

## 450 SMR

Art. no. 3213039en



**KTM**



# DEAR KTM CUSTOMER

Congratulations on your decision to purchase a KTM motorcycle. You are now the owner of a state-of-the-art sports motorcycle that will give you 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. 10)	Dealer's stamp
Engine number (☛ p. 10)	

The Owner's Manual contained the latest information for this model series at the time of going to print. Slight deviations resulting from continuing development and design can, however, not be completely excluded.

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ISO 9001(12 100 6061)

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KTM-Sportmotorcycle AG  
5230 Mattighofen, Austria





# TABLE OF CONTENTS

1	MEANS OF REPRESENTATION .....	4	10.2	Compression damping of the shock absorber.....	23
1.1	Symbols used .....	4	10.3	Adjusting the low-speed compression damping of the shock absorber .....	23
1.2	Formats used.....	4	10.4	Adjusting the high-speed compression damping of the shock absorber.....	24
2	SAFETY ADVICE.....	5	10.5	Adjusting the rebound damping of the shock absorber.....	24
2.1	Use definition - intended use .....	5	10.6	Measuring rear wheel sag unloaded.....	25
2.2	Safety advice.....	5	10.7	Checking static sag of shock absorber .....	25
2.3	Degrees of risk and symbols .....	5	10.8	Checking riding sag of shock absorber.....	25
2.4	Tampering warning.....	5	10.9	Adjusting the spring preload of the shock absorber 🛠️.....	26
2.5	Safe operation .....	5	10.10	Adjusting the riding sag 🛠️.....	26
2.6	Protective clothing .....	6	10.11	Checking the basic setting of the fork .....	27
2.7	Work rules.....	6	10.12	Adjusting the compression damping of the fork .....	27
2.8	Environment.....	6	10.13	Adjusting the rebound damping of the fork.....	28
2.9	Owner's Manual .....	6	10.14	Handlebar position.....	28
3	IMPORTANT NOTES.....	7	10.15	Adjusting the handlebar position 🛠️.....	28
3.1	Guarantee, warranty .....	7	11	SERVICE WORK ON THE CHASSIS.....	30
3.2	Operating and auxiliary substances .....	7	11.1	Raising the motorcycle with the lift stand.....	30
3.3	Spare parts, accessories .....	7	11.2	Removing the motorcycle from the lift stand.....	30
3.4	Service .....	7	11.3	Bleeding the fork legs.....	30
3.5	Figures .....	7	11.4	Cleaning the dust boots of the fork legs.....	31
3.6	Customer service.....	7	11.5	Removing the fork legs 🛠️.....	31
4	VIEW OF VEHICLE .....	8	11.6	Installing the fork legs 🛠️.....	32
4.1	View of vehicle, front left (example) .....	8	11.7	Removing the fork protector .....	32
4.2	View of vehicle, rear right (example) .....	9	11.8	Installing the fork protector .....	32
5	SERIAL NUMBERS .....	10	11.9	Removing the lower triple clamp 🛠️.....	33
5.1	Chassis number .....	10	11.10	Installing the lower triple clamp 🛠️.....	33
5.2	Type label .....	10	11.11	Checking the steering head bearing play.....	35
5.3	Engine number .....	10	11.12	Adjusting the play of the steering head bearing 🛠️.....	35
5.4	Fork part number .....	10	11.13	Greasing the steering head bearing 🛠️.....	36
5.5	Shock absorber part number .....	10	11.14	Removing the start number plate.....	36
6	CONTROLS.....	11	11.15	Installing the start number plate.....	36
6.1	Clutch lever.....	11	11.16	Removing the front fender .....	36
6.2	Hand brake lever.....	11	11.17	Installing the front fender .....	37
6.3	Throttle grip .....	11	11.18	Removing the shock absorber 🛠️.....	37
6.4	Kill switch .....	11	11.19	Installing the shock absorber 🛠️.....	38
6.5	Electric starter button.....	11	11.20	Removing the seat .....	39
6.6	Overview of indicator lamps .....	12	11.21	Mounting the seat.....	39
6.7	Opening the filler cap.....	12	11.22	Removing the air filter box lid .....	39
6.8	Closing the filler cap .....	12	11.23	Installing the air filter box lid .....	39
6.9	Cold start button.....	13	11.24	Removing the air filter 🛠️.....	40
6.10	Idle speed adjusting screw.....	13	11.25	Installing the air filter 🛠️.....	40
6.11	Shift lever .....	13	11.26	Cleaning the air filter and air filter box 🛠️.....	41
6.12	Foot brake lever .....	14	11.27	Securing the air filter box lid 🛠️.....	41
6.13	Plug-in stand.....	14	11.28	Removing the manifold 🛠️.....	41
7	PREPARING FOR USE.....	15	11.29	Installing the manifold 🛠️.....	42
7.1	Advice on first use .....	15	11.30	Removing the main silencer .....	42
7.2	Running in the engine.....	16	11.31	Installing the main silencer.....	43
8	RIDING INSTRUCTIONS.....	17	11.32	Changing the glass fiber yarn filling of the main silencer 🛠️.....	43
8.1	Checks and maintenance work when preparing for use .....	17	11.33	Removing the fuel tank 🛠️.....	43
8.2	Starting.....	17	11.34	Installing the fuel tank 🛠️.....	45
8.3	Starting off.....	18	11.35	Checking for chain dirt accumulation.....	46
8.4	Shifting, riding .....	18	11.36	Cleaning the chain .....	46
8.5	Applying the brakes.....	18	11.37	Checking the chain tension .....	46
8.6	Stopping, parking.....	18	11.38	Adjusting the chain tension.....	47
8.7	Transport .....	19	11.39	Checking the chain, rear sprocket, engine sprocket and chain guide.....	48
8.8	Refueling .....	19			
9	SERVICE SCHEDULE .....	21			
9.1	Service schedule.....	21			
9.2	Service work (as additional order) .....	22			
10	TUNING THE CHASSIS .....	23			
10.1	Checking the basic chassis setting with the rider's weight.....	23			

11.40	Checking the frame 	49	19	STORAGE.....	80
11.41	Checking the swingarm 	50	19.1	Storage.....	80
11.42	Checking the throttle cable routing.....	50	19.2	Preparing for use after storage.....	80
11.43	Checking the rubber grip.....	50	20	TROUBLESHOOTING.....	81
11.44	Additionally securing the rubber grip.....	50	21	BLINK CODE.....	83
11.45	Adjusting the basic position of the clutch lever.....	51	22	TECHNICAL DATA.....	84
11.46	Checking/correcting the fluid level of the hydraulic clutch.....	51	22.1	Engine.....	84
11.47	Changing the hydraulic clutch fluid 	51	22.2	Engine tightening torques.....	84
12	BRAKE SYSTEM.....	53	22.3	Capacities.....	86
12.1	Adjusting the basic position of the hand brake lever.....	53	22.3.1	Engine oil.....	86
12.2	Checking the brake discs.....	53	22.3.2	Coolant.....	86
12.3	Checking the brake fluid level of the front brake.....	53	22.3.3	Fuel.....	86
12.4	Adding front brake fluid 	54	22.4	Chassis.....	86
12.5	Checking the front brake linings.....	54	22.5	Electrical system.....	87
12.6	Changing the front brake linings 	55	22.6	Tires.....	87
12.7	Checking the free travel of foot brake lever.....	56	22.7	Fork.....	87
12.8	Adjusting the basic position of the foot brake lever 	56	22.8	Shock absorber.....	87
12.9	Checking the rear brake fluid level.....	57	22.9	Chassis tightening torques.....	88
12.10	Adding rear brake fluid 	57	23	SUBSTANCES.....	90
12.11	Checking the rear brake linings.....	58	24	AUXILIARY SUBSTANCES.....	92
12.12	Changing the rear brake linings 	58	25	STANDARDS.....	94
13	WHEELS, TIRES.....	60	INDEX.....		95
13.1	Removing the front wheel 	60			
13.2	Installing the front wheel 	60			
13.3	Removing the rear wheel 	61			
13.4	Installing the rear wheel 	62			
13.5	Checking the tire condition.....	63			
13.6	Checking the tire air pressure.....	63			
13.7	Checking the spoke tension.....	63			
14	ELECTRICAL SYSTEM.....	65			
14.1	Removing the battery 	65			
14.2	Installing the battery 	65			
14.3	Charging the battery 	65			
14.4	Changing the main fuse.....	66			
15	COOLING SYSTEM.....	68			
15.1	Cooling system.....	68			
15.2	Checking the antifreeze and coolant level.....	68			
15.3	Checking the coolant level.....	68			
15.4	Draining the coolant 	69			
15.5	Refilling coolant 	70			
16	TUNING THE ENGINE.....	71			
16.1	Checking the play in the throttle cable.....	71			
16.2	Adjusting the play in the throttle cable 	71			
16.3	Adjusting the idle speed 	72			
16.4	Checking the basic position of the shift lever.....	72			
16.5	Adjusting the basic position of the shift lever 	72			
16.6	Antihopping clutch.....	73			
16.7	Adjusting the antihopping clutch.....	73			
17	SERVICE WORK ON THE ENGINE.....	75			
17.1	Changing the fuel screen 	75			
17.2	Checking the engine oil level.....	75			
17.3	Changing the engine oil and oil filter, cleaning the oil screens 	76			
17.4	Adding engine oil.....	78			
18	CLEANING, CARE.....	79			
18.1	Cleaning the motorcycle.....	79			

## 1.1 Symbols used

The meaning of specific symbols is described below.

- 
- |  |   |
|--|---|
|  | Indicates an expected reaction (e.g. of a work step or a function).   |
|  | Indicates an unexpected reaction (e.g. of a work step or a function).   |
|  | All work marked with this symbol requires specialist knowledge and technical understanding. In the interest of your own safety, have these jobs performed by an authorized KTM workshop. There, your motorcycle will be optimally cared for by specially trained experts using the specialist tools required. |
|  | Indicates a page reference (more information is provided on the specified page).  |
- 

## 1.2 Formats used

The typographical formats used in this document are explained below.

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

## 2.1 Use definition - intended use

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



### Info

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

## 2.2 Safety advice

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



### Info

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

## 2.3 Degrees of risk and symbols



### Danger

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.

## 2.4 Tampering warning

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

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

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

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

## 2.5 Safe operation



### Danger

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

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



### Danger

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

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



### Warning

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

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

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

The vehicle should only be used by trained persons.

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

Adhere to the information and warning labels on the vehicle.

## 2.6 Protective clothing



### Warning

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

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

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

## 2.7 Work rules

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

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

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

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

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

## 2.8 Environment

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

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

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

## 2.9 Owner's Manual

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

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

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

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



## 3.1 Guarantee, warranty

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

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

## 3.2 Operating and auxiliary substances



### Warning

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

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

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

## 3.3 Spare parts, accessories

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

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

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

## 3.4 Service

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

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

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

## 3.5 Figures

The figures contained in the manual may depict special equipment.

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

## 3.6 Customer service

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

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

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

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



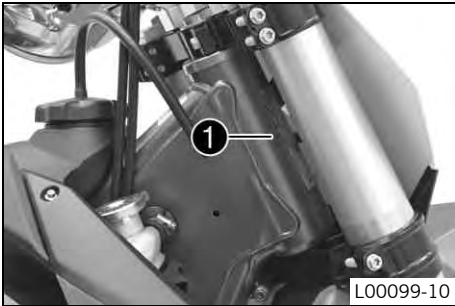
- |   |                             |
|---|-----------------------------|
| 1 | Hand brake lever (☛ p. 11)  |
| 2 | Clutch lever (☛ p. 11)      |
| 3 | Filler cap                  |
| 4 | Plug-in stand (☛ p. 14)     |
| 5 | Air filter box lid          |
| 6 | Engine number (☛ p. 10)     |
| 7 | Shift lever (☛ p. 13)       |
| 8 | Cold start button (☛ p. 13) |

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



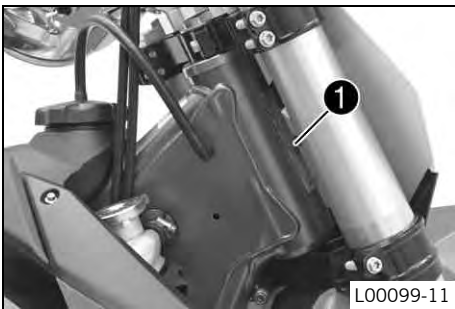
1	Kill switch (☛ p. 11)
2	Electric starter button (☛ p. 11)
3	Fork compression adjustment
4	Fork rebound adjustment
5	Foot brake lever (☛ p. 14)
6	Level viewer, engine oil
7	Shock absorber compression adjustment
8	Level viewer for brake fluid, rear
9	Shock absorber rebound adjustment

## 5.1 Chassis number



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

## 5.2 Type label



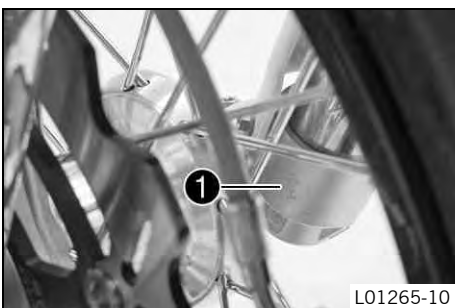
The type label ❶ is fixed to the front of the steering head.

## 5.3 Engine number



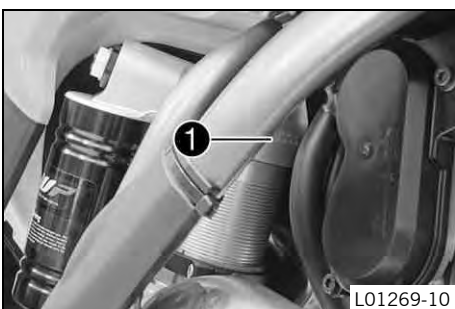
The engine number ❶ is stamped on the left side of the engine under the engine sprocket.

## 5.4 Fork part number



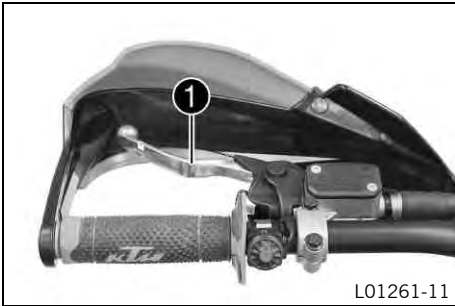
The fork part number ❶ is stamped on the inner side of the axle clamp.

## 5.5 Shock absorber part number



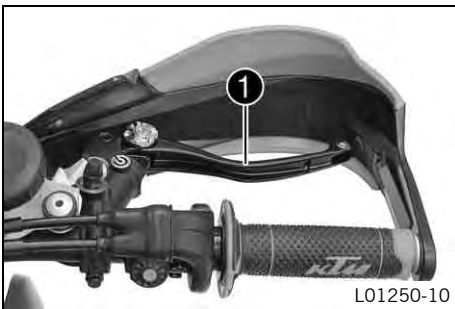
The shock absorber part number ❶ is stamped on the top of the shock absorber above the adjusting ring on the engine side.

## 6.1 Clutch lever



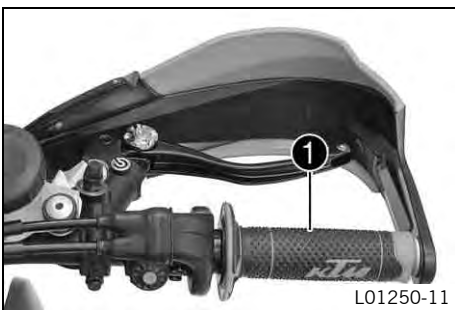
The clutch lever ❶ is fitted on the left side of the handlebar. The clutch is hydraulically operated and self-adjusting.

## 6.2 Hand brake lever



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

## 6.3 Throttle grip



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

## 6.4 Kill switch



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

### Possible states

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

## 6.5 Electric starter button

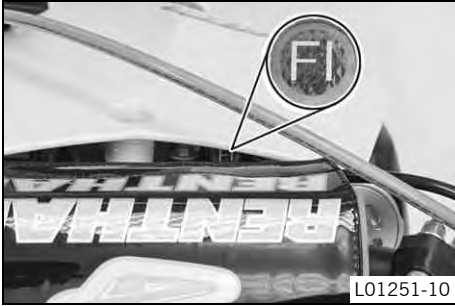


Electric starter button ❶ is fitted on the right side of the handlebar.

### Possible states

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

## 6.6 Overview of indicator lamps



L01251-10

### Possible states

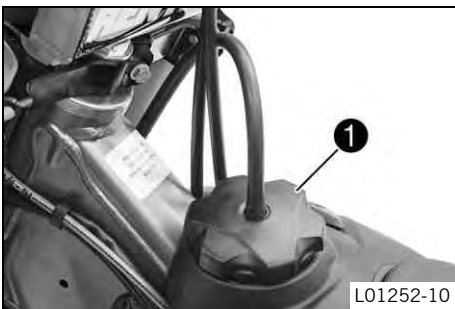
	<b>FI</b> warning lamp ( <b>MIL</b> ) lights up/flashes orange – The OBD (on-board diagnosis) has detected an emission- or safety-critical error.
--	---

## 6.7 Opening the filler cap

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

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

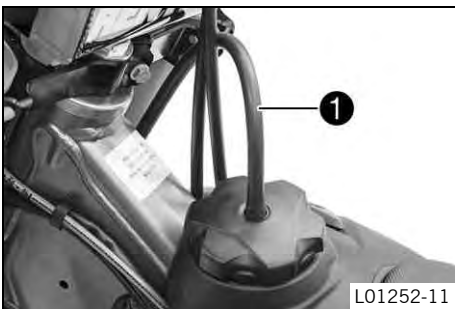
- Warning**  
**Environmental hazard** Improper handling of fuel is a danger to the environment.
- Do not allow fuel to get into the ground water, the ground, or the sewage system.



L01252-10

- Turn filler cap ❶ counterclockwise and lift it off.

## 6.8 Closing the filler cap

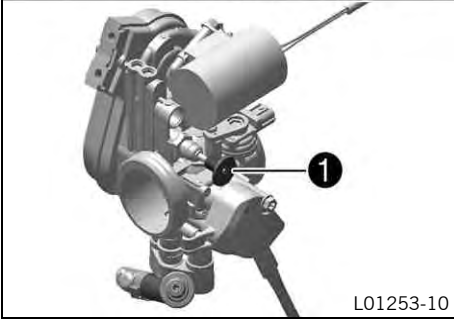


L01252-11

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

**i Info**  
 Run the fuel tank breather hose ❶ without kinks.

## 6.9 Cold start button

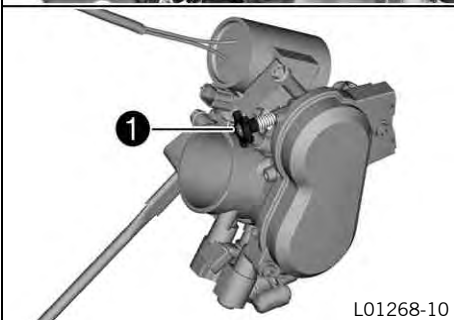


The cold start button ❶ is fitted on the left on the throttle valve body. The injection system extends the injection time if the engine is cold and the outside temperature is low. The engine can only burn the increased fuel quantity if it receives more air. It obtains more air by pulling the cold start button.

### Possible states

- The cold start button is activated – The cold start button is pulled out all the way.
- The cold start button is deactivated – The cold start button is pushed in all the way.

## 6.10 Idle speed adjusting screw



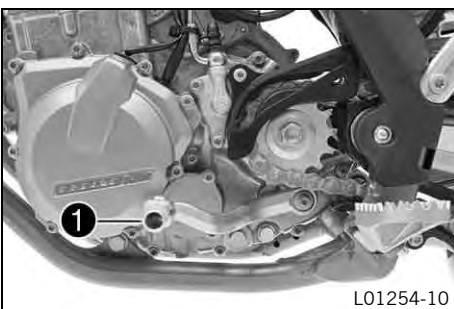
The idle setting of the throttle valve body has a big influence on the starting behavior, stable idling and the response to throttle opening. This means that an engine with a correctly set idle speed is easier to start than if the idle is set wrongly.

The idle speed is adjusted with idle speed adjusting screw ❶.

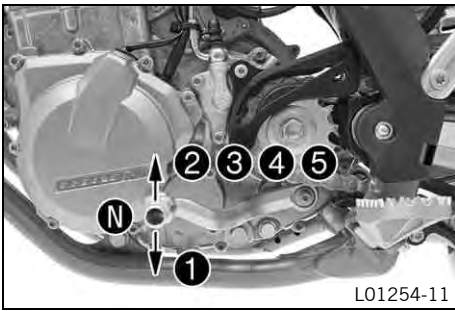
Turning the adjusting screw clockwise increases the idle speed.

Turning the adjusting screw counterclockwise lowers the idle speed.

## 6.11 Shift lever

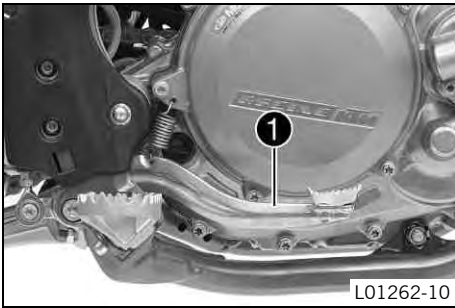


Shift lever ❶ is mounted on the left side of the engine.



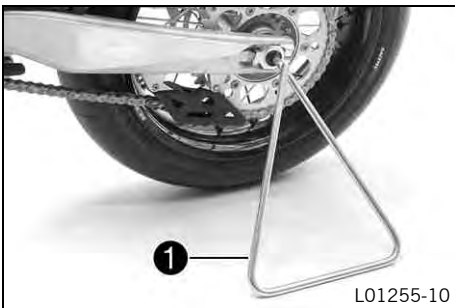
The gear positions can be seen in the photograph.  
The neutral or idle position is between the first and second gears.

## 6.12 Foot brake lever



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

## 6.13 Plug-in stand



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.



### Info

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



## 7.1 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 presents an increased safety risk.

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



### 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 the clutch lever. (☞ p. 51)
- Adjust the basic position of the hand brake lever. (☞ p. 53)
- Adjust the basic position of the foot brake lever. ☞ (☞ p. 56)
- Adjust the basic position of the shift lever. ☞ (☞ p. 72)
- 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 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. 16)

## 7.2 Running in the engine

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

## Guideline

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

- Avoid fully opening the throttle!

## 8.1 Checks and maintenance work when preparing for use



### Info

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

- Check the engine oil level. (☛ p. 75)
- Check the brake fluid level of the front brake. (☛ p. 53)
- Check the rear brake fluid level. (☛ p. 57)
- Check the front brake linings. (☛ p. 54)
- Check the rear brake linings. (☛ p. 58)
- Check that the brake system is functioning properly.
- Check the coolant level. (☛ p. 68)
- Check for chain dirt accumulation. (☛ p. 46)
- Check the chain, rear sprocket, engine sprocket and chain guide. (☛ p. 48)
- Check the chain tension. (☛ p. 46)
- Check the tire condition. (☛ p. 63)
- Check the tire air pressure. (☛ p. 63)
- Check the spoke tension. (☛ p. 63)
- Clean the dust boots of the fork legs. (☛ p. 31)
- Bleed the 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 supply.

## 8.2 Starting



### Danger

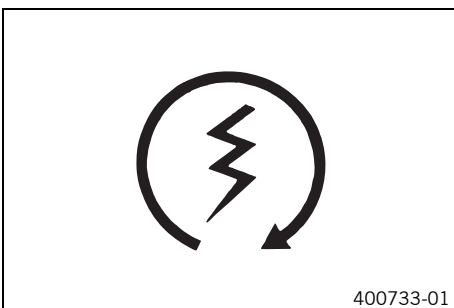
**Danger of poisoning** Exhaust gases are toxic and inhaling them may result in unconsciousness and/or death.

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

### Note

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

- Always warm up the engine at low engine speeds.



- Remove the plug-in stand.
- Shift gear to neutral.

### Condition

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

- Pull the cold start button out all the way.
- Press the electric starter button (Ⓢ).



### Info

Press the electric starter button for at most 5 seconds. Wait for a least 5 seconds before trying again.

**FI** warning lamp lights up briefly as a functional control when starting.

## 8.3 Starting off

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

## 8.4 Shifting, riding



### Warning

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

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



### Info

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

- When conditions allow (incline, road situation, etc.), 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, when starting, you have increased the idle speed, press the cold start button in all the way after the engine has heated 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 standing for a long time.

Guideline

≥ 1 min

- Avoid frequent and longer slipping of the clutch. This heats the engine oil, the engine and the cooling system.
- Ride with a lower engine speed instead of with a high engine speed and a slipping clutch.

## 8.5 Applying the brakes



### Warning

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

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



### Warning

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

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



### Warning

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

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

- On sandy, wet or slippery surfaces, use the rear brake.
- Braking should always be completed before you go into a bend. 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 apply the brakes far less frequently and the brake system does not overheat.

## 8.6 Stopping, parking



### Warning

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

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



### Warning

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

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

**Note**

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

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

**Note**

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

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

- 
- Brake the motorcycle.
  - Shift gear to neutral.
  - Press and hold the kill switch ☒ while the engine is idling until the engine stops.
  - Park the motorcycle on firm ground.

## 8.7 Transport

**Note**

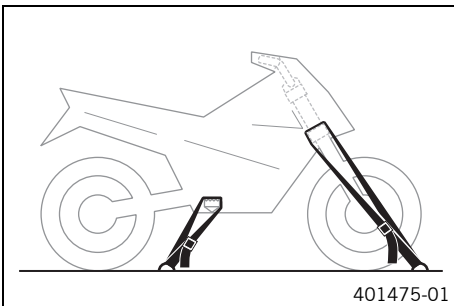
**Danger of damage** The parked vehicle may roll away or fall over.

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

**Note**

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

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



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

## 8.8 Refueling

**Danger**

**Fire hazard** Fuel is highly flammable.

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

**Warning**

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

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

**Note**

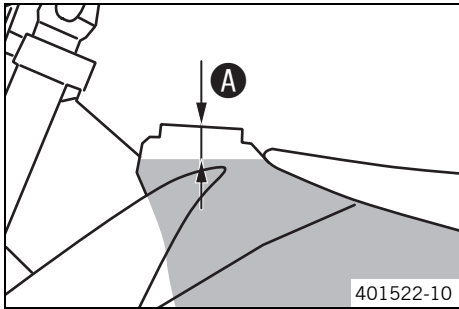
**Material damage** Premature clogging of the fuel filter.

- In some countries and regions, the available fuel quality and cleanliness may not be sufficient. This will result in problems with the fuel system. (Your authorized KTM workshop will be glad to help.)
- Only refuel with clean fuel that meets the specified standards.

**Warning**

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

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



- Switch off the engine.
- Open the filler cap. (☛ p. 12)
- Fill the fuel tank with fuel up to measurement **A**.

Guideline

Measurement of <b>A</b>	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. 91)

- Close the filler cap. (☛ p. 12)

## 9.1 Service schedule

	Every 30 operating hours - corresponds to about 210 liters of fuel (55.5 US gal)	Every 20 operating hours - corresponds to about 140 liters of fuel (37 US gal)	Every 10 operating hours - corresponds to about 70 liters of fuel (18.5 US gal) / after every race	Once after 1 operating hour - corresponds to about 7 liters of fuel (1.8 US gal)
Read out the fault memory using the KTM diagnostics tool. 🛠️	○	●	●	●
Check and charge the battery. 🛠️		●	●	●
Check the front brake linings. (📖 p. 54)		●	●	●
Check the rear brake linings. (📖 p. 58)		●	●	●
Check the brake discs. (📖 p. 53)		●	●	●
Check the brake lines for damage and leakage.		●	●	●
Check the rear brake fluid level. (📖 p. 57)		●	●	●
Check the free travel of the foot brake lever. (📖 p. 56)		●	●	●
Check the frame and swingarm. 🛠️		●	●	●
Check the swingarm bearing. 🛠️			●	
Check the shock absorber linkage. 🛠️		●	●	●
Conduct a minor fork service. 🛠️		●	●	●
Conduct a major fork service. 🛠️				●
Check the tire condition. (📖 p. 63)	○	●	●	●
Check the tire air pressure. (📖 p. 63)	○	●	●	●
Check the wheel bearing for play. 🛠️		●	●	●
Check the wheel hubs. 🛠️		●	●	●
Check the rim run-out. 🛠️	○	●	●	●
Check the spoke tension. (📖 p. 63)	○	●	●	●
Check the chain, rear sprocket, engine sprocket and chain guide. (📖 p. 48)		●	●	●
Check the chain tension. (📖 p. 46)	○	●	●	●
Grease all moving parts (e.g., hand lever, chain, ...) and check for smooth operation. 🛠️		●	●	●
Check/correct the fluid level of the hydraulic clutch. (📖 p. 51)		●	●	●
Check the brake fluid level of the front brake. (📖 p. 53)		●	●	●
Check the free travel of the hand brake lever.		●	●	●
Check the steering head bearing play. (📖 p. 35)	○	●	●	●
Check the valve clearance. 🛠️	○			●
Check the clutch. 🛠️				●
Change the engine oil and oil filter and clean the oil screens. 🛠️ (📖 p. 76)	○	●	●	●
Check all hoses (e. g. fuel, cooling, bleeding, drainage) and sleeves for tearing, leaks and incorrect routing. 🛠️	○	●	●	●
Check the antifreeze and coolant level. (📖 p. 68)	○	●	●	●
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. 41)		●	●	●
Change the glass fiber yarn filling of the main silencer. 🛠️ (📖 p. 43)				●
Check the screws and nuts for tightness. 🛠️	○	●	●	●
Change the fuel screen. 🛠️ (📖 p. 75)	○	●	●	●
Check the fuel pressure. 🛠️		●	●	●
Check idle.	○	●	●	●
Final check: Check the vehicle for safe operation and take a test ride.	○	●	●	●
Read out the fault memory using the KTM diagnostics tool after a test ride. 🛠️	○	●	●	●
Make the service entry in <b>KTM DEALER.NET</b> and in the service record. 🛠️	○	●	●	●

- One-time interval
- Periodic interval

## 9.2 Service work (as additional order)

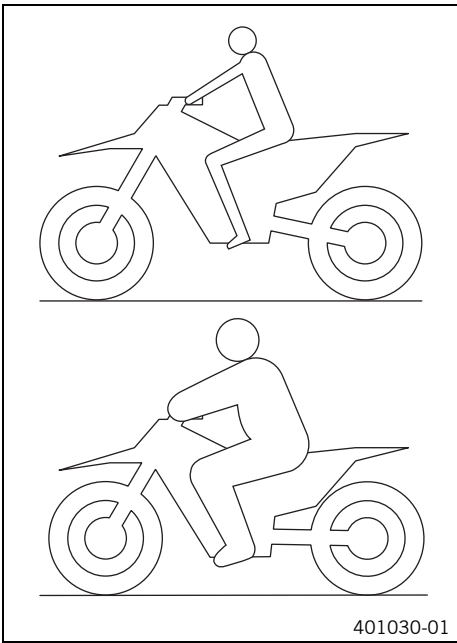
	Annually			
Every 100 operating hours - corresponds to about 700 liters of fuel (185 US gal)				
Every 50 operating hours - corresponds to about 350 liters of fuel (92.5 US gal)				
Every 40 operating hours - corresponds to about 280 liters of fuel (74 US gal)				
Once after 20 operating hours				
Change the front brake fluid. 🛠️				•
Change the rear brake fluid. 🛠️				•
Change the hydraulic clutch fluid. 🛠️ (🔧 p. 51)				•
Grease the steering head bearing. 🛠️ (🔧 p. 36)				•
Service the shock absorber. 🛠️	○	•		
Change the spark plug and spark plug connector. 🛠️				•
Change the piston. 🛠️			•	•
Check/measure the cylinder. 🛠️			•	•
Check the cylinder head. 🛠️			•	•
Change the valves, valve springs and valve spring seats. 🛠️				•
Check the camshaft and rocker arm. 🛠️			•	•
Change the connecting rod, conrod bearing, and crank pin. 🛠️				•
Change the shaft seal rings of the water pump. 🛠️			•	•
Check the transmission and shift mechanism. 🛠️				•
Check the oil pressure regulator valve. 🛠️				•
Change the suction pump. 🛠️				•
Check the pressure pump and lubrication system. 🛠️				•
Replace the timing chain. 🛠️				•
Check the timing assembly. 🛠️			•	•
Change all engine bearings. 🛠️				•

- One-time interval
- Periodic interval



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

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



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

Guideline

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

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

## 10.2 Compression damping of the shock absorber

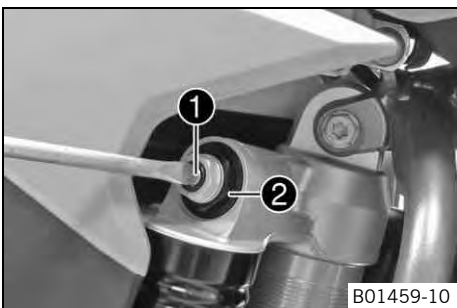
The compression damping of the shock absorber is divided into two ranges: high-speed and low-speed. High-speed and low-speed refer to the compression speed of the rear wheel suspension and not to the vehicle speed. The high-speed setting, for example, has an effect on the landing after a jump: the rear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

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

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

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

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



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

**i 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	
Comfort	21 clicks
Standard	18 clicks
Sport	15 clicks

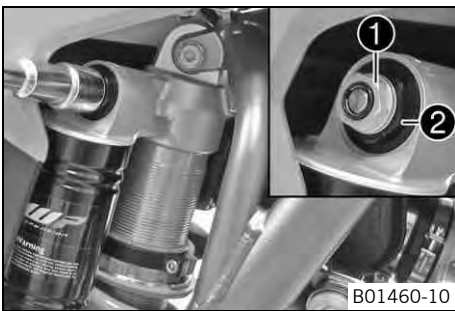
**i Info**  
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

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

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

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

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



- Turn adjusting screw 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

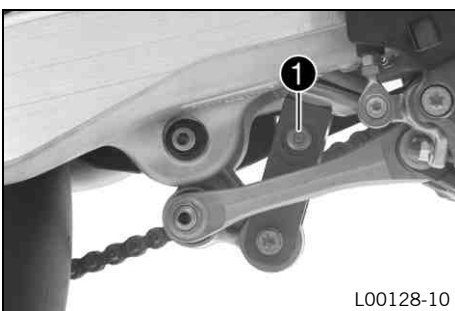
Compression damping, high-speed	
Comfort	2 turns
Standard	1.5 turns
Sport	1 turn

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

## 10.5 Adjusting the rebound damping of the shock absorber

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

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



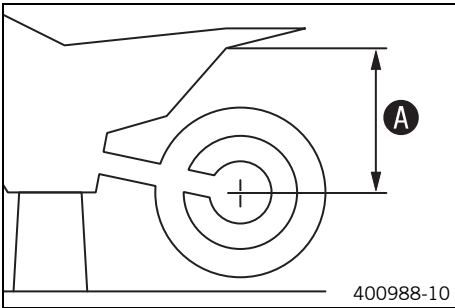
- Turn adjusting screw ❶ clockwise up to the last perceptible click.
- Turn back counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

Rebound damping	
Comfort	14 clicks
Standard	12 clicks
Sport	10 clicks

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

## 10.6 Measuring rear wheel sag unloaded



### Preparatory work

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

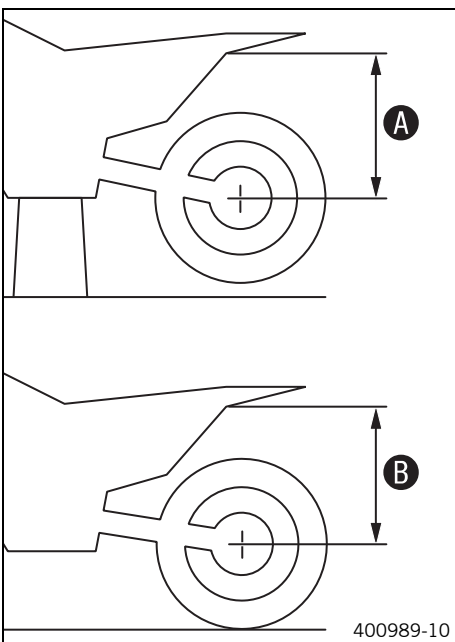
### Main work

- Measure the vertical distance between the rear axle and a fixed point such as a marking on the side cover.
- Note down the value as dimension **A**.

### Finishing work

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

## 10.7 Checking static sag of shock absorber



- Measure distance **A** 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 **B**.

### Info

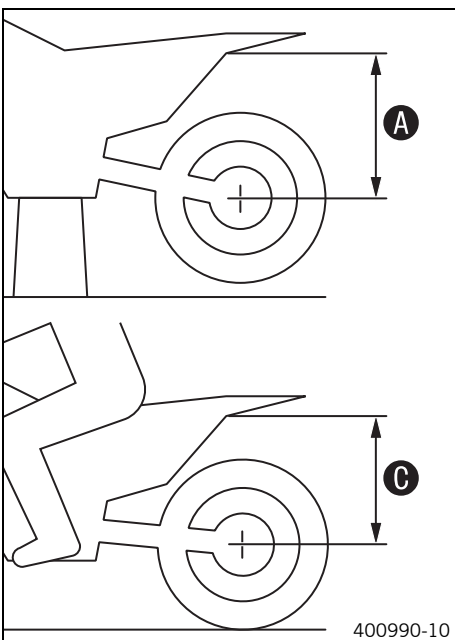
The static sag is the difference between measurements **A** and **B**.

- Check the static sag.

Static sag	20 mm (0.79 in)
------------	-----------------

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

## 10.8 Checking riding sag of 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**.

### Info

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

- Check the riding sag.

Riding sag	75 mm (2.95 in)
------------	-----------------

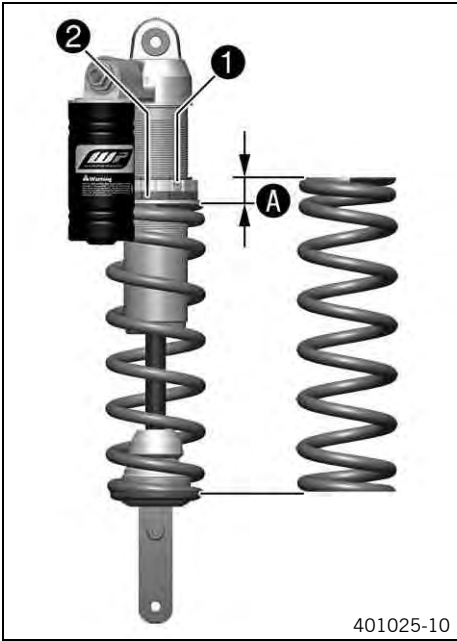
- » If the riding sag differs from the specified measurement:
  - Adjust the riding sag. ☞ (☞ p. 26)

## 10.9 Adjusting the spring preload of the shock absorber

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

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

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



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- Preparatory work**
- Raise the motorcycle with the lift stand. (☞ p. 30)
  - Remove the manifold. (☞ p. 41)
  - Remove the shock absorber. (☞ p. 37)
  - After removing the shock absorber, clean it thoroughly.

- Main work**
- Loosen screw ❶.
  - Turn adjusting ring ❷ until the spring is no longer under tension.

Hook wrench (T106S)

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

Guideline

Spring preload	19 mm (0.75 in)
----------------	-----------------

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

- Tighten screw ❶.
- Guideline
- |                                      |    |                   |
|--------------------------------------|----|-------------------|
| Screw, shock absorber adjusting ring | M5 | 5 Nm (3.7 lbf ft) |
|--------------------------------------|----|-------------------|

- Finishing work**
- Install the shock absorber. (☞ p. 38)
  - Install the manifold. (☞ p. 42)
  - Remove the motorcycle from the lift stand. (☞ p. 30)

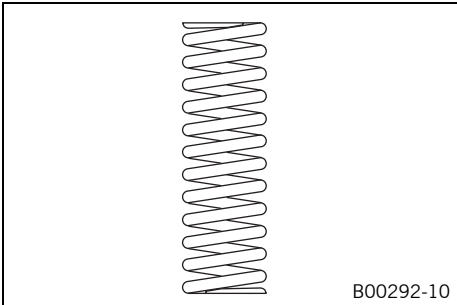
## 10.10 Adjusting the riding sag

- Preparatory work**
- Raise the motorcycle with the lift stand. (☞ p. 30)
  - Remove the manifold. (☞ p. 41)
  - Remove the shock absorber. (☞ p. 37)
  - After removing the shock absorber, clean it thoroughly.

- Main work**
- Choose and mount a suitable spring.

Guideline

Spring rate	
Weight of rider: 65... 75 kg (143... 165 lb.)	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)



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**Info**

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

**Finishing work**

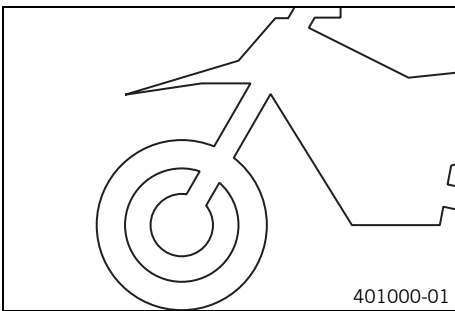
- Install the shock absorber. (🔧 p. 38)
- Install the manifold. (🔧 p. 42)
- Check the static sag of the shock absorber. (🔧 p. 25)
- Check the riding sag of the shock absorber. (🔧 p. 25)
- Adjust the rebound damping of the shock absorber. (🔧 p. 24)
- Remove the motorcycle from the lift stand. (🔧 p. 30)

## 10.11 Checking the basic setting of the 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.

## 10.12 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	
Comfort	14 clicks
Standard	12 clicks
Sport	10 clicks

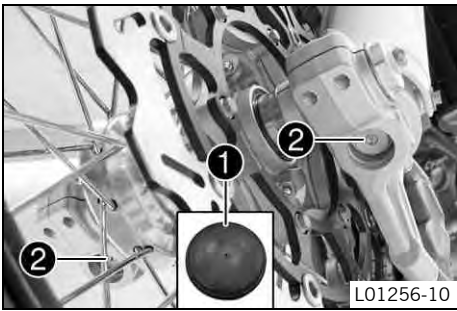


**Info**

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

## 10.13 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.

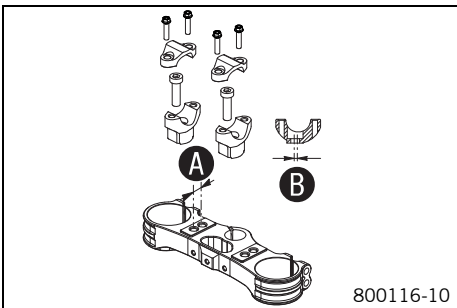
- Turn back counterclockwise by the number of clicks corresponding to the fork type. Guideline

Rebound damping	
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.

## 10.14 Handlebar position



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

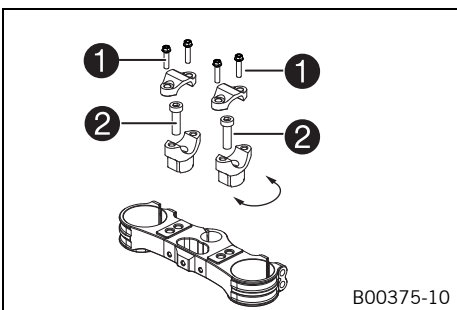
Hole distance A	15 mm (0.59 in)
-----------------	-----------------

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.

## 10.15 Adjusting the 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 against damage by covering them. Do not bend the cables and lines.

- Remove screws ❷. Remove the handlebar supports.
- Place the handlebar supports 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 clamps. Fit and evenly tighten the four screws ❶.

Guideline

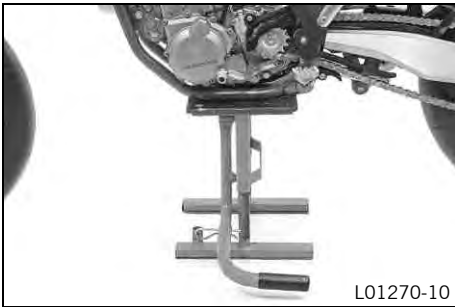
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)
------------------------	----	------------------------

## 11.1 Raising the motorcycle with the lift stand

### Note

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

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



- Raise the motorcycle at the frame underneath the engine.
  - ✓ The wheels must no longer touch the ground.
- Secure the motorcycle against falling over.

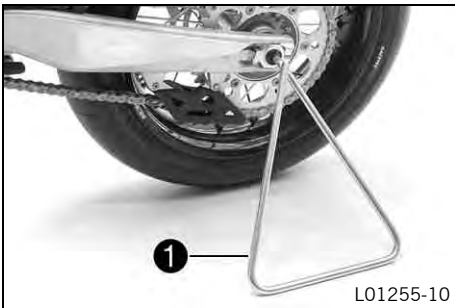
Lift stand (54829055000)

## 11.2 Removing the motorcycle from the lift stand

### Note

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

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



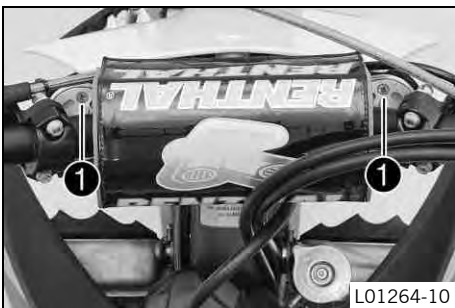
- Remove the motorcycle from the lift stand.
- Remove the lift stand.
- To park the motorcycle, insert plug-in stand ❶ into the left side of the wheel spindle.



### Info

Remove the plug-in stand before riding.

## 11.3 Bleeding the fork legs



### Preparatory work

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

### Main work

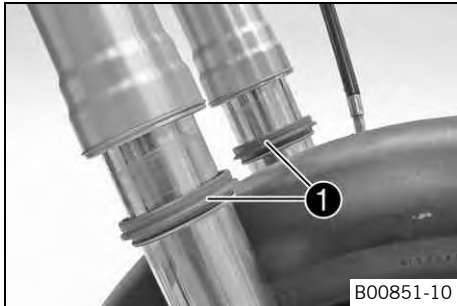
- Release bleeder screws ❶.
  - ✓ Any excess pressure escapes from the interior of the fork.
- Mount and tighten bleeder screws.

### Finishing work

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



## 11.4 Cleaning the dust boots of the fork legs



### Preparatory work

- Raise the motorcycle with the lift stand. (☞ p. 30)
- Remove the fork protector. (☞ p. 32)

### Main work

- Push dust boots ❶ of both fork legs downward.

### Info

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



### Warning

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

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

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

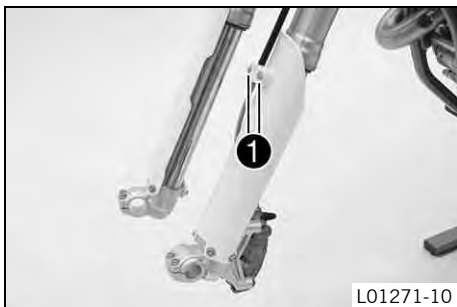
Universal oil spray (☞ p. 93)

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

### Finishing work

- Install the fork protector. (☞ p. 32)
- Remove the motorcycle from the lift stand. (☞ p. 30)

## 11.5 Removing the fork legs



### Preparatory work

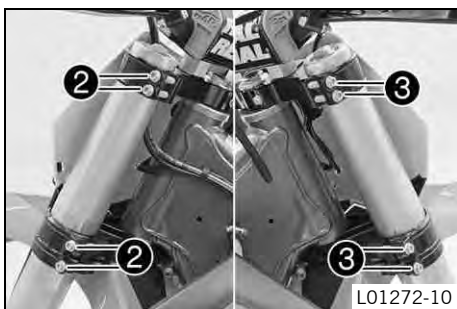
- Raise the motorcycle with the lift stand. (☞ p. 30)
- Remove the front wheel. ☞ (☞ p. 60)

### Main work

- Remove screws ❶ and take off the clamp.
- Hang the brake caliper with the brake line to one side without tension.

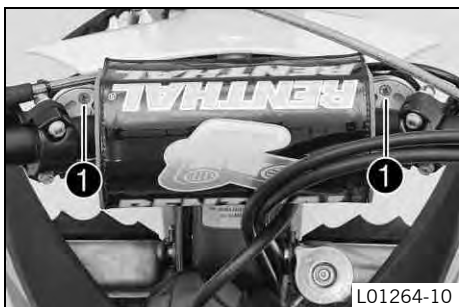
### Info

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



- Loosen screws ❷. Remove the left fork leg.
- Loosen screws ❸. Remove the right fork leg.

## 11.6 Installing the fork legs



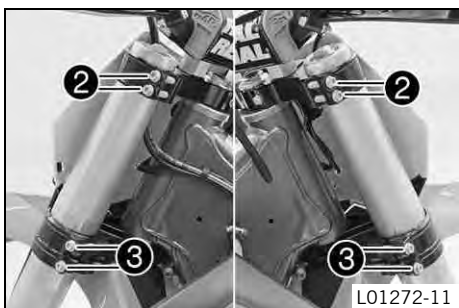
### Main work

- Position the fork legs.

### **i** Info

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

Position bleeder screws **1** toward the front.



- Tighten screws **2**.

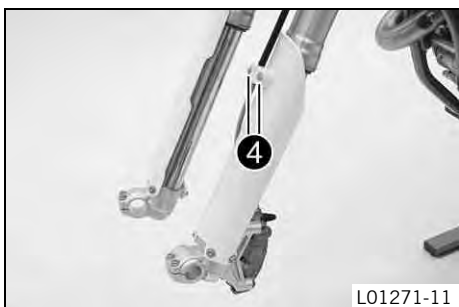
### Guideline

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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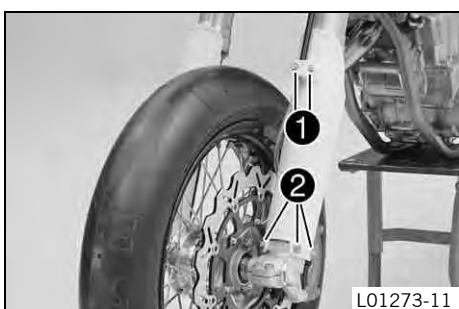


- Position the brake line and clamp. Mount and tighten screws **4**.

### Finishing work

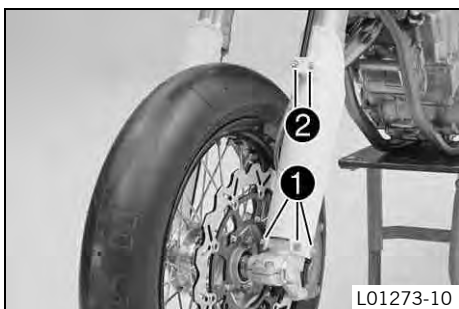
- Install the front wheel. (p. 60)

## 11.7 Removing the fork protector



- Remove screws **1** and take off the clamp.
- Remove screws **2** on the left fork leg. Take off the fork protector.
- Remove screws on the right fork leg. Take off the fork protector.

## 11.8 Installing the fork protector



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

### Guideline

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

- Position the brake line and clamp. Mount and tighten screws **2**.

- Position the fork protector on the right fork leg. Mount and tighten the screws.

### Guideline

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

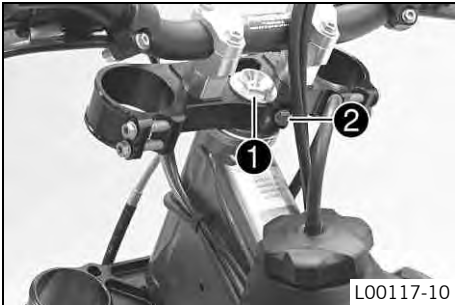
## 11.9 Removing the lower triple clamp

### Preparatory work

- Raise the motorcycle with the lift stand. (☞ p. 30)
- Remove the front wheel. ☞ (☞ p. 60)
- Remove the fork legs. ☞ (☞ p. 31)
- Remove the start number plate. (☞ p. 36)
- Remove the front fender. (☞ p. 36)
- Remove the handlebar cushion.

### Main work

- Remove screw ❶.
- Remove screw ❷.
- 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.

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



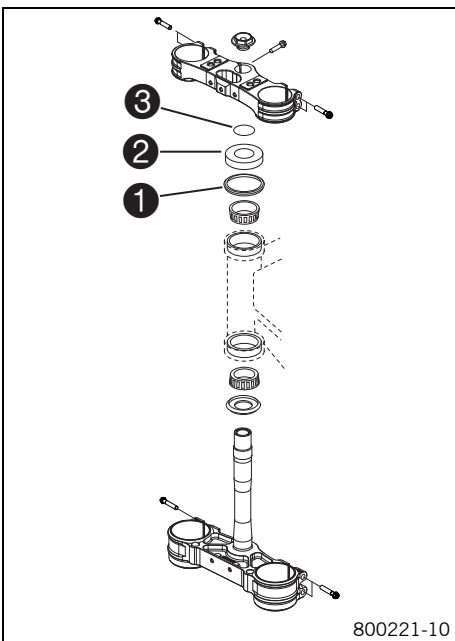
## 11.10 Installing the lower triple clamp

### Main work

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

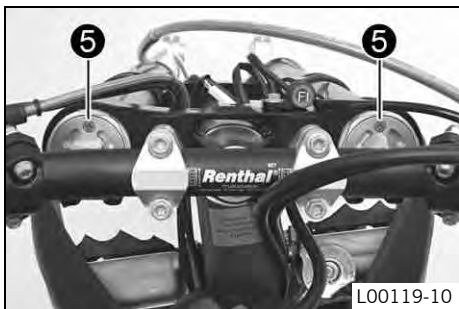
High viscosity grease (☞ p. 92)

- Insert the lower triple clamp with the steering stem. Mount the upper steering head bearing.
- Check whether the upper steering head seal ❶ is correctly positioned.
- Slide on protective ring ❷ and O-ring ❸.



- Position the upper triple clamp with the handlebar.
- Mount screw ❹ but do not tighten yet.



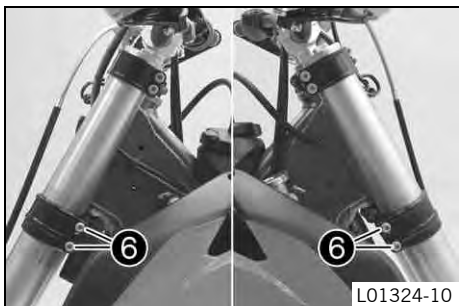


- Position the fork legs.
- ✓ Bleeder screws 5 face forward.



**Info**

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



- Tighten screws 6.

Guideline

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

Guideline

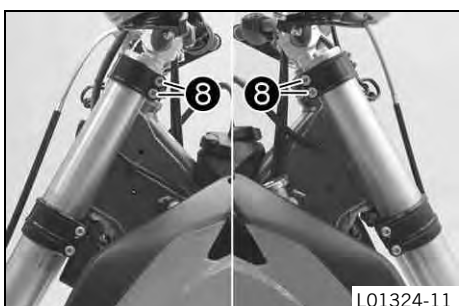
Screw, top steering head	M20x1.5	12 Nm (8.9 lbf ft)
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- Mount and tighten screw 7.

Guideline

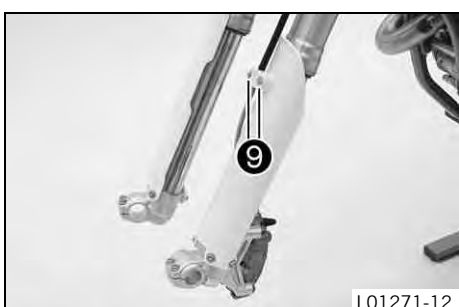
Screw, top steering stem	M8	17 Nm (12.5 lbf ft)	Loctite® 243™
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- Using a plastic hammer, tap lightly on the upper triple clamp to avoid strains.
- Tighten screws 8.

Guideline

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



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

**Finishing work**

- Install the front fender. (☛ p. 37)

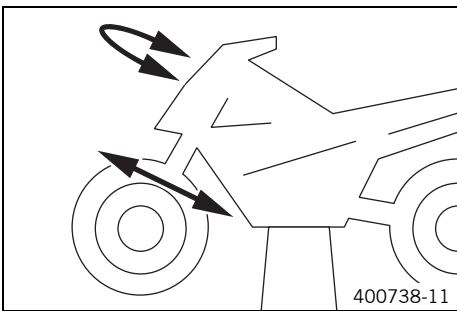
- Mount the handlebar cushion.
- Install the start number plate. (☞ p. 36)
- Install the front wheel. 🛠️ (☞ p. 60)
- Check that the wiring harness, throttle cables and brake and clutch lines can move freely and are routed correctly.
- Check the steering head bearing play. (☞ p. 35)
- Remove the motorcycle from the lift stand. (☞ p. 30)

## 11.11 Checking the 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 with play in the steering head bearing, the bearing and the bearing seats in the frame can become damaged over time.



### Preparatory work

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

### Main work

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

No play should be noticeable in the steering head bearing.

- » If there is noticeable play present:
  - Adjust the play of the steering head bearing. 🛠️ (☞ p. 35)
- Move the handlebar to and fro over the entire steering range.

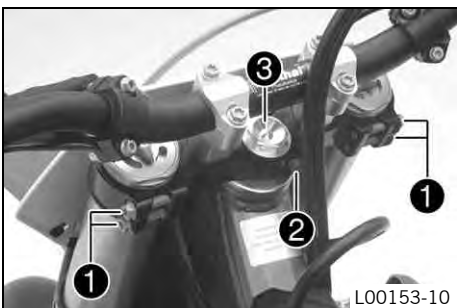
The handlebar must be able to move easily over the entire steering range. No resting locations should be noticeable.

- » If click positions are noticeable:
  - Adjust the play of the steering head bearing. 🛠️ (☞ p. 35)
  - Check the steering head bearing and change if necessary.

### Finishing work

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

## 11.12 Adjusting the play of the steering head bearing 🛠️



### Preparatory work

- Raise the motorcycle with the lift stand. (☞ p. 30)
- Remove the handlebar cushion.

### Main work

- Loosen screw ①. Remove screw ②.
- Loosen and retighten screw ③.

#### Guideline

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

- Using a plastic hammer, tap lightly on the upper triple clamp to avoid strains.
- Fully tighten screws ①.

#### Guideline

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

- Mount and tighten screw ②.

#### Guideline

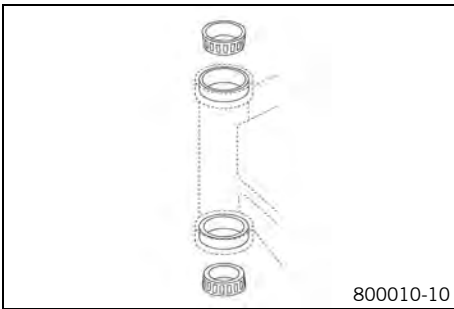
Screw, top steering stem	M8	17 Nm (12.5 lbf ft)	Loctite® 243™
--------------------------	----	---------------------	---------------

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

## Finishing work

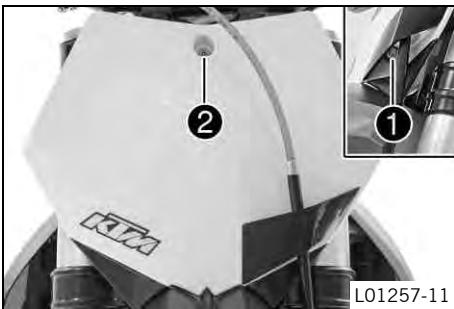
- Mount the handlebar cushion.
- Remove the motorcycle from the lift stand. (☞ p. 30)

### 11.13 Greasing the steering head bearing ☞



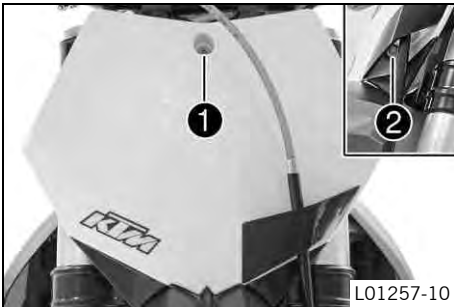
- Remove the lower triple clamp. ☞ (☞ p. 33)
- Install the lower triple clamp. ☞ (☞ p. 33)

### 11.14 Removing the start number plate



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

### 11.15 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)
---------------------------	----	--------------------

- ✓ The holding lugs engage.

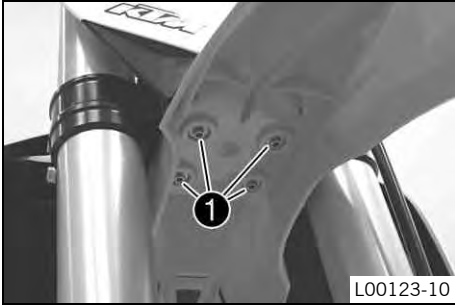
- Position the brake line and clamp. Mount and tighten screw ❷.

### 11.16 Removing the front fender



- Remove screws ❶. Remove the front fender.
- Ensure that the spacers remain in position.

## 11.17 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)
---------------------------	----	--------------------

- ✓ The holding lugs engage.

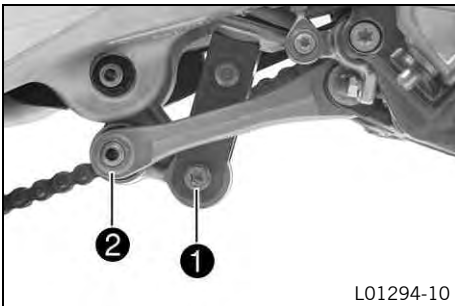
## 11.18 Removing the shock absorber

### Preparatory work

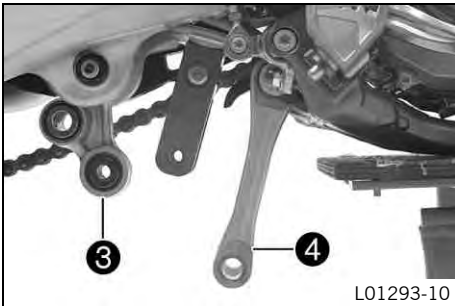
- Raise the motorcycle with the lift stand. (☞ p. 30)
- Remove the manifold. ☞ (☞ p. 41)

### Main work

- Remove screw ❶.
- Remove screw cap ❷.



- Press angle lever ❸ toward the rear.
- Press linkage lever ❹ downward.



- Raise the swingarm.

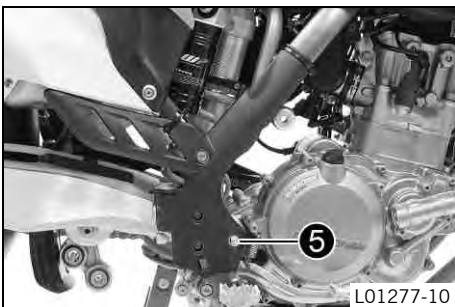


- Remove the cable binders of the frame protector.
- Remove screw ❺.
- Remove frame protector.



### Info

Pay attention to the holding lugs.





- Remove screw ⑥.
- Carefully lift the shock absorber up and out of the vehicle.

## 11.19 Installing the shock absorber

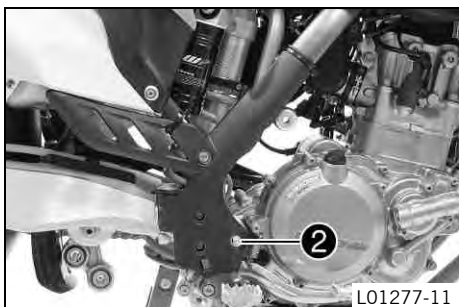


### Main work

- From above, position the shock absorber carefully in the vehicle.
- Mount and tighten screw ①.

#### Guideline

Screw, top shock absorber	M10	60 Nm (44.3 lbf ft)	Loctite® 2701™
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- Position the frame protector.



### Info

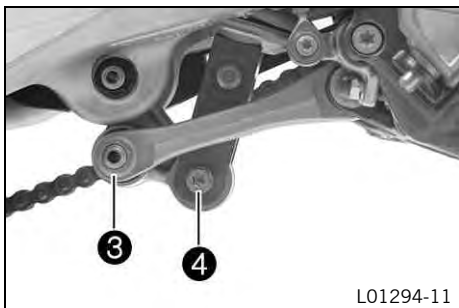
Pay attention to the holding lugs.

- Mount and tighten screw ②.

#### Guideline

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

- Attach the frame protector with a cable binder.
- Lower the swingarm.



- Position the angle lever and linkage lever.

- Mount and tighten screw cap ③.

#### Guideline

Nut, linkage lever to angle lever	M14x1.5	80 Nm (59 lbf ft)	
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- Mount and tighten screw ④.

#### Guideline

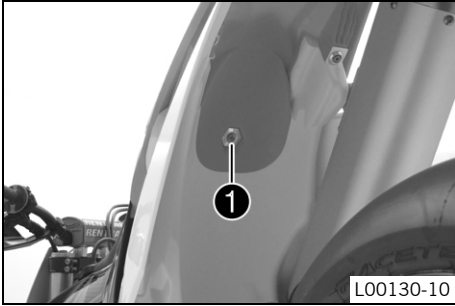
Screw, bottom shock absorber	M10	60 Nm (44.3 lbf ft)	Loctite® 2701™
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### Finishing work

- Install the manifold. (🔧 p. 42)
- Remove the motorcycle from the lift stand. (🔧 p. 30)



## 11.20 Removing the seat



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

## 11.21 Mounting the seat

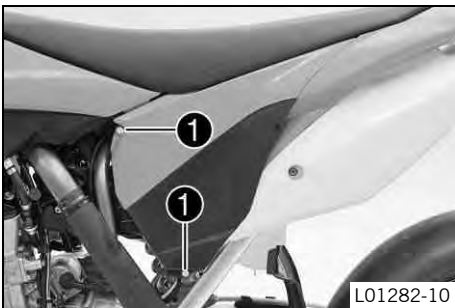


- Hook in the front of the seat at the collar bushing of the fuel tank, lower it at the rear and simultaneously it push forward.
- Make sure that the seat is correctly locked in.
- Mount and tighten the screw of the seat fixing.

Guideline

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

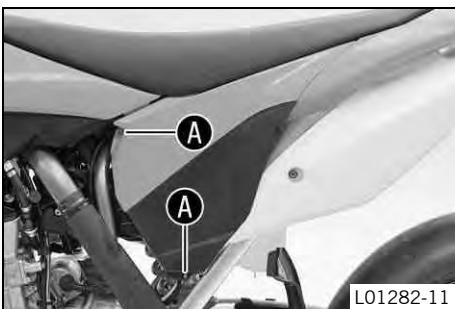
## 11.22 Removing the air filter box lid



### Condition

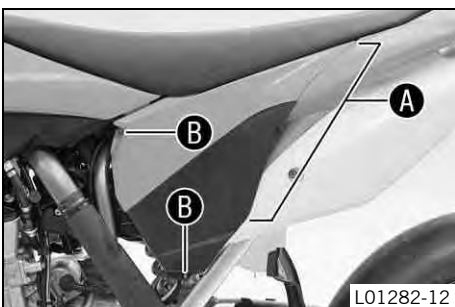
The air filter box lid is secured.

- Remove screws ❶.

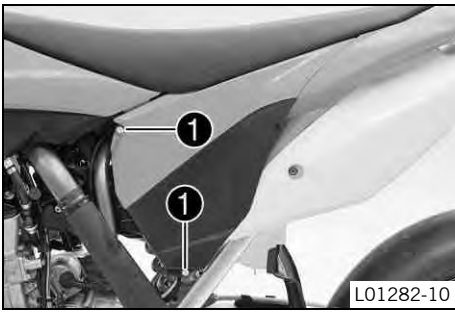


- Pull off the air filter box lid in area ❶ sideways and remove it toward the front.

## 11.23 Installing the air filter box lid



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



L01282-10

**Condition**

The air filter box lid is secured.

- Mount and tighten screws ❶.

**Guideline**

Screw, air filter box lid	<b>EJOT PT®</b> K60x20-Z	3 Nm (2.2 lbf ft)
EJOT PT screw (0017060204)		

## 11.24 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.



L01283-10

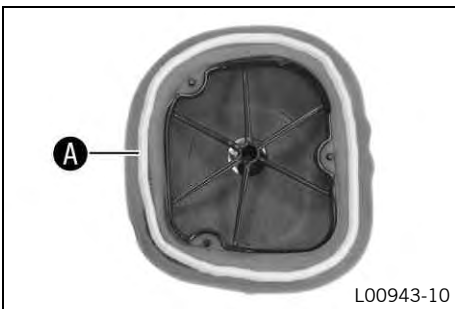
**Preparatory work**

- Remove the air filter box lid. (🛠️ p. 39)

**Main work**

- 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.

## 11.25 Installing the air filter 🛠️



L00943-10

**Main work**

- Mount the clean air filter onto the air filter support.
- Grease the air filter in area **A**.

Long-life grease (🛠️ p. 92)
-----------------------------



L01283-11

- Put in both parts together, position them, and fix them with air filter holder ❶.
- ✓ The arrow of the **UP** marking points upward.

 **Info**

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

**Finishing work**

- Install the air filter box lid. (🛠️ p. 39)

## 11.26 Cleaning the air filter and air filter box



### Warning

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

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



### Info

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



### Preparatory work

- Remove the air filter box lid. (☞ p. 39)
- Remove the air filter. (☞ p. 40)

### Main work

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

Air filter cleaner (☞ p. 92)
------------------------------



### Info

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

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

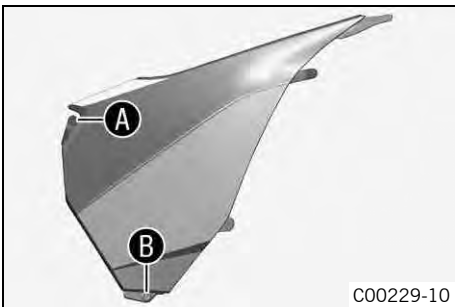
Oil for foam air filter (☞ p. 93)
-----------------------------------

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

### Finishing work

- Install the air filter. (☞ p. 40)
- Install the air filter box lid. (☞ p. 39)

## 11.27 Securing the air filter box lid



### Preparatory work

- Remove the air filter box lid. (☞ p. 39)

### Main work

- Drill a hole at markings A and B.

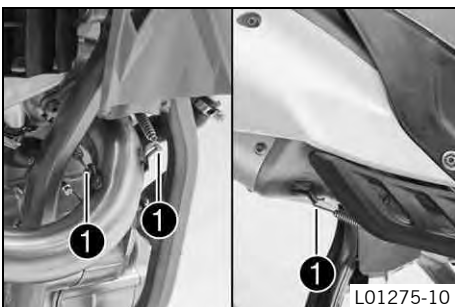
Guideline

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

### Finishing work

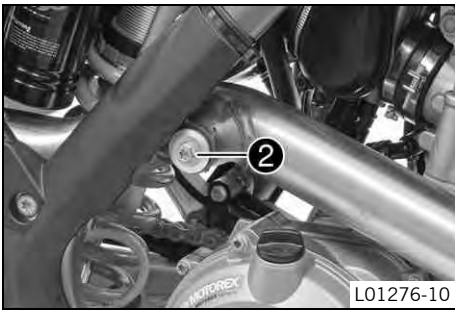
- Install the air filter box lid. (☞ p. 39)

## 11.28 Removing the manifold



- Detach springs 1.

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

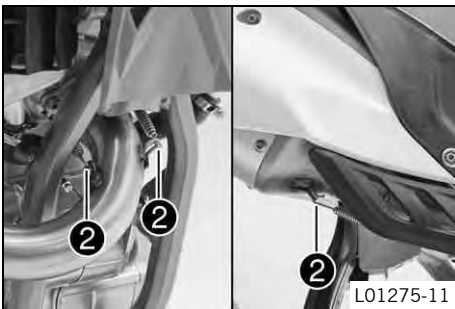


- Remove screw ②.
- Take off manifold.

## 11.29 Installing the manifold

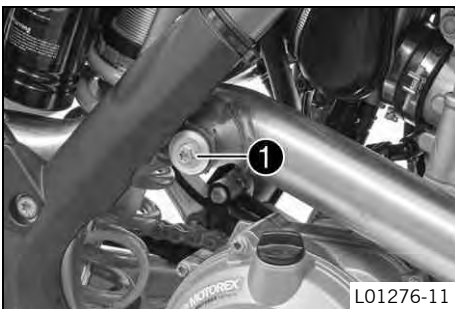


- Feed in and position the manifold.
- Mount screw ① but do not tighten yet.



- Attach springs ②.

Spring hooks (50305017000)



- Tighten screw ①.

Guideline

Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)
---------------------------	----	------------------------

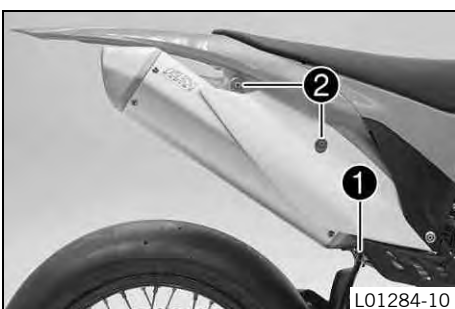
## 11.30 Removing the main silencer



### Warning

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

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

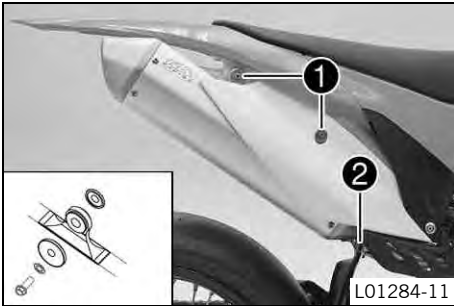


- Disconnect spring ①.

Spring hooks (50305017000)

- Remove screws ② and take off the main silencer.

## 11.31 Installing the main silencer



- Position the main silencer.
- Mount screws ❶ but do not tighten yet.
- Reconnect spring ❷.

Spring hooks (50305017000)

- Tighten screws ❶.

Guideline

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

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



### Warning

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

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



### Info

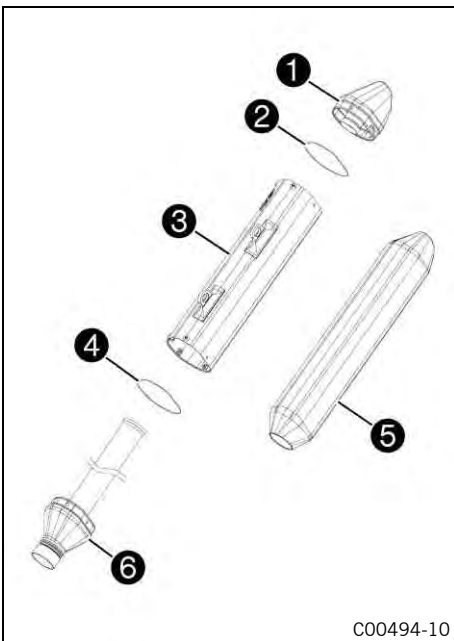
Over time, the fibers of the glass fiber yarn escape and the damper "burns" out. Not only is the noise level higher, the performance characteristic changes.

### Preparatory work

- Remove the main silencer. (☛ p. 42)

### Main work

- Remove all screws from the main silencer.
- Remove protection cap ❶ and O-ring ❷.
- Remove outer tube ❸ and O-ring ❹.
- Pull the glass fiber yarn filling ❺ from the inner tube ❻.
- Clean the parts that are to be reinstalled.
- Mount the new glass fiber yarn filling ❺ on the inner tube.
- Slide the O-ring ❹ and the outer tube ❸ over the glass fiber yarn filling.
- Insert the O-ring ❷ and the protection cap ❶ into the outer tube.
- Mount and tighten all screws.



### Finishing work

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

## 11.33 Removing the fuel tank



### Danger

**Fire hazard** Fuel is highly flammable.

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



**Warning**

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

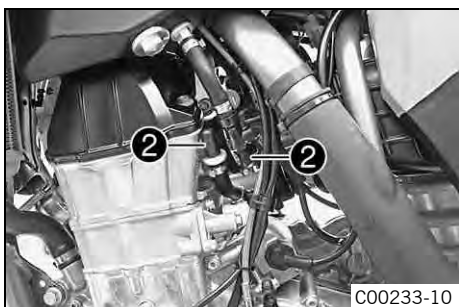
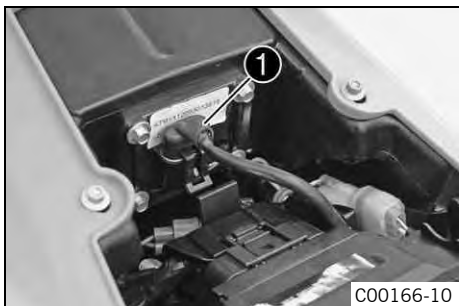
- Fuel must not come into contact with the skin, eyes, or clothing. Do not breathe in the fuel vapors. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If fuel is swallowed, contact a physician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

**Preparatory work**

- Remove the seat. (☛ p. 39)

**Main work**

- Unplug connector ❶ of the fuel pump.



- Thoroughly clean the plug-in connection of the fuel line using compressed air.



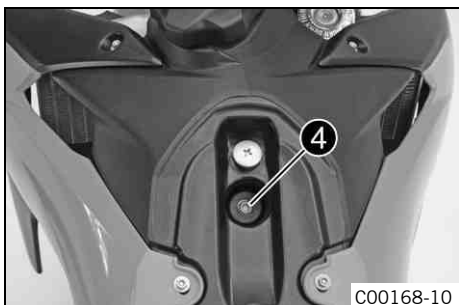
**Info**

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

- Disconnect the plug-in connection of the fuel line.
- Mount wash cap set ❷.

Wash cap set (81212016100)

- Remove the tube from the fuel tank breather.
- Remove screws ❸ with the collar bushing.



- Remove screw ❹ with the rubber bushing.



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

## 11.34 Installing the fuel tank



### Danger

**Fire hazard** Fuel is highly flammable.

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




### Warning

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

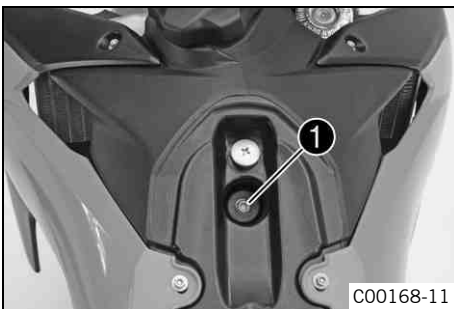
- Fuel must not come into contact with the skin, eyes, or clothing. Do not breathe in the fuel vapors. If contact occurs with the eyes, rinse with water immediately and contact a physician. Immediately clean contaminated areas on the skin with soap and water. If fuel is swallowed, contact a physician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

### Main work

- Check the throttle cable routing. ( p. 50)
- 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 breather.
- Mount and tighten screw **1** with the rubber bushing.

#### Guideline

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



- Mount and tighten screws **2** with the collar bushing.

#### Guideline

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



- Connect the electrical plug-in connection **3**.
- Remove the wash cap set. Thoroughly clean the plug-in connection of the fuel line using compressed air.

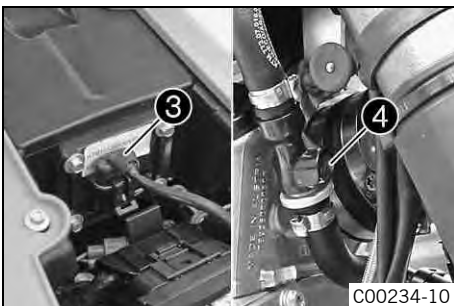
#### Info

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


- Lubricate the O-ring and connect plug-in connection **4** of the fuel line.

#### Info

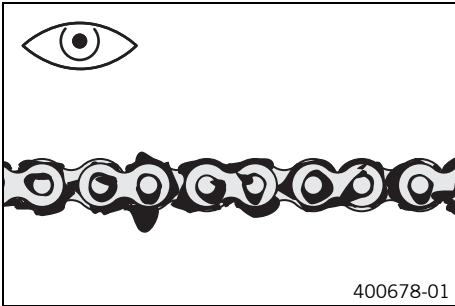
Route the cable and fuel line at a safe distance from the exhaust system.



### Finishing work

- Mount the seat. ( p. 39)

## 11.35 Checking for chain dirt accumulation



- Check the chain for coarse dirt accumulation.
  - » If the chain is very dirty:
    - Clean the chain. (☛ p. 46)

## 11.36 Cleaning the chain

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

- Remove oil and grease with a suitable cleaning material.

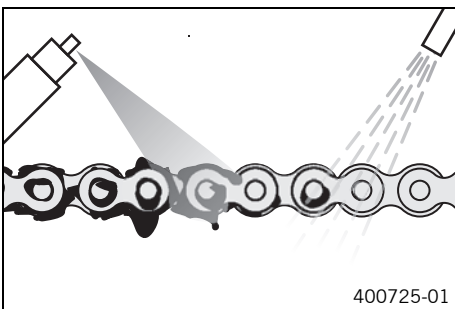
**Warning**  
**Danger of accidents** Reduced braking efficiency due to oil or grease on the brake discs.

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

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

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

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



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

Chain cleaner (☛ p. 92)
Off-road chain spray (☛ p. 92)

## 11.37 Checking the chain tension

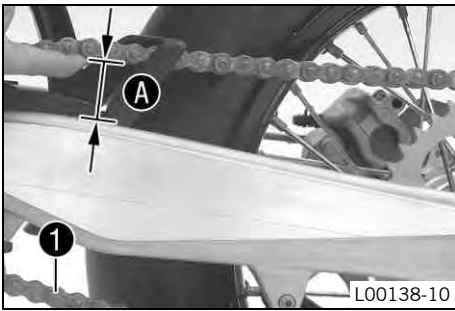
**Warning**  
**Danger of accidents** Danger caused by incorrect chain tension.

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

### Preparatory work

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





**Main work**

- Push the chain at the end of the chain sliding component upwards to measure the chain tension **A**.

**i 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. 47)

**Finishing work**

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

## 11.38 Adjusting the chain tension

**Warning**

**Danger of accidents** Danger caused by incorrect chain tension.

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

**Preparatory work**

- Raise the motorcycle with the lift stand. (☛ p. 30)
- Check the chain tension. (☛ p. 46)

**Main work**

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

**Guideline**

Chain tension	55... 58 mm (2.17... 2.28 in)	
Turn adjusting screws <b>3</b> 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 <b>A</b> . The rear wheel is then correctly aligned.		

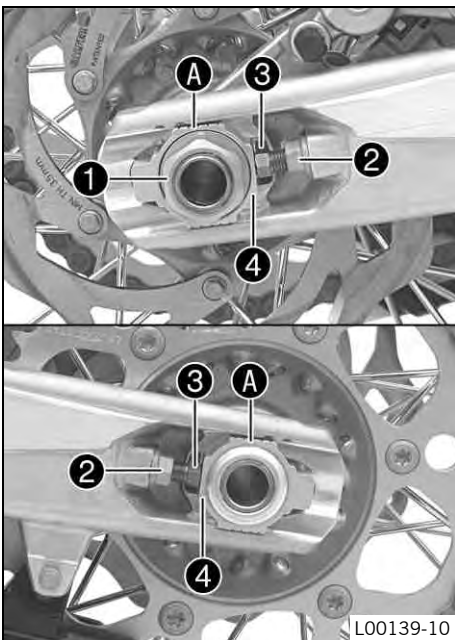
- Tighten nuts **2**.
- Make sure that chain adjusters **4** are fitted correctly on adjusting screws **3**.
- Tighten nut **1**.

**Guideline**

Nut, rear wheel spindle	M25x1.5	80 Nm (59 lbf ft)
-------------------------	---------	-------------------

**i Info**

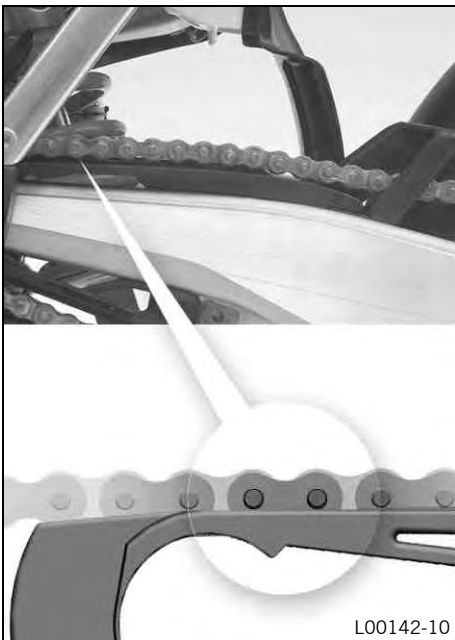
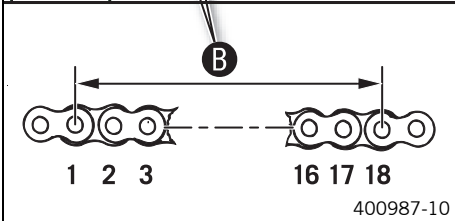
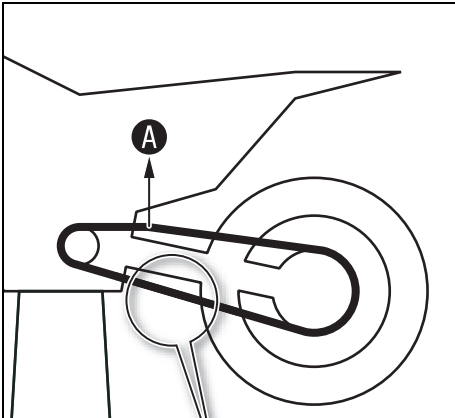
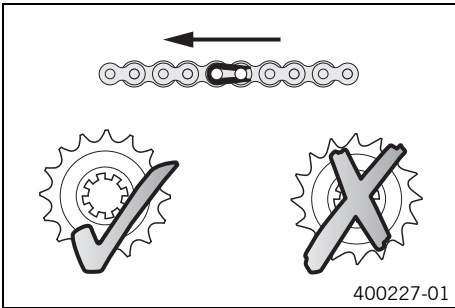
The wide adjustment range of the chain adjusters (32 mm (1.18 in)) enables different secondary ratios with the same chain length.  
Chain adjusters **4** can be turned by 180°.



**Finishing work**

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

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



### Preparatory work

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

### Main work

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

**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 **A**.

### Guideline

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

- Measure the distance **B** 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 <b>B</b> at the longest chain section	272 mm (10.71 in)
--	-------------------

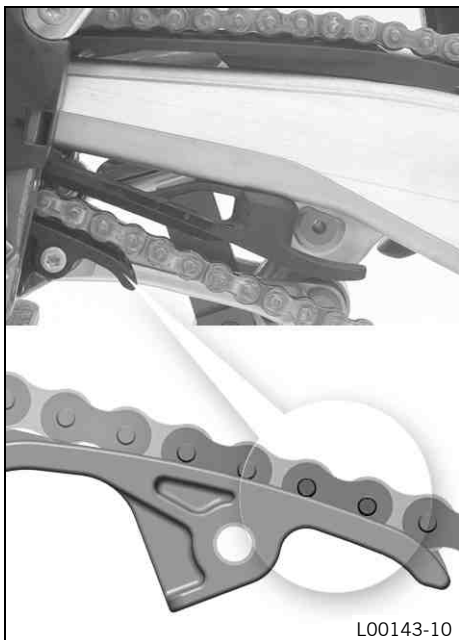
- » If the distance **B** is greater than the specified measurement:
  - Change the power set. ☛

**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

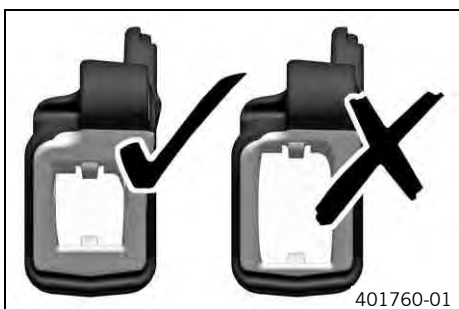
Screw, chain sliding guard	M6	6 Nm (4.4 lbf ft)	<b>Loctite® 243™</b>
----------------------------	----	----------------------	----------------------



- 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)
----------------------------	----	------------------------



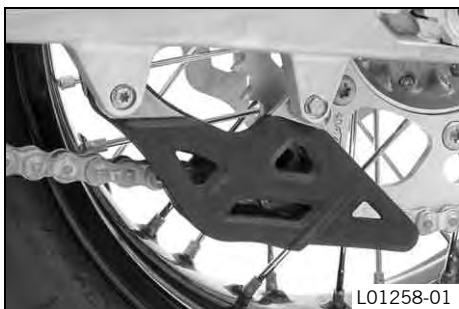
- Check the chain guide for wear.



**Info**

Wear is visible on the front of the chain guide.

- » If the light part of the chain guide is worn:
  - 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)
---------------------------	----	-----------------------

**Finishing work**

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

**11.40 Checking the frame 🛠️**



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




**Info**

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

## 11.41 Checking the swingarm



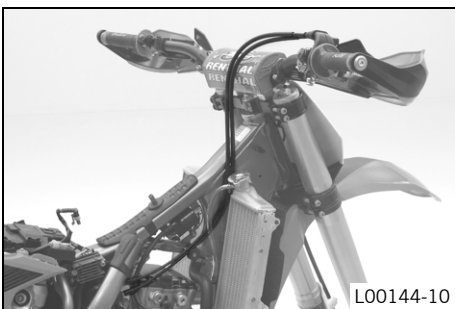
- Check the swingarm for damage, cracking, and deformation.
  - » If the swingarm shows signs of damage, cracking, or deformation:
    - Change the swingarm. 






### Info

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

## 11.42 Checking the throttle cable routing



### Preparatory work

- Remove the seat. ( p. 39)
- Remove the fuel tank.  ( p. 43)




### Main work

- Check the throttle cable routing.

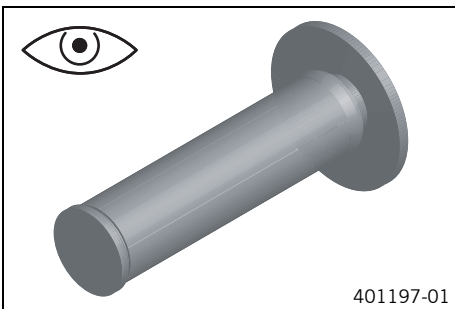
Both throttle cables must be routed to the throttle valve body side by side behind the handlebars and above the fuel tank bracket.

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


### Finishing work

- Install the fuel tank.  ( p. 45)
- Mount the seat. ( p. 39)

## 11.43 Checking the rubber grip




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

Rubber grip adhesive (00062030051) ( p. 93)

## 11.44 Additionally securing the rubber grip



### Preparatory work

- Check the rubber grip. ( p. 50)

### Main work

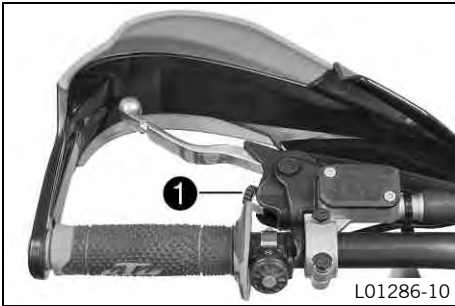
- Secure the rubber grip at two points using the securing wire.

Securing wire (54812016000)

Wire twister forceps (U6907854)

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

## 11.45 Adjusting the basic position of the clutch lever



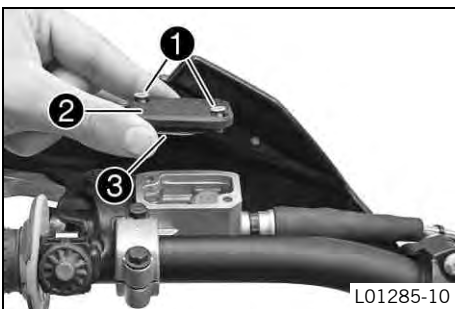
- Adjust the basic setting of the clutch lever to your hand size by turning adjusting screw ❶.

### Info

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

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

**Info**  
The fluid level rises with increased wear of the clutch lining discs.



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

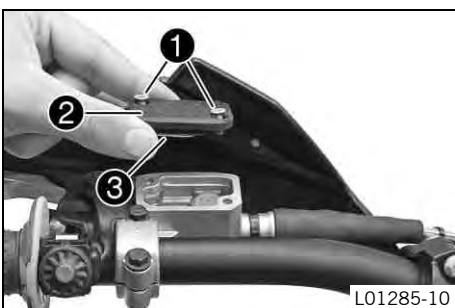
Brake fluid DOT 4 / DOT 5.1 (☛ p. 90)
---------------------------------------

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

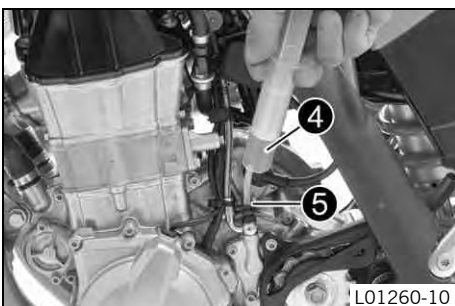
## 11.47 Changing the hydraulic clutch fluid ☛

**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.

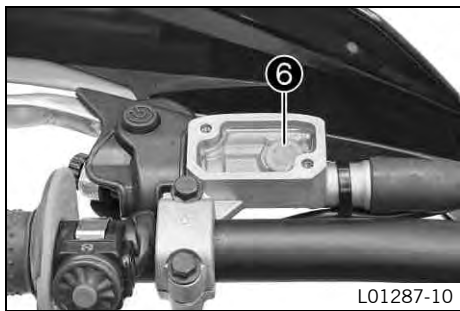


- Fill bleeding syringe ❷ with the appropriate hydraulic fluid.

Bleed syringe (50329050000)
-----------------------------

Brake fluid DOT 4 / DOT 5.1 (☛ p. 90)
---------------------------------------

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



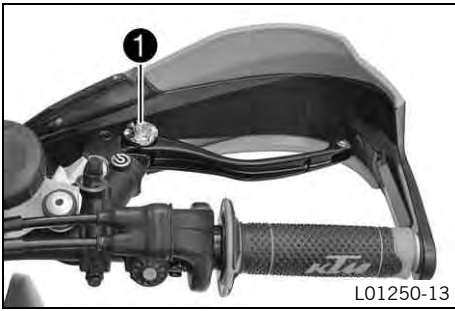
- Inject the liquid into the system until it escapes from hole ⑥ of the master cylinder without bubbles.
- To prevent overflow, drain fluid occasionally from the master cylinder reservoir.
- Remove the bleeding syringe. Mount and tighten screws bleeder screw.
- Correct the fluid level of the hydraulic clutch.

Guideline

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

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

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



L01250-13

### Preparatory work

- Check the free travel of the hand brake lever.

### Main work

- Adapt the basic position of the hand brake lever to your hand size using adjusting wheel ❶.

### Info

Pull the hand brake lever forward and turn the adjusting wheel. When the adjusting wheel is turned clockwise, the hand brake lever moves away from the handlebar. When the adjusting wheel is turned counterclockwise, the hand brake lever moves closer to the handlebar. The range of adjustment is limited. Do not adjust the settings while riding the vehicle.

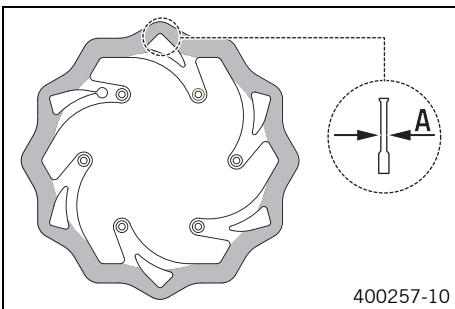
## 12.2 Checking the brake discs



### 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.)



400257-10

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

### Info

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

Brake discs - wear limit	
Front	4.25 mm (0.1673 in)
Rear	3.5 mm (0.138 in)

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

## 12.3 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 efficiency due to old brake fluid.

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



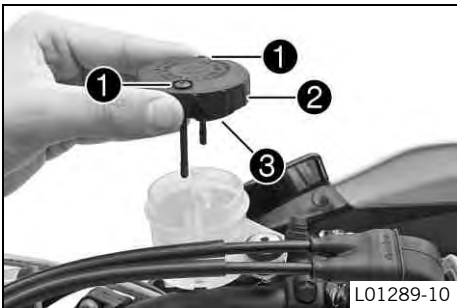
L01288-10

- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Check the brake fluid level in the brake fluid reservoir ❶.
  - » If the brake fluid is below the **MIN** marking:
    - Add front brake fluid. 🛠️ (p. 54)

## 12.4 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 efficiency due to old brake fluid.
  - Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)
- Warning**  
**Environmental hazard** Hazardous substances cause environmental damage.
  - Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

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



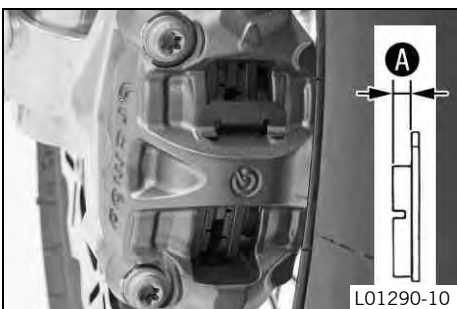
L01289-10

- Preparatory work**
    - Check the front brake linings. (☞ p. 54)
  - Main work**
    - Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
    - Loosen screws ①.
    - Remove cover ② with membrane ③.
    - Add brake fluid to the **MAX** marking.
- |                                       |
|---------------------------------------|
| Brake fluid DOT 4 / DOT 5.1 (☞ p. 90) |
|---------------------------------------|
- Position cover with membrane. Mount and tighten the screws.

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

## 12.5 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.)



L01290-10

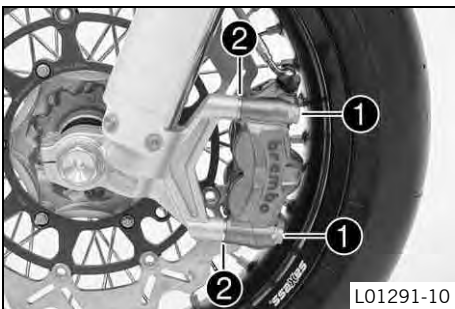
- Check the brake linings for minimum thickness **A**.
- |                            |   |
|----------------------------|---|
| Minimum thickness <b>A</b> | $\geq 1 \text{ mm } (\geq 0.04 \text{ in})$ |
|----------------------------|---|
- » If the minimum thickness is less than specified:
    - Change the front brake linings. ☞ (☞ p. 55)
  - Check the brake linings for damage and cracking.
    - » If damage or cracking is visible:
      - Change the front brake linings. ☞ (☞ p. 55)



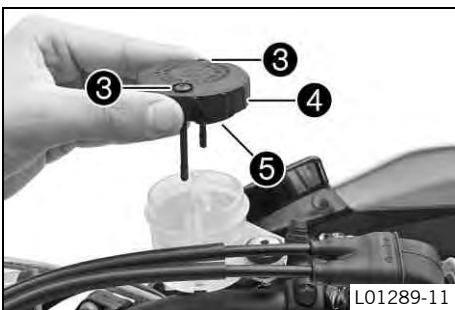
## 12.6 Changing the front brake linings 🛠️

- Warning**  
**Danger of accident** Brake system failure.
  - Maintenance work and repairs must be carried out professionally. (Your authorized KTM workshop will be glad to help.)
- Warning**  
**Skin irritation** Brake fluid can cause skin irritation on contact.
  - Avoid contact with skin and eyes, and keep out of the reach of children.
  - Wear suitable protective clothing and goggles.
  - If brake fluid comes into contact with the eyes, flush the eyes thoroughly with water and consult a physician immediately.
- Warning**  
**Danger of accidents** Reduced braking efficiency due to old brake fluid.
  - Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)
- Warning**  
**Environmental hazard** Hazardous substances cause environmental damage.
  - Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

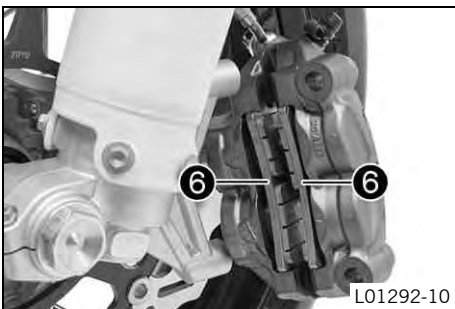
**i Info**  
 Never use DOT 5 brake fluid. It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.  
 Avoid contact between brake fluid and painted parts. Brake fluid attacks paint!  
 Use only clean brake fluid from a sealed container.



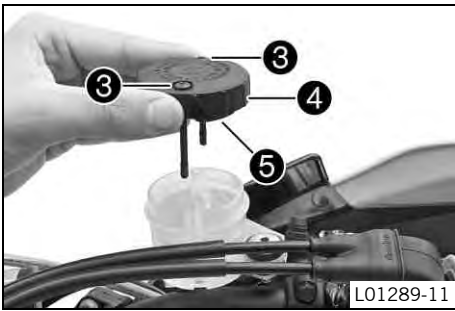
- Remove screws ❶ with washers ❷ and take off the brake caliper.



- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Loosen screws ❸.
- Remove cover ❹ with membrane ❺.



- Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake fluid reservoir.
- Remove the brake linings.
- Clean the brake caliper.
- Insert new brake linings ❻.



L01289-11

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

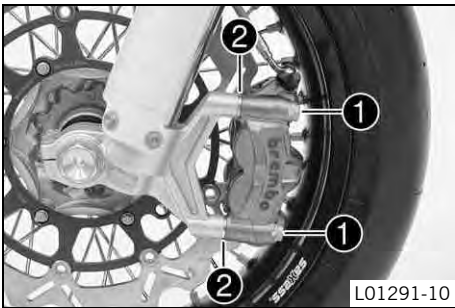
Brake fluid DOT 4 / DOT 5.1 (☞ p. 90)

- Position cover 4 with membrane 5. Mount and tighten screws 3.



**Info**

Clean up overflowed or spilled brake fluid immediately with water.



L01291-10

- Position the brake caliper. Mount screws 1 with washers 2 but do not tighten yet.
- Operate the hand brake lever repeatedly until the brake linings lie on the brake disc and there is a pressure point. Fix the hand brake lever in the activated position.
- ✓ The brake caliper straightens.
- Tighten screws 1.

**Guideline**

Screw, front brake caliper	M10x1.25	45 Nm (33.2 lbf ft)	<b>Loctite® 243™</b>
----------------------------	----------	------------------------	----------------------

- Remove the fixation of the hand brake lever.

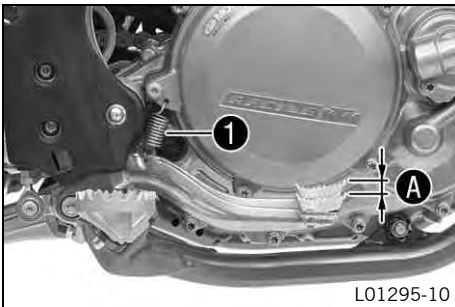
## 12.7 Checking the free travel of foot brake lever



**Warning**

**Danger of accidents** Brake system failure.

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



L01295-10

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

**Guideline**

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

- » If the free travel does not meet specifications:
  - Adjust the basic position of the foot brake lever. ☞ (☞ p. 56)
- Reconnect spring 1.

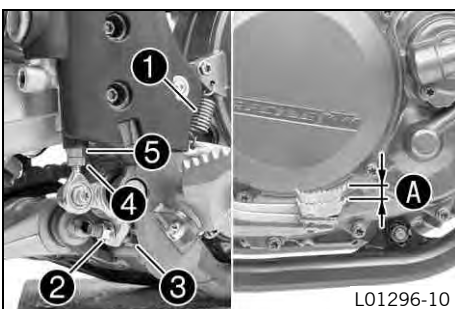
## 12.8 Adjusting the basic position of the foot brake lever



**Warning**

**Danger of accidents** Brake system failure.

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



L01296-10

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



**Info**

The range of adjustment is limited.

- Turn push rod 5 accordingly until you have free travel 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	10 Nm (7.4 lbf ft)
-------------------------	----	--------------------

- Reconnect spring ①.

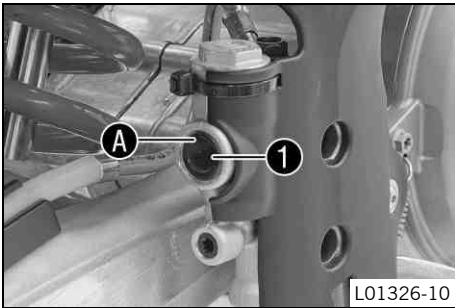
## 12.9 Checking the rear brake fluid level

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

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

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

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



**Preparatory work**

- Check the rear brake linings. (↖ p. 58)

**Main work**

- Stand the vehicle upright.
- Check the brake fluid level in the viewer ①.
  - » If the brake fluid level drops below marking A:
  - Add rear brake fluid. ↘ (↖ p. 57)

## 12.10 Adding rear brake fluid ↘

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

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

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

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

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

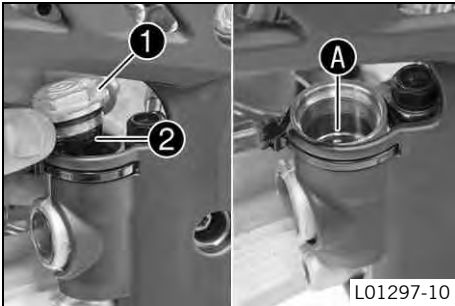
- Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)

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

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

**i Info**

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



**Preparatory work**

- Check the rear brake linings. (🔧 p. 58)

**Main work**

- 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. 90)
---------------------------------------

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

**i Info**

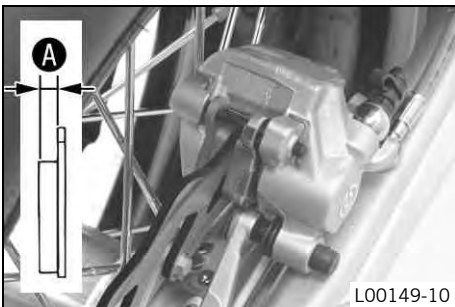
Clean up overflowed or spilt brake fluid immediately with water.

## 12.11 Checking the rear brake linings

**⚠ Warning**

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

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



- Check the brake linings for minimum thickness A.

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

- » If the minimum thickness is less than specified:
  - Change the rear brake linings. (🔧 p. 58)
- Check the brake linings for damage and cracking.
  - » If damage or cracking is visible:
    - Change the rear brake linings. (🔧 p. 58)

## 12.12 Changing the rear brake linings 🛠

**⚠ Warning**

**Danger of accident** Brake system failure.

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

**⚠ Warning**

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

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

**⚠ Warning**

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

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

**🌿 Warning**

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

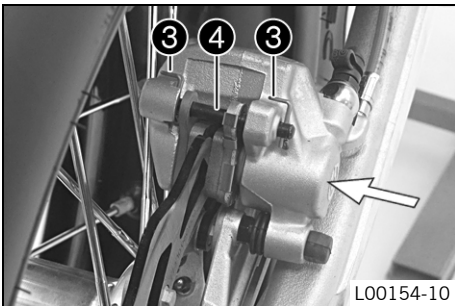
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

**i Info**

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



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

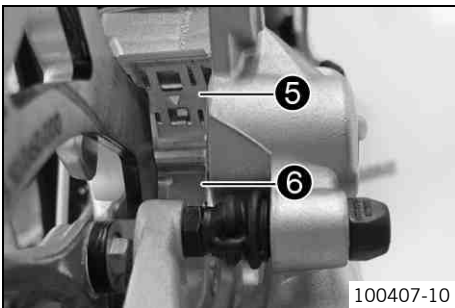


- Manually press the brake caliper to the brake disc to push back the brake piston. Ensure that brake fluid does not flow out of the brake fluid reservoir, extracting it by suction if it does.

**i Info**

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

- Remove cotter pins ③, pull out pin ④, and remove 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**

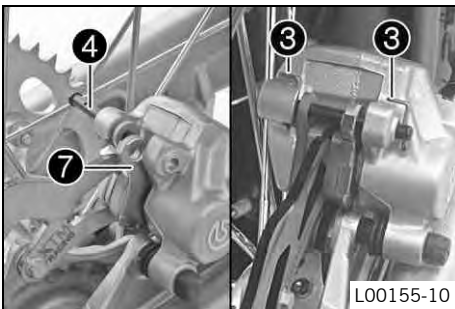
The arrow on the leaf spring points in the rotation direction of the brake disc.

- Insert the brake linings, insert pin ④, and mount cotter 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.



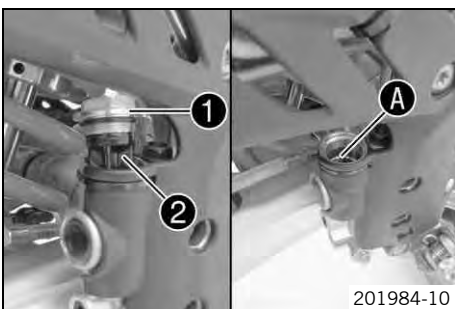
- Add brake fluid to level A.

Brake fluid DOT 4 / DOT 5.1 (☞ p. 90)

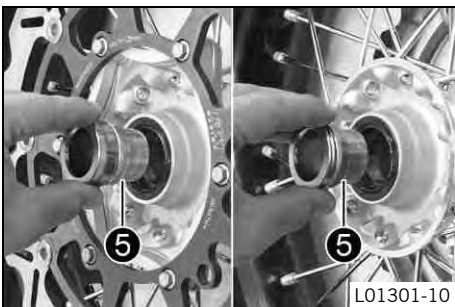
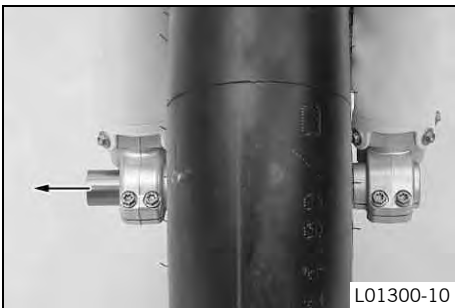
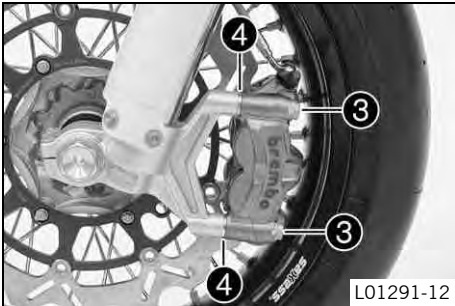
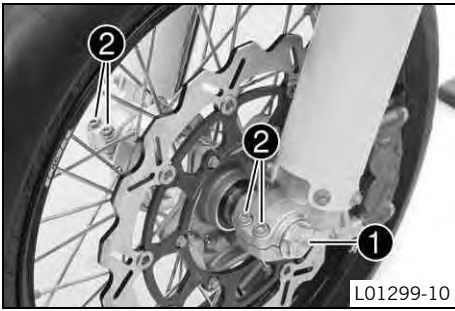
- Mount and tighten screw cap ① with membrane ② and the O-ring.

**i Info**

Clean up overflowed or spilled brake fluid immediately with water.



## 13.1 Removing the front wheel



### Preparatory work

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

### Main work

- Remove screw 1.
- Loosen screw 2.

- Remove screws 3 with washers 4 and take off the brake caliper.

### **i** Info

Do not pull the hand brake lever when the brake caliper is removed.

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

### **i** Info

Always lay the wheel down in such a way that the brake disc is not damaged.

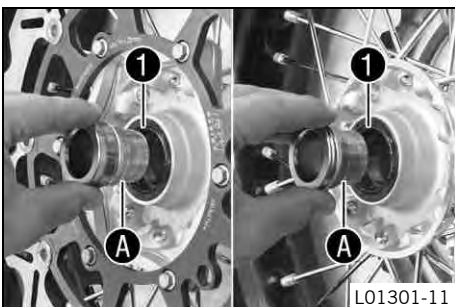
- Remove spacers 5.

## 13.2 Installing the front wheel

### **!** Warning

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

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



- 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 contact surface A of the spacers.

Long-life grease (☛ p. 92)

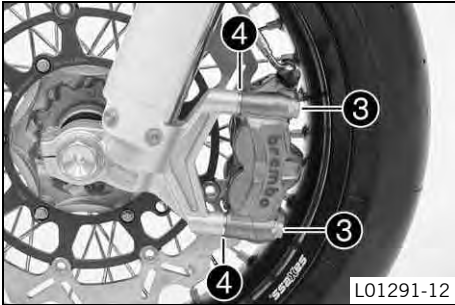
- Insert the spacers.



- Position the front wheel and insert the wheel spindle.
- Mount and tighten screw ②.

Guideline

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



- Position the brake caliper. Mount screws ③ with washers ④ but do not tighten yet.
- Operate the hand brake lever repeatedly until the brake linings lie on the brake disc and there is a pressure point. Fix the hand brake lever in the activated position.

✓ The brake caliper straightens.

- Tighten screws ③.

Guideline

Screw, front brake caliper	M10x1.25	45 Nm (33.2 lbf ft)	Loctite® 243™
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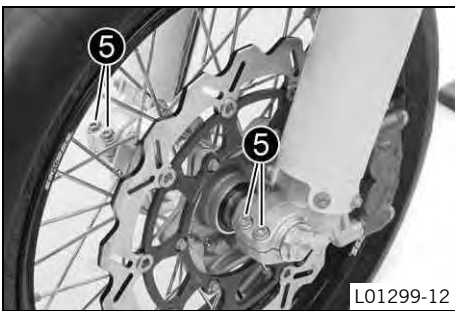
- Remove the fixation of the hand brake lever.
- Remove the motorcycle from the lift stand. (☛ p. 30)
- Pull the front brake and push down hard on the fork several times.

✓ The fork legs become aligned.

- Tighten screws ⑤.

Guideline

Screw, fork stub	M8	15 Nm (11.1 lbf ft)
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## 13.3 Removing the rear wheel

### Preparatory work

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

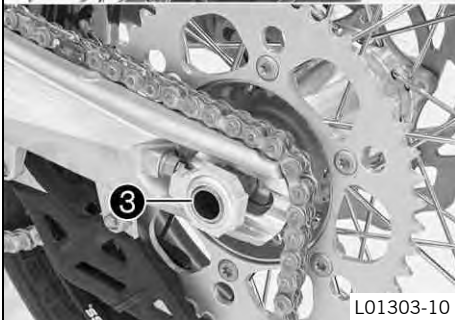
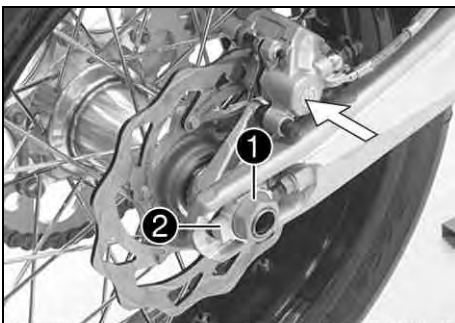
### Main work

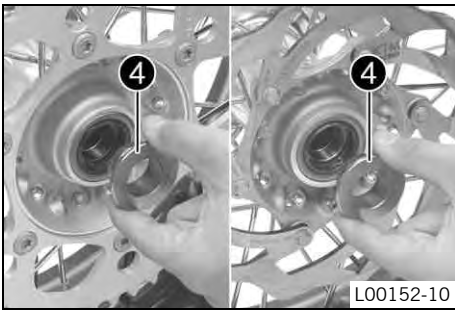
- Press the brake caliper by hand on to the brake disc in order to press back the brake piston.

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

- Remove nut ①.
- Remove chain adjuster ②. Withdraw wheel spindle ③ only enough to allow the rear wheel to be pushed forward.
- Push the rear wheel forward as far as possible.
- Holding the rear wheel, withdraw the wheel spindle. Take the rear wheel out of the swing arm. Remove the chain from the rear sprocket.
- Take the rear wheel out of the swing arm.

**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.

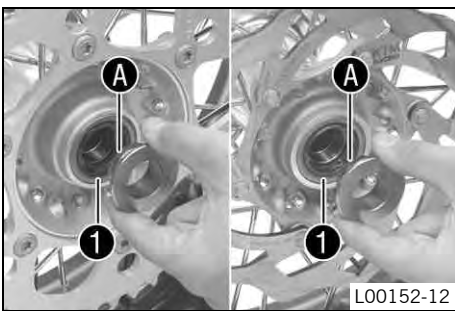




- Remove spacers ④.

## 13.4 Installing the rear wheel 🛠️

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

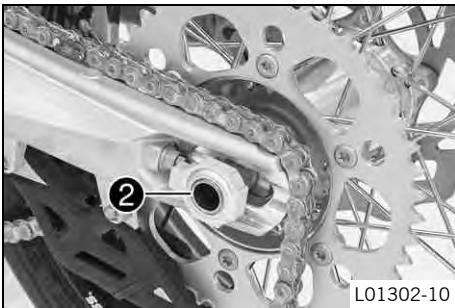


### Main work

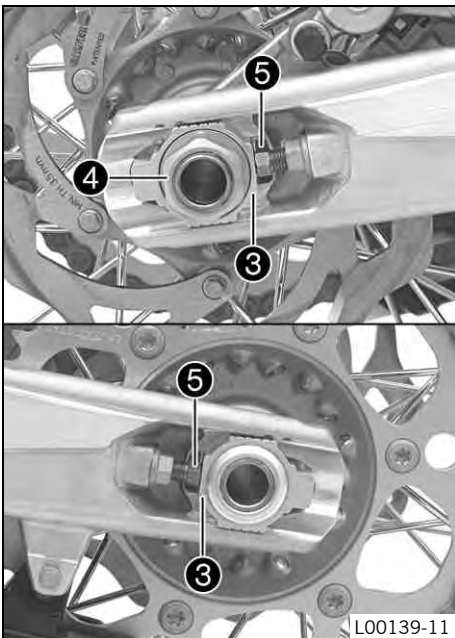
- Check the wheel bearing for damage and wear.
  - » If the wheel bearing is damaged or worn:
    - Change the wheel bearing. 🛠️
- Clean and grease shaft seal rings ① and bearing surface A of the spacers.

Long-life grease (🔧 p. 92)

- Insert the spacers.



- Lift the rear wheel into the swing arm, position it, and attach the chain.
- Insert wheel spindle ②.



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

### Guideline

Nut, rear wheel spindle	M25x1.5	80 Nm (59 lbf ft)
-------------------------	---------	-------------------

**i Info**  
 The wide adjustment range of the chain adjusters (32 mm (1.26 in)) enables different secondary ratios with the same chain length. Chain adjusters ③ can be turned by 180°.

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

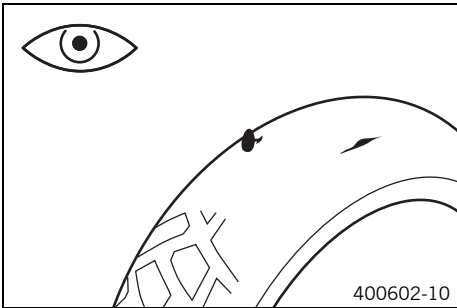
### Finishing work

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



## 13.5 Checking the tire condition

**i Info**  
 Only mount tires approved and/or recommended by KTM.  
 Other tires could have a negative effect on 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.



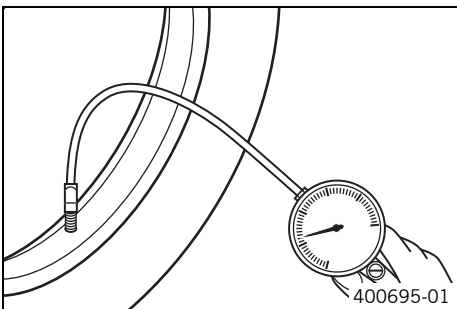
- Examine the front and rear tires for cuts, foreign bodies and other damage.
  - » If you find cuts, foreign bodies or other damage on a tire:
    - Change the tire.
- Check the tire age.

**i 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 be changed after 5 years at the latest, regardless of the actual state of wear.

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

## 13.6 Checking the tire air pressure

**i Info**  
 If the tire air pressure is too low, this will lead to abnormal wear and overheating of the tire.  
 Correct tire air pressure ensures optimal riding comfort and the maximum service life of the tire.



- Remove the protection cap.
- Check the tire air pressure on cold or warm tires.

Tire air pressure (cold)	
Front: 10... 30 °C (50... 86 °F)	1.9 bar (28 psi)
Rear: 10... 30 °C (50... 86 °F)	1.7 bar (25 psi)
Tire air pressure (warm)	
Front: 75... 85 °C (167... 185 °F)	2.1 bar (30 psi)
Rear: 75... 85 °C (167... 185 °F)	1.9 bar (28 psi)

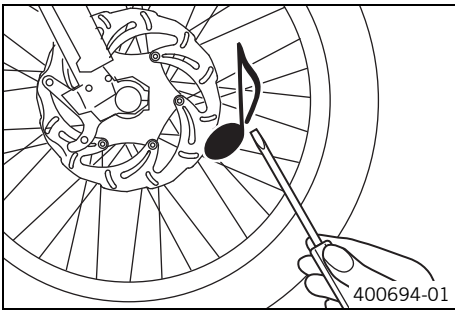
- » If the tire air pressure does not meet the specification:
  - Correct the tire air pressure.
- Mount the protection cap.

## 13.7 Checking the spoke tension

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

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

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



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



**Info**

The tone frequency depends on the length of the spoke and the spoke diameter.

If you hear different tone frequencies from different spokes of equal length and diameter, this is an indication of different spoke tensions.

You should hear a high note.

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

- Check the spoke torque.

Guideline

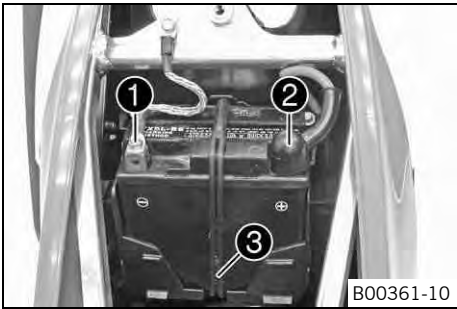
Spoke nipple, front wheel	M4.5	5... 6 Nm (3.7... 4.4 lbf ft)
Spoke nipple, rear wheel	M4.5	5... 6 Nm (3.7... 4.4 lbf ft)

Torque wrench with various accessories in set (58429094000)

## 14.1 Removing the battery

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

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



B00361-10

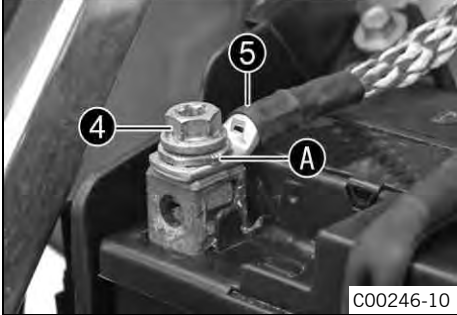
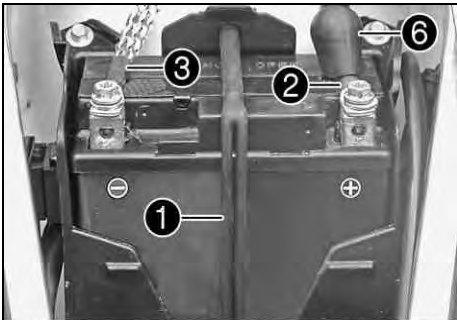
**Preparatory work**

- Switch off all power consumers and switch off the engine.
- Remove the seat. (p. 39)

**Main work**

- Disconnect negative cable 1 of the battery.
- Pull back the positive terminal cover 2 and disconnect the positive (plus) cable of the battery.
- Detach rubber band 3 at the bottom.
- Lift the battery up and out.

## 14.2 Installing the battery



C00246-10

**Main work**

- Insert the battery into the battery compartment with the terminals facing to the front.
- Reconnect rubber band 1.
- Connect positive cable 2 and negative cable 3.

Guideline

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

**Info**  
 Contact disks A must be mounted between screws 4 and cable sockets 5 with the claws facing down.

- Slide positive terminal cover 6 over the positive terminal.

**Finishing work**

- Mount the seat. (p. 39)

## 14.3 Charging the battery

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

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



**Warning**

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

- Do not discard batteries with the household waste. Dispose of faulty batteries in an environmentally compatible manner. Give the battery to your authorized KTM dealer or dispose of it at a collection point for used batteries.



**Warning**

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

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



**Info**

Even when there is no load on the battery, it still loses power steadily. The charging level and the method of charging 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.

**Preparatory work**

- Switch off all power consumers and switch off the engine.
- Remove the seat. (☛ p. 39)
- Disconnect the negative cable of the battery to avoid damage to the onboard electronics.

**Main work**

- 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.



**Info**

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

**Finishing work**

- Mount the seat. (☛ p. 39)

## 14.4 Changing the main fuse



**Warning**

**Fire hazard** The electrical system can be overloaded if the wrong fuses are used.

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

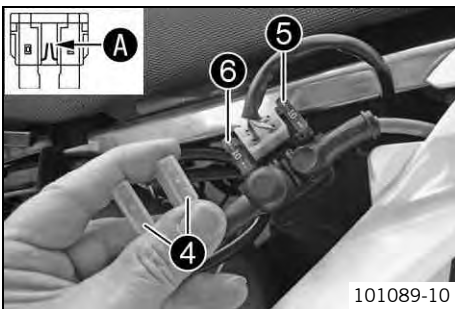
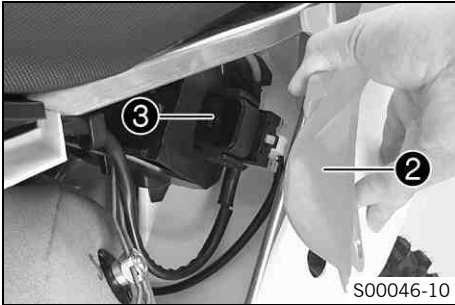


**Info**

The main fuse protects all power consumers of the vehicle. It is located in the starter relay housing under the air filter box lid.

**Preparatory work**

- Switch off all power consumers and switch off the engine.
- Remove the air filter box lid. (☛ p. 39)



### Main work

- Remove screw ❶.
- Lift rear fairing ❷ slightly and pull starter relay ❸ out of the holder.

- Remove protection caps ❹.
- Remove the faulty main fuse ❺.



### Info

A defective fuse can be identified by the burned-out fuse wire **A**.  
A reserve fuse **❻** is located in the starter relay.

- Install a new main fuse.

Fuse (58011109110) (☛ p. 87)

- Check that the electrical equipment is functioning properly.



### Tip

Insert the spare fuse so that it is available if needed.

- Mount the protection caps.
- Mount the starter relay onto the holder and lay the cable.
- Position the rear fairing. Mount and tighten the screw.

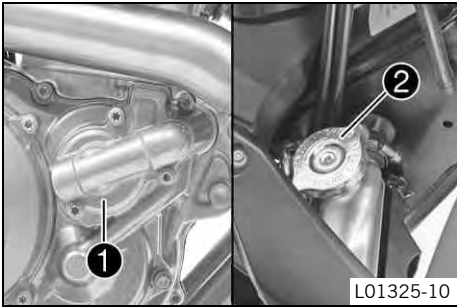
### Guideline

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

### Finishing work

- Install the air filter box lid. (☛ p. 39)

## 15.1 Cooling system



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

120 °C (248 °F)
-----------------

Cooling is effected by the air stream. The lower the speed, the less the cooling effect. Dirty cooling fins also reduce the cooling effect.

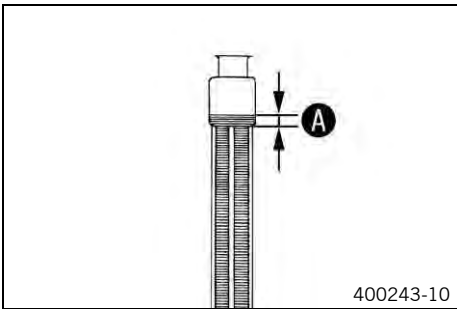
## 15.2 Checking the antifreeze and coolant level

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

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

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

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



**Condition**  
 The engine is cold.

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

-25... -45 °C (-13... -49 °F)
-------------------------------

- » If the antifreeze of the coolant does not meet specifications:
  - Correct the antifreeze of the coolant.
- Check the coolant level in the radiator.

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

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

**Alternative 1**

Coolant (☞ p. 90)
-------------------

**Alternative 2**

Coolant (mixed ready to use) (☞ p. 90)
--

- Mount the radiator cap.

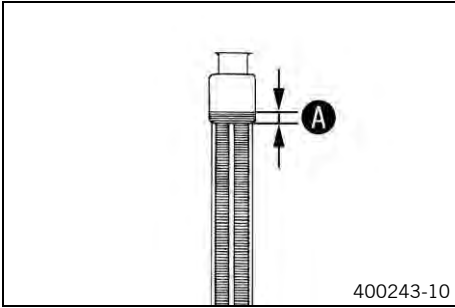
## 15.3 Checking the coolant level

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

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

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

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



**Condition**

The engine is cold.

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

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

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

**Alternative 1**

Coolant (☛ p. 90)
-------------------

**Alternative 2**

Coolant (mixed ready to use) (☛ p. 90)
--

- Mount the radiator cap.

## 15.4 Draining the coolant ☛



**Warning**

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

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



**Warning**

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

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

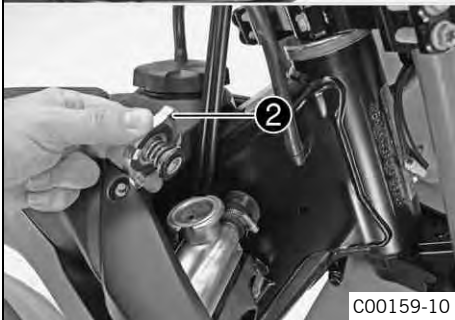
**Condition**

The engine is cold.


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

**Guideline**

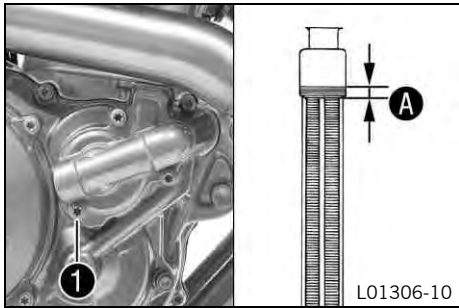
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)
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## 15.5 Refilling coolant



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


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



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

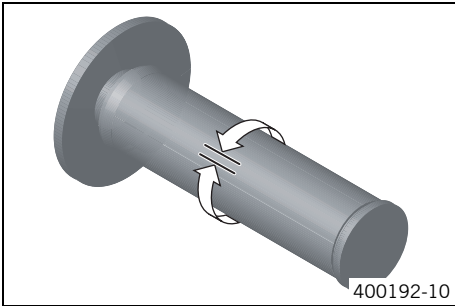
Guideline

Dimension <b>A</b> over the radiator fins		10 mm (0.39 in)
Coolant	1.20 l (1.27 qt.)	Coolant (  p. 90)
		Coolant (mixed ready to use) (  p. 90)

- Mount the radiator cap.
- Take a short test ride.
- Check the coolant level. ( p. 68)



## 16.1 Checking the play in the throttle cable



- Check the throttle grip for smooth operation.
- Move the handlebar to the straight-ahead position. Move the throttle grip backwards and forwards to ascertain 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. 71)



### Danger

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

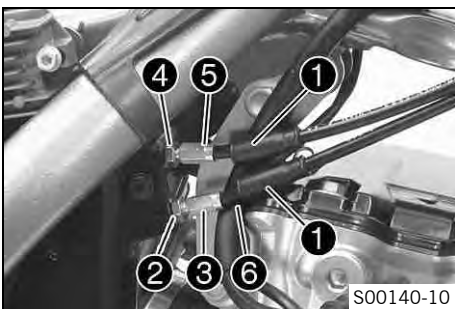
- When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

- Start the engine and let it 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. 71)

## 16.2 Adjusting the play in the throttle cable 🛠️



### Preparatory work

- Remove the seat. (📖 p. 39)
- Remove the fuel tank. 🛠️ (📖 p. 43)
- Check the throttle cable routing. (📖 p. 50)

### Main work

- Move the handlebar to the straight-ahead position.
- Push back sleeves ①.
- Loosen nut ②. Turn adjusting screw ③ in as far as possible.
- Loosen nut ④. Turn adjusting screw ⑤ so that there is play in the throttle cable at the throttle grip.

### Guideline

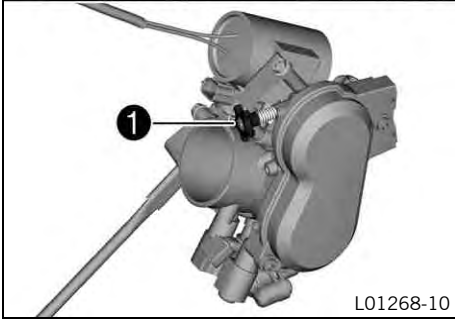
Play in throttle cable	3... 5 mm (0.12... 0.2 in)
------------------------	----------------------------

- Tighten nut ④.
- Press and hold the throttle grip in the closed setting. Turn adjusting screw ③ out until there is no play in the throttle cable ⑥.
- Tighten nut ②.
- Push sleeves ① on. Check the throttle grip for smooth operation.

### Finishing work

- Check the play in the throttle cable. (📖 p. 71)
- Install the fuel tank. 🛠️ (📖 p. 45)
- Mount the seat. (📖 p. 39)

## 16.3 Adjusting the idle speed 🛠️



- Run the engine until warm.
- Set the desired idle speed by turning the idle speed adjusting screw ❶.

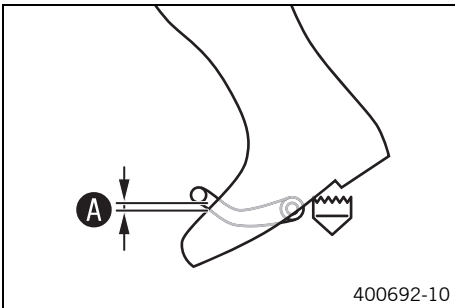
Guideline

Idle speed	2,250... 2,350 rpm
------------	--------------------

Tachometer (45129075000)
--------------------------

- i Info**  
 Turn counterclockwise to decrease the idle speed.  
 Turn clockwise to increase the idle speed.

## 16.4 Checking the basic position of the shift lever

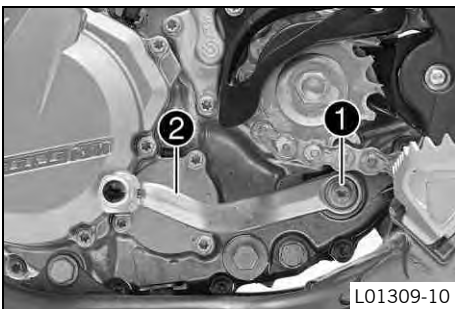


- Sit on the vehicle in the riding position and determine the distance ❶ between the upper edge of your boot and the shift lever.

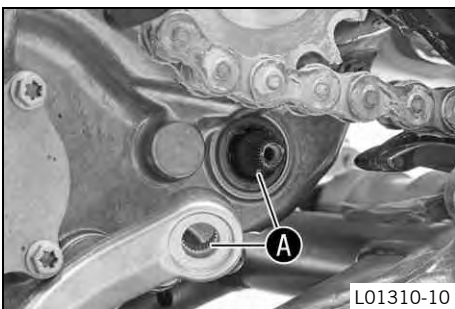
Distance between shift lever and upper edge of boot	10... 20 mm (0.39... 0.79 in)
---	-------------------------------

- » If the distance does not meet specifications:
  - Adjust the basic position of the shift lever. 🛠️ (p. 72)

## 16.5 Adjusting the basic position of the shift lever 🛠️



- Remove screw ❶ and take off shift lever ❷.



- 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.

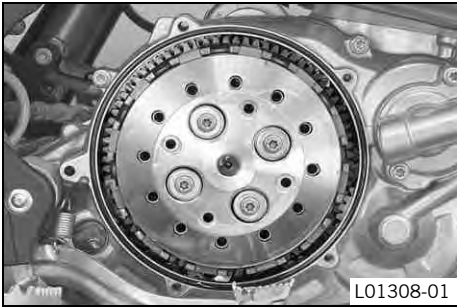
- i Info**  
 The range of adjustment is limited.  
 The shift lever must not come into contact with any other vehicle components during the shift procedure.

- Mount and tighten the screw.

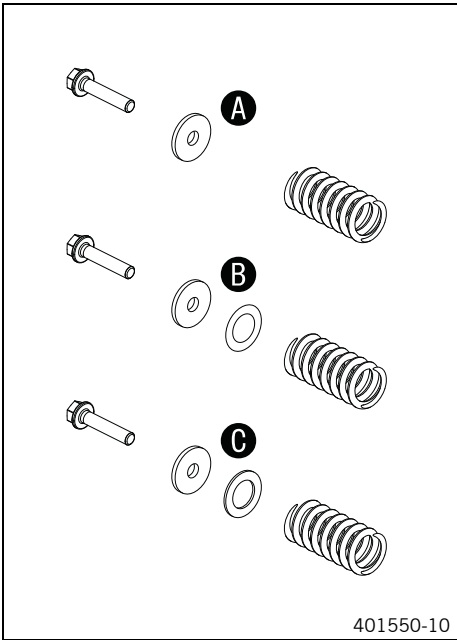
Guideline

Screw, shift lever	M6	14 Nm (10.3 lbf ft)	Loctite® 243™
--------------------	----	------------------------	---------------

## 16.6 Antihopping clutch



The antihopping system reduces the force required to activate the clutch and improves clutch handling; in addition, it increases riding stability by reducing slippage of the rear wheel by means of engine braking action during downshifting.



The antihopping system uses a two-part inner clutch hub that is connected to a helical gear.

The clutch spring preload can be adjusted if necessary.

Preload low, without washer <b>A</b>	0 mm (0 in)
--------------------------------------	-------------

Preload moderate, with washer <b>B</b> (condition at delivery)	1.0 mm (0.039 in)
--	-------------------

Washer (59032000101)

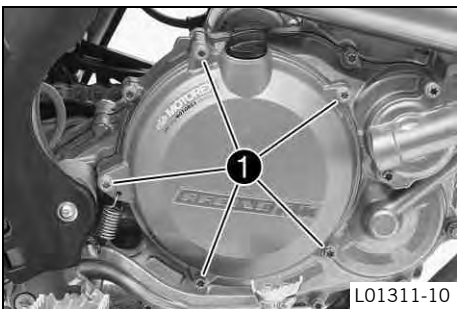
Preload high, with washer <b>C</b>	1.5 mm (0.059 in)
------------------------------------	-------------------

Washer (59032000102)

When the engine load is high (large engine torque), the turning action presses the two parts of the inner clutch hub against each other, corresponding to the helical gearing, thereby pressing the clutch facings against each other in addition to the clutch springs. This additional press force means that the clutch springs require less preloading; as a result, when downshifting, slippage arises briefly at the clutch and prevents rear wheel hopping.

## 16.7 Adjusting the antihopping clutch

**i Info**  
 The characteristics of the antihopping clutch can be affected by the spring preload force. Increasing the spring preload force causes the clutch to open later when braking (more engine braking effect). The clutch also engages differently when starting; the differences are considerably less pronounced than when braking. The clutch then behaves somewhat more aggressively.

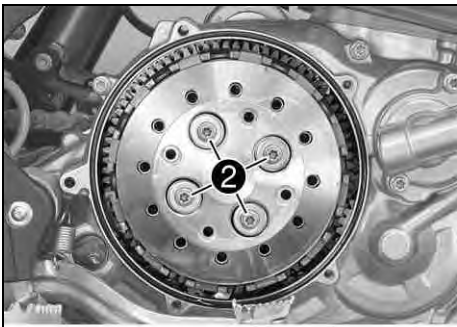


### Preparatory work

- Rest the vehicle on the plug-in stand.

### Main work

- Remove screws **1**. Remove the outer clutch cover.



L01312-10

- Only ever remove one of screws ❷ and add or remove the desired washers.

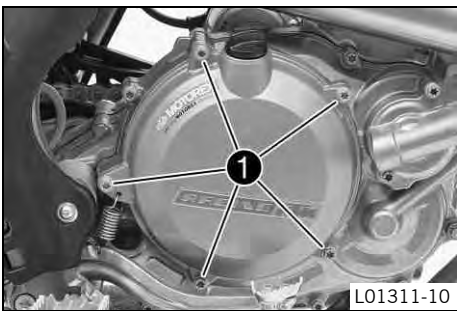
Guideline

Screw, clutch spring retainer	M5	8 Nm (5.9 lbf ft)
-------------------------------	----	-------------------



**Info**

The spring preload must be the same on all screws.




L01311-10

- Position the outer clutch cover. Mount and tighten screws ❶.


Guideline

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


## 17.1 Changing the fuel screen

 **Danger**  
**Fire hazard** Fuel is highly flammable.

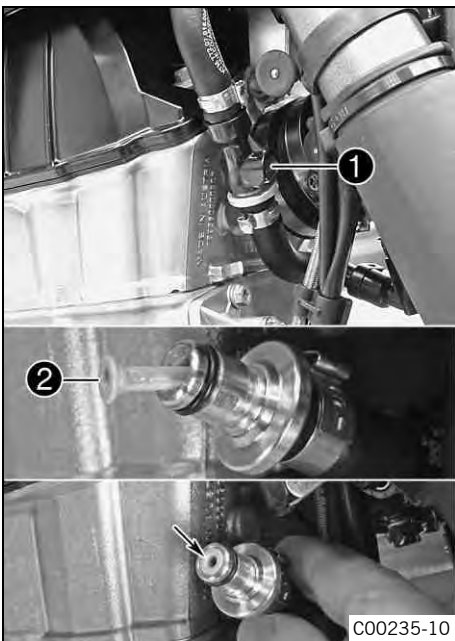
- Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
- The fuel in the fuel tank expands when warm and may emerge if overfilled. Follow the instructions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

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


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

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


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



- Thoroughly clean plug-in connection ❶ of the fuel line using compressed air.

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

- Disconnect the plug-in connection of the fuel line.
- Pull fuel screen ❷ out of the connecting piece.
- Push the new fuel screen all the way into the connecting piece.
- Lubricate the O-ring and connect plug-in connection of the fuel line.

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

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


- Start the engine and check the response.

## 17.2 Checking the engine oil level

**Condition**  
 The engine is at operating temperature.

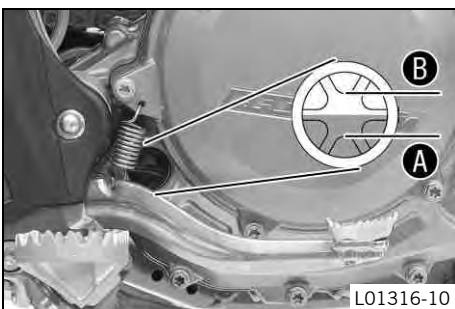
**Preparatory work**  
 - Stand the motorcycle upright on a horizontal surface.

**Main work**  
 - Check the engine oil level.

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

The engine oil level is between ❶ and ❷.

- » If the engine oil level is below marking ❶:
  - Add engine oil. (🔧 p. 78)
- » If the engine oil level is at marking ❷ or above:
  - Correct the engine oil level.

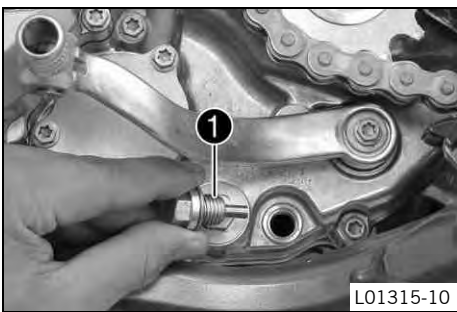


## 17.3 Changing the engine oil and oil filter, cleaning the oil screens

**Warning**  
**Danger of scalding** Engine oil and gear oil get very hot when the motorcycle is ridden.  
 – Wear appropriate protective clothing and safety gloves. In case of burns, rinse immediately with lukewarm water.

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

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

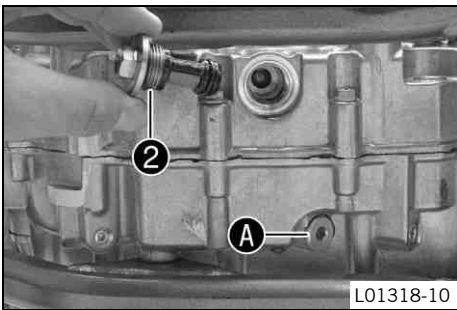


**Preparatory work**

- Park the motorcycle on a level surface.

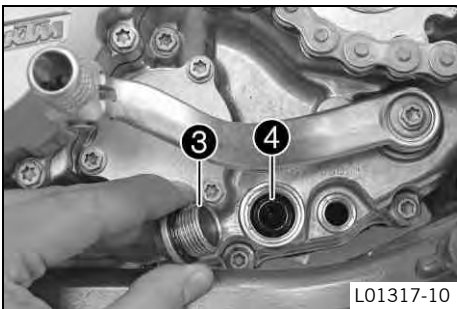
**Main work**

- Place a suitable container under the engine.
- Remove oil drain plug 1 with the magnet and seal ring.

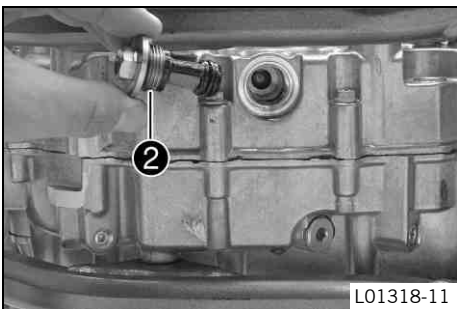


- Remove screw plug 2 with the short oil screen and the O-rings.

**Info**  
 Do not remove screw A.



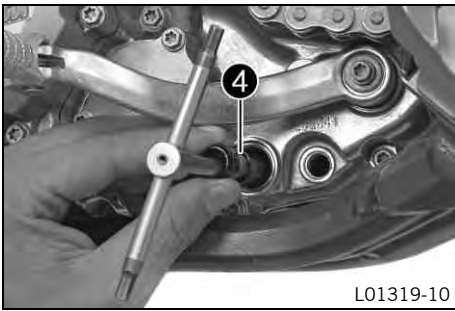
- Remove screw plug 3 with the long oil screen 4 and the O-rings.
- Completely drain the engine oil.
- Thoroughly clean the parts and sealing surfaces.



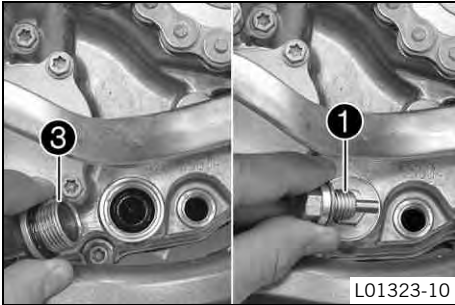
- Mount and tighten screw plug 2 with the short oil screen and the O-rings.

**Guideline**

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



- Place the long oil screen 4 with the O-rings onto a pin wrench.
- Push the pin wrench through the opening into the drill hole of the opposite engine case wall and push the engine oil screen as far as possible into the engine case.



- Mount and tighten screw plug 3 with the O-ring.

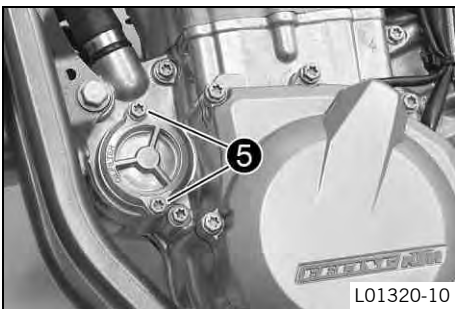
Guideline

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

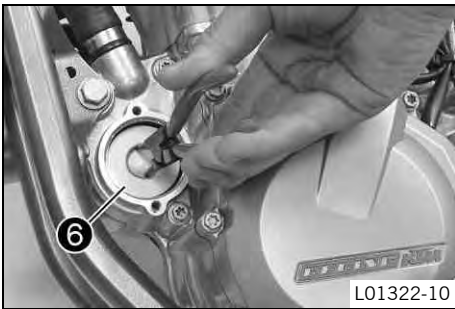
- Mount and tighten the oil drain plug 1 with the magnet and a new seal ring.

Guideline

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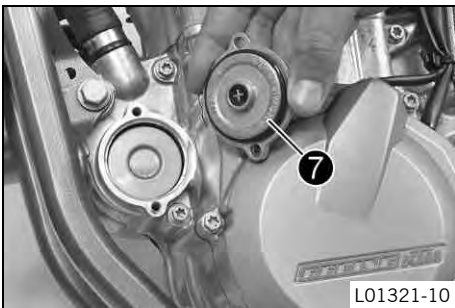
- Remove screws 5. Remove the oil filter cover with the O-ring.



- Pull oil filter 6 out of the oil filter housing.

Circlip pliers reverse (51012011000)
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- Completely drain the engine oil.
- Thoroughly clean the parts and sealing surface.



- Lay the motorcycle on its side and fill the oil filter housing to about 1/3 full with engine oil.
- Insert the oil filter into the oil filter housing.
- Lubricate the O-ring of the oil filter cover and mount it with the oil filter cover 7.
- Mount and tighten the screws.

Guideline

Screw, oil filter cover	M5	6 Nm (4.4 lbf ft)
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- Stand the motorcycle upright.



- Remove the oil filler plug 8 with the O-ring from the clutch cover and fill up with engine oil.

Engine oil	1.50 l (1.59 qt.)	Engine oil (SAE 10W/50) (p. 90)
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**i Info**

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

- Install and tighten the oil filler plug with the O-ring.

**Danger**

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

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

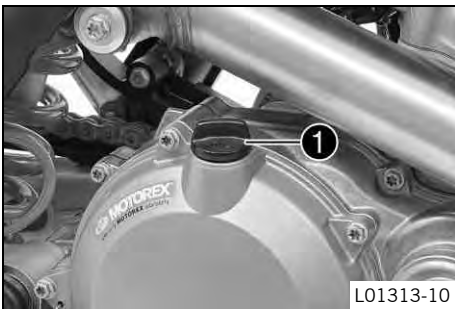
- Start the engine and check that it is oil-tight.

**Finishing work**

- Check the engine oil level. (☛ p. 75)

**17.4 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 with the O-ring from the clutch cover.
- Add the same engine oil that was used when the motor was changed.

Engine oil (SAE 10W/50) (☛ p. 90)

**Info**

For optimal performance of the engine oil, do not mix different types of engine oil.

If appropriate, change the engine oil.

- Install and tighten the oil filler plug with O-ring.

**Danger**

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

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

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



## 18.1 Cleaning the motorcycle

**Note**

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

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

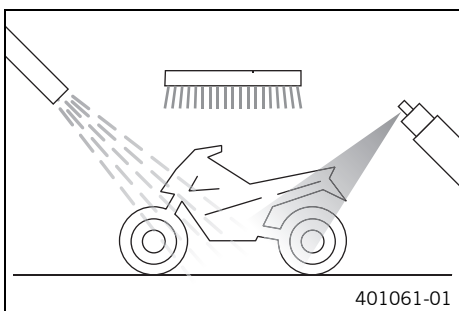
 **Warning**

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

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

 **Info**

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



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

Motorcycle cleaner (☛ p. 92)

 **Info**

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

- After rinsing the motorcycle with a gentle spray of water, allow it to dry thoroughly.
- Remove the plug from the exhaust system.

 **Warning**

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

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

- After cleaning, ride a short distance until the engine reaches operating temperature.

 **Info**

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

- After the motorcycle has cooled off, lubricate all moving parts and bearings.
- Clean the chain. (☛ p. 46)
- Treat bare metal parts (except for brake discs and the exhaust system) with a corrosion inhibitor.

Cleaning and preserving materials for metal, rubber and plastic (☛ p. 92)

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

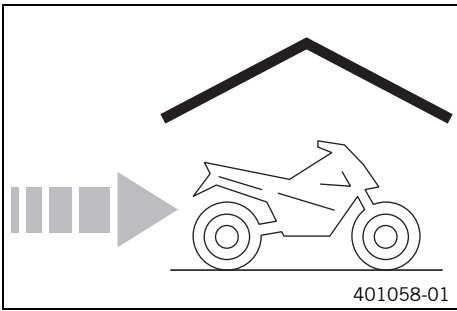
Paint cleaner and polish for high-gloss and matte finishes, bare metal and plastic surfaces (☛ p. 93)

## 19.1 Storage

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

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

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



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

Fuel additive (☞ p. 92)
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- Refuel. (☞ p. 19)
- Clean the motorcycle. (☞ p. 79)
- Change the engine oil and oil filter and clean the oil screens. 🛠️ (☞ p. 76)
- Check the antifreeze and coolant level. (☞ p. 68)
- Check the tire air pressure. (☞ p. 63)
- Remove the battery. 🛠️ (☞ p. 65)
- Charge the battery. 🛠️ (☞ p. 65)

**Guideline**

Storage temperature of battery without direct sunlight	0... 35 °C (32... 95 °F)
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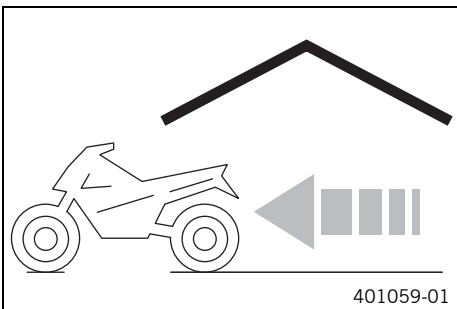
- Store the vehicle in a dry location that is not subject to large fluctuations in temperature.

**Info**  
 KTM recommends raising the motorcycle.

- Raise the motorcycle with the lift stand. (☞ p. 30)
- Cover the vehicle with a tarp or a cover that is permeable to air.

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









## 19.2 Preparing for use after storage



- Install the battery. 🛠️ (☞ p. 65)
- Remove the motorcycle from the lift stand. (☞ p. 30)
- Perform checks and maintenance work when preparing the vehicle for use. (☞ p. 17)
- Make a test ride.

Faults	Possible cause	Action
The engine does not turn when the starter button is pressed	Operating error	– Carry out the start procedure. (☞ p. 17)
	Battery is discharged	– Charge the battery. 🛠️ (☞ p. 65) – Check the charging voltage. 🛠️ – Check the quiescent current. 🛠️ – Check the stator winding of the alternator. 🛠️
	Main fuse blown	– Change the main fuse. (☞ p. 66)
	Starter relay defective	– Check the starter relay. 🛠️
	Starter motor defective	– Check the starter motor. 🛠️
Engine turns but does not start	Coupling of fuel hose connection not joined together	– Join the fuel hose connection.
	Idle speed is not set correctly	– Adjust the idle speed. 🛠️ (☞ p. 72)
	Spark plug oily or wet	– Clean and dry the spark plug, or change it if necessary.
	Electrode distance (plug gap) of spark plug too wide	– Adjust the plug gap. Guideline Spark plug electrode gap 0.9 mm (0.035 in)
	Short circuit cable in wiring harness frayed, kill switch defective	– Check the wiring harness. (visual check) – Check the electrical system.
	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool. 🛠️
Engine does not speed up	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool. 🛠️
Engine has too little power	Air filter is very dirty	– Clean the air filter and air filter box. 🛠️ (☞ p. 41)
	Fuel filter is very dirty	– Change the fuel filter. 🛠️
	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool. 🛠️
	Exhaust system leaky, deformed or too little glass fiber yarn filling in main silencer	– Check exhaust system for damage. – Change the glass fiber yarn filling of the main silencer. 🛠️ (☞ p. 43)
	Valve clearance too little	– Adjust the valve clearance. 🛠️
Engine dies during the trip	Lack of fuel	– Refuel. (☞ p. 19)
Engine overheats	Too little coolant in cooling system	– Check the cooling system for leakage. – Check the coolant level. (☞ p. 68)
	Too little air stream	– Switch off the engine when standing.
	Radiator fins very dirty	– Clean radiator fins.
	Foam formation in cooling system	– Drain the coolant. 🛠️ (☞ p. 69) – Refill the coolant. 🛠️ (☞ p. 70)
	Bent radiator hose	– Change the radiator hose. 🛠️
FI warning lamp (MIL) lights up/flashes	Defect in fuel injection system	– Stop the motorcycle and identify the faulty part using the blink code. – Check the cabling for damage and the electrical connectors for corrosion and damage. – Read out the fault memory using the KTM diagnostics tool. 🛠️
High oil consumption	Engine vent hose bent	– Route the vent hose without bends or change it if necessary.
	Engine oil level too high	– Check the engine oil level. (☞ p. 75)
	Engine oil too thin (low viscosity)	– Change the engine oil and oil filter and clean the oil screens. 🛠️ (☞ p. 76)
	Piston and cylinder worn	– Piston/cylinder - determine the mounting clearance.
Battery is discharged	Battery is not charging	– Check the charging voltage. 🛠️ – Check the stator winding of the alternator. 🛠️

Faults	Possible cause	Action
Battery is discharged	Unwanted power consumer	– Check the quiescent current. ↗

<b>Blink code FI warning lamp (MIL)</b>	 02 FI warning lamp (MIL) flashes 2x short
<b>Error level condition</b>	Crankshaft position sensor - circuit fault
<b>Blink code FI warning lamp (MIL)</b>	 06 FI warning lamp (MIL) flashes 6x short
<b>Error level condition</b>	Throttle position sensor circuit A - input signal too low Throttle position sensor circuit A - input signal too high
<b>Blink code FI warning lamp (MIL)</b>	 09 FI warning lamp (MIL) flashes 9x short
<b>Error level condition</b>	Manifold absolute pressure sensor cylinder 1 - input signal too low Manifold absolute pressure sensor cylinder 1 - input signal too high
<b>Blink code FI warning lamp (MIL)</b>	 12 FI warning lamp (MIL) flashes 1x long, 2x short
<b>Error level condition</b>	Engine coolant temperature sensor - input signal too low Engine coolant temperature sensor - input signal too high
<b>Blink code FI warning lamp (MIL)</b>	 13 FI warning lamp (MIL) flashes 1x long, 3x short
<b>Error level condition</b>	Intake air temperature sensor - input signal to low Intake air temperature sensor - input signal too high
<b>Blink code FI warning lamp (MIL)</b>	 15 FI warning lamp (MIL) flashes 1x long, 5x short
<b>Error level condition</b>	Rollover sensor (A/D type) - input signal too low Rollover sensor (A/D type) - input signal too high
<b>Blink code FI warning lamp (MIL)</b>	 33 FI warning lamp (MIL) flashes 3x long, 3x short
<b>Error level condition</b>	Injector cylinder 1 - circuit fault
<b>Blink code FI warning lamp (MIL)</b>	 37 FI warning lamp (MIL) flashes 3x long, 7x short
<b>Error level condition</b>	Ignition coil 1, cylinder 1 - circuit fault
<b>Blink code FI warning lamp (MIL)</b>	 41 FI warning lamp (MIL) flashes 4x long, 1x short
<b>Error level condition</b>	Fuel pump control - short circuit to ground or open circuit Fuel pump control - input signal too low

## 22.1 Engine

Design	1-cylinder 4-stroke engine, water-cooled
Displacement	449.3 cm <sup>3</sup> (27.418 cu in)
Stroke	63.4 mm (2.496 in)
Bore	95 mm (3.74 in)
Compression ratio	12.6:1
Idle speed	2,250... 2,350 rpm
Control	OHC, 4 valves controlled via rocker arm
Valve diameter, intake	40 mm (1.57 in)
Valve diameter, exhaust	33 mm (1.3 in)
Valve clearance	
Intake at: 20 °C (68 °F)	0.10... 0.15 mm (0.0039... 0.0059 in)
Exhaust at: 20 °C (68 °F)	0.12... 0.17 mm (0.0047... 0.0067 in)
Crankshaft bearing	2 grooved ball bearings
Conrod bearing	Slide bearing
Piston pin bearing	Not a bearing bush - DLC-plated piston pins
Pistons	Forged light alloy
Piston rings	1 compression ring, 1 oil scraper ring
Engine lubrication	Pressure circulation lubrication with two Eaton pumps
Primary transmission	32:76
Clutch	Antihopping clutch <b>APTCTM</b> in oil bath/hydraulically operated
Gearbox	5-gear, claw shifted
Transmission ratio	
1st gear	16:32
2nd gear	18:30
3rd gear	20:28
4th gear	22:26
5th gear	24:24
Alternator	12 V, 75 W
Ignition	Contactless controlled fully electronic ignition with digital ignition adjustment
Spark plug	NGK LKAR8AI-9
Spark plug electrode gap	0.9 mm (0.035 in)
Cooling	Water cooling, permanent circulation of coolant by water pump
Starting aid	Electric starter

## 22.2 Engine tightening torques

Screw, cable holder in alternator cover	M4	4 Nm (3 lbf ft)	Loctite® 243™
Screw, oil jet for piston cooling	M4	2 Nm (1.5 lbf ft)	Loctite® 243™
Screw, stator	M4	4 Nm (3 lbf ft)	Loctite® 648™
Oil nozzle, piston cooling	M5	2 Nm (1.5 lbf ft)	Loctite® 243™
Oil nozzle, rocker arm lubrication	M5	2 Nm (1.5 lbf ft)	Loctite® 243™
Screw, bearing retainer	M5	6 Nm (4.4 lbf ft)	Loctite® 2701™
Screw, clutch spring retainer	M5	8 Nm (5.9 lbf ft)	–
Screw, crankshaft position sensor	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, suction pump cover	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Nut, water-pump wheel	M6	8 Nm (5.9 lbf ft)	Loctite® 243™
Screw, alternator cover	M6	10 Nm (7.4 lbf ft)	–

Screw, bearing bolt for starter idler gear	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, bearing bolt, torque limiter	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, camshaft support plate	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, clutch cover	M6	10 Nm (7.4 lbf ft)	–
Screw, cylinder head	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, pressure pump cover	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, timing chain guide rail	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, timing chain securing guide	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, timing chain tensioner	M6	10 Nm (7.4 lbf ft)	–
Screw, timing chain tensioning rail	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, valve cover	M6	10 Nm (7.4 lbf ft)	–
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)	–
Oil jet for balancer shaft lubrication	M6x0.75	4 Nm (3 lbf ft)	–
Oil nozzle for conrod bearing lubrication	M6x0.75	4 Nm (3 lbf ft)	–
Plug, oil channel	M7	9 Nm (6.6 lbf ft)	Loctite® 243™
Screw, rocker arm bearing	M7	15 Nm (11.1 lbf ft)	–
Plug, timing chain tensioner	M8	8 Nm (5.9 lbf ft)	–
Screw plug, crankshaft location	M8	10 Nm (7.4 lbf ft)	–
Plug, oil channel	M10	15 Nm (11.1 lbf ft)	Loctite® 243™
Screw, engine sprocket	M10	60 Nm (44.3 lbf ft)	Loctite® 2701™
Screw, cylinder head	M10x1.25	Step 1 10 Nm (7.4 lbf ft) Step 2 30 Nm (22.1 lbf ft) Step 3 50 Nm (36.9 lbf ft)	Lubricated with engine oil
Nut, rotor	M12x1	60 Nm (44.3 lbf ft)	Thread, oiled with engine oil/cone degreased
Spark plug	M12x1.25	15... 20 Nm (11.1... 14.8 lbf ft)	–
Engine coolant temperature sensor	M12x1.5	12 Nm (8.9 lbf ft)	–
Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)	–
Plug, oil pressure regulator valve	M12x1.5	20 Nm (14.8 lbf ft)	–
Nut, inner clutch hub	M18x1.5	80 Nm (59 lbf ft)	–
Screw plug, rocker arm	M18x1.5	30 Nm (22.1 lbf ft)	–
Nut, primary gear	M20LHx1.5	100 Nm (73.8 lbf ft)	Loctite® 648™
Screw plug, oil screen	M20x1.5	15 Nm (11.1 lbf ft)	–

## 22.3 Capacities

### 22.3.1 Engine oil

Engine oil	1.50 l (1.59 qt.)	Engine oil (SAE 10W/50) (☛ p. 90)
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### 22.3.2 Coolant

Coolant	1.20 l (1.27 qt.)	Coolant (☛ p. 90)
		Coolant (mixed ready to use) (☛ p. 90)

### 22.3.3 Fuel

Total fuel tank capacity, approx.	7.5 l (1.98 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (☛ p. 91)
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## 22.4 Chassis

Frame	Central tube frame made of chrome molybdenum steel tubing	
Fork	<b>WP Suspension</b> Up Side Down 4860 MXMA CC	
Suspension travel		
Front	280 mm (11.02 in)	
Rear	292 mm (11.5 in)	
Fork offset	16 mm (0.63 in)	
Shock absorber	<b>WP Suspension</b> 5018 BAVP DCC	
Brake system		
Front	Single disc brake with radially screwed four-piston fixed caliper, floating brake disc	
Rear	Single disc brake with single-piston floating caliper, fixed brake disc	
Brake discs - diameter		
Front	310 mm (12.2 in)	
Rear	220 mm (8.66 in)	
Brake discs - wear limit		
Front	4.25 mm (0.1673 in)	
Rear	3.5 mm (0.138 in)	
Tire air pressure (cold)		
Front: 10... 30 °C (50... 86 °F)	1.9 bar (28 psi)	
Rear: 10... 30 °C (50... 86 °F)	1.7 bar (25 psi)	
Tire air pressure (warm)		
Front: 75... 85 °C (167... 185 °F)	2.1 bar (30 psi)	
Rear: 75... 85 °C (167... 185 °F)	1.9 bar (28 psi)	
Secondary ratio	14:48	
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)	
Ground clearance, unloaded	310 mm (12.2 in)	
Seat height, unloaded	927 mm (36.5 in)	
Weight without fuel, approx.	110.2 kg (242.9 lb.)	
Maximum permissible front axle load	145 kg (320 lb.)	
Maximum permissible rear axle load	190 kg (419 lb.)	
Maximum permissible overall weight	335 kg (739 lb.)	



## 22.5 Electrical system

Battery	YTX4L-BS	Battery voltage: 12 V Nominal capacity: 3 Ah Maintenance-free
Fuse	58011109110	10 A
FI warning lamp		LED

## 22.6 Tires

Front tires	Rear tires
<b>125/80 R 420 M/C TL</b> Metzeler Racetec SM 17 125/80 R 17 M/C NHS TL - K1	<b>165/55 R 17 M/C TT</b> Metzeler Racetec SM 17 165/55 R 17 M/C NHS TL - K1
Additional information is available in the Service section under: <a href="http://www.ktm.com">http://www.ktm.com</a>	

## 22.7 Fork

Fork part number	14.18.7M.08	
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)	482 mm (18.98 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)	
Gas pressure	1.2 bar (17 psi)	
Fork length	920 mm (36.22 in)	
Oil capacity per cartridge	195 ml (6.59 fl. oz.)	Fork oil (SAE 4) (48601166S1) (☛ p. 90)
Oil capacity fork leg without cartridge	380 ml (12.85 fl. oz.)	Fork oil (SAE 4) (48601166S1) (☛ p. 90)

## 22.8 Shock absorber

Shock absorber part number	18.18.7M.08	
Shock absorber	<b>WP Suspension</b> 5018 BAVP DCC	
Compression damping, low-speed		
Comfort	21 clicks	
Standard	18 clicks	
Sport	15 clicks	
Compression damping, high-speed		
Comfort	2 turns	
Standard	1.5 turns	
Sport	1 turn	
Rebound damping		
Comfort	14 clicks	
Standard	12 clicks	
Sport	10 clicks	
Spring preload	19 mm (0.75 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	20 mm (0.79 in)
Riding sag	75 mm (2.95 in)
Fitted length	479 mm (18.86 in)

Shock absorber oil	Shock absorber oil (SAE 2.5) (50180342S1) (☛ p. 90)
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## 22.9 Chassis tightening torques

Screw, air filter box lid	EJOT PT® K60x20-Z	3 Nm (2.2 lbf ft)	–
Screw, pressure regulator	EJOT PT®	3 Nm (2.2 lbf ft)	–
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)	–
Screw, battery terminal	M5	2.5 Nm (1.84 lbf ft)	–
Screw, intake air temperature sensor	M5	2 Nm (1.5 lbf ft)	–
Screw, shock absorber adjusting ring	M5	5 Nm (3.7 lbf ft)	–
Nut, cable on starter motor	M6	4 Nm (3 lbf ft)	–
Remaining nuts, chassis	M6	10 Nm (7.4 lbf ft)	–
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)	–
Screw, ball joint of push rod on foot brake cylinder	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, chain sliding guard	M6	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, front brake disc	M6	14 Nm (10.3 lbf ft)	Loctite® 243™
Screw, rear brake disc	M6	14 Nm (10.3 lbf ft)	Loctite® 243™
Screw, throttle grip	M6	5 Nm (3.7 lbf ft)	–
Fuel connection on fuel tank	M8	10 Nm (7.4 lbf ft)	–
Nut, foot brake lever stop	M8	20 Nm (14.8 lbf ft)	–
Nut, rear sprocket screw	M8	35 Nm (25.8 lbf ft)	Loctite® 2701™
Nut, rim lock	M8	12 Nm (8.9 lbf ft)	–
Remaining nuts, chassis	M8	25 Nm (18.4 lbf ft)	–
Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)	–
Screw, bottom triple clamp	M8	12 Nm (8.9 lbf ft)	–
Screw, chain sliding piece	M8	15 Nm (11.1 lbf ft)	–
Screw, engine brace	M8	33 Nm (24.3 lbf ft)	–
Screw, fork stub	M8	15 Nm (11.1 lbf ft)	–
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)	–
Screw, subframe	M8	35 Nm (25.8 lbf ft)	Loctite® 2701™
Screw, top steering stem	M8	17 Nm (12.5 lbf ft)	Loctite® 243™
Screw, top triple clamp	M8	17 Nm (12.5 lbf ft)	–
Engine carrying screw	M10	60 Nm (44.3 lbf ft)	–
Remaining nuts, chassis	M10	45 Nm (33.2 lbf ft)	–
Remaining screws, chassis	M10	45 Nm (33.2 lbf ft)	–
Screw, bottom shock absorber	M10	60 Nm (44.3 lbf ft)	Loctite® 2701™
Screw, handlebar support	M10	40 Nm (29.5 lbf ft)	Loctite® 243™
Screw, top shock absorber	M10	60 Nm (44.3 lbf ft)	Loctite® 2701™
Screw, front brake caliper	M10x1.25	45 Nm (33.2 lbf ft)	Loctite® 243™
Nut, fuel pump	M12	15 Nm (11.1 lbf ft)	–
Nut, seat fixing	M12x1	20 Nm (14.8 lbf ft)	–

Nut, frame to linkage lever	M14x1.5	80 Nm (59 lbf ft)	–
Nut, linkage lever on swingarm	M14x1.5	80 Nm (59 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)	–
Screw, top steering head	M20x1.5	12 Nm (8.9 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)	–
Nut, rear wheel spindle	M25x1.5	80 Nm (59 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®**

- **COOLANT G48**

## Engine oil (SAE 10W/50)

**According to**

- JASO T903 MA (☛ p. 94)
- SAE (☛ p. 94) (SAE 10W/50)

**Guideline**

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

Synthetic engine oil
----------------------

**Supplier**

**Motorex®**

- **Cross Power 4T**

## Fork oil (SAE 4) (48601166S1)

**According to**

- SAE (☛ p. 94) (SAE 4)

**Guideline**

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

## Shock absorber oil (SAE 2.5) (50180342S1)

**According to**

- SAE (☛ p. 94) (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)

### Guideline

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



### Info

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

## Air filter cleaner

### Guideline

- KTM recommends **Motorex®** products.

### Supplier

#### Motorex®

- **Twin Air Dirt Bio Remover**

## Chain cleaner

### Guideline

- KTM recommends **Motorex®** products.

### Supplier

#### Motorex®

- **Chain Clean**

## Cleaning and preserving materials for metal, rubber and plastic

### Guideline

- KTM recommends **Motorex®** products.

### Supplier

#### Motorex®

- **Protect & Shine**

## Fuel additive

### Guideline

- KTM recommends **Motorex®** products.

### Supplier

#### Motorex®

- **Fuel Stabilizer**

## 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**

## Rubber grip adhesive (00062030051)

### Supplier

KTM-Sportmotorcycle AG

- **GRIP GLUE**

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

## SAE

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



<b>A</b>	
<b>Accessories</b>	7
<b>Air filter</b>	
cleaning	41
installing	40
removing	40
<b>Air filter box</b>	
cleaning	41
<b>Air filter box lid</b>	
installing	39
removing	39
securing	41
<b>Antifreeze</b>	
checking	68
<b>Antihopping clutch</b>	73
adjusting	73
<b>Auxiliary substances</b>	7
<b>B</b>	
<b>Basic chassis setting</b>	
checking with rider's weight	23
<b>Battery</b>	
charging	65
installing	65
removing	65
<b>Blink code</b>	83
<b>Brake discs</b>	
checking	53
<b>Brake fluid</b>	
front brake, adding	54
rear brake, adding	57
<b>Brake fluid level</b>	
front brake, checking	53
rear brake, checking	57
<b>Brake linings</b>	
front brake, changing	55
front brake, checking	54
rear brake, changing	58
rear brake, checking	58
<b>C</b>	
<b>Capacity</b>	
coolant	70, 86
engine oil	77, 86
fuel	20, 86
<b>Chain</b>	
checking	48
cleaning	46
<b>Chain guide</b>	
checking	48
<b>Chain tension</b>	
adjusting	47
checking	46
<b>Chassis number</b>	10
<b>Clutch</b>	73
adjusting	73

checking/correcting the fluid level	51
fluid, changing	51
<b>Clutch lever</b>	11
basic position, adjusting	51
<b>Cold start button</b>	13
<b>Compression damping</b>	
fork, adjusting	27
<b>Compression damping, high-speed</b>	
shock absorber, adjusting	24
<b>Compression damping, low-speed</b>	
shock absorber, adjusting	23
<b>Coolant</b>	
draining	69
refilling	70
<b>Coolant level</b>	
checking	68
<b>Cooling system</b>	68
<b>Customer service</b>	7
<b>E</b>	
<b>Electric starter button</b>	11
<b>Engine</b>	
running in	16
<b>Engine number</b>	10
<b>Engine oil</b>	
adding	78
changing	76
<b>Engine oil level</b>	
checking	75
<b>Engine sprocket</b>	
checking	48
<b>Environment</b>	6
<b>F</b>	
<b>Figures</b>	7
<b>Filler cap</b>	
closing	12
opening	12
<b>Foot brake lever</b>	14
basic position, adjusting	56
free travel, checking	56
<b>Fork legs</b>	
basic setting, checking	27
bleeding	30
compression damping, adjusting	27
dust boots, cleaning	31
installing	32
rebound damping, adjusting	28
removing	31
<b>Fork protector</b>	
installing	32
removing	32
<b>Frame</b>	
checking	49
<b>Front fender</b>	
installing	37
removing	36

<b>Front wheel</b>	
installing	60
removing	60
<b>Fuel screen</b>	
changing	75
<b>Fuel tank</b>	
installing	45
removing	43
<b>Fuse</b>	
main fuse, changing	66
<b>H</b>	
<b>Hand brake lever</b>	11
basic position, adjusting	53
<b>Handlebar position</b>	28
adjusting	28
<b>I</b>	
<b>Idle speed</b>	
adjusting	72
<b>Idle speed adjusting screw</b>	13
<b>Intended use</b>	5
<b>K</b>	
<b>Kill switch</b>	11
<b>L</b>	
<b>Lower triple clamp</b>	
installing	33
removing	33
<b>M</b>	
<b>Main fuse</b>	
changing	66
<b>Main silencer</b>	
glass fiber yarn filling, changing	43
installing	43
removing	42
<b>Manifold</b>	
installing	42
removing	41
<b>Motorcycle</b>	
cleaning	79
raising with lift stand	30
removing from lift stand	30
<b>O</b>	
<b>Oil filter</b>	
changing	76
<b>Oil screens</b>	
cleaning	76
<b>Operating substances</b>	7
<b>Overview of indicator lamps</b>	12
<b>Owner's Manual</b>	6
<b>P</b>	
<b>Play in throttle cable</b>	
adjusting	71
<b>Plug-in-stand</b>	14

<b>Preparing for use</b>	
advice on first use	15
after storage	80
checks and maintenance work when preparing for use	17
<b>Protective clothing</b>	6
<b>R</b>	
<b>Rear sprocket</b>	
checking	48
<b>Rear wheel</b>	
installing	62
removing	61
<b>Rebound damping</b>	
fork, adjusting	28
shock absorber, adjusting	24
<b>Refueling</b>	
fuel	19
<b>Riding sag</b>	
adjusting	26
<b>Rubber grip</b>	
checking	50
securing	50
<b>S</b>	
<b>Safe operation</b>	5
<b>Seat</b>	
mounting	39
removing	39
<b>Service</b>	7
<b>Service schedule</b>	21-22
<b>Shift lever</b>	13
basic position, adjusting	72
basic position, checking	72
<b>Shock absorber</b>	
compression damping, general	23
compression damping, high-speed, adjusting	24
compression damping, low-speed, adjusting	23
installing	38
rebound damping, adjusting	24
removing	37
riding sag, checking	25
spring preload, adjusting	26
static sag, checking	25
<b>Spare parts</b>	7
<b>Spoke tension</b>	
checking	63
<b>Start number plate</b>	
installing	36
removing	36
<b>Starting</b>	17
<b>Steering head bearing</b>	
greasing	36
<b>Steering head bearing play</b>	
adjusting	35
checking	35
<b>Storage</b>	80

**Swingarm**

checking ..... 50

**T****Technical data**

capacities ..... 86

chassis ..... 86

chassis tightening torques ..... 88

electrical system ..... 87

engine ..... 84

engine tightening torques ..... 84

fork ..... 87

shock absorber ..... 87

tires ..... 87

**Throttle cable play**

checking ..... 71

**Throttle cable routing**

checking ..... 50

**Throttle grip** ..... 11**Tire air pressure**

checking ..... 63

**Tire condition**

checking ..... 63

**Transport** ..... 19**Troubleshooting** ..... 81-82**Type label** ..... 10**U****Use definition** ..... 5**V****View of vehicle**

front left side ..... 8

rear right side ..... 9

**W****Warranty** ..... 7**Work rules** ..... 6



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