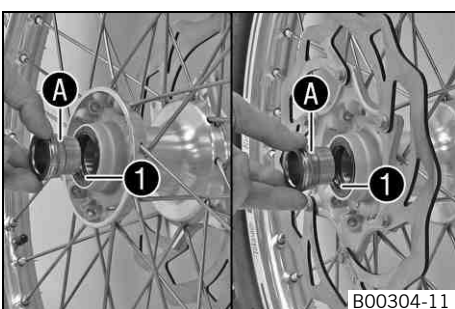
## Installing the front wheel ↩



**Warning**

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

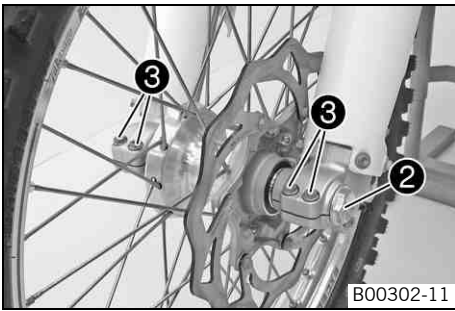
- Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.



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

Long-life grease (☛ p. 89)

- Insert the spacers.



- Lift the front wheel into the fork, position it, and insert the wheel spindle.
- Mount and tighten screw ❶.

Guideline

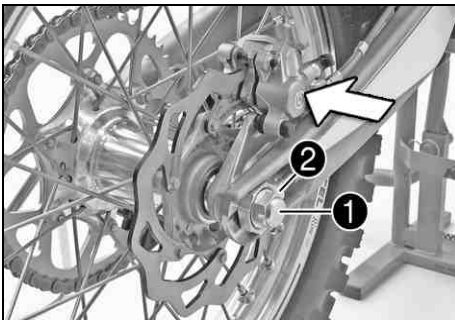
Screw, front wheel spindle	M24x1.5	45 Nm (33.2 lbf ft)
----------------------------	---------	------------------------

- Activate the hand brake lever multiple times until the brake linings are in contact with the brake disc.
- Remove the motorcycle from the lift stand. (☛ p. 30)
- Pull the front wheel brake and push down hard on the fork several times to align the fork legs.
- Fully tighten screw ❸.

Guideline

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

## Removing the rear wheel ☛



- Raise the motorcycle with the lift stand. (☛ p. 30)
- Press the brake caliper by hand on to the brake disc in order to press back the brake piston.

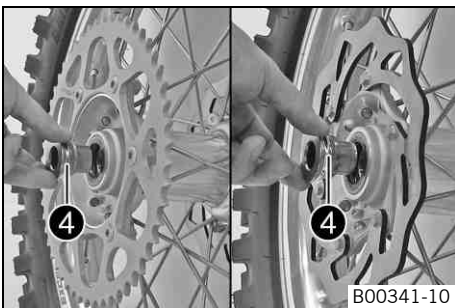
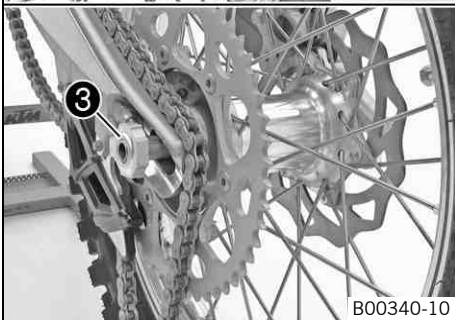
**i** Info

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

- Remove nut ❶.
- Remove chain adjuster ❷. Withdraw wheel spindle ❸ only enough to allow the rear wheel to be pushed forward.
- Push the rear wheel forward as far as possible. Remove the chain from the rear sprocket.
- Holding the rear wheel, withdraw the wheel spindle. Take the rear wheel out of the swingarm.

**i** Info

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



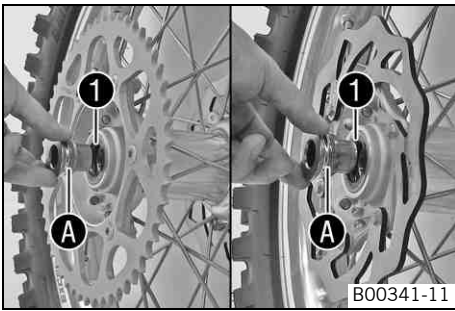
- Remove spacers ❹.

## Installing the rear wheel ☛

**⚠** Warning

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

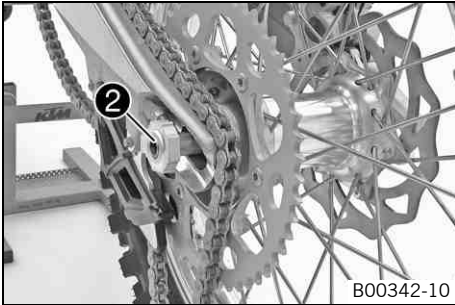
- Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.



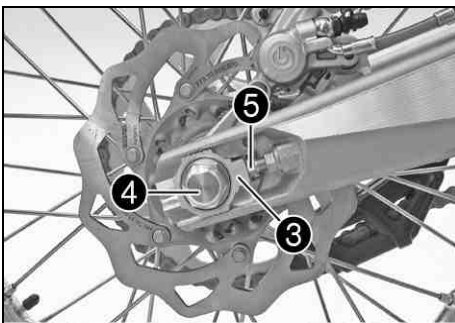
- Check the wheel bearing for damage and wear.
  - » If the wheel bearing is damaged or worn:
    - Change the wheel bearing. 🛠️
- Clean and grease shaft seal rings ① and bearing surface ①A of the spacers.

Long-life grease (🔧 p. 89)

- Insert the spacers.



- Lift the rear wheel into the swing arm, position it, and insert the wheel spindle ②.
- Put the chain on.

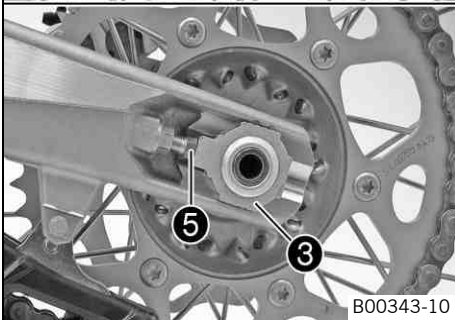


- Position the chain adjuster ③. Mount nut ④, but do not tighten it yet.
- Make sure that the chain adjusters ③ are fitted correctly on the adjusting screws ⑤.
- Check the chain tension. (🔧 p. 43)
- Tighten nut ④.

**Guideline**

Nut, rear wheel spindle	M20x1.5	80 Nm (59 lbf ft)
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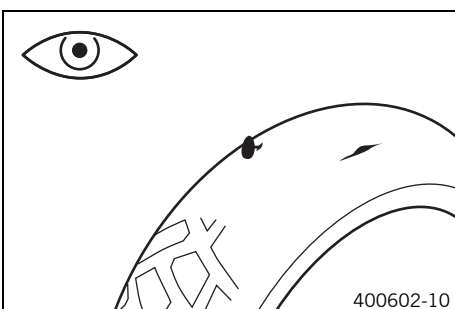
**i Info**  
 The wide adjustment range of the chain adjusters (32 mm) enables different secondary transmissions with the same chain length.  
 The chain adjusters ③ can be turned by 180°.



- Operate the foot brake lever repeatedly until the brake linings are in contact with the brake disc and there is a pressure point.
- Remove the motorcycle from the lift stand. (🔧 p. 30)

## Checking the tire condition

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



- Examine the front and rear tires for cuts, foreign bodies and other damage.
  - » If you find cuts, foreign bodies or other damage on a tire:
    - Change the tire.
- Check the depth of the tread.

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

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

- » If the tread depth is less than the minimum allowable depth:

- Change the tire.
- Check the tire age.



**Info**

The tire manufacture date is usually included in the tire identification number and comprises the last four digits of the **DOT** code. The first two digits indicate the week of manufacture and the last two digits the year of manufacture.

KTM recommends that the tires are changed regardless of the actual wear, at the latest after 5 years.

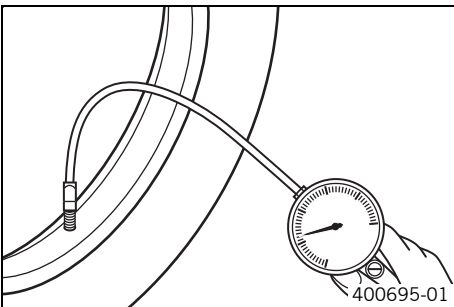
- » If the tire is older than five years:
  - Change the tire.

## Checking 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.



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

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

- » If the tire pressure does not meet specifications:
  - Correct the tire air pressure.
- Fit the dust cap.

## Checking spoke tension



**Warning**

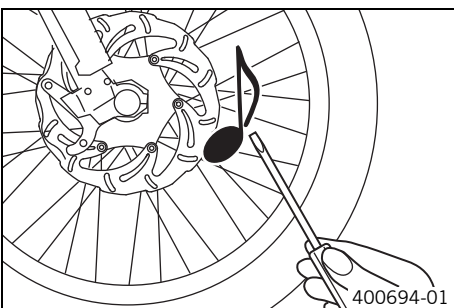
**Danger of accidents** Instable handling due to incorrect spoke tension.

- Ensure that the spoke tension is correct. (Your authorized KTM workshop will be glad to help.)



**Info**

A loose spoke can cause wheel imbalance, which leads to more loose spokes in a short time. If the spokes are too tight, they can break due to local overload. Check the spoke tension regularly, especially on a new motorcycle.



- Tap each spoke with a screwdriver.



**Info**

The sound frequency depends on the length and thickness of the spoke. If there are different sound frequencies in spokes with the same length and thickness, this indicates different spoke tensions.

You should hear a high note.

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

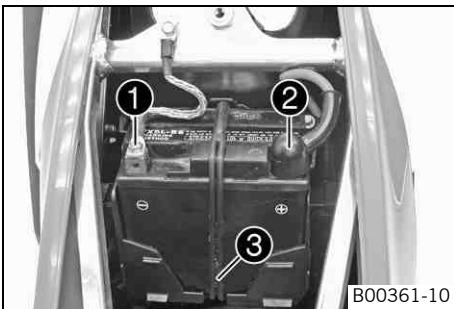
Guideline

Spoke nipple, front wheel	M4.5	5... 6 Nm (3.7... 4.4 lbf ft)
Spoke nipple, rear wheel	M4.5	5... 6 Nm (3.7... 4.4 lbf ft)

Torque wrench with various accessories in set (58429094000)

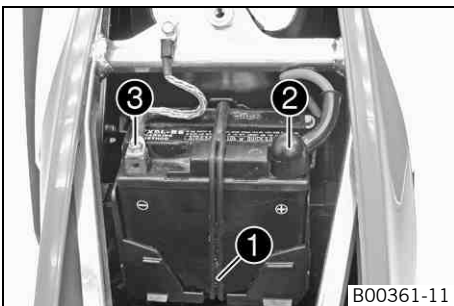
## Removing the battery ↩

- Warning**  
**Risk of injury** Battery acid and battery gases cause serious cauterization.
- 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 fire. Charge only in well ventilated rooms.
  - Flush with copious amounts of water in case of skin contact. If battery acid comes into contact with the eyes, flush the eyes with water for at least 15 minutes and consult a physician.



- Switch off all power-consuming components and switch off the engine.
- Remove the seat. (↩ p. 38)
- Disconnect the negative (minus) cable ❶ of the battery.
- Pull back the plus pole cover ❷ and disconnect the positive (plus) cable of the battery.
- Hang the rubber band ❸ out to the bottom.
- Lift the battery up.

## Installing the battery ↩



- Place the battery in the battery holder.

External temperature	$\geq 10\text{ °C}$ ( $\geq 50\text{ °F}$ )
Battery (YTX4L-BS) (↩ p. 81)	
External temperature	$\leq 10\text{ °C}$ ( $\leq 50\text{ °F}$ )
Battery (YTX5L-BS) (↩ p. 81)	

- Reconnect the rubber band ❶.
- Attach the plus cable and replace the plus pole cover ❷.
- Attach the minus cable ❸.
- Mount the seat. (↩ p. 38)

## Recharging the battery ↩

- Warning**  
**Risk of injury** Battery acid and battery gases cause serious cauterization.

- 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 fire. Charge only in well ventilated rooms.
- Flush with copious amounts of water in case of skin contact. If battery acid comes into contact with the eyes, flush the eyes with water for at least 15 minutes and consult a physician.

- Warning**  
**Environmental hazard** Battery parts and acid are harmful to the environment.

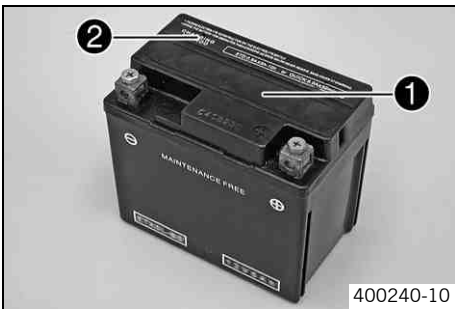
- Do not discard batteries with the household trash. Dispose of a defective battery in an environmentally compatible manner. Give the battery to your KTM dealer or to a recycling center that accepts used batteries.

- 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.

**i Info**

Even when 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 recharging with a high charging current shortens the battery's service life. If the charging current, charging voltage and charging time are exceeded, electrolyte escapes through the safety valves. This reduces the battery capacity. If the battery is depleted from starting the vehicle repeatedly, the battery must be charged immediately. If the battery is left in a discharged state for an extended period, it will become over-discharged and sulfate, destroying the battery. The battery is maintenance-free, which means that the acid level does not need to be checked.



- Switch off all power consumers and switch off the engine.
- Remove the seat. (☛ p. 38)
- Disconnect the negative cable of the battery to avoid damage to the onboard electronics.
- Connect the battery charger to the battery. Switch on the battery charger.

Battery charger (58429074000)

You can also use the battery charger to test the open-circuit voltage and starting voltage of the battery, and to test the alternator. With this device, you cannot over-charge the battery.

**i Info**

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

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

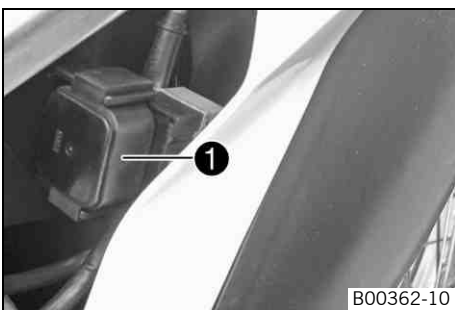
Guideline

The charge current, charge voltage and charge time must not be exceeded.

Charge the battery regularly when the motorcycle is not in use	3 months
--	----------

- Mount the seat. (☛ p. 38)

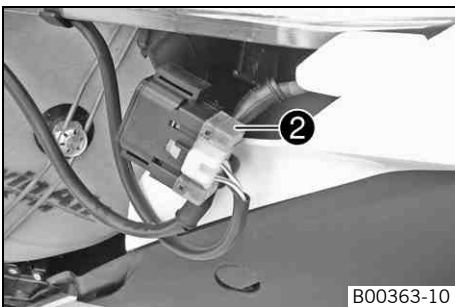
## Removing the main fuse



- Switch off all power consumers and switch off the engine.
- Remove the air filter box lid. (☛ p. 38)
- Pull starter relay ❶ off of the holder.

**i Info**

The main fuse is located in the starter relay under the air filter box lid.

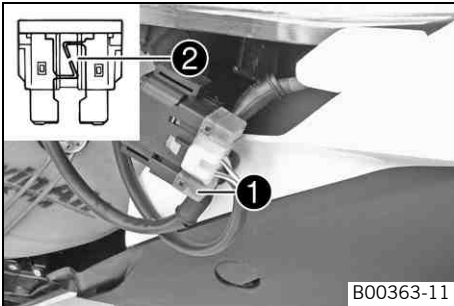


- Remove protective cover ❷.
- Remove main fuse.

**Installing the main fuse****Warning**

**Fire hazard** The electrical system can be overloaded by the use of incorrect fuses.

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



- Insert the main fuse.

Fuse (58011109110) (☛ p. 81)

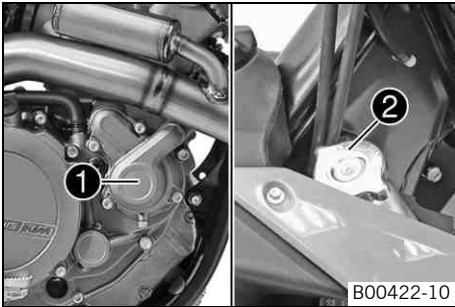
**Info**

A reserve fuse ❶ is located in the starter relay.  
Replace a faulty fuse ❷ by an equivalent fuse only.

- Replace the protective cover.
- Mount the starter relay on the holder.
- Install the air filter box lid. (☛ p. 38)



## Cooling system



Water pump ❶ in the engine circulates the coolant.

The pressure resulting from the warming of the cooling system is regulated by a valve in radiator cap ❷. This ensures that operating the vehicle at the specified coolant temperature will not result in a risk of malfunctions.

120 °C (248 °F)

Cooling is effected by the air stream.

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

## Checking the anti-freeze and coolant level



### Warning

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

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



### Warning

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

- 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

Engine is cold.

- Stand the motorcycle upright on a horizontal surface.
- Remove radiator cap.
- Check the anti-freeze of the coolant.

-25... -45 °C (-13... -49 °F)

» If the anti-freeze of the coolant does not meet specifications:

- Correct the anti-freeze of the coolant.

- Check the coolant level in the radiator.

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

» If the level of the coolant does not meet specifications:

- Correct the coolant level.

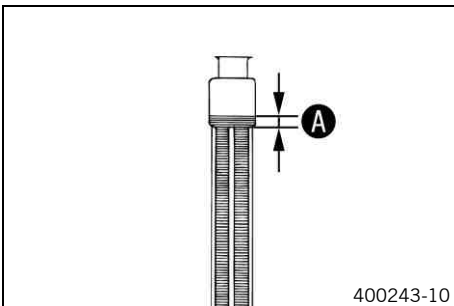
### Alternative 1

Coolant (☛ p. 87)

### Alternative 2

Coolant (mixed ready to use) (☛ p. 87)

- Refit the radiator cap.



## Checking the coolant level



### Warning

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

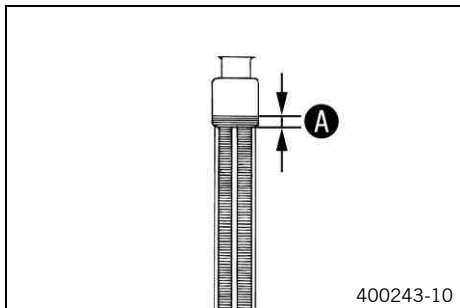
- Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.



### Warning

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

- 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 engine is cold.

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

Coolant level <b>A</b> above the radiator fins.	10 mm (0.39 in)
---	-----------------

» If the coolant level does not meet specifications:

- Correct the coolant level.

**Alternative 1**

Coolant (☞ p. 87)
-------------------

**Alternative 2**

Coolant (mixed ready to use) (☞ p. 87)
--

- Mount the radiator cap.

## Draining the coolant ☞



**Warning**

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

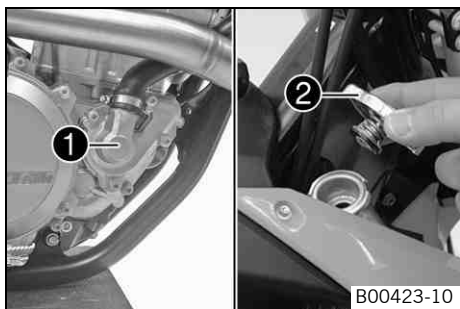
- Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.



**Warning**

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

- 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 engine is cold.

- Stand the motorcycle upright.
- Place a suitable container under the water pump cover.
- Remove screw **1**. Remove the radiator cap **2**.
- Completely drain the coolant.
- Mount and tighten screw **1** with a new seal ring.

**Guideline**

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

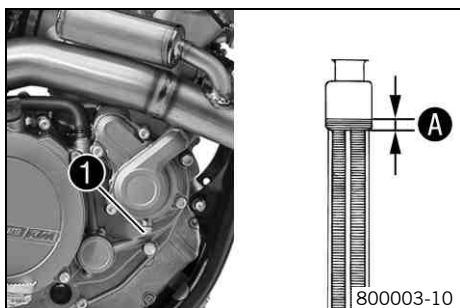
## Refilling coolant ☞



**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.



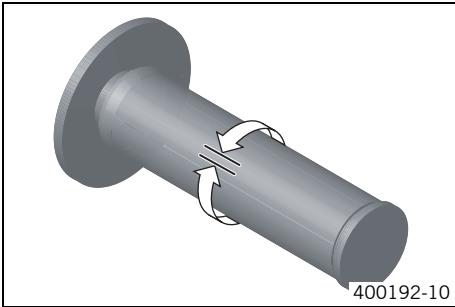
- Make sure that the screw **1** is tightened.
- Stand the vehicle upright.
- Pour coolant in up to measurement **A** above the radiator fins.

**Guideline**

10 mm (0.39 in)		
Coolant	1.2 l (1.3 qt.)	Coolant (☞ p. 87)
		Coolant (mixed ready to use) (☞ p. 87)

- Refit the radiator cap.
- Make a short test ride.
- Check the coolant level. (☛ p. 63)

## Checking the play in the throttle cable



- Move the handlebar to the straight-ahead position. Move the throttle grip backwards and forwards to ascertain the play in the throttle cable.

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. 66)



### Danger

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

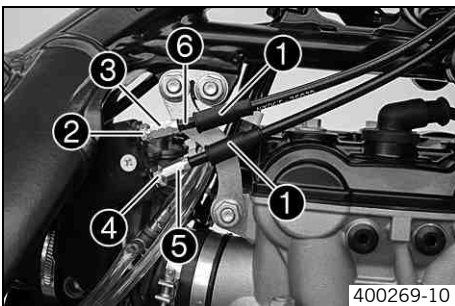
- When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

- 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. 66)

## Adjusting the play in the throttle cable 🛠️



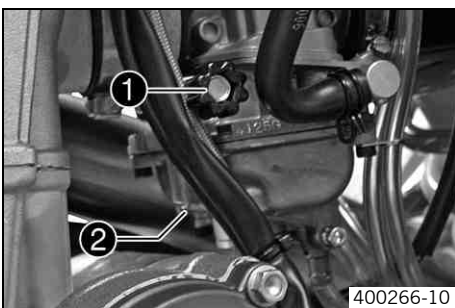
- Remove the fuel tank. 🛠️ (☞ p. 41)
- Check the throttle cable routing. (☞ p. 46)
- Move the handlebar to the straight-ahead position.
- Push back sleeves ❶.
- Loosen nut ❷. Turn adjusting screw ❸ in as far as possible.
- Loosen nut ❹. Turn adjusting screw ❺ so that there is play in the throttle cable at the throttle grip.

### Guideline

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

- Tighten nut ❹.
- Press and hold the throttle grip in the closed setting. Turn adjusting screw ❸ out until there is no play in the throttle cable ❻.
- Tighten nut ❷.
- Push sleeves ❶ on. Check the throttle grip for smooth operation.
- Install the fuel tank. 🛠️ (☞ p. 41)
- Check the play in the throttle cable. (☞ p. 66)

## 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.

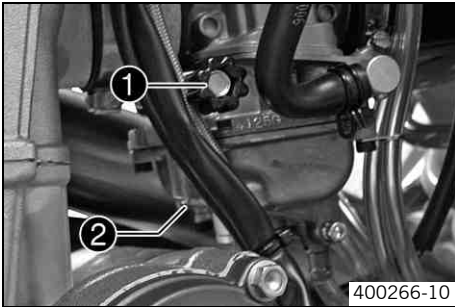


### Info

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

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

## Carburetor - adjusting idle



- Screw in idle adjusting screw ② until it stops and then to the prescribed basic setting.

Guideline

Idle mixture adjusting screw	
Open	1.5 turns

Adjustment tool for mixture control screw (77329034000)	
---	--

- Run the engine until warm.

Guideline

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

- Adjust the idle speed with adjusting screw ①.

Guideline

Choke function deactivated – The choke lever is pushed in to the stop. (☛ p. 12)	
Idle speed	1,550... 1,650 rpm

- Turn idle adjusting screw ② 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.

### **i** Info

If there is a big engine speed rise, reduce the idle speed to a normal level and repeat the above steps.  
 The extreme sport motorcyclist will set the mixture about 1/4 of a turn back from this ideal value (leaner, in a clockwise direction) since the engine becomes hotter 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 adjusting screw ①.

Guideline

Choke function deactivated – The choke lever is pushed in to the stop. (☛ p. 12)	
Idle speed	1,550... 1,650 rpm

### **i** 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**

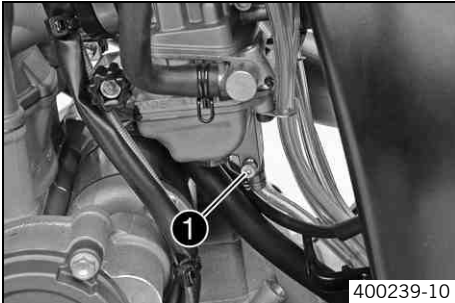
**Environmental hazard** Improper handling of fuel is a danger to the environment.

- 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.



400239-10

- Turn handle ❶ of the fuel tap to the **OFF** position. (Figure 500178-10 p. 11)
- ✓ 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 screw ❶ (turn it counterclockwise) a few turns and drain the fuel from the float chamber.
- Tighten screw ❶.

## Ignition curve plug connection



B00424-10

The plug connection ❶ is located under the seat near the upper shock absorber fixation.

**Possible states**

- Soft – The plug connection is disconnected to achieve better driveability.
- Performance – The plug connection is connected to achieve better performance.

## Changing the ignition curve

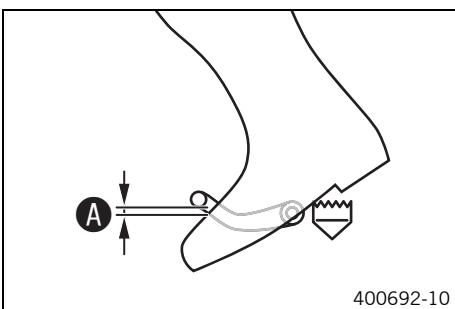
**Change the ignition curve from Performance to Soft.**

- Disconnect plug connection ❶. (Figure B00424-10 p. 68)
- ✓ Soft – better driveability

**Change the ignition curve from Soft to Performance.**

- Connect plug connection ❶. (Figure B00424-10 p. 68)
- ✓ Performance – higher performance

## Checking the basic position of the shift lever



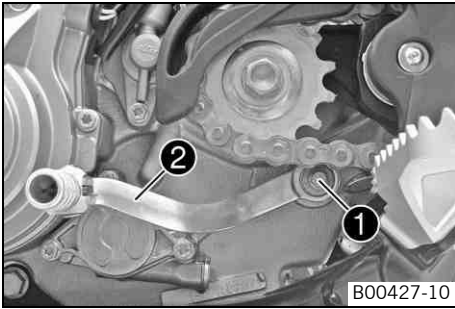
400692-10

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

Gap between the shift lever and the top of the boot	10... 20 mm (0.39... 0.79 in)
---	-------------------------------

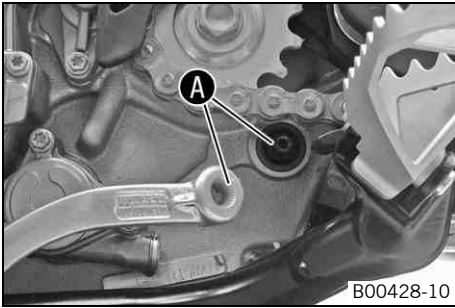
- » If the distance does not meet the specifications:
  - Adjust the basic position of the shift lever. (p. 69)

## Adjusting the basic position of the shift lever



B00427-10

- Remove screw ❶ and take off shift lever ❷.



B00428-10

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

**i** **Info**

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

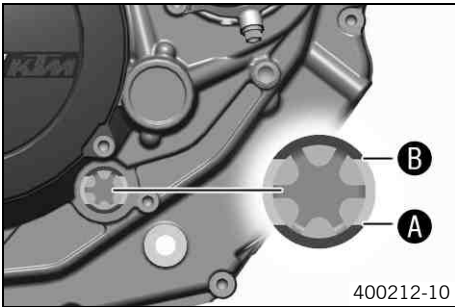
- Mount and tighten screw.

Guideline

Screw, shift lever	M6	14 Nm (10.3 lbf ft)	Loctite® 243™
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## Checking engine oil level

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



- Stand the motorcycle upright on a horizontal surface.

**Condition**

Engine is cold.

- Check the engine oil level.

The engine oil level is up to the bottom edge **A** of the level viewer.

- » If the engine oil is not up to the bottom edge of the level viewer:
  - Add engine oil. (☛ p. 72)

**Condition**

The engine is at normal operating temperature.

- Check the engine oil level.

**i Info**  
After switching off the engine, wait a minute and then check.

The engine oil level is up to the top edge of the level viewer **B**.

- » If the engine oil is not up to the top edge of the level viewer:
  - Add engine oil. (☛ p. 72)

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

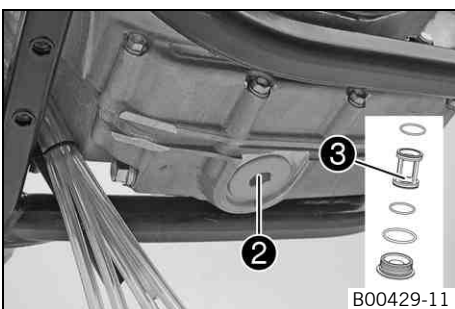
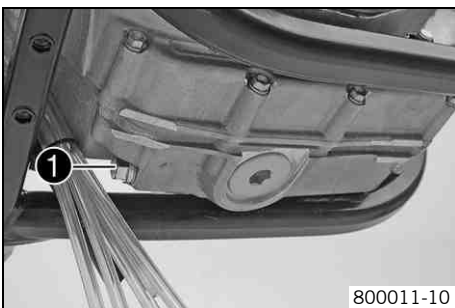
**⚠ Warning**  
**Danger of scalding** Engine oil and gear oil get very hot when the motorcycle is ridden.

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

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

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

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



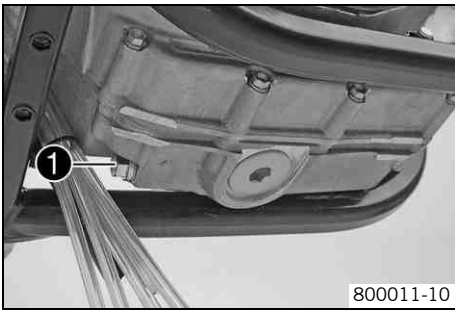
- Park the motorcycle on a level surface.
- Place a suitable container under the engine.
- Remove oil drain plug **1** with the seal ring.

- Loosen screw plug **2** by striking it lightly with a hammer a few times.
- Remove plug **2** with oil screen **3** and the O-rings.
- Completely drain the engine oil.
- Thoroughly clean the parts and sealing surfaces.
- Mount and tighten screw plug **2** with oil screen **3** and the O-rings.

**Guideline**

Plug, oil screen	M32x1.5	30 Nm (22.1 lbf ft)	Lubricated with engine oil
------------------	---------	------------------------	----------------------------

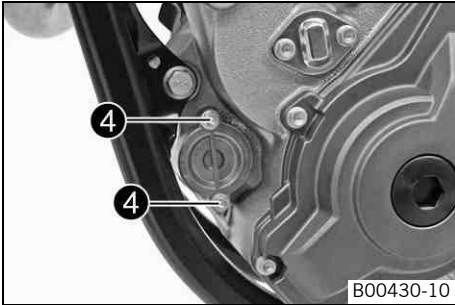




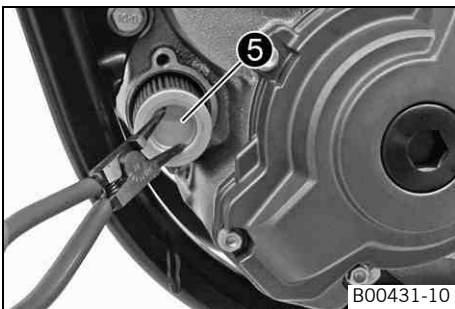
- Mount and tighten oil drain plug ❶ with the seal ring.

Guideline

Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)
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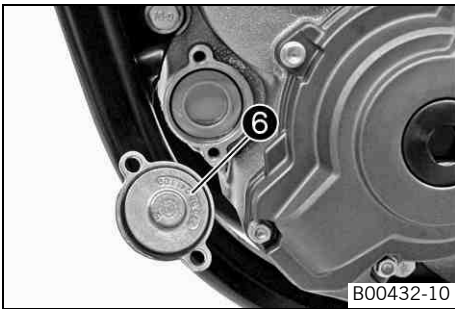
- Remove screws ❷. Remove the oil filter cover with the O-ring.



- Pull oil filter ❸ out of the oil filter housing.

Circlip pliers reverse (51012011000)

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

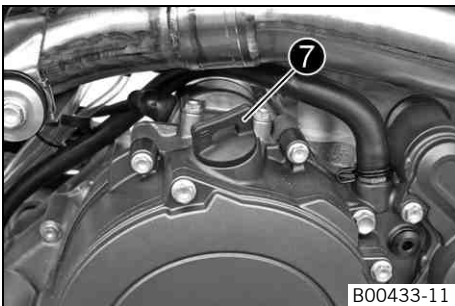


- Lay the motorcycle on its side and fill the oil filter housing to about 1/3 full with engine oil.
- Fill oil filter with engine oil and place in the oil filter housing.
- Oil the O-ring of the oil filter cover and mount it with the oil filter cover ❹.
- Mount and tighten the screws.

Guideline

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

- Stand the motorcycle upright.



- Remove the oil filler plug ❺ on the clutch cover and fill up with engine oil.

Engine oil	1.35 l (1.43 qt.)	Engine oil (SAE 10W/50) (☛ p. 87)
------------	-------------------	-----------------------------------

**i Info**

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

- Mount and tighten the oil filler plug.

**! 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.

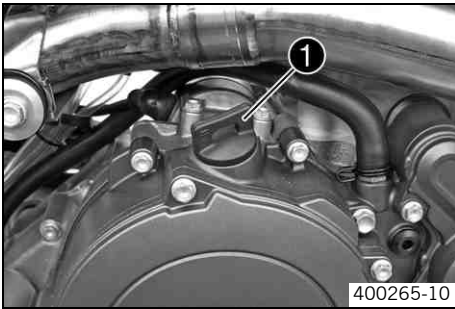
- Start the engine and check that it is oil-tight.
- Check the engine oil level. (☛ p. 70)

## Adding engine oil



### Info

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



- Remove the oil filler plug ❶ on the clutch cover and fill up with engine oil.

Engine oil (SAE 10W/50) (☛ p. 87)

- Mount and tighten the oil filler plug.



### 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.

## Cleaning the motorcycle

### 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 motorcycle regularly, its value and appearance are maintained over a long period. Avoid direct sunshine on the motorcycle during cleaning.

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

Motorcycle cleaner (☛ p. 89)



### Info

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

- After rinsing the motorcycle with a gentle spray of water, allow it to dry thoroughly.
- Empty the carburetor float chamber. 🛠 (☛ p. 67)



### 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, ride a short distance 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 covers of the handlebar grips to allow any water that has penetrated to evaporate.
- After the motorcycle has cooled off, lubricate all moving parts and bearings.
- Clean the chain. (☛ p. 42)
- 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. 89)

- 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. 90)

## 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 garage the motorcycle for a longer period, take the following actions.

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

- Clean the motorcycle. (🔧 p. 73)
- Change the engine oil and oil filter, clean the oil screen. 🛠️ (🔧 p. 70)
- Check the anti-freeze and coolant level. (🔧 p. 63)
- Drain the fuel from the tanks into a suitable container.
- Empty the carburetor float chamber. 🛠️ (🔧 p. 67)
- Check the tire air pressure. (🔧 p. 59)
- Remove the battery. 🛠️ (🔧 p. 60)
- Recharge the battery. 🛠️ (🔧 p. 60)

#### Guideline

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

- Place the vehicle on a dry storage place that is not subject to large temperature variations.



### Info

KTM recommends raising the motorcycle.

- Raise the motorcycle with the lift stand. (🔧 p. 30)
- Cover the vehicle with an air-permeable cover or blanket.



### Info

Do not use non-porous materials since they prevent humidity from escaping, thus causing corrosion.

Avoid running the engine for a short time only. Since the engine cannot warm up properly, the water vapor produced during combustion condenses and causes valves and exhaust system to rust.

## Putting into operation after storage

- Remove the motorcycle from the lift stand. (🔧 p. 30)
- Install the battery. 🛠️ (🔧 p. 60)
- Refuel. (🔧 p. 20)
- Perform checks and maintenance steps before putting into operation. (🔧 p. 18)
- Take a test ride.

Faults	Possible cause	Action
The engine cannot be cranked (electric starter)	Operating error	– Carry out the start procedure. (☞ p. 18)
	Battery discharged	– Recharge the battery. ☞ (☞ p. 60) – Check the charging voltage. ☞ – Check the stall current. ☞ – Check the alternator. ☞
	Main fuse blown	– Remove the main fuse. (☞ p. 61) – Install the main fuse. (☞ p. 62)
	Low external temperature	– Use the battery supplied in the accessory package. Battery (YTX5L-BS) (☞ p. 81)
	Starter relay defective	– Check the starter relay. ☞
	Starter motor defective	– Check the starter motor. ☞
Engine turns but does not start	Operating error	– Carry out the start procedure. (☞ p. 18)
	Motorcycle was out of use for a long time and there is old fuel in the float chamber	– Empty the carburetor float chamber. ☞ (☞ p. 67)
	Fuel feed interrupted	– Check the fuel tank breather. – Clean the fuel tap. – Check/adjust the carburetor components. ☞
	Spark plug oily or wet	– Clean and dry the spark plug or replace if necessary.
	Electrode distance (plug gap) of spark plug too wide	– Adjust the plug gap. Guideline Spark plug electrode gap 0.7 mm (0.028 in)
	Fault in ignition system	– Check the ignition system. ☞
	Short-circuit cable in wiring harness frayed, short-circuit button defective	– Check the wiring harness. (visual check) – Check the electrical system.
	Plug connector of CDI control device, pulse generator or ignition coil oxidized.	– Clean the plug connector and treat it with contact spray.
	Water in carburetor or jets blocked	– 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. 67)
	Spark plug defective	– Change spark plug.
	Ignition system defective	– Check the ignition coil. ☞ – Check the CDI controller. ☞ – Check the spark plug connector. ☞ – Check the ignition pulse generator. ☞ – Check the alternator. ☞
Engine does not speed up	Carburetor running over because float needle dirty or worn.	– Check/adjust the carburetor components. ☞
	Loose carburetor jets	– Check/adjust the carburetor components. ☞
	Ignition system defective	– Check the ignition coil. ☞ – Check the CDI controller. ☞ – Check the spark plug connector. ☞ – Check the ignition pulse generator. ☞ – Check the alternator. ☞
Engine has a lack of power	Fuel feed interrupted	– Check the fuel tank breather. – Clean the fuel tap. – Check/adjust the carburetor components. ☞
	Air filter heavily contaminated	– Clean the air filter and air filter box. ☞ (☞ p. 39)

Faults	Possible cause	Action
Engine has a lack of power	Exhaust system leaky, deformed or too little glass fiber yarn filling in main silencer	<ul style="list-style-type: none"> <li>- Check exhaust system for damage.</li> <li>- Change the glass fiber yarn filling of the main silencer. 🛠️ (📄 p. 40)</li> </ul>
	Valve clearance too little	<ul style="list-style-type: none"> <li>- Set the valve clearance. 🛠️</li> </ul>
	Ignition system defective	<ul style="list-style-type: none"> <li>- Check the ignition coil. 🛠️</li> <li>- Check the CDI controller. 🛠️</li> <li>- Check the spark plug connector. 🛠️</li> <li>- Check the ignition pulse generator. 🛠️</li> <li>- Check the alternator. 🛠️</li> </ul>
Engine stalls or pops back into the carburetor	Lack of fuel	<ul style="list-style-type: none"> <li>- Turn handle ❶ of the fuel tap to the <b>ON</b> position. (Figure 500178-10📄 p. 11)</li> <li>- Refuel. (📄 p. 20)</li> </ul>
	The intake system has an air leak	<ul style="list-style-type: none"> <li>- Check rubber sleeves and carburetor for tightness.</li> </ul>
Engine overheats	Too little coolant in cooling system	<ul style="list-style-type: none"> <li>- Check the cooling system for leakage.</li> <li>- Check the coolant level. (📄 p. 63)</li> </ul>
	Insufficient airflow	<ul style="list-style-type: none"> <li>- Switch off engine when stationary.</li> </ul>
	Radiator fins very dirty	<ul style="list-style-type: none"> <li>- Clean radiator fins.</li> </ul>
	Foam formation in cooling system	<ul style="list-style-type: none"> <li>- Drain the coolant. 🛠️ (📄 p. 64)</li> <li>- Refill the coolant. 🛠️ (📄 p. 64)</li> </ul>
	Bent radiator hose	<ul style="list-style-type: none"> <li>- Change the radiator hose. 🛠️</li> </ul>
High oil consumption	Engine vent hose bent	<ul style="list-style-type: none"> <li>- Route the vent hose without bends or replace it if necessary.</li> </ul>
	Engine oil level too high	<ul style="list-style-type: none"> <li>- Check the engine oil level. (📄 p. 70)</li> </ul>
	Engine oil too thin (low viscosity)	<ul style="list-style-type: none"> <li>- Change the engine oil and oil filter, clean the oil screen. 🛠️ (📄 p. 70)</li> </ul>
	Piston and cylinder worn	<ul style="list-style-type: none"> <li>- Piston/cylinder - determine the mounting clearance 🛠️</li> </ul>
Battery discharged	Battery is not charged by alternator	<ul style="list-style-type: none"> <li>- Check the charging voltage. 🛠️</li> <li>- Check the alternator. 🛠️</li> </ul>
	Unwanted power consumer	<ul style="list-style-type: none"> <li>- Check the stall current. 🛠️</li> </ul>

Design	1-cylinder 4-stroke engine, water-cooled	
Displacement	449.3 cm <sup>3</sup> (27.418 cu in)	
Stroke	60.8 mm (2.394 in)	
Bore	97 mm (3.82 in)	
Compression ratio	12.5:1	
Idle speed	1,550... 1,650 rpm	
Control	DOHC, four valves controlled via cam lever, drive via helical gear pair and tooth-wheel chain	
Valve diameter, intake	40.4 mm (1.591 in)	
Valve diameter, exhaust	31.7 mm (1.248 in)	
Valve clearance, cold, intake	0.07... 0.13 mm (0.0028... 0.0051 in)	
Valve clearance, cold, exhaust	0.12... 0.18 mm (0.0047... 0.0071 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 3 rotor pumps	
Primary transmission	29:74	
Clutch	Multidisc clutch in oil bath/hydraulically activated	
Transmission ratio		
1st gear	16:34	
2nd gear	19:31	
3rd gear	20:26	
4th gear	23:25	
5th gear	26:24	
Alternator	12 V, 42 W	
Ignition	Contactless controlled fully electronic ignition with digital ignition adjustment	
Spark plug	NGK CR 9 EKB	
Spark plug electrode gap	0.7 mm (0.028 in)	
Cooling	Water cooling, permanent circulation of coolant by water pump	
Starting aid	Electric starter	

### Capacity - engine oil

Engine oil	1.35 l (1.43 qt.)	Engine oil (SAE 10W/50) (☛ p. 87)
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### Capacity - coolant

Coolant	1.2 l (1.3 qt.)	Coolant (☛ p. 87)
		Coolant (mixed ready to use) (☛ p. 87)

Jet, engine case breather	M4	On block	Loctite® 243™
Oil jet, cam lever lubrication	M4	6 Nm (4.4 lbf ft)	Loctite® 243™
Oil jet, piston cooling	M4	4 Nm (3 lbf ft)	Loctite® 243™
Locking screw for bearing	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Oil jet, clutch oil supply	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, bearing bolt of oil pump idler shaft	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, camshaft bearing retaining bracket	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, ignition pulse generator	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, ignition pulse generator adapter	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, locking 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® 243™
Screw, stator bracket	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, stator cable holder	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, timing train axle retaining bracket	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Nut, cylinder head	M6	10 Nm (7.4 lbf ft)	Lubricated with engine oil
Nut, water-pump wheel	M6	6 Nm (4.4 lbf ft)	Loctite® 243™
Oil jet, timing chain tensioner	M6	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, alternator cover	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch cover	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch slave cylinder	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch spring	M6	10 Nm (7.4 lbf ft)	–
Screw, engine case	M6	10 Nm (7.4 lbf ft)	–
Screw, exhaust flange	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, ignition pulse generator cable holder	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, oil pump casing	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	14 Nm (10.3 lbf ft)	Loctite® 243™
Screw, starter motor	M6	10 Nm (7.4 lbf ft)	–
Screw, valve cover	M6	8 Nm (5.9 lbf ft)	–
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)	–
Stud, cylinder head	M6	10 Nm (7.4 lbf ft)	–
Screw, camshaft bearing bridge	M7x1	14 Nm (10.3 lbf ft)	Lubricated with engine oil
Screw, clutch cover	M7x1	14 Nm (10.3 lbf ft)	–
Screw, engine case	M7x1	14 Nm (10.3 lbf ft)	–
Plug, crankshaft location	M8	20 Nm (14.8 lbf ft)	–
Screw, engine sprocket	M10	60 Nm (44.3 lbf ft)	Loctite® 2701
Spark plug	M10	10... 12 Nm (7.4... 8.9 lbf ft)	–
Plug, cam lever axle	M10x1	10 Nm (7.4 lbf ft)	–
Plug, oil channel	M10x1	10 Nm (7.4 lbf ft)	–
Screw, camshaft gear	M10x1	50 Nm (36.9 lbf ft)	Lubricated with engine oil
Screw, rotor	M10x1	80 Nm (59 lbf ft)	Lubricated with engine oil
Screw, unlocking of timing chain tensioner	M10x1	10 Nm (7.4 lbf ft)	–



Nut, cylinder head	M10x1.25	Tightening sequence: Tighten in diagonal sequence. Tightening stage 1 10 Nm (7.4 lbf ft) Tightening stage 2 30 Nm (22.1 lbf ft) Tightening stage 3 50°	Lubricated with engine oil
Stud, cylinder head	M10x1.25	20 Nm (14.8 lbf ft)	–
Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)	–
Screw-in studs for clutch cover	M12x1.5	20 Nm (14.8 lbf ft)	–
Axle guide rail for timing chain	M14x1	15 Nm (11.1 lbf ft)	–
Axle tension rail for timing chain	M14x1	15 Nm (11.1 lbf ft)	–
Nut, compensating sprocket	M14x1	20 Nm (14.8 lbf ft)	<b>Loctite® 243™</b>
Oil suction pipe	M14x1	15 Nm (11.1 lbf ft)	<b>Loctite® 243™</b>
Oil pressure regulator valve plug	M14x1.5	18 Nm (13.3 lbf ft)	–
Nut, inner clutch hub	M18x1.5	80 Nm (59 lbf ft)	<b>Loctite® 243™</b>
Plug, timing chain tensioner	M24x1.5	25 Nm (18.4 lbf ft)	–
Screw, alternator cover	M24x1.5	8 Nm (5.9 lbf ft)	–
Nut, freewheel hub	M27x1	80 Nm (59 lbf ft)	<b>Loctite® 243™</b>
Nut, primary gear	M27x1	80 Nm (59 lbf ft)	<b>Loctite® 243™</b>
Plug, oil screen	M32x1.5	30 Nm (22.1 lbf ft)	Lubricated with engine oil

Carburetor type	KEIHIN FCR-MX 41
Carburetor identification number	4125M
Needle position	6th position from top
Idle mixture adjusting screw	
Open	1.5 turns
Pump membrane stop	2.15 mm (0.0846 in)
Hot start button	
Diameter of bore in carburetor body	2.5 mm (0.098 in)
Main jet	185
Jet needle	OBDTQ
Idling jet	42
Idle air jet	100
Cold start jet	85

Frame	Central tube frame made of chrome molybdenum steel tubing	
Fork	<b>WP Suspension</b> Up Side Down 4860 MXMA CC	
Suspension travel		
Front	300 mm (11.81 in)	
Suspension travel (450 SX-F EU)		
Rear	330 mm (12.99 in)	
Suspension travel (450 SX-F USA)		
Rear	317 mm (12.48 in)	
Fork offset	22 mm (0.87 in)	
shock absorber	<b>WP Suspension</b> 5018 BAVP DCC	
Brake system	Disc brakes, brake calipers on floating bearings	
Brake discs - diameter		
Front	260 mm (10.24 in)	
Rear	220 mm (8.66 in)	
Brake discs - wear limit		
Front	2.5 mm (0.098 in)	
Rear	3.5 mm (0.138 in)	
Tire air pressure off road		
Front	1.0 bar (15 psi)	
Rear	1.0 bar (15 psi)	
Final drive	14:52	
Chain	5/8 x 1/4"	
Rear sprockets available	38, 40, 42, 45, 48, 49, 50, 51, 52	
Steering head angle	63.5°	
Wheelbase	1,495±10 mm (58.86±0.39 in)	
Seat height unloaded	985 mm (38.78 in)	
Ground clearance unloaded	371 mm (14.61 in)	
Weight without fuel, approx.	107.4 kg (236.8 lb.)	
Maximum permissible front axle load	145 kg (320 lb.)	
Maximum permissible rear axle load	190 kg (419 lb.)	
Maximum permissible overall weight	335 kg (739 lb.)	
Battery	YTX4L-BS	Battery voltage: 12 V Nominal capacity: 3 Ah Maintenance-free
Battery	YTX5L-BS	Battery voltage: 12 V Nominal capacity: 4 Ah Maintenance-free
Fuse	58011109110	10 A

## Tires

Front tire	Rear tire
<b>80/100 - 21 51M TT</b> Bridgestone M59	<b>110/90 - 19 62M TT</b> Bridgestone M70
Additional information is available in the Service section under: <a href="http://www.ktm.com">http://www.ktm.com</a>	

## Capacity - fuel

Total fuel tank capacity, approx.	7.5 l (1.98 US gal)	Super unleaded (ROZ 95 / RON 95 / PON 91) (☛ p. 88)
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## 450 SX-F EU

Fork part number	14.18.7K.07	
Fork	<b>WP Suspension</b> Up Side Down 4860 MXMA CC	
Compression damping		
Comfort	14 clicks	
Standard	12 clicks	
Sport	10 clicks	
Rebound damping		
Comfort	14 clicks	
Standard	12 clicks	
Sport	10 clicks	
Spring length with preload spacer(s)	492 mm (19.37 in)	
Spring rate		
Weight of rider: 65... 75 kg (143... 165 lb.)	4.6 N/mm (26.3 lb/in)	
Weight of rider: 75... 85 kg (165... 187 lb.)	4.8 N/mm (27.4 lb/in)	
Weight of rider: 85... 95 kg (187... 209 lb.)	5.0 N/mm (28.6 lb/in)	
Gas pressure	1.2 bar (17 psi)	
Fork length	940 mm (37.01 in)	
Oil capacity per cartridge	195 ml (6.59 fl. oz.)	Fork oil (SAE 5) (☛ p. 87)
Oil capacity fork leg without cartridge	390 ml (13.19 fl. oz.)	Fork oil (SAE 5) (☛ p. 87)

## 450 SX-F USA

Fork part number	14.18.7K.57	
Fork	<b>WP Suspension</b> Up Side Down 4860 MXMA CC	
Compression damping		
Comfort	14 clicks	
Standard	12 clicks	
Sport	10 clicks	
Rebound damping		
Comfort	14 clicks	
Standard	12 clicks	
Sport	10 clicks	
Spring length with preload spacer(s)	497 mm (19.57 in)	
Spring rate		
Weight of rider: 65... 75 kg (143... 165 lb.)	4.8 N/mm (27.4 lb/in)	
Weight of rider: 75... 85 kg (165... 187 lb.)	5.0 N/mm (28.6 lb/in)	
Gas pressure	1.2 bar (17 psi)	
Fork length	940 mm (37.01 in)	
Oil capacity per cartridge	195 ml (6.59 fl. oz.)	Fork oil (SAE 5) (☛ p. 87)
Oil capacity fork leg without cartridge	380 ml (12.85 fl. oz.)	Fork oil (SAE 5) (☛ p. 87)

## 450 SX-F EU

Shock absorber part number	18.18.7K.07
shock absorber	<b>WP Suspension</b> 5018 BAVP DCC
Compression damping, low-speed	
Comfort	17 clicks
Standard	15 clicks
Sport	13 clicks
Compression damping, high-speed	
Comfort	2.5 turns
Standard	2 turns
Sport	1.5 turns
Rebound damping	
Comfort	17 clicks
Standard	15 clicks
Sport	13 clicks
Spring preload	15 mm (0.59 in)
Spring rate	
Weight of rider: 65... 75 kg (143... 165 lb.)	54 N/mm (308 lb/in)
Weight of rider: 75... 85 kg (165... 187 lb.)	57 N/mm (325 lb/in)
Weight of rider: 85... 95 kg (187... 209 lb.)	60 N/mm (343 lb/in)
Spring length	260 mm (10.24 in)
Gas pressure	10 bar (145 psi)
Static sag	30 mm (1.18 in)
Riding sag	90 mm (3.54 in)
Fitted length	490 mm (19.29 in)
Shock absorber oil	Shock absorber oil (SAE 2,5) (50180342S1) (☛ p. 88)

## 450 SX-F USA

Shock absorber part number	18.18.7K.57
shock absorber	<b>WP Suspension</b> 5018 BAVP DCC
Compression damping, low-speed	
Comfort	17 clicks
Standard	15 clicks
Sport	13 clicks
Compression damping, high-speed	
Comfort	2.5 turns
Standard	2 turns
Sport	1.5 turns
Rebound damping	
Comfort	17 clicks
Standard	15 clicks
Sport	13 clicks
Spring preload	12 mm (0.47 in)
Spring rate	
Weight of rider: 65... 75 kg (143... 165 lb.)	54 N/mm (308 lb/in)
Weight of rider: 75... 85 kg (165... 187 lb.)	57 N/mm (325 lb/in)
Weight of rider: 85... 95 kg (187... 209 lb.)	60 N/mm (343 lb/in)
Spring length	260 mm (10.24 in)
Gas pressure	10 bar (145 psi)
Static sag	34 mm (1.34 in)
Riding sag	100 mm (3.94 in)

Fitted length	486 mm (19.13 in)
Shock absorber oil	Shock absorber oil (SAE 2,5) (50180342S1) (☛ p. 88)

Spoke nipple, front wheel	M4.5	5... 6 Nm (3.7... 4.4 lbf ft)	–
Spoke nipple, rear wheel	M4.5	5... 6 Nm (3.7... 4.4 lbf ft)	–
Remaining nuts, chassis	M6	15 Nm (11.1 lbf ft)	–
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)	–
Screw, ball joint of push rod on foot brake cylinder	M6	10 Nm (7.4 lbf ft)	–
Screw, chain sliding guard	M6	6 Nm (4.4 lbf ft)	<b>Loctite® 243™</b>
Screw, front brake disc	M6	14 Nm (10.3 lbf ft)	<b>Loctite® 243™</b>
Screw, rear brake disc	M6	14 Nm (10.3 lbf ft)	<b>Loctite® 243™</b>
Nut, foot brake lever stop	M8	20 Nm (14.8 lbf ft)	–
Nut, rear sprocket screw	M8	35 Nm (25.8 lbf ft)	<b>Loctite® 2701</b>
Nut, rim lock	M8	10 Nm (7.4 lbf ft)	–
Remaining nuts, chassis	M8	30 Nm (22.1 lbf ft)	–
Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)	–
Screw, bottom triple clamp	M8	12 Nm (8.9 lbf ft)	–
Screw, chain sliding piece	M8	15 Nm (11.1 lbf ft)	–
Screw, engine brace	M8	33 Nm (24.3 lbf ft)	–
Screw, fork stub	M8	15 Nm (11.1 lbf ft)	–
Screw, front brake caliper	M8	25 Nm (18.4 lbf ft)	<b>Loctite® 243™</b>
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)	–
Screw, subframe	M8	35 Nm (25.8 lbf ft)	<b>Loctite® 2701</b>
Screw, top steering stem	M8	17 Nm (12.5 lbf ft)	<b>Loctite® 243™</b>
Screw, top triple clamp	M8	17 Nm (12.5 lbf ft)	–
Engine attachment bolt	M10	60 Nm (44.3 lbf ft)	–
Remaining nuts, chassis	M10	50 Nm (36.9 lbf ft)	–
Remaining screws, chassis	M10	45 Nm (33.2 lbf ft)	–
Screw, bottom shock absorber	M10	60 Nm (44.3 lbf ft)	<b>Loctite® 2701</b>
Screw, handlebar support	M10	40 Nm (29.5 lbf ft)	<b>Loctite® 243™</b>
Screw, top shock absorber	M10	60 Nm (44.3 lbf ft)	<b>Loctite® 2701</b>
Nut, seat fixing	M12x1	20 Nm (14.8 lbf ft)	–
Nut, linkage lever to angle lever	M14x1.5	80 Nm (59 lbf ft)	–
Nut, swingarm pivot	M16x1.5	100 Nm (73.8 lbf ft)	–
Nut, rear wheel spindle	M20x1.5	80 Nm (59 lbf ft)	–
Screw, top steering head	M20x1.5	10 Nm (7.4 lbf ft)	–
Screw-in nozzles, cooling system	M20x1.5	12 Nm (8.9 lbf ft)	<b>Loctite® 243™</b>
Screw, front wheel spindle	M24x1.5	45 Nm (33.2 lbf ft)	–



## 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
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## Coolant (mixed ready to use)

Antifreeze	-40 °C (-40 °F)
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### Supplier

#### Motorex®

- **Anti Freeze**

## Engine oil (SAE 10W/50)

### According to

- JASO T903 MA (☛ p. 91)
- SAE (☛ p. 91) (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
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### Supplier

#### Motorex®

- **Cross Power 4T**

## Fork oil (SAE 5)

### According to

- SAE (☛ p. 91) (SAE 5)

### Guideline

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

### Supplier

#### Motorex®

- **Racing Fork Oil**

## 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

**Shock absorber oil (SAE 2,5) (50180342S1)****According to**

- SAE ( p. 91) (SAE 2,5)

**Guideline**

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

**Super unleaded (ROZ 95 / RON 95 / PON 91)****According to**

- DIN EN 228 (ROZ 95 / RON 95 / PON 91)

## 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**

## High viscosity grease

### Guideline

- KTM recommends **SKF®** products.

### Supplier

#### SKF®

- **LGHB 2**

## Long-life grease

### Guideline

- KTM recommends **Motorex®** products.

### Supplier

#### Motorex®

- **Bike Grease 2000**

## 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**

## Universal oil spray

### Guideline

- KTM recommends **Motorex®** products.

### Supplier

**Motorex®**

- **Joker 440 Synthetic**

## JASO T903 MA

Different technical development directions required a new specification for 4-stroke motorcycles – the JASO T903 MA Standard. Earlier, engine oils from the automobile industry were used for 4-stroke motorcycles because there was no separate motorcycle specification. Whereas long service intervals are demanded for automobile engines, high performance at high engine speeds are in the foreground for motorcycle engines. 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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