

OWNER'S MANUAL 2010

50 SX

50 SX Mini

Art. no. 3211477en



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

We wish you great pleasure riding the vehicle!

Enter the serial numbers of your vehicle below.

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

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

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Issued by: TÜV Management Service

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5230 Mattighofen, Austria

MEANS OF REPRESENTATION	4	Removing the lower triple clamp 🛠️	28
IMPORTANT INFORMATION	5	Installing the lower triple clamp 🛠️	29
VIEW OF VEHICLE	7	Greasing the steering head bearing 🛠️	30
View of the vehicle from the left front (example)	7	Dismounting the front fender	30
View of the vehicle from the right rear (example)	8	Installing the front fender	31
LOCATION OF SERIAL NUMBERS	9	Dismounting the start number plate	31
Chassis number	9	Installing the start number plate	31
Engine number	9	Handlebar position	32
Shock absorber part number	9	Adjusting handlebar position 🛠️	32
CONTROLS	10	Checking the play in the throttle cable	32
Throttle grip	10	Adjusting the play in the throttle cable 🛠️	33
Hand brake lever	10	Checking chain dirt	33
Short circuit button	10	Cleaning the chain	33
Fuel tap	10	Checking the chain tension	34
Opening filler cap	10	Checking the chain tension - installing rear wheel	34
Closing filler cap	11	Checking rear sprocket / engine sprocket for wear	34
Opening oil tank cap (50 SX Mini)	11	Adjusting chain tension	35
Closing oil tank cap (50 SX Mini)	11	Adjusting chain tension - after checking	35
Choke (50 SX)	11	Adjusting chain tension - installing rear wheel	36
Choke (50 SX Mini)	11	Adjusting the chain guide 🛠️	36
Kickstarter	12	Checking brake discs	36
Foot brake pedal	12	Checking play of handbrake lever	37
Plug-in stand	12	Adjusting play of handbrake lever	37
GENERAL TIPS AND HINTS ON PUTTING INTO OPERATION	13	Adjusting basic position of handbrake lever	37
Advice on first use	13	Checking the front brake fluid level	37
Running in the engine	14	Adding front brake fluid 🛠️	38
RIDING INSTRUCTIONS	15	Checking the front brake linings	39
Checks before putting into operation	15	Removing front brake linings 🛠️	39
Starting	15	Installing the front brake linings 🛠️	39
Starting up	16	Changing the front brake linings 🛠️	40
Shifting, riding	16	Checking the free travel of the foot brake lever	41
Braking	16	Adjusting basic position of foot brake pedal 🛠️	41
Stopping, parking	16	Checking rear brake fluid level	42
Refueling	17	Adding rear brake fluid 🛠️	42
Filling up with oil (50 SX Mini)	17	Checking the rear brake linings	43
SERVICE SCHEDULE	18	Removing rear brake linings 🛠️	43
Important maintenance work that must be done in an authorized KTM workshop	18	Installing the rear brake linings 🛠️	44
Important maintenance work that must be done in an authorized KTM workshop (as additional order)	18	Changing the rear brake linings 🛠️	44
Performance of urgent inspection and care work by the supervisory individual.	19	Removing front wheel 🛠️	45
MAINTENANCE WORK ON CHASSIS AND ENGINE	20	Installing the front wheel 🛠️	45
Jacking up the motorcycle	20	Removing rear wheel 🛠️	46
Removing the motorcycle from the work stand	20	Installing the rear wheel 🛠️	46
Adjusting the rebound damping of the shock absorber	20	Checking the tire condition	47
Measuring rear wheel sag unloaded	20	Checking tire air pressure	47
Checking the static sag of the shock absorber	21	Checking spoke tension	47
Checking the riding sag of the shock absorber	21	Removing the seat	48
Adjusting the spring preload of the shock absorber 🛠️	21	Mounting the seat	48
Adjusting the riding sag 🛠️	22	Cooling system	48
Removing the shock absorber 🛠️	22	Checking the antifreeze and coolant level	49
Installing shock absorber 🛠️	23	Checking the coolant level	49
Vehicle level	23	Draining the coolant 🛠️	50
Adjusting the fork overhang 🛠️	23	Refilling coolant 🛠️	50
Adjusting seat height 🛠️	24	Removing main silencer	51
Cleaning dust boots of fork legs	24	Installing the main silencer	51
Checking play of steering head bearing	25	Glass fiber yarn filling of main silencer	52
Adjusting play of steering head bearing 🛠️	25	Removing the glass fiber yarn filling of the main silencer 🛠️	52
Removing the fork legs 🛠️	26	Installing the glass fiber yarn filling of the main silencer 🛠️	52
Installing the fork legs 🛠️	27	Removing the air filter 🛠️	52
		Installing the air filter 🛠️	53

Cleaning air filter 	53
Carburetor - idle (50 SX)	53
Carburetor - idle (50 SX Mini)	54
Carburetor - adjusting idle speed  (50 SX)	54
Carburetor - adjusting idle speed  (50 SX Mini)	55
Checking oil level (50 SX Mini)	55
Bleeding oil pump  (50 SX Mini)	56
Checking gear oil level	57
Changing the gear oil 	57
Draining the gear oil 	58
Filling up with gear oil 	58
Adding gear oil 	58
Checking clutch engagement speed 	59
Adjust the clutch engagement speed 	59
Removing centrifugal clutch 	60
Fitting centrifugal force clutch 	61
Checking/measuring clutch 	61
Dismantling centrifugal clutch 	62
Assembling centrifugal clutch 	62
TROUBLESHOOTING	64
CLEANING	66
Cleaning motorcycle	66
STORAGE	67
Storage	67
Putting into operation after storage	67
TECHNICAL DATA - ENGINE	68
Capacity - gear oil	68
Capacity - coolant	68
TECHNICAL DATA - ENGINE TIGHTENING TORQUES	69
TECHNICAL DATA - CARBURETOR	70
50 SX	70
50 SX Mini	70
TECHNICAL DATA - CHASSIS	71
Tires	71
Capacity - fuel	72
TECHNICAL DATA - FORK	73
50 SX	73
50 SX Mini	73
TECHNICAL DATA - SHOCK ABSORBER	74
50 SX	74
50 SX Mini	74
TECHNICAL DATA - CHASSIS TIGHTENING TORQUES	75
OPERATING SUBSTANCES	76
AUXILIARY SUBSTANCES	78
STANDARDS	80
INDEX	81

Symbols used

The symbols used are explained in the following.



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 done in an authorized KTM workshop! There, your motorcycle will be serviced optimally by specially trained experts using the specialist tools required.



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

Formats used

The typographical and other formats used are explained in the following.

Proper name	Identifies a proper name.
Name®	Identifies a protected name.
Brand™	Identifies a brand in merchandise traffic.

Use definition

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



Info

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

Maintenance

A prerequisite for perfect operation and prevention of wear is that the engine and chassis maintenance and adjustment work described in the owner's manual are properly carried out. Poor adjustment and tuning of the engine and chassis can lead to damage and breakage of components.

Using the motorcycle in difficult conditions such as on sand or very muddy or wet terrain can lead to above-average wear of components such as the transmission train or the brakes. For this reason, it may be necessary to service or replace worn parts before the limit specified in the service schedule is reached.

Pay careful attention to the prescribed running-in period, inspection and maintenance intervals. If you observe these exactly, you will ensure a much longer service life for your motorcycle.

Warranty

The work prescribed in the service schedule must be carried out in an authorized KTM workshop only and confirmed in the customer's service record, since otherwise no warranty claims will be honored. No warranty claims can be honored for damage resulting from manipulations and/or alterations to the vehicle.

Fuel, oils, etc.

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

Spare parts, accessories

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

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

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

Work rules

Special tools are needed for certain tasks. They are not included with the vehicle but can be ordered under the number in parentheses. Ex.: bearing puller (15112017000)

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

If a thread locker is used for the screw connections (e.g. **Loctite**®), follow the specific manufacturer instructions regarding its use.

Parts that are to be reused after disassembly must be cleaned and checked for damage and wear. Change damaged or worn parts.

After repair and maintenance, ensure that the vehicle is roadworthy.

Transport

Note

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

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

Note

Fire hazard Some vehicle components get very hot when the machine is driven.

- Do not place the vehicle where there are flammable or explosive substances. Do not place objects over the vehicle while it is still warm from being run. Always let the vehicle cool first.

- Switch off the engine.

- Use straps or other suitable devices to secure the motorcycle against accidents or falling over.

Environment

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

notes/warnings

Be sure to pay attention to the notes and warnings given here.

i Info
Various notes and warning stickers are attached to the vehicle. Do not remove any notes and warning stickers. If they are missing, you or others may not recognize sources of danger and may therefore be injured.

Grades of risks

! Danger
Indicates immediate danger that will invariably lead to severe or even fatal injury if the appropriate measures are not taken.

! Warning
Indicates immediate danger that may lead to severe or even fatal injury 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
Indicates immediate danger that will invariably lead to environmental damage if the appropriate measures are not taken.

Owner's manual

- Carefully read this owner's manual in its entirety together with your child before letting your child ride the motorcycle for the first time. It contains a lot of information and tips to help you and your child operate and handle the motorcycle. Only then will you find out how to customize the motorcycle ideally for your child's use and how to protect your child from injury. The owner's manual also contains important information on servicing the motorcycle.
- The owner's manual is an important component of the motorcycle and should be handed over to the new owner if the vehicle is sold.

View of the vehicle from the left front (example)



B00068-10

1	Hand brake lever
2	Filler cap
3	Fuel tap
4	Quick release for seat lock
5	Shock absorber compression adjustment
6	Chain guide
7	Plug-in stand

View of the vehicle from the right rear (example)



B00069-10

1	Short circuit button
2	Chassis number
3	Throttle grip
4	Level viewer for brake fluid, rear
5	Foot brake pedal
6	Kickstarter

Chassis number



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

Engine number



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

Shock absorber part number



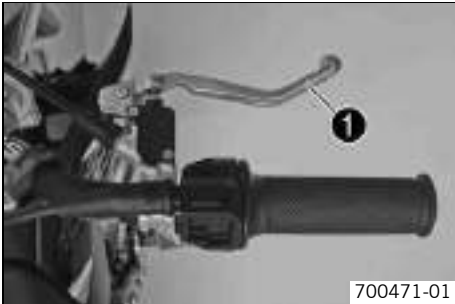
The shock absorber part number ❶ is stamped on the top of the shock absorber above the adjusting ring towards the rear.

Throttle grip



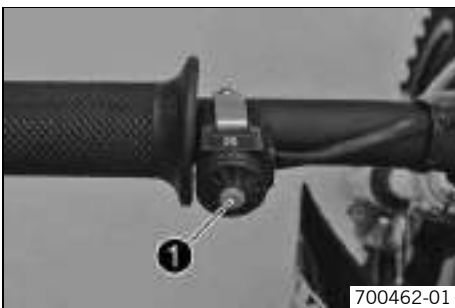
Throttle grip ❶ is fitted on the right side of the handlebar.

Hand brake lever



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

Short circuit button



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

Possible states

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

Fuel tap



Fuel tap ❶ is on the left of the fuel tank.

Possible states

- Fuel tap is closed – The knurled screw is turned all the way clockwise. Fuel cannot flow out of the fuel tank.
- Fuel tap is open – The knurled screw is turned all the way counterclockwise. Fuel can flow out of the fuel tank.

Opening filler cap



- Turn the tank cap ❶ counterclockwise and pull it up.

Closing filler cap



700465-11

- Put the tank cap on and turn it clockwise.



Info

Run the fuel tank breather hose ❶ without kinks.

Opening oil tank cap (50 SX Mini)



700517-01

- Turn the oil tank cap ❶ counterclockwise and pull it up.

Closing oil tank cap (50 SX Mini)



700517-10

- Put the oil tank cap on and turn it clockwise.



Info

Run the oil tank breather hose ❶ without kinks.

Choke (50 SX)



700464-01

The choke knob ❶ is fitted on the left of the carburetor.

Activating the choke function frees an opening through which the engine can draw extra fuel. This gives a richer fuel-air mixture, which is needed for a cold start.



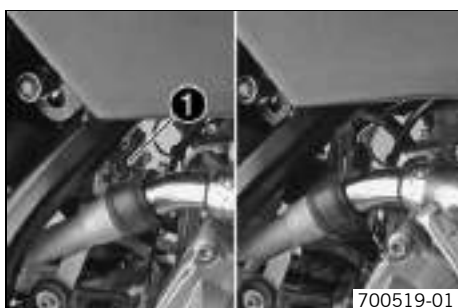
Info

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

Possible states

- Choke function activated – Choke knob is in upper position. The O-ring is visible.
- Choke function deactivated – Choke knob is in lower position. No O-ring is visible.

Choke (50 SX Mini)



700519-01

The choke lever ❶ is fitted on the right of the carburetor.

Activating the choke function frees an opening through which the engine can draw extra fuel. This gives a richer fuel-air mixture, which is needed for a cold start.



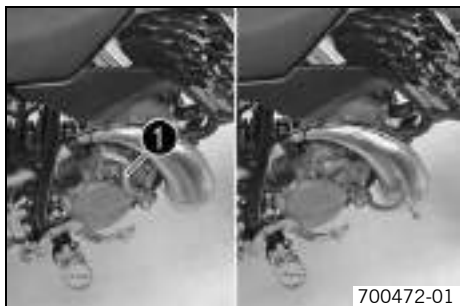
Info

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

Possible states

- Choke function activated – The choke lever is pushed up all the way.
- Choke function deactivated – The choke lever is pushed down all the way.

Kickstarter



The kickstarter ❶ is fitted on the right of the engine.
The kickstarter can be swiveled.

i Info

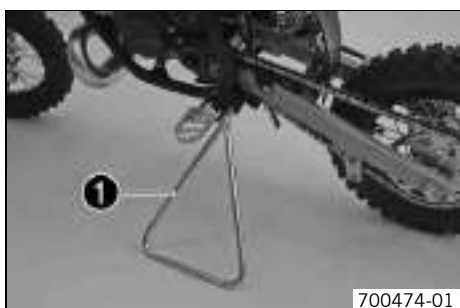
Before riding, swing the kickstarter inwards towards the engine.

Foot brake pedal



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

Plug-in stand



Note

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

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

To park the motorcycle, insert the plug-in stand ❶ in the support for the plug-in stand on the left of the vehicle.

i Info

Remove the plug-in stand before riding.

Advice on first use

- 
Warning
Danger of accidents Physical and mental readiness of a child.

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

 - Wear protective clothing (helmet, boots, gloves, pants and jacket with protectors) every time you ride the motorcycle. You and your child should always used protective clothing that is in good condition and meets the legal requirements. When you ride a motorcycle, set an example for your child and wear suitable protective clothing.
- 
Warning
Danger of crashing Impairment of handling characteristic due to different tire tread patterns on front and rear wheels.

 - The front and rear wheels must be fitted with tires with similar tread patterns to prevent loss of control over the vehicle.
- 
Warning
Danger of accidents Critical riding behavior due to inappropriate riding.

 - Ensure that your child adjusts the riding speed to the road conditions and to his or her riding abilities.
- 
Warning
Danger of accidents Accident risk caused by presence of a passenger.

 - Your vehicle is not designed to carry passengers. Do not ride with a passenger.
- 
Warning
Danger of accidents Brake system failure.

 - If the foot brake pedal is not released, the brake linings drag permanently. The rear brake can fail due to overheating. Ensure that your child raises his or her foot from the foot brake pedal when the child does not want to brake.
- 
Warning
Danger of accidents Destruction of chassis components.

 - Do not exceed the maximum allowable rider weight.
- 
Warning
Risk of misappropriation Usage by unauthorized persons.

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


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

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

-
- 
Info
 Pay special attention to the safety warnings and injury risks.
 Explain to your child the techniques of riding and falling, e.g. how shifting weight can influence handling characteristics.
-
- Familiarize your child with the controls.
 - Adjust the basic position of the handbrake lever. (👉 p. 37)
 - Adjust the basic position of the foot brake pedal. 👉 (👉 p. 41)
 - Before using the vehicle for the first time, ensure that the basic settings of the chassis are suitable for the weight of your child.
 - Accustom your child to the handling of the motorcycle on suitable terrain, preferably on a large open meadow.

**Info**

To give your child a feel for the brake, you should push your child at first. Do not start the engine until your child can is able to apply the necessary brake pressure.

At the start, let your child ride to another person who can help him or her stop and turn.

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

Guideline

Maximum rider weight	< 35 kg (< 77 lb.)
Maximum rider size	< 130 cm (< 51.2 in)

- Check the spoke tension. (🔧 p. 47)

**Info**

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

- Run the engine in. (🔧 p. 14)

Running in the engine

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

Guideline

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

- Avoid fully opening the throttle!

Checks before putting into operation

- i Info**
Make sure that the motorcycle is in a perfect technical condition before use.
- i Info**
In the interests of riding safety, make it your own and your child's habit to perform a general check before going for a ride. Insist that your child perform the general checks himself or herself.

- Check the gear oil level. (🔧 p. 57)
- (50 SX Mini)**
- Check the oil level. (🔧 p. 55)
 - Check the chain tension. (🔧 p. 34)
 - Check the chain dirt accumulation. (🔧 p. 33)
 - Check the tire condition. (🔧 p. 47)
 - Check the tire air pressure. (🔧 p. 47)
 - Check the front brake fluid level. (🔧 p. 37)
 - Check the rear brake fluid level. (🔧 p. 42)
 - Check the front brake linings. (🔧 p. 39)
 - Check the rear brake linings. (🔧 p. 43)
 - Check the function of the brake system.
 - Check the coolant level. (🔧 p. 49)
 - Check the settings of all controls and ensure that they can be operated smoothly.
 - Check the functioning of the electrical equipment.

Starting

- ⚠ Danger**
Danger of poisoning Exhaust gases are poisonous and can 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 a closed 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.

- i Info**
If the motorcycle is unwilling to start, the cause can be old fuel in the float chamber. The flammable elements of the fuel evaporate after a long time of standing.
If the float chamber is filled with fresh fuel, the engine starts immediately.

- Turn the knurled screw on the fuel tap all the way counterclockwise.
 - ✓ Fuel can flow from the fuel tank to the carburetor.
- Remove the motorcycle from the stand.

The engine is cold

(50 SX)

- Pull the choke knob fully out and turn it by max. ¼ turn.

(50 SX Mini)

- Push the choke lever up all the way.
- Forcefully step on the kickstarter, pushing it all the way forward.

- i Info**
Do not open the throttle.

Starting up

**Info**

The plug-in stand must be removed before you start your journey.

- Open the throttle carefully.

Shifting, riding

**Info**

If you hear unusual noises while riding, stop immediately, switch off the engine and contact an authorized KTM workshop.

- If the choke function was activated, deactivate it after the engine has warmed up.
- When you reach maximum speed after fully opening the throttle, turn back the throttle to about $\frac{3}{4}$ of its range. The speed hardly drops, but the fuel consumption falls considerably.
- Your child should always open the throttle only as much as the engine can handle – abruptly opening the throttle increases fuel consumption.
- Your child should switch off the engine if he or she expects to be standing for a long time.

Guideline

≥ 2 min

Braking

**Warning**

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

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

**Warning**

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

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

**Warning**

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

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

- On sandy, wet or slippery surfaces, use the rear brake.
- Braking should always be completed before you go into a bend.

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 get very hot when the machine is driven.

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

Note

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

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

Note

Fire hazard Some vehicle components get very hot when the machine is driven.

- Do not place the vehicle where there are flammable or explosive substances. Do not place objects over the vehicle while it is still warm from being run. Always let the vehicle cool first.

Note

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

- The plug-in stand is designed for the weight of the motorcycle only. You or your child should not sit on the motorcycle when it is standing on the plug-in stand. The plug-in stand and/or the frame could be damaged and the motorcycle could fall over.
- Brake the motorcycle.
- Press and hold the short circuit button ☒ while the engine is idling until the engine stops.
- Turn the knurled screw on the fuel tap all the way clockwise.
- Park the motorcycle on firm ground.

Refueling

**Danger**
Fire hazard Fuel can easily catch fire.

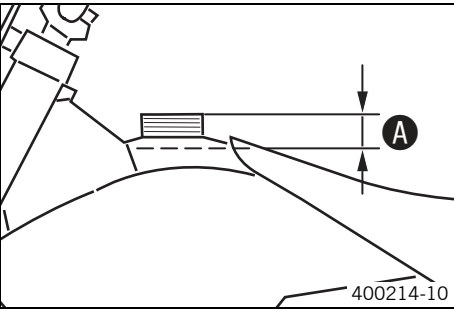
- Never fill up the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
- Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See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

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

- Avoid contact of the fuel with skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact with fuel.

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

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



- Switch off the engine.
- Open the filler cap. (☛ p. 10)
- Fill the fuel tank with fuel up to measurement **A**.

Guideline

Measurement of A	35 mm (1.38 in)	
Fuel tank capacity, approx. (50 SX Mini)	2.0 l (2.1 qt.)	Super unleaded (ROZ 95 / RON 95 / PON 91) (☛ p. 77)
Fuel tank capacity, approx. (50 SX)	2.3 l (2.4 qt.)	Super unleaded gasoline, mixed with 2-stroke engine oil (1:60) (☛ p. 77)

- Close the filler cap. (☛ p. 11)

Filling up with oil (50 SX Mini)

**Warning**
Engine failure If the vehicle is run without 2-stroke oil in the tank, the result is engine failure.

- The oil tank must always be filled up to the **MIN** mark.



- Switch off the engine.
- Open the oil tank cap. (☛ p. 11)
- Fill the oil tank at least up to the **MIN** mark **A**.

Guideline

MIN mark	Sufficient for a single tank filling	
Oil tank contents ca.	0.2 l (0.2 qt.)	2-stroke engine oil (☛ p. 76)

- Close the oil tank cap. (☛ p. 11)

Important maintenance work that must be done in an authorized KTM workshop

		S20A	S40A
engine	Change the gear oil.  (☞ p. 57)		•
	Check spark plug and replace if required. 	•	•
	Clean spark plug connectors and check for tightness. 	•	•
	Check engine mounting screws for tightness.	•	•
	Check the clutch engagement speed.  (☞ p. 59)	•	•
carburetor	Check intake flange and carburetor connection boot for cracks and leakage.		•
	Check idle.	•	•
	Check vent hoses for damage and routing without sharp bends.		•
Attachments	Check the cooling system for leakage.		•
	Check the antifreeze and coolant level. (☞ p. 49)		•
	Check exhaust system for leakage and looseness.	•	•
	Check throttle cables for damage, smooth operation and routing without sharp bends.		•
	Clean the air filter.  (☞ p. 53)	•	•
Brakes	Check the front brake linings. (☞ p. 39)		•
	Check the rear brake linings. (☞ p. 43)		•
	Check the brake discs. (☞ p. 36)		•
	Check the front brake fluid level. (☞ p. 37)	•	•
	Check the rear brake fluid level. (☞ p. 42)	•	•
	Check brake lines for damage and leakage.		•
	Check the play of the handbrake lever. (☞ p. 37)	•	•
	Check the free travel of the foot brake lever. (☞ p. 41)	•	•
	Check the function of the brake system.	•	•
	Check screws and guide bolts of brake system for tightness.	•	•
Chassis	Check shock absorber and fork for leakage and functioning. 	•	•
	Clean dust boots of fork legs. (☞ p. 24)	•	•
	Check swingarm bearing.		•
	Check play of steering head bearing. (☞ p. 25)		•
	Check all screws to see if they are tight.	•	•
Wheels	Check the spoke tension. (☞ p. 47)	•	•
	Check rim run-out.	•	•
	Check the tire condition. (☞ p. 47)	•	•
	Check the tire air pressure. (☞ p. 47)	•	•
	Check the chain wear.	•	•
	Check the chain tension. (☞ p. 34)	•	•
	Clean the chain. (☞ p. 33)	•	•
	Check wheel bearing for play.	•	•
	Clean and grease adjusting screws of chain adjuster.	•	•

S20A: every 20 service hours

S40A: every 40 service hours

Important maintenance work that must be done in an authorized KTM workshop (as additional order)

	S20A	S40A	S80A	J1A
Check/set the carburetor components. (50 SX Mini) 				•
Check/set the carburetor components. (50 SX) 				•
Check the reed valve housing, diaphragm and intake flange. 	•	•	•	
Check/measure the clutch.  (☞ p. 61)	•	•	•	
Checking wear of clutch drum. 	•	•	•	
Determine the piston/cylinder mounting clearance. 	•	•	•	
Check the seating of the piston pin. 	•	•	•	

	S20A	S40A	S80A	J1A
Check main bearing of the crankshaft. 	•	•	•	
Check radial clearance of conrod bearing. 	•	•	•	
Change crankshafts and conrod bearings. 		•	•	
Service the fork. 		•	•	
Service the shock absorber. 			•	
Clean and lubricate swingarm bearing. 				•
Grease the steering head bearing.  ( p. 30)				•
Change the glass fiber yarn filling of the main silencer. 	•	•	•	
Change the front brake fluid. 				•
Change the rear brake fluid. 				•

S20A: every 20 service hours

S40A: every 40 service hours

S80A: every 80 service hours

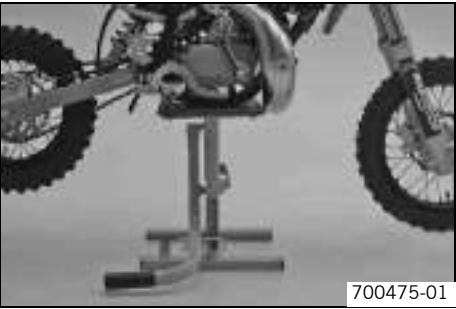
J1A: annually

Performance of urgent inspection and care work by the supervisory individual.

	NB1A
Check the gear oil level. ( p. 57)	•
Check the front brake fluid level. ( p. 37)	•
Check the rear brake fluid level. ( p. 42)	•
Check the front brake linings. ( p. 39)	•
Check the rear brake linings. ( p. 43)	•
Check and adjust throttle cables.	•
Bleed fork legs.	•
Clean dust boots of fork legs. ( p. 24)	•
Clean the chain. ( p. 33)	•
Check the chain tension. ( p. 34)	•
Check the chain wear.	•
Check rear sprocket / engine sprocket for wear. ( p. 34)	•
Clean the air filter.  ( p. 53)	•
Check the tire air pressure. ( p. 47)	•
Check the tire condition. ( p. 47)	•
Check the coolant level. ( p. 49)	•
Check all controls for smooth operation.	•
Check braking.	•
Check all screws, nuts and hose clamps regularly for tightness.	•

NB1A: Depending on conditions of use according to requirements.

Jacking up the motorcycle



- Note**
Danger of damage The parked vehicle can roll away or fall over.
- Always place the vehicle on a firm and even surface.
- Jack up the motorcycle underneath the engine.
- Work stand (54829055000)
- Secure the motorcycle against falling over.

Removing the motorcycle from the work stand

- Note**
Danger of damage The parked vehicle can roll away or fall over.
- Always place the vehicle on a firm and even surface.
- Remove the motorcycle from the work stand.
- Remove the work stand.

Adjusting the rebound damping of the shock absorber

- Danger**
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.)



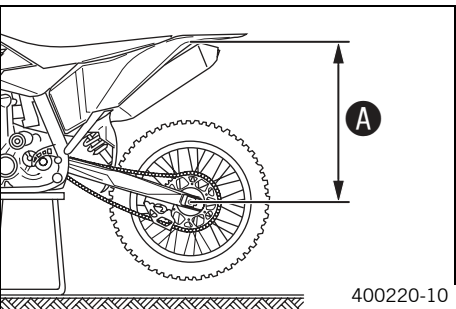
- Turn adjusting screw ❶ clockwise to the last perceptible click.
- Turn back counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

Rebound damping (50 SX)	
Standard	10 clicks
Rebound damping (50 SX Mini)	
Standard	12 clicks

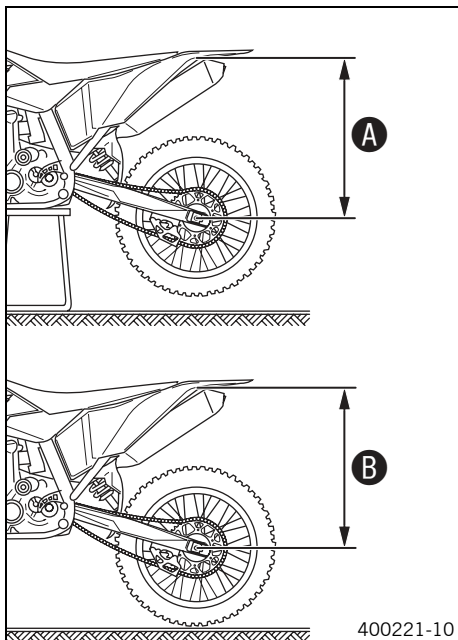
- i Info**
Turn clockwise to increase damping, turn counterclockwise to reduce suspension damping.

Measuring rear wheel sag unloaded



- Jack up the motorcycle. (🔧 p. 20)
- Measure the distance – as vertical as possible – between the rear axle and a fixed point, for example, a mark on the side cover.
- Make a note of the value as measurement **A**.
- Remove the motorcycle from the work stand. (🔧 p. 20)

Checking the static sag of the shock absorber



- Measure distance **A** of rear wheel unloaded. (☞ p. 20)
- Ask someone to help you by holding the motorcycle upright.
- Measure the distance between the rear axle and the fixed point again.
- Make a note of the value as measurement **B**.



Info

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

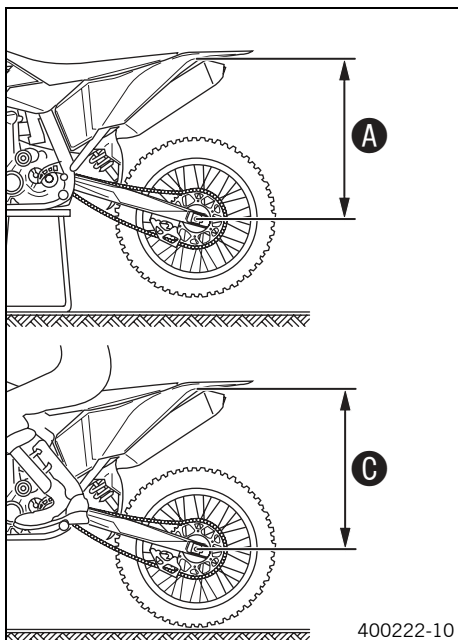
- Check the static sag.

Static sag (50 SX)	20 mm (0.79 in)
--------------------	-----------------

Static sag (50 SX Mini)	15 mm (0.59 in)
-------------------------	-----------------

- » If the static sag is less or more than the specified value:
 - Adjust the spring preload of the shock absorber. ☞ (☞ p. 21)

Checking the riding sag of the shock absorber



- Measure distance **A** of rear wheel unloaded. (☞ p. 20)
- Hold the motorcycle in a vertical position and seat the rider, wearing a full set of protective clothing, on the motorcycle in the normal sitting position (feet on the footrests). The rider should bounce up and down several times so that the rear wheel suspension can level out.
- Now measure the distance between the rear axle and the fixed point again.
- Make a note of the value as measurement **C**.



Info

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

- Check the riding sag.

Riding sag (50 SX)	45... 55 mm (1.77... 2.17 in)
--------------------	-------------------------------

Riding sag (50 SX Mini)	40... 50 mm (1.57... 1.97 in)
-------------------------	-------------------------------

- » If the riding sag differs from the specified measurement:
 - Adjust the riding sag. ☞ (☞ p. 22)

Adjusting the spring preload of the shock absorber ☞

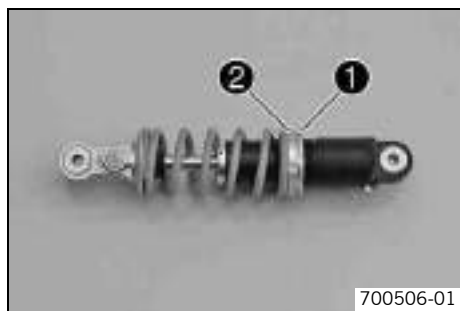


Danger

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.)

- Remove shock absorber. ☞ (☞ p. 22)
- After removing the shock absorber, clean it thoroughly.



- Measure the full spring length while it is under tension and note down the value.
- Loosen lock ring 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.

Guideline

Spring preload (50 SX)	
Standard	3 mm (0.12 in)
Spring preload (50 SX Mini)	
Standard	5 mm (0.2 in)



Info

Measure is the difference between the relaxed spring length and the tensioned spring length.

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

- Tighten lock ring ❶.
- Install shock absorber. 🛠️ (📖 p. 23)

Adjusting the riding sag 🛠️

- Remove shock absorber. 🛠️ (📖 p. 22)
- After removing the shock absorber, clean it thoroughly.
- Choose and mount a suitable spring.

Guideline

Spring rate (50 SX)	
Weight of rider: < 25 kg (< 55 lb.)	30 N/mm (171 lb/in)
Weight of rider: 25... 35 kg (55... 77 lb.)	35 N/mm (200 lb/in)
Weight of rider: > 40 kg (> 88 lb.)	40 N/mm (228 lb/in)
Spring rate (50 SX Mini)	
Weight of rider: < 25 kg (< 55 lb.)	65 N/mm (371 lb/in)
Weight of rider: 25... 35 kg (55... 77 lb.)	75 N/mm (428 lb/in)
Weight of rider: > 35 kg (> 77 lb.)	85 N/mm (485 lb/in)



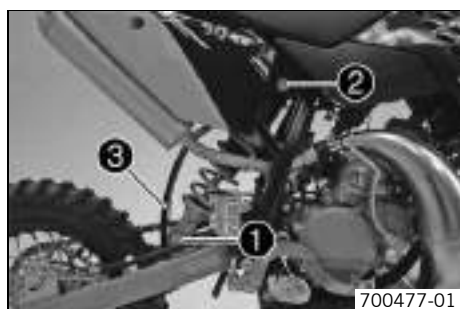
Info

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

Smaller weight differences can be compensated by changing the spring preload.

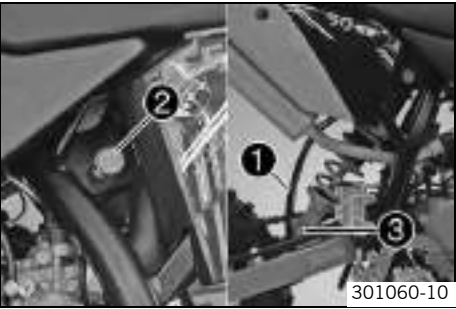
- Install shock absorber. 🛠️ (📖 p. 23)
- Check the static sag of the shock absorber. (📖 p. 21)
- Check the riding sag of the shock absorber. (📖 p. 21)
- Adjust the rebound damping of the shock absorber. (📖 p. 20)

Removing the shock absorber 🛠️



- Jack up the motorcycle. (📖 p. 20)
- Remove screw ❶ and lower the rear wheel with the swing arm as far as possible without blocking the rear wheel. Fix the rear wheel in this position.
- Remove screw ❷, push splash protector ❸ to the side, and remove the shock absorber.

Installing shock absorber



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

Guideline

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

- Mount and tighten screw ❸.

Guideline

Screw, bottom shock absorber	M10	45 Nm (33.2 lbf ft)
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- Remove the motorcycle from the work stand. (🔧 p. 20)

Vehicle level



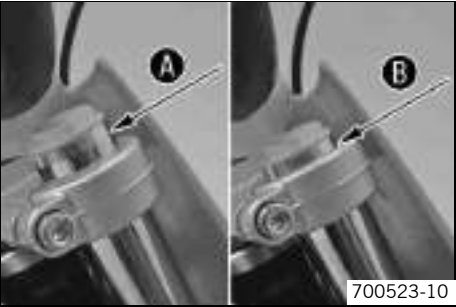
Warning

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

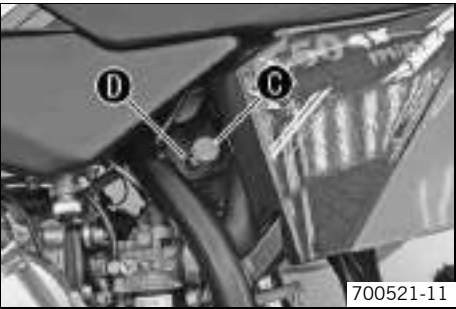
- Following modifications, ride slowly at first to get the feel of the new ride behavior.

The vehicle level can be adjusted at the front by means of the clamping of the fork legs and at the rear by means of the positioning of the shock absorber.

The fork overhang can be individually adjusted to the size of the child. In the lower position ❶ (standard), the fork is completely pushed through. In the higher position ❷, the cone is flush with the upper triple clamp.



Fork overhang over the upper triple clamp	10... 17 mm (0.39... 0.67 in)
---	-------------------------------



The seat height can be individually adjusted to the size of the child. The shock absorber can be mounted at two different holes in the frame.

Difference between low ❶ (standard) and high ❷ seat position	25 mm (0.98 in)
--	-----------------

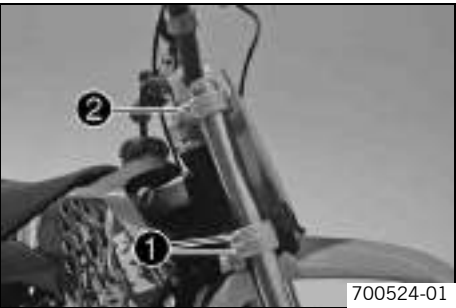
Adjusting the fork overhang



Warning

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

- Following modifications, ride slowly at first to get the feel of the new ride behavior.



- Loosen screws ❶ on the lower triple clamp.
- Loosen screw ❷ on the upper triple clamp.



Info

Loosen the screws to the point where the fork legs can be moved without damaging it.

Make the adjustments first on one fork leg and then on the other.

- Adjust the fork overhang with the upper triple clamp.

Guideline

10... 17 mm (0.39... 0.67 in)

- Tighten screw ❷.

Guideline

Screw, top triple clamp	M8	25 Nm (18.4 lbf ft)
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- Fully tighten screws ❶.

Guideline

Screw, bottom triple clamp	M6	10 Nm (7.4 lbf ft)
----------------------------	----	--------------------

- Repeat the adjustment on the other fork leg.



Info

The setting of the vehicle level via the fork legs must be identical on both fork legs.

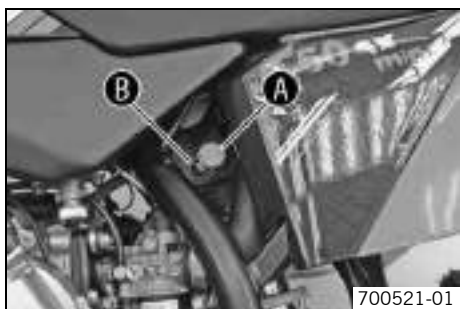
Adjusting seat height 🛠️



Warning

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

- Following modifications, ride slowly at first to get the feel of the new ride behavior.



700521-01

- Remove shock absorber. 🛠️ (🔧 p. 22)
- Position the shock absorber according to the required seat height.

Guideline

Low seat position (standard)	❶
High seat position	❷

- Install shock absorber. 🛠️ (🔧 p. 23)

Cleaning dust boots of fork legs



700478-11

- Jack up the motorcycle. (🔧 p. 20)
- Push dust boots ❶ of both fork legs upwards.



Info

The dust boots should remove dust and coarse dirt particles from the 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.

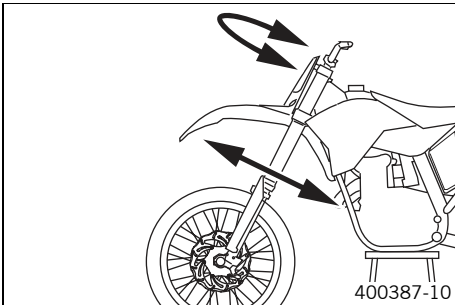
Universal oil spray (🔧 p. 79)

- Press the dust boots back into their normal position.
- Remove excess oil.
- Remove the motorcycle from the work stand. (🔧 p. 20)

Checking play of steering head bearing

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

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



- Jack up the motorcycle. (☞ p. 20)
- 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:
 - Adjust play of the steering head bearing. ☞ (☞ p. 25)
- Move the handlebar to and fro over the entire steering range.

The handlebar must move smoothly over the entire steering range. There should be no perceptible detent positions.

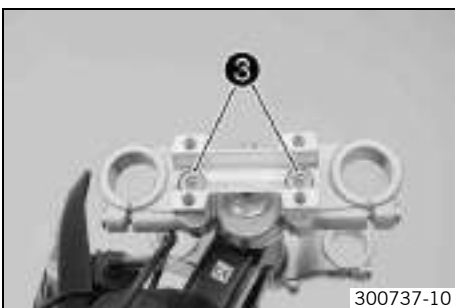
- » If detent positions are noticeable:
 - Adjust play of the steering head bearing. ☞ (☞ p. 25)
 - Check the steering head bearing and replace if required.
- Remove the motorcycle from the work stand. (☞ p. 20)

Adjusting play of steering head bearing ☞

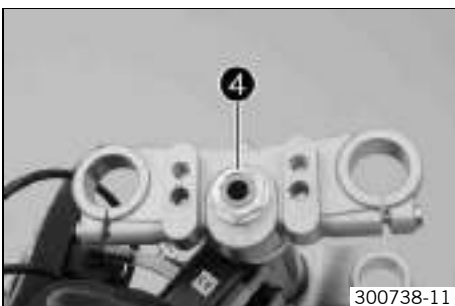


- Jack up the motorcycle. (☞ p. 20)
- Remove the fork legs. ☞ (☞ p. 26)
- Remove the fuel tank breather ①.
- Remove screws ②.
- Remove the handlebar clamp.
- Remove the handlebar and lay it to one side.

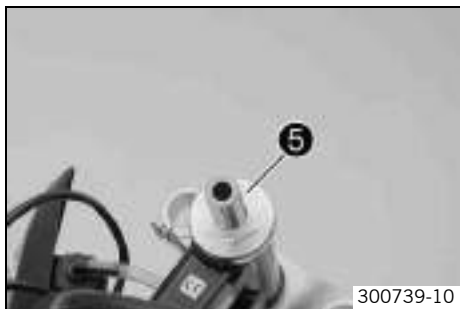
- i Info**
 Protect the motorcycle and its attachments from damage by covering them. Do not bend the cables and lines.



- Remove screws ③.
- Take off the handlebar support.



- Remove nut ④.
- Take off the upper triple clamp.

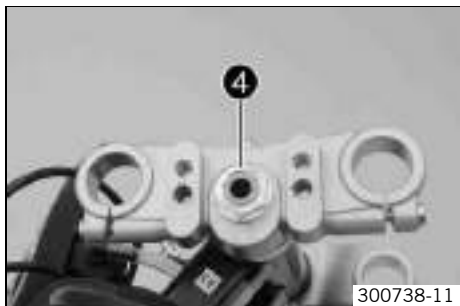


300739-10

- Tighten nut 5.

Guideline

Steering head nut	M20x1.5	10 Nm (7.4 lbf ft)
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300738-11

- Position the upper triple clamp.
- Mount nut 4, but do not tighten it yet.

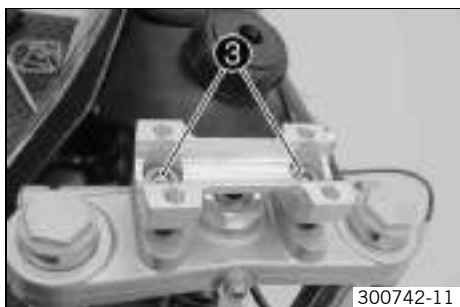
Guideline

Nut, steering stem	M20x1.5	10 Nm (7.4 lbf ft)
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- Install the fork legs. (p. 27)
- Tighten nut 4.

Guideline

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

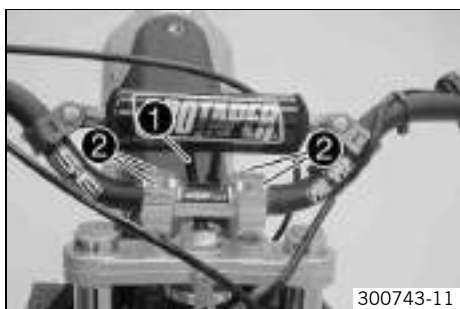


300742-11

- Position the handlebar support.
- Mount and tighten screws 3.

Guideline

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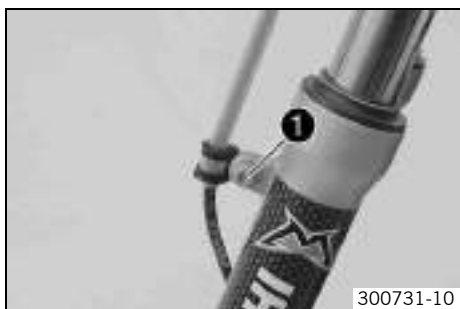


300743-11

- Position the handlebar with the handlebar clamps.
- Mount and tighten screws 2.
- Position the fuel tank breather 1.
- Check play of steering head bearing. (p. 25)
- Check the cable harness, bowden cables and brake line for freedom of movement and routing.
- Remove the motorcycle from the work stand. (p. 20)

Removing the fork legs

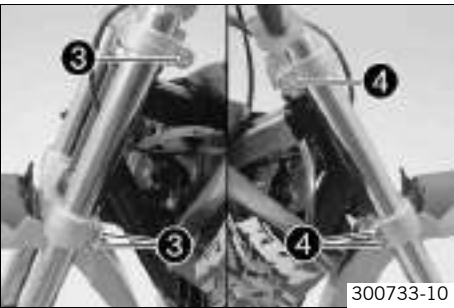
- Remove front wheel. (p. 45)
- Dismount the start number plate. (p. 31)
- Remove screws 1 and take off clamp.



300731-10

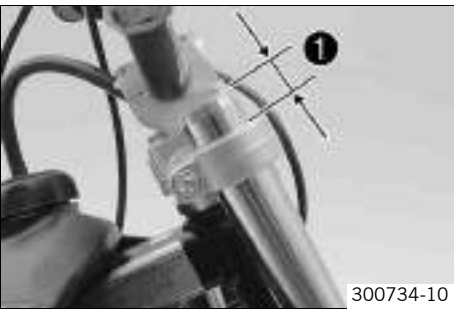


- Remove screws 2 with washers and brake caliper.
- Hang the brake caliper and the brake line loosely to the side.



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

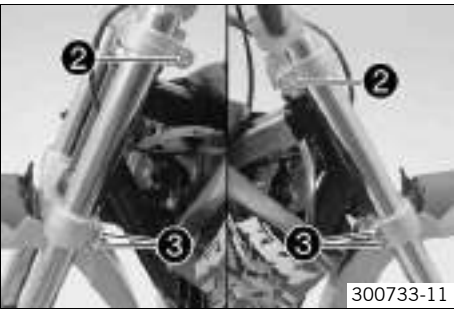
Installing the fork legs



- Position the fork legs.
- Adjust fork overhang 1.

Guideline

Upper fork projection	10... 17 mm (0.39... 0.67 in)
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- Tighten screw 2.

Guideline

Screw, top triple clamp	M8	25 Nm (18.4 lbf ft)
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- Tighten screws 3.

Guideline

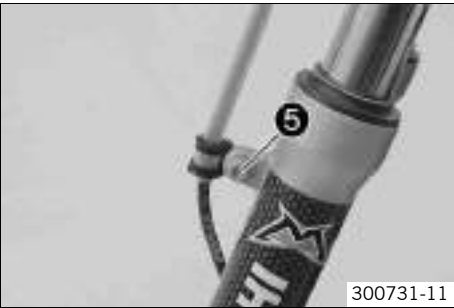
Screw, bottom triple clamp	M6	10 Nm (7.4 lbf ft)
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- Position the brake caliper, fit and tighten the screws 4 with washers.

Guideline

Screw, front brake caliper	M8	20 Nm (14.8 lbf ft)	Loctite® 243™
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- Position the brake line. Put the clamp on, and mount and tighten screws 5.
- Install the start number plate. (p. 31)
- Install the front wheel. (p. 45)

Removing the lower triple clamp

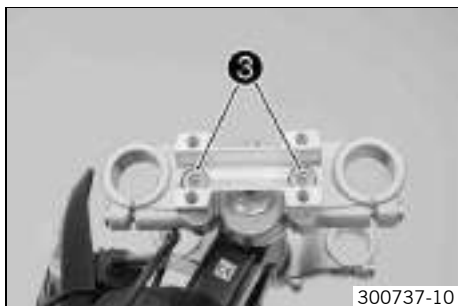


- Remove the fork legs. (p. 26)
- Dismount the front fender. (p. 30)
- Remove the fuel tank breather ①.
- Remove screws ②.
- Remove the handlebar clamp.
- Remove the handlebar and lay it to one side.

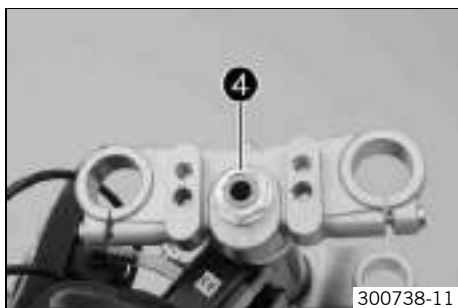


Info

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



- Remove screws ③.
- Take off the handlebar support.



- Remove nut ④.
- Take off the upper triple clamp.

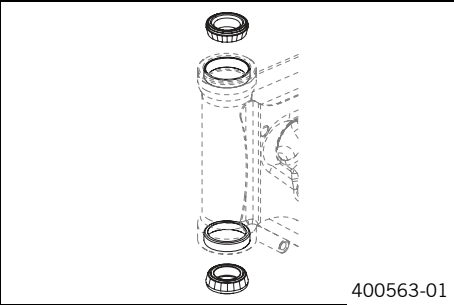


- Remove nut ⑤.



- Remove protector ring ⑥.
- Remove the lower triple clamp with the steering stem.
- Remove the upper steering head bearing.

Installing the lower triple clamp



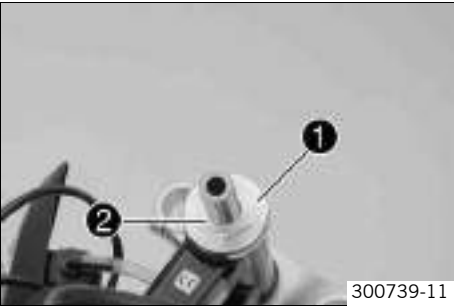
- Clean the bearing and sealing elements, check for damage, and grease.

Long-life grease (☛ p. 78)

- Insert the lower triple clamp with the steering stem. Mount the upper steering head bearing.

 **Info**

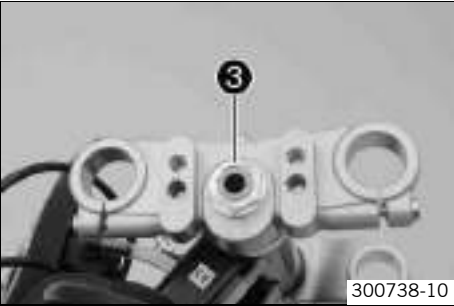
Check that the O-rings of the steering head seal are correctly positioned.



- Push on protective ring 1.
- Mount and tighten nut 2.

Guideline

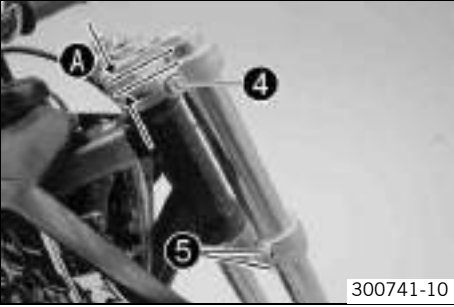
Steering head nut	M20x1.5	10 Nm (7.4 lbf ft)
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- Position the upper triple clamp.
- Mount nut 3, but do not tighten it yet.

Guideline

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



- Position the fork leg.
- Adjust fork overhang A.

Guideline

Upper fork projection	10... 17 mm (0.39... 0.67 in)
-----------------------	-------------------------------

- Tighten screw 4.

Guideline

Screw, top triple clamp	M8	25 Nm (18.4 lbf ft)
-------------------------	----	---------------------

- Tighten screws 5.

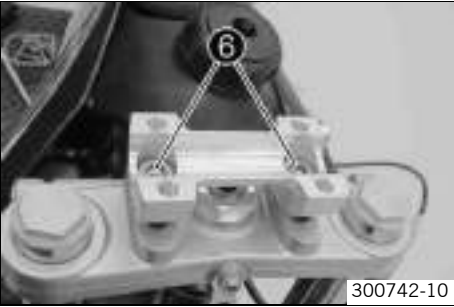
Guideline

Screw, bottom triple clamp	M6	10 Nm (7.4 lbf ft)
----------------------------	----	--------------------

- Repeat these steps on the opposite side.
- Tighten nut 3.

Guideline

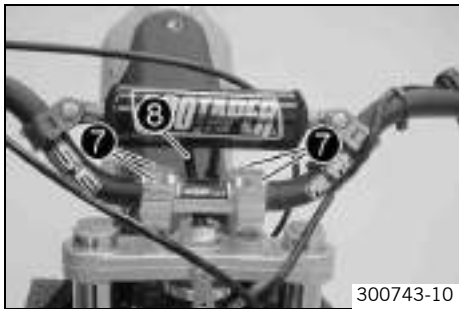
Nut, steering stem	M20x1.5	10 Nm (7.4 lbf ft)
--------------------	---------	--------------------



- Position the handlebar support.
- Mount and tighten screws 6.

Guideline

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

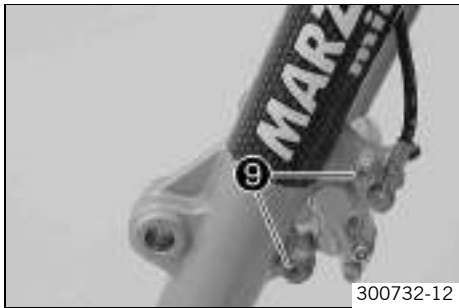


- Position the handlebar with handlebar clamps.
- Mount and tighten screws 7.

Guideline

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

- Position the fuel tank breather 8.



- Position the brake caliper, fit and tighten the screws 9 with washers.

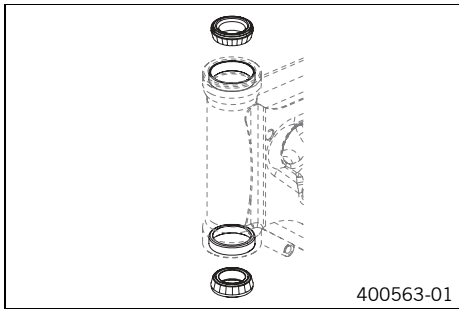
Guideline

Screw, front brake caliper	M8	20 Nm (14.8 lbf ft)	Loctite® 243™
----------------------------	----	------------------------	---------------



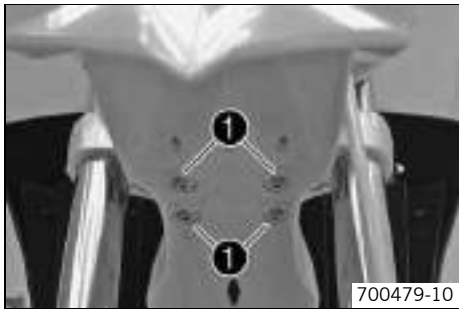
- Position the brake line. Put the clamp on, and mount and tighten screws 10.
- Install the front fender. (☞ p. 31)
- Install the start number plate. (☞ p. 31)
- Install the front wheel. ☞ (☞ p. 45)
- Check that the wiring harness, Bowden cables and brake line have freedom of movement and are routed correctly.
- Check play of steering head bearing. (☞ p. 25)

Greasing the steering head bearing ☞



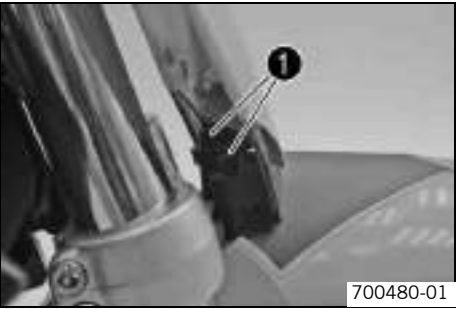
- Remove the lower triple clamp. ☞ (☞ p. 28)
- Install the lower triple clamp. ☞ (☞ p. 29)

Dismounting the front fender

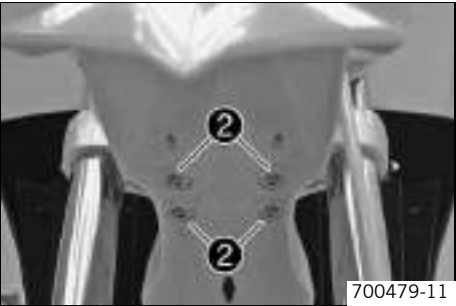


- Remove screws 1. Remove the front fender.

Installing the front fender



- Position the fender with holding lugs ❶ into the drill holes on the start number plate.

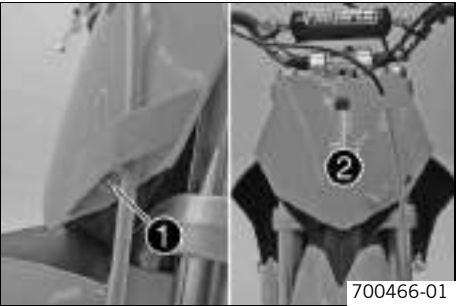


- Position the front fender. Mount and tighten screws ❷.

Guideline

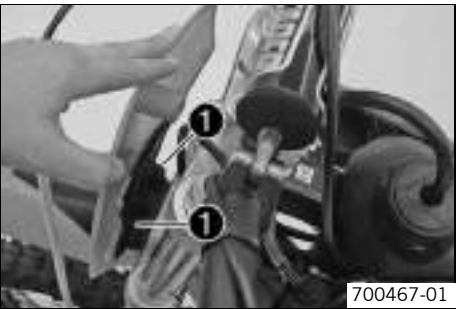
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	--------------------

Dismounting the start number plate

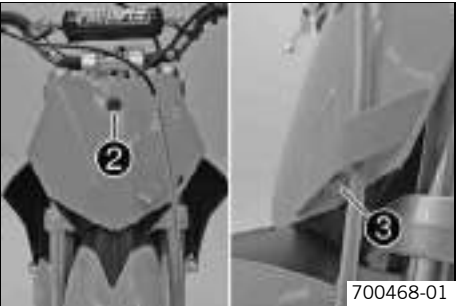


- Remove screw ❶ and take off clamp.
- Remove screw ❷. Remove the start number plate.

Installing the start number plate



- Position the start number plate with the drill holes onto the holding lugs ❶ of the fender.



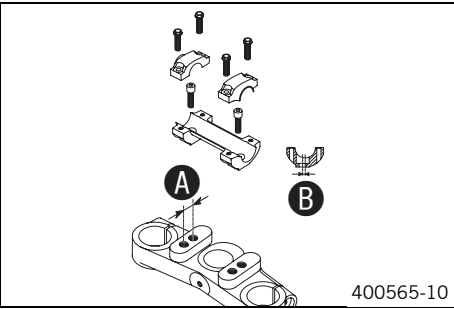
- Mount and tighten screw ❷.

Guideline

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

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

Handlebar position



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

Distance A between holes	15 mm (0.59 in)
---------------------------------	-----------------

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

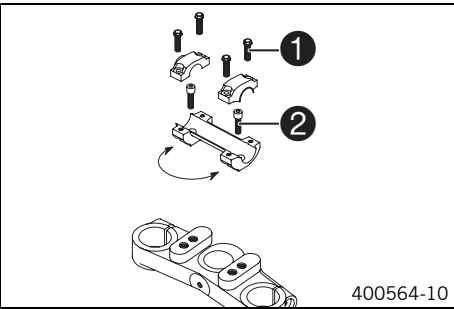
Distance B between holes	3.5 mm (0.138 in)
---------------------------------	-------------------

The handlebar supports can be mounted in 4 different positions.

Adjusting handlebar position

Warning
Danger of accidents Handlebar breakage.

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



- Remove the four screws **1**. Remove the handlebar clamp. Remove the handlebar and lay it to one side.

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

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

Guideline

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

- Position the handlebar.

Info
Make sure cables and wiring are positioned correctly.

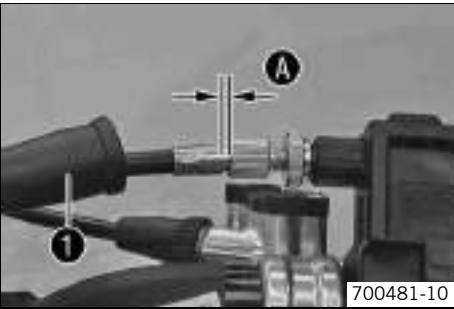
- Position the handlebar clamp. Mount and evenly tighten the four screws **1**.

Guideline

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

Info
Make sure the gap width is even.

Checking the play in the throttle cable

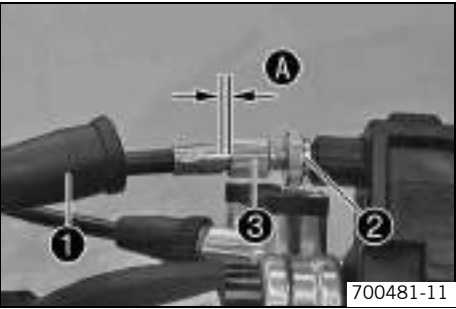


- Move the handlebar to the straight-ahead position.
- Push back bellows **1**.
- Pull back the throttle cable casing until you sense a resistance.
- Now check throttle cable play **A**.

Play in gas 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. 33)
- Push on bellows **1**. Check the throttle grip for smooth operation.

Adjusting the play in the throttle cable



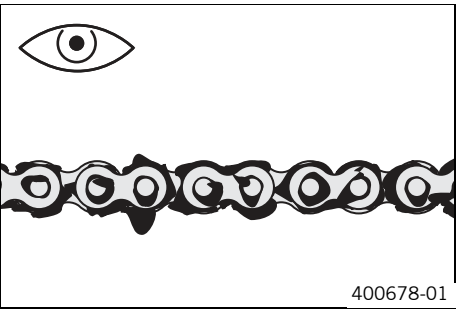
- Move the handlebar to the straight-ahead position.
- Push back bellows ❶.
- Loosen nut ❷. Turn adjusting screw ❸ in as far as possible.
- Turn the adjusting screw so that there is play A at the outer casing of the throttle cable.

Guideline

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

- Tighten the nut.
- Push on bellows ❶. Check the throttle grip for smooth operation.

Checking chain dirt



- Check the chain for coarse dirt accumulation.
 - » If the chain is very dirty:
 - Clean the chain. (☛ p. 33)

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.

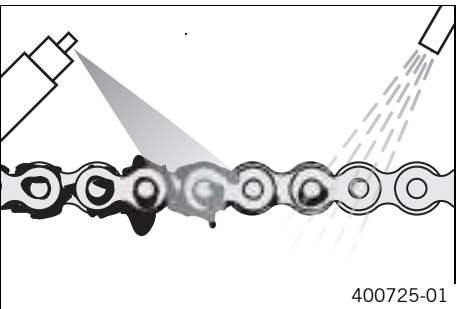
**Warning**
Danger of accidents Reduced braking efficiency due to oil or grease on the brake discs.

- 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. 78)
Offroad chain spray (☛ p. 78)

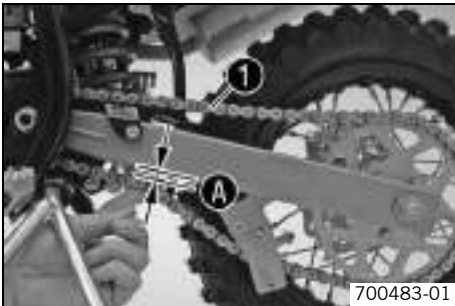
Checking the chain tension



Warning

Danger of accidents Danger caused by incorrect chain tension.

- If the chain is over tensioned, the components of the secondary power train (chain, engine sprocket, rear sprocket, bearings in transmission and rear wheel) are under additional load. Apart from premature wear, in extreme cases the chain may snap or the countershaft of the transmission can break. On the other hand, if the chain is loose, it may jump off the engine sprocket or the rear sprocket, causing the rear wheel to lock or damage the engine. Check for correct chain tension and adjust if necessary.



- Jack up the motorcycle. (☛ p. 20)
- Push the chain at the end of the chain sliding component upward to measure the chain tension **A**.



Info

The upper chain section **1** must be taut. Because chain wear is not always even, repeat this measurement at different chain positions.

Chain tension	5... 8 mm (0.2... 0.31 in)
---------------	----------------------------

- » If the chain tension does not meet specifications:
 - Adjusting chain tension - after checking. (☛ p. 35)
- Remove the motorcycle from the work stand. (☛ p. 20)

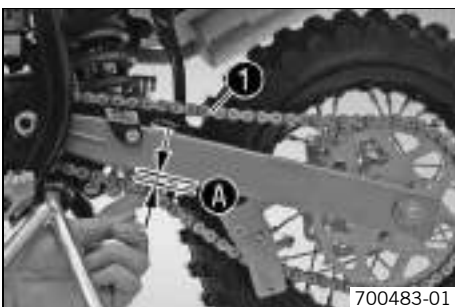
Checking the chain tension - installing rear wheel



Warning

Danger of accidents Danger caused by incorrect chain tension.

- If the chain is over tensioned, the components of the secondary power train (chain, engine sprocket, rear sprocket, bearings in transmission and rear wheel) are under additional load. Apart from premature wear, in extreme cases the chain may snap or the countershaft of the transmission can break. On the other hand, if the chain is loose, it may jump off the engine sprocket or the rear sprocket, causing the rear wheel to lock or damage the engine. Check for correct chain tension and adjust if necessary.



- Make sure that the chain adjuster support plates are lying on the adjusting screws.
- Push the chain at the end of the chain sliding component upward to measure the chain tension **A**.



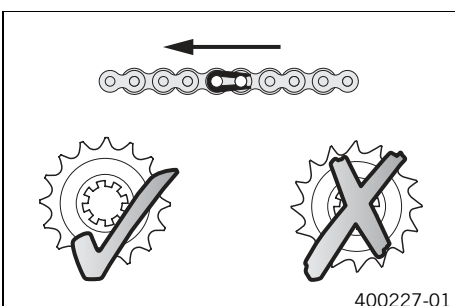
Info

The upper chain section **1** must be taut. Because chain wear is not always even, repeat this measurement at different chain positions.

Chain tension	5... 8 mm (0.2... 0.31 in)
---------------	----------------------------

- » If the chain tension does not meet specifications:
 - Adjust the chain tension when installing the rear wheel. (☛ p. 36)

Checking rear sprocket / engine sprocket for wear



- Check rear sprocket / engine sprocket for wear.
 - » If the rear sprocket / engine sprocket are worn:
 - Replace rear sprocket / engine sprocket.



Info

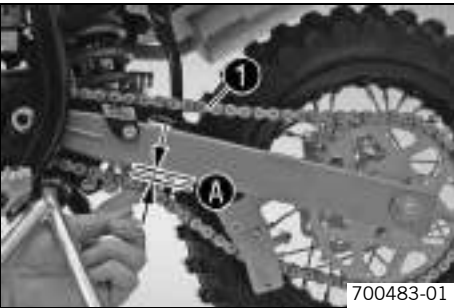
When fitting the chain joint, always make sure that the closed side of the joint faces forward (riding direction). The engine sprocket, rear sprocket and chain should always be replaced together.

- Check the chain guide for tightness and wear.

Adjusting chain tension

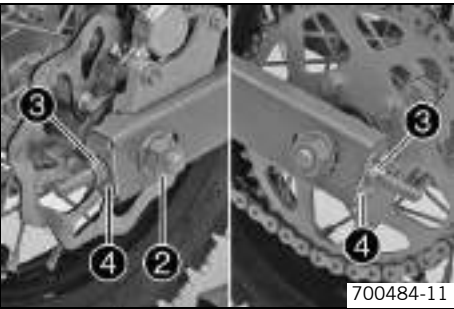
Warning
Danger of accidents Danger caused by incorrect chain tension.

- If the chain is over tensioned, the components of the secondary power train (chain, engine sprocket, rear sprocket, bearings in transmission and rear wheel) are under additional load. Apart from premature wear, in extreme cases the chain may snap or the countershaft of the transmission can break. On the other hand, if the chain is loose, it may jump off the engine sprocket or the rear sprocket, causing the rear wheel to lock or damage the engine. Check for correct chain tension and adjust if necessary.



- Jack up the motorcycle. (🔧 p. 20)
- Push the chain at the end of the chain sliding component upward to measure the chain tension **A**.

i Info
The upper chain section **1** must be taut.
Because chain wear is not always even, repeat this measurement at different chain positions.



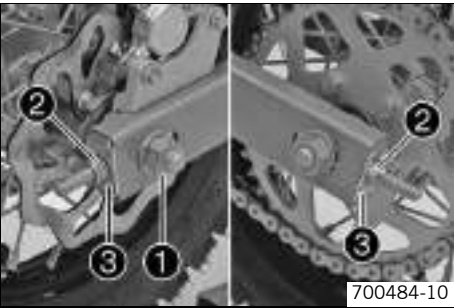
- Loosen nut **2**.
 - Adjust the chain tension by turning the adjusting screws **3** left and right.
Guideline
- | | |
|--|----------------------------|
| Chain tension | 5... 8 mm (0.2... 0.31 in) |
| Turn adjusting screws 3 equally on the left and right. Check that the rear wheel is aligned with the front wheel. | |

- Make sure that the chain adjuster supports **4** are fitted correctly on the adjusting screws **3**.
- Tighten nut **2**.
Guideline

Nut, rear wheel spindle	M12x1	40 Nm (29.5 lbf ft)
-------------------------	-------	------------------------

- Remove the motorcycle from the work stand. (🔧 p. 20)

Adjusting chain tension - after checking

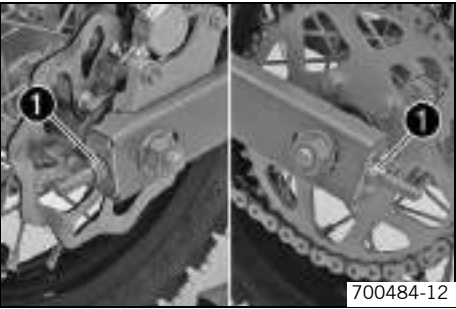


- Loosen nut **1**.
 - Adjust the chain tension by turning the adjusting screws **2** left and right.
Guideline
- | | |
|--|----------------------------|
| Chain tension | 5... 8 mm (0.2... 0.31 in) |
| Turn adjusting screws 2 equally on the left and right. Check that the rear wheel is aligned with the front wheel. | |

- Make sure that the chain adjuster supports **3** are fitted correctly on the adjusting screws **2**.
- Tighten nut **1**.
Guideline

Nut, rear wheel spindle	M12x1	40 Nm (29.5 lbf ft)
-------------------------	-------	------------------------

Adjusting chain tension - installing rear wheel



- Adjust the chain tension by turning the adjusting screws ❶ left and right.

Guideline

Chain tension	5... 8 mm (0.2... 0.31 in)
Turn adjusting screws ❶ equally on the left and right. Check that the rear wheel is aligned with the front wheel.	

Adjusting the chain guide

Info

The size of the chain wheel varies with the number of teeth. The chain guide can be adjusted on small sprockets.



- Loosen screw ❶.
- Position the chain guide.
- Tighten screw.

Guideline

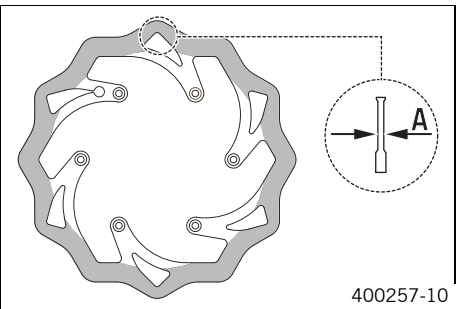
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
---------------------------	----	--------------------

Checking brake discs

Warning

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

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



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

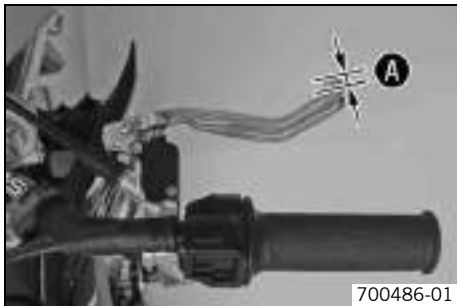
Info

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

Brake discs - wear limits	
Front	2.2 mm (0.087 in)
Rear	2.2 mm (0.087 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 disk exhibits damage, cracking or deformation:
 - Change the brake disc.

Checking play of handbrake lever



- Push the handbrake lever forwards and check the play **A**.

Play at handbrake lever	3... 5 mm (0.12... 0.2 in)
-------------------------	----------------------------

- » If the play does not meet specifications:
 - Adjust the play of the handbrake lever. (☛ p. 37)

Adjusting play of handbrake lever

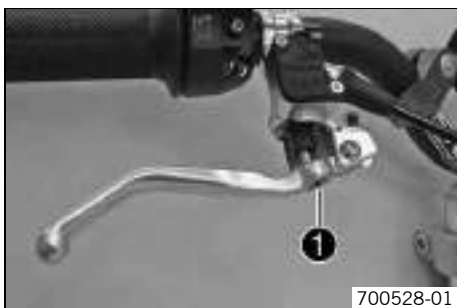


- Check the play of the handbrake lever. (☛ p. 37)
- Adjust the play of the handbrake lever with the adjusting screw **1**.

Guideline

Play at handbrake lever	3... 5 mm (0.12... 0.2 in)
-------------------------	----------------------------

Adjusting basic position of handbrake lever



- Check the play of the handbrake lever. (☛ p. 37)
- Adjust the basic position of the handbrake lever with the adjusting screw **1** to the rider's hand size.



Info

Turn the adjusting screw clockwise to increase the distance between the handbrake lever and the handlebar.
Turn the adjusting screw counterclockwise to decrease the distance between the handbrake lever and the handlebar.
The range of adjustment is limited.

Checking the front brake fluid level



Warning

Danger of accidents Brake system failure.

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



Warning

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 gets into your eyes, rinse thoroughly with water and contact a doctor immediately.



Warning

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

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



Warning

Environmental hazard Hazardous substances cause environmental damage.

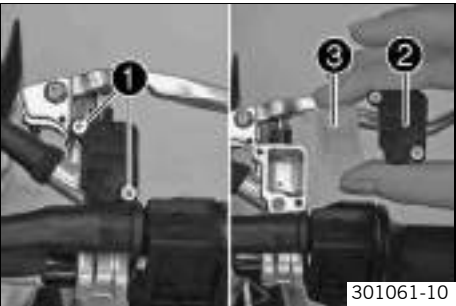
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

**Info**

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

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

Use only clean brake fluid from a sealed container!



- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
 - Remove screws ❶.
 - Remove cover ❷ with diaphragm ❸.
 - Check the brake fluid level.
- | | |
|--|---------------|
| Brake fluid level under top level of container | 5 mm (0.2 in) |
|--|---------------|
- » If the brake fluid level does not meet specifications:
- Add front brake fluid. 🛠️ (🔧 p. 38)
- Position the cover with the diaphragm. Mount and tighten the screws.

**Info**

Clean up overflowed or spilt brake fluid immediately with water.

Adding front brake fluid 🛠️

**Warning**

Danger of accidents Brake system failure.

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

**Warning**

Skin irritation Brake fluid can cause skin irritation on contact.

- Avoid contact with skin and eyes, and keep out of the reach of children.
- Wear suitable protective clothing and goggles.
- If brake fluid gets into your eyes, rinse thoroughly with water and contact a doctor immediately.

**Warning**

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

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

**Warning**

Environmental hazard Hazardous substances cause environmental damage.

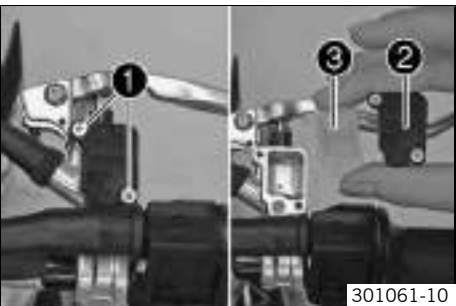
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

**Info**

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

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

Use only clean brake fluid from a sealed container!



- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
 - Remove screws ❶.
 - Remove cover ❷ with diaphragm ❸.
 - Correct the brake fluid level.
- Guideline
- | | |
|--|---------------|
| Brake fluid level under top level of container | 5 mm (0.2 in) |
|--|---------------|
- | | |
|---------------------------------------|--|
| Brake fluid DOT 4 / DOT 5.1 (🔧 p. 76) | |
|---------------------------------------|--|

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



Info

Clean up overflowed or spilt brake fluid immediately with water.

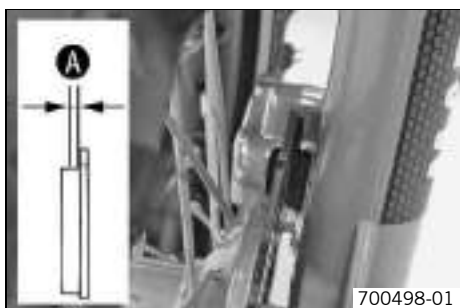
Checking the front brake linings



Warning

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

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



700498-01

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

Minimum thickness A	$\geq 1 \text{ mm } (\geq 0.04 \text{ in})$
----------------------------	---

- » If the minimum thickness is less than specified:
 - Change the front brake linings. (p. 40)
- Check the brake linings for damage and cracking.
 - » If damage or wear is encountered:
 - Change the front brake linings. (p. 40)

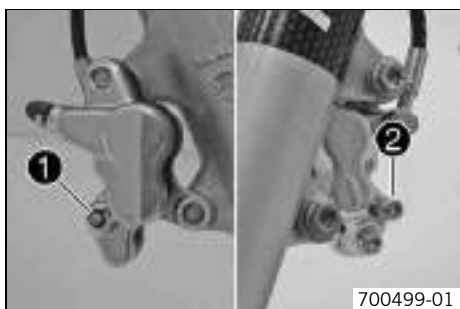
Removing front brake linings



Warning

Danger of accident Brake system failure.

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



700499-01

- Remove front wheel. (p. 45)
- Remove the lock washer **1**.
- Remove screw **2**.



700500-01

- Remove the brake linings.
- Clean brake caliper and brake caliper support.

Installing the front brake linings



Warning

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

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



Warning

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

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

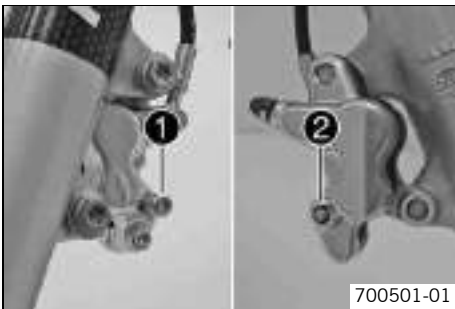


- Check the brake discs. (🔧 p. 36)
- Insert the brake linings.



Info

Ensure that the brake linings are correctly positioned in the holding spring.



- Mount screw ❶.
- Fit the lock washer ❷.
- Install the front wheel. 🛞 (🔧 p. 45)

Changing the front brake linings 🛞



Warning

Skin irritation Brake fluid can cause skin irritation on contact.

- Avoid contact with skin and eyes, and keep out of the reach of children.
- Wear suitable protective clothing and goggles.
- If brake fluid gets into your eyes, rinse thoroughly with water and contact a doctor immediately.



Warning

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

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



Warning

Environmental hazard Hazardous substances cause environmental damage.

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



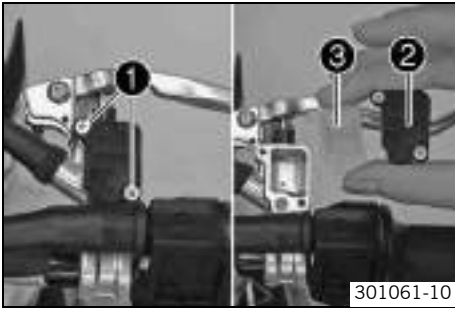
Info

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

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

Use only clean brake fluid from a sealed container!

- Remove the front brake linings. 🛞 (🔧 p. 39)



301061-10

- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Remove screws ❶.
- Remove cover ❷ with diaphragm ❸.
- Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake fluid reservoir.
- Install the front brake linings. 🛠️ (📖 p. 39)
- Correct the brake fluid level.

Guideline

Brake fluid level under top level of container	5 mm (0.2 in)
--	---------------

Brake fluid DOT 4 / DOT 5.1 (📖 p. 76)

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



Info

Clean up overflowed or spilt brake fluid immediately with water.

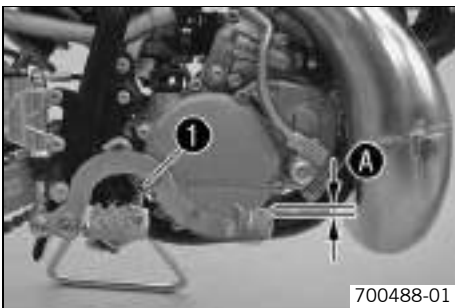
Checking the free travel of the foot brake lever



Warning

Danger of accidents Brake system failure.

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



700488-01

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

Guideline

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

» If the free travel does not meet specifications:

- Adjust the free travel of the foot brake pedal. 🛠️
- Attach spring ❶.

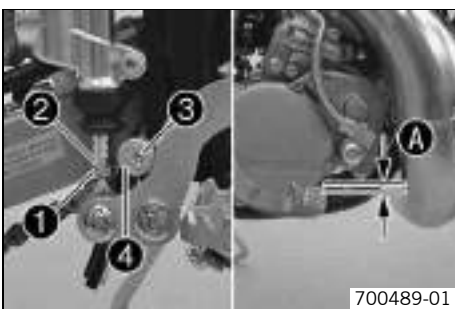
Adjusting basic position of foot brake pedal 🛠️



Warning

Danger of accidents Brake system failure.

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



700489-01

- Detach the spring.
- Loosen nut ❶.
- Turn back push rod ❷ until free travel is at a maximum.
- For an individual adjustment of the basic position of the footbrake pedal, loose the screw ❸ and turn the eccentric brake lever stop ❹ accordingly.
- Tighten screw ❸.

Guideline

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

- Turn push rod ❷ until clearance A is created.

Guideline

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

- Hold push rod ❷ and tighten nut ❶.
- Attach the spring.
- Check whether the basic position of the foot brake pedal is suitable for the rider.

Checking rear brake fluid level

- Warning**
Danger of accidents Failure of the brake system.
- If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)
- Warning**
Danger of accidents Reduced braking efficiency due to old brake fluid.
- Change the brake fluid of the front and rear brakes according to the service schedule. (Your authorized KTM workshop will be glad to help.)



- Stand the vehicle upright.
- Check the brake fluid level in the viewer **1**.
 - » When an air bubble is visible in the viewer **1**:
 - Add rear brake fluid. 🛠️ (📖 p. 42)

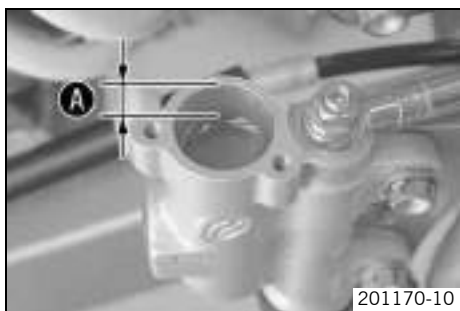
Adding rear brake fluid 🛠️

- 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 gets into your eyes, rinse thoroughly with water and contact a doctor immediately.
- Warning**
Danger of accidents Reduced braking efficiency due to old brake fluid.
- Change the brake fluid of the front and rear brakes 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! This is based on silicone oil and is colored purple. Oil seals and brake lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint!
Use only clean brake fluid from a sealed container!



- Jack up the motorcycle. (📖 p. 20)
- Remove screws **1**.
- Take off cover **2** with washer **3** and membrane **4**.



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

Guideline

Dimension A (brake fluid level below top edge of container)	10 mm (0.39 in)
--	-----------------

Brake fluid DOT 4 / DOT 5.1 (🔧 p. 76)

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



Info

Clean up overflowed or spilt brake fluid immediately with water.

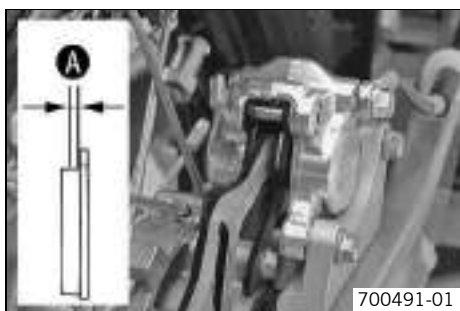
Checking the rear brake linings



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	$\geq 1 \text{ mm } (\geq 0.04 \text{ in})$
----------------------------	---

- » If the minimum thickness is less than specified:
 - Change the rear brake linings. 🛠️ (🔧 p. 44)
- Check the brake linings for damage and cracking.
 - » If damage or wear is encountered:
 - Change the rear brake linings. 🛠️ (🔧 p. 44)

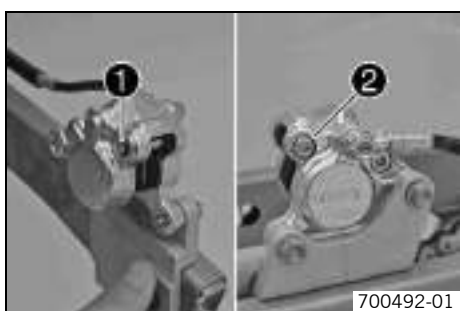
Removing rear brake linings 🛠️



Warning

Danger of accident Brake system failure.

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



- Remove the rear wheel. 🛠️ (🔧 p. 46)
- Remove the lock washer **1**.
- Remove screw **2**.



- Remove the brake linings.
- Clean brake caliper and brake caliper support.

Installing the rear brake linings 🛠️



Warning

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

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



Warning

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

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

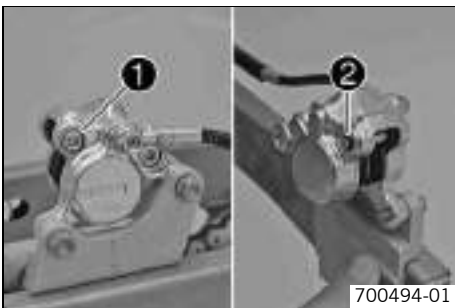


- Check the brake discs. (🔧 p. 36)
- Insert the brake linings.



Info

Ensure that the brake linings are correctly positioned in the holding spring.



- Mount screw ❶.
- Fit the lock washer ❷.
- Install the rear wheel. 🛠️ (🔧 p. 46)

Changing the rear brake linings 🛠️



Warning

Skin irritation Brake fluid can cause skin irritation on contact.

- Avoid contact with skin and eyes, and keep out of the reach of children.
- Wear suitable protective clothing and goggles.
- If brake fluid gets into your eyes, rinse thoroughly with water and contact a doctor immediately.



Warning

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

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



Warning

Environmental hazard Hazardous substances cause environmental damage.

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

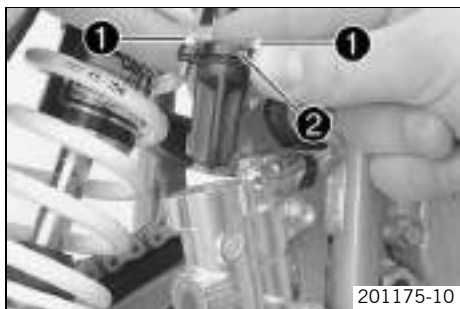


Info

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

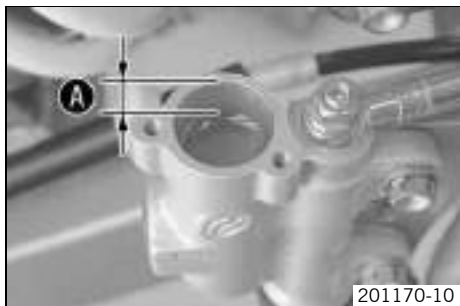
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint!

Use only clean brake fluid from a sealed container!



201175-10

- Remove the rear brake linings. (p. 43)
- Remove screws 1.
- Take off cover 2 with washer 3 and membrane 4.
- Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake fluid reservoir.
- Install the rear brake linings. (p. 44)



201170-10

- Add brake fluid to level A.

Guideline

Dimension A (brake fluid level below top edge of container)	10 mm (0.39 in)
---	-----------------

Brake fluid DOT 4 / DOT 5.1 (p. 76)

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



Info

Clean up overflowed or spilt brake fluid immediately with water.

Removing front wheel



700502-01

- Jack up the motorcycle. (p. 20)
- Remove nut 1 with washer.



700503-01

- Hold the front wheel and pull out the wheel spindle 2 with the washer 3. Take the front wheel out of the fork.



Info

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

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.

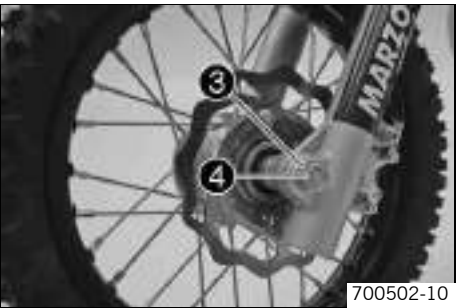
- Clean and grease wheel spindle 1.

Long-life grease (p. 78)



700503-10

- Lift the front wheel into the fork, position it, and insert wheel spindle ❶ with washer ❷.



700502-10

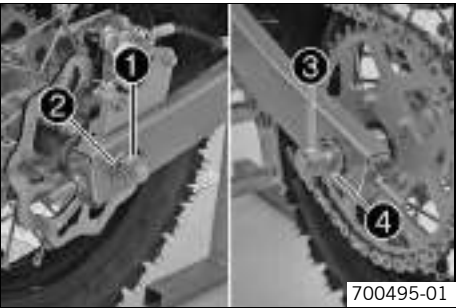
- Position washer ❸.
- Mount and tighten nut ❹.

Guideline

Front wheel spindle nut	M12x1	40 Nm (29.5 lbf ft)
-------------------------	-------	------------------------

- Remove the motorcycle from the work stand. (☛ p. 20)
- Operate the hand brake lever several times until the brake pads are lying correctly on the brake disc.

Removing rear wheel 🛠



700495-01

- Jack up the motorcycle. (☛ p. 20)
- Remove nut ❶.
- Remove the washer ❷.
- Pull out the wheel spindle ❸ with the washer ❹.
- Remove the chain from the rear sprocket.
- Take the rear wheel out of the swing arm.

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.

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.



700496-01

- Clean and grease wheel spindle ❶.
- Lift the rear wheel into the swingarm and place the chain on the rear sprocket.
- Insert the wheel spindle ❶ with the washer ❷.
- Position washer ❸. Mount nut ❹, but do not tighten it yet.
- Check chain tension when installing the rear wheel. (☛ p. 34)
- Make sure that the chain adjuster supports are fitted correctly on the adjusting screws.
- Tighten nut ❹.

Guideline

Nut, rear wheel spindle	M12x1	40 Nm (29.5 lbf ft)
-------------------------	-------	------------------------

- Operate the foot brake lever repeatedly until the brake linings lie on the brake disc and there is a tight spot.
- Remove the motorcycle from the work stand. (☛ p. 20)

Checking the tire condition



Info

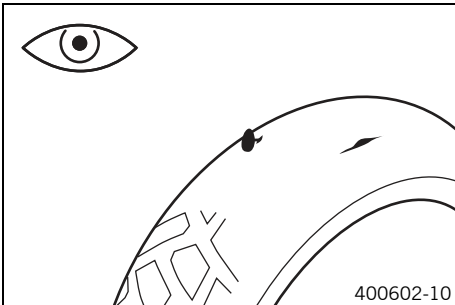
Only mount tires that have been approved and/or recommended by KTM.

Other tires could have a negative effect on vehicle handling.

The type, condition and air pressure of the tires all have an important impact on the handling characteristics of the motorcycle.

The tires mounted on the front and rear wheels must have the same profile.

Worn tires have a negative effect on vehicle handling, especially on wet surfaces.



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



Info

Note local national regulations concerning the minimum tread depth.

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

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



Info

The tire's date of manufacture is usually part of the tire markings and is indicated by the last four digits of the **DOT** marking. The first two digits refer to the week of manufacture and last two digits refer to the year of manufacture.

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

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

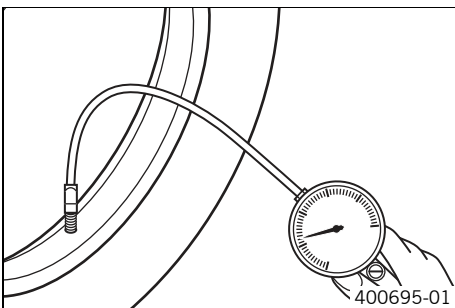
Checking tire air pressure



Info

Low tire air pressure leads to abnormal wear and overheating of the tire.

Correct tire air pressure ensures optimal riding comfort and maximum tire service life.



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

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

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

Checking spoke tension



Warning

Danger of accidents Instable handling due to incorrect spoke tension.

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

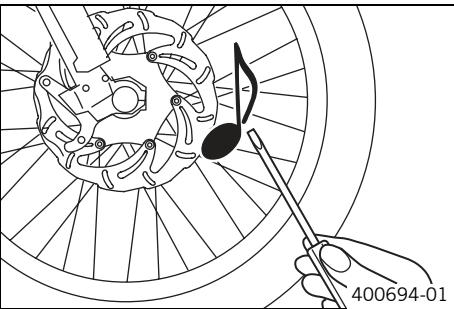


Info

A loose spoke can cause wheel imbalance, which leads to more loose spokes in a short time.

If the spokes are too tight, they can break due to local overload.

Check the spoke tension regularly, especially on a new motorcycle.



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



Info

The frequency of the tone depends on the spoke length and diameter. If you hear different tone frequencies from spokes of the same length and thickness, this is an indication that the spoke tension differs.

You should hear a high note.

- » If the spoke tension differs:
 - Correct the spoke tension. ↩

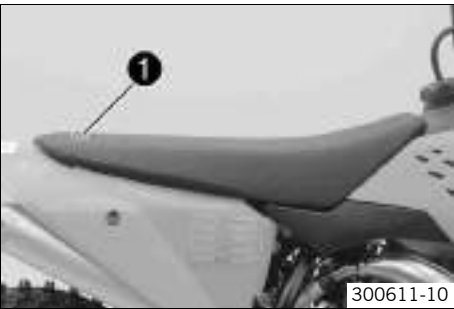
- Check the spoke torque.

Guideline

Spoke nipple	M3.5	3 Nm (2.2 lbf ft)
--------------	------	-------------------

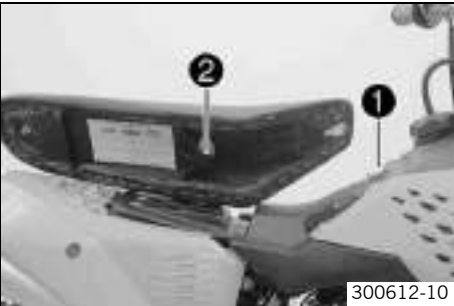
Torque wrench with various accessories in set (58429094000)

Removing the seat



- Open quick release ❶ and raise the rear of the seat.
- Pull back the seat and remove it.

Mounting the seat

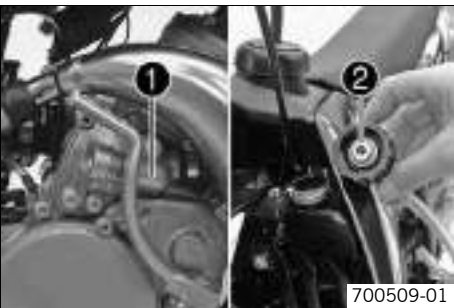


- Hook the seat onto screw ❶ and lower the seat at the rear while pushing it forward.
 - ✓ Projection ❷ hooks into the fuel tank.



- Close quick release ❸.

Cooling system



The water pump ❶ in the engine forces the coolant to flow. The pressure resulting from the warming of the cooling system is regulated by a valve in the radiator cap ❷. The specified coolant temperature is therefore permissible without danger of function problems.

120 °C (248 °F)

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

Checking the antifreeze and coolant level

- Warning**
Danger of scalding During motorcycle operation, the coolant gets very hot and is under pressure.
- Do not open the radiator, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of burns, rinse immediately with lukewarm water.
- Warning**
Danger of poisoning Coolants are poisonous and a health hazard.
- Avoid contact between coolants and skin, eyes and clothing. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolants out of the reach of children.

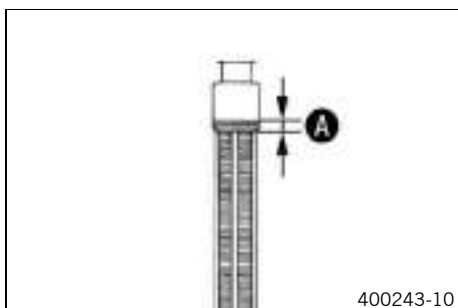
i Info
Carry out this work with a cold engine.



- Stand the motorcycle upright on a horizontal surface.
- Remove radiator cap ①.
- Check the antifreeze of the 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 ① above the radiator fins	10 mm (0.39 in)
---	-----------------

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

Alternative 1

Coolant (☞ p. 76)

Alternative 2

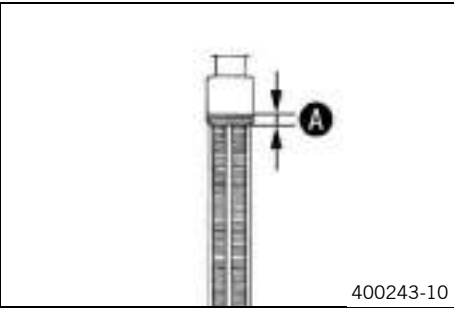
Coolant (mixed ready to use) (☞ p. 76)
--

- Mount the radiator cap.

Checking the coolant level

- Warning**
Danger of scalding During motorcycle operation, the coolant gets very hot and is under pressure.
- Do not open the radiator, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of burns, rinse immediately with lukewarm water.
- Warning**
Danger of poisoning Coolants are poisonous and a health hazard.
- Avoid contact between coolants and skin, eyes and clothing. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolants out of the reach of children.

i Info
Carry out this work with a cold engine.



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

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

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

Alternative 1

Coolant (☛ p. 76)

Alternative 2

Coolant (mixed ready to use) (☛ p. 76)
--

- Mount the radiator cap.

Draining the coolant ☛

**Warning**

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

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

**Warning**

Danger of poisoning Coolants are poisonous and a health hazard.

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

**Info**

Carry out this work with a cold engine.



- Stand the vehicle upright.
- Place a suitable container under the engine.
- Remove screw 1. Remove the radiator cap.
- Completely drain the coolant.
- Mount and tighten screw 1 with a new seal ring.

Guideline

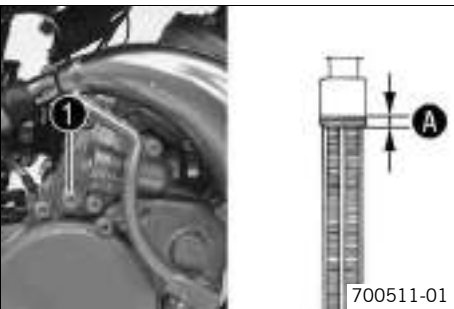
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)
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Refilling coolant ☛

**Warning**

Danger of poisoning Coolants are poisonous and a health hazard.

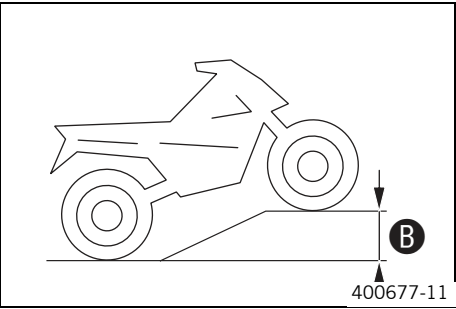
- Avoid contact between coolants and skin, eyes and clothing. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with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



- Make sure that the screw 1 is tightened.
- Stand the vehicle upright.
- Add coolant to level A.

Guideline

Level A above the radiator fins	10 mm (0.39 in)	
Coolant	0.5 l (0.5 qt.)	Coolant (☛ p. 76)
		Coolant (mixed ready to use) (☛ p. 76)



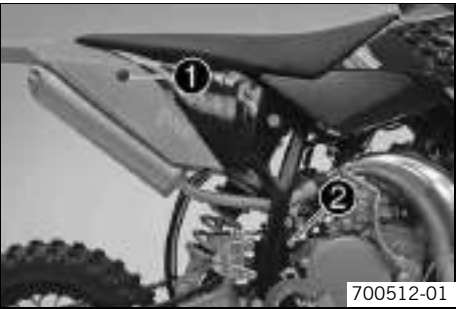
- Position the vehicle as shown and secure it against rolling away. A height difference of **B** must be reached.
- Guideline
- | | |
|----------------------------|------------------|
| Height difference B | 100 cm (39.4 in) |
|----------------------------|------------------|
- Info**

To ensure that all of the air can escape from the cooling system, the front of the vehicle must be jacked up. A poorly bled cooling system is less effective at cooling and may result in overheating of the engine.
- Place the vehicle back on a level surface.
 - Add coolant to level **A**.
 - Mount the radiator cap.
 - Make a short test ride.
 - Check the coolant level. (🔧 p. 49)

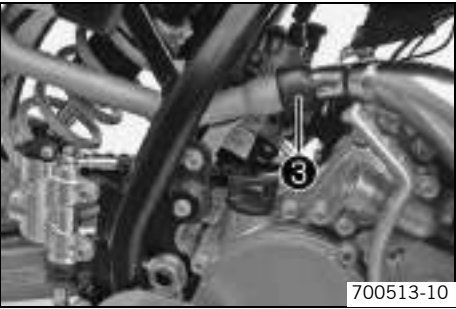
Removing main silencer

- Warning**

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

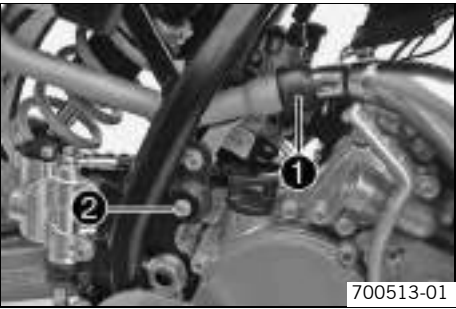


- Remove screw **1**.
- Remove screw **2**.



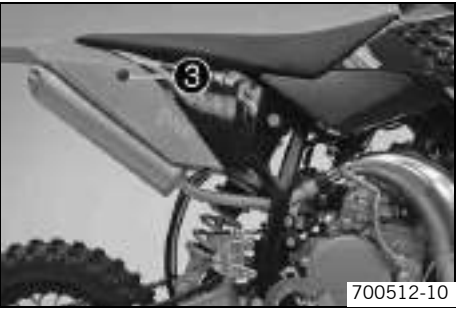
- Pull the main silencer off of the manifold at the rubber sleeve **3**.

Installing the main silencer



- Position the main silencer.
- Mount the main silencer with the rubber sleeve **1**.
- Mount the silentblock with the screw **2**.

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



- Position the collar sleeves.
- Mount and tighten screw 3.

Guideline

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

Glass fiber yarn filling of main silencer

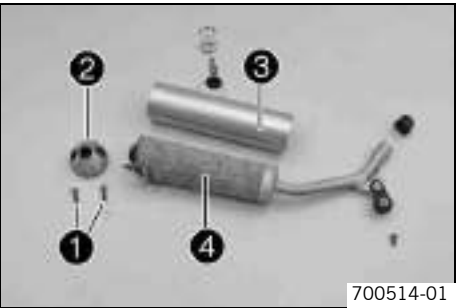
The main silencer is filled with glass fiber yarn.
Over a period, the fibers of the insulating material vanish into the air, and the silencer "burns out".
Not only is the noise level higher, the performance characteristic changes.

Removing the glass fiber yarn filling of the main silencer

Warning

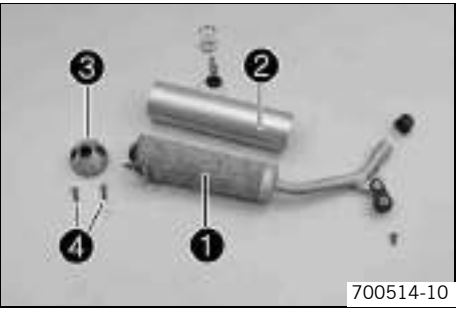
Danger of burns The exhaust system gets very hot when the vehicle is driven.

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



- Remove the main silencer. (p. 51)
- Remove screws 1 of locking cap 2. Remove locking cap and outer tube 3.
- Pull the glass fiber yarn filling 4 from the inner tube.
- Clean the parts that are to be reinstalled.

Installing the glass fiber yarn filling of the main silencer



- Slide the glass fiber yarn filling 1 over the inner tube.
- Slide the outer tube 2 over the glass fiber yarn filling.
- Insert the locking cap 3 into the outer tube. Fit and tighten screws 4 with tooth lock washer.

Guideline

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

- Install the main silencer. (p. 51)

Removing the air filter

Note

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

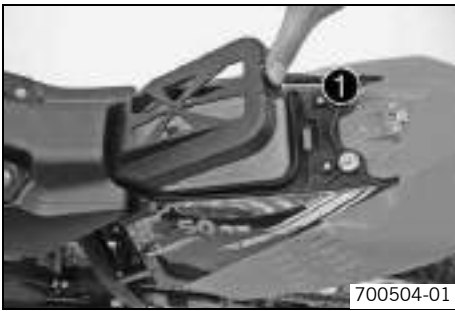
- Never ride the vehicle without an air filter since dust and dirt can get into the engine and result in increased wear.

Warning

Environmental hazard Hazardous substances cause environmental damage.

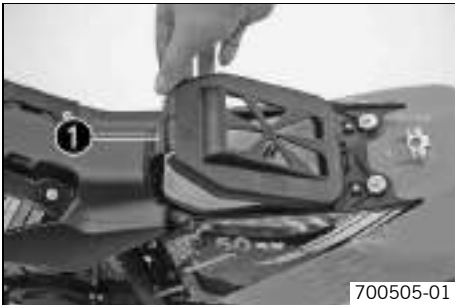
- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

- Remove the seat. (p. 48)



- Press the rear holding lugs ❶ together slightly and swing the air filter cover upward. Pull out the front holding lug and take off the air filter cover.
- Take off the air filter.

Installing the air filter 🛠️



- Position the clean air filter.
- Position the rear holding lug. Lower the air filter cover and allow the front holding lug ❶ to snap in.



Info

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

- Mount the seat. (🔧 p. 48)

Cleaning air filter 🛠️



Warning

Environmental hazard Hazardous substances cause environmental damage.

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



Info

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

- Remove the air filter. 🛠️ (🔧 p. 52)
- Wash the air filter thoroughly in special cleaning liquid and allow it to dry properly.

Air filter cleaner (🔧 p. 78)

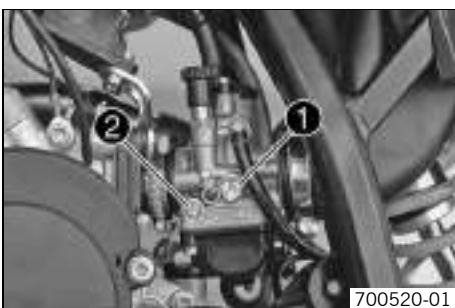


Info

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. 78)
- Clean the air filter box.
 - Check carburetor connection boot for damage and tightness.
 - Install the air filter. 🛠️ (🔧 p. 53)

Carburetor - idle (50 SX)



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

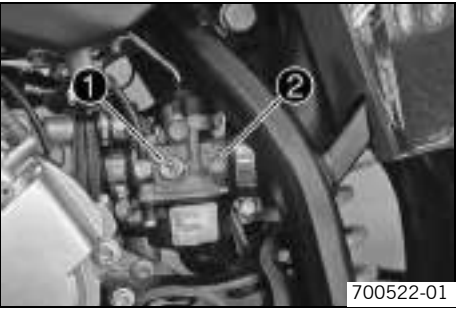


Info

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

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

Carburetor - idle (50 SX Mini)



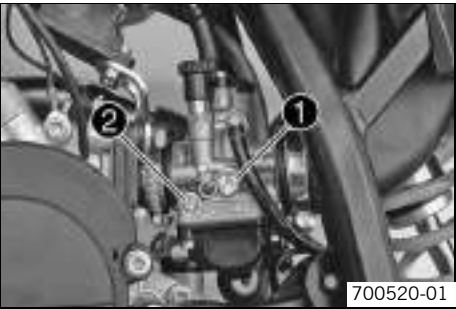
The idle setting of the carburetor has a big influence on the starting behavior, stable idling and the response to throttle opening. That means that an engine with a correctly set idle speed is easier to start than if the idle is set wrongly.

Info

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

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

Carburetor - adjusting idle speed 🏍️ (50 SX)



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

Guideline	
Idle mixture adjusting screw	
Open	3 turns

- Run the engine until warm.

Guideline	
Warm-up time	≥ 5 min

Danger

Danger of poisoning Exhaust gases are poisonous and can 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 a closed space without an effective exhaust extraction system.

- Adjust the idle speed with the adjusting screw ❶.

Guideline	
Choke function deactivated – Choke knob is in lower position. No O-ring is visible. (🔧 p. 11)	
Idle speed	1,400... 1,500 rpm

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

Info

If the speed rise is too high, reduce the idle speed to a normal level and repeat the preceding steps.

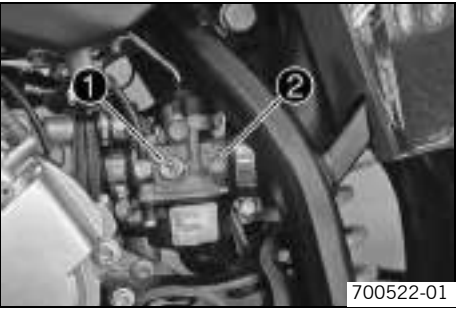
If the procedure described here does not lead to satisfactory results, the cause may be a wrongly dimensioned idling jet.

If you can turn the idle adjusting screw to the end without any change of engine speed, you have to install a smaller idling jet.

After changing the idling jet, start from the beginning with the adjusting steps.

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

Carburetor - adjusting idle speed ⚙️ (50 SX Mini)



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

Guideline	
Idle air adjusting screw	
Open	1 turn

- Run the engine until warm.

Guideline	
Warm-up time	≥ 5 min



Danger
Danger of poisoning Exhaust gases are poisonous and can 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 a closed space without an effective exhaust extraction system.

- Adjust the idle speed with the adjusting screw ❶.

Guideline	
Choke function deactivated – The choke lever is pushed down all the way. (⚙️ p. 11)	
Idle speed	1,400... 1,500 rpm

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



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

Checking oil level (50 SX Mini)



- Stand the motorcycle upright on a horizontal surface.
- Check the oil level in the oil tank.

For a full fuel tank, the oil tank must be filled up to MIN mark A at a minimum.
--

- » If the oil level does not meet specifications:
 - Fill up with oil. (⚙️ p. 17)

Bleeding oil pump (50 SX Mini)

Condition

Fuel tank removed.

- Pull off the oil line ❶.



300650-10

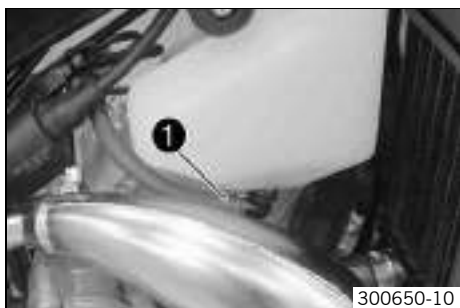
- Fill the oil line with a syringe.

2-stroke engine oil (☛ p. 76)



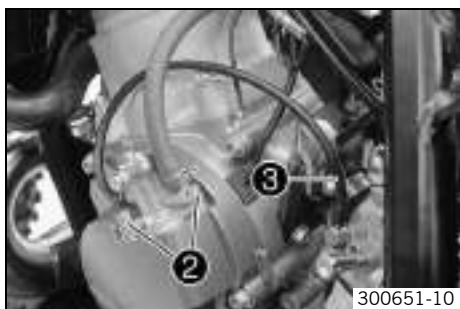
300652-10

- Connect the oil line ❶.



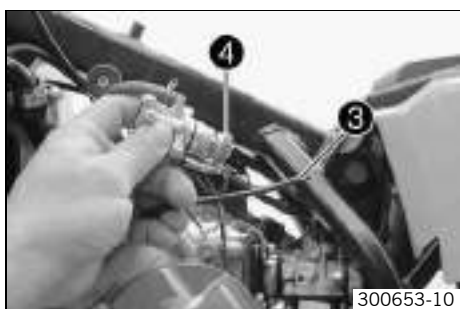
300650-10

- Remove screws ❷.
- Take off the oil pump.
- Pull off the oil line ❸ from the carburetor.

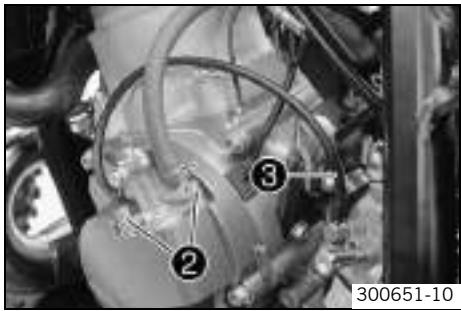


300651-10

- Turn the oil pump gear ❹ anticlockwise until oil flows out of the oil line ❸ without bubbles.



300653-10



- Connect the oil line ❸.
- Position the oil pump.
- Mount and tighten screws ❷.

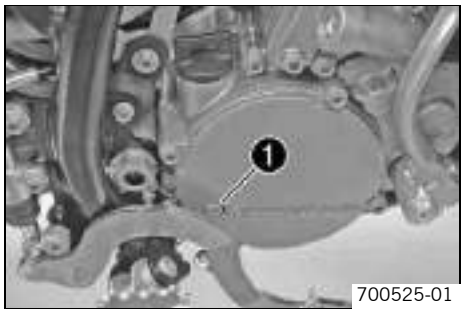
Guideline

Screw, oil pump	M5	6 Nm (4.4 lbf ft)
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Checking gear oil level

 **Info**

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



- Stand the motorcycle upright on a horizontal surface.

Condition

Engine is cold.

- Remove gear oil level check screw ❶. Stand the vehicle upright.
- Check the gear oil level.

A small amount of gear oil should flow out.

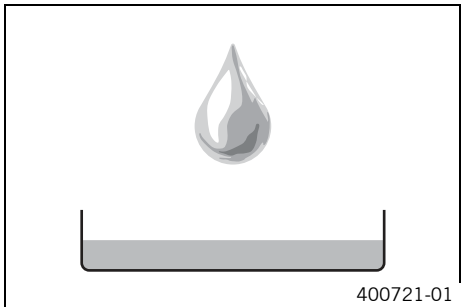
- » If no gear oil flows out:
 - Add gear oil. 🛢️ (🔧 p. 58)

- Mount and tighten the gear oil level check screw.

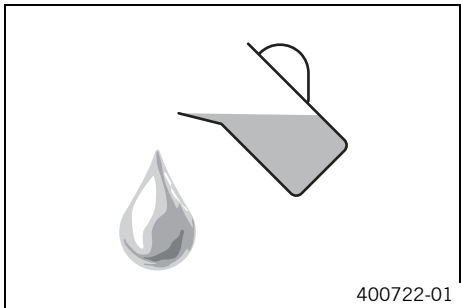
Guideline

Screw, gear oil level check	M6	10 Nm (7.4 lbf ft)
-----------------------------	----	--------------------

Changing the gear oil 🛢️



- Drain the gear oil. 🛢️ (🔧 p. 58)



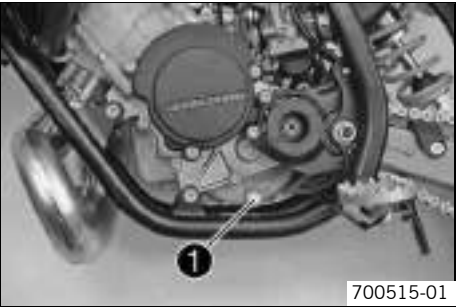
- Fill up with gear oil. 🛢️ (🔧 p. 58)

Draining the gear oil

- **Warning**
Danger of scalding Engine oil and gear oil get very hot when the motorcycle is ridden.
 - Wear appropriate protective clothing and safety gloves. In case of burns, rinse immediately with lukewarm water.
- **Warning**
Environmental hazard Hazardous substances cause environmental damage.
 - Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

**Info**

Drain the gear oil only when the engine is warm.



- Stand the motorcycle on its side stand on a horizontal surface.
- Place a suitable container under the engine.
- Remove the oil drain plug with magnet ❶.
- Completely drain the gear oil.
- Thoroughly clean the oil drain plug with magnet.
- Clean the sealing area on the engine.
- Fit and tighten the oil drain plug with magnet and seal ring.

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

Filling up with gear oil

**Info**

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



- Remove screw cap ❶ and fill up with gear oil.

Gear oil	0.20 l (0.21 qt.)	Gear oil (ATF Dexron 3) (☞ p. 76)
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- Mount and tighten screw cap.

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

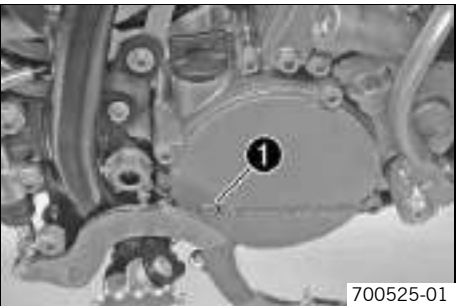
- When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in a closed space without an effective exhaust extraction system.

- Start the engine and check that it is oil-tight.
- Check the gear oil level. (☞ p. 57)

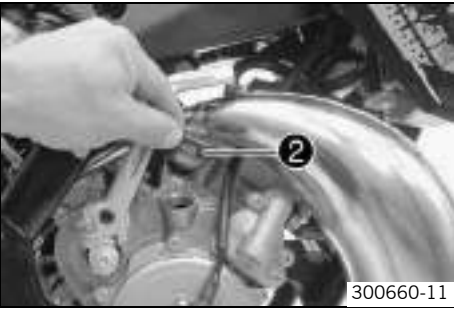
Adding gear oil

**Info**

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



- Remove gear oil level check screw ❶.



- Remove screw cap ❷. Stand the vehicle upright.
- Add gear oil until it flows out of the bore of the gear oil level screw.

Gear oil (ATF Dexron 3) (🔧 p. 76)

- Mount and tighten the gear oil level check screw.

Guideline

Screw, gear oil level check	M6	10 Nm (7.4 lbf ft)
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- Mount and tighten screw cap ❷.



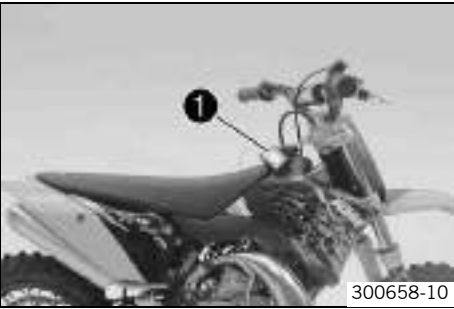
Danger

Danger of poisoning Exhaust gases are poisonous and can 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 a closed space without an effective exhaust extraction system.

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

Checking clutch engagement speed 🛞



- Connect special tool ❶.

Tachometer (45129075000)



Danger

Danger of poisoning Exhaust gases are poisonous and can 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 a closed space without an effective exhaust extraction system.

- Start the motorcycle.
- Slowly increase engine speed until the clutch begins to engage.
- Measure the engine speed.

Clutch engagement speed	7,200... 7,500 rpm
-------------------------	--------------------

- » If the specified value is not reached:
 - Adjust the clutch engagement speed. 🛞 (🔧 p. 59)

Adjust the clutch engagement speed 🛞

**Info**

All clutch springs on a vehicle must be marked with the same color.

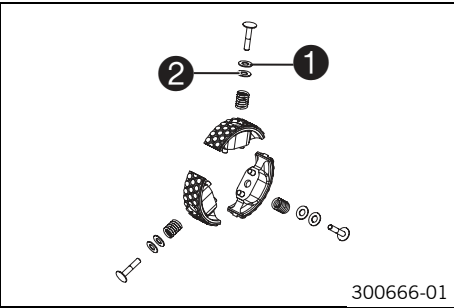
- Check the clutch engagement speed. 🛞 (🔧 p. 59)
- Remove the centrifugal clutch. 🛞 (🔧 p. 60)
- Dismantle the centrifugal clutch. 🛞 (🔧 p. 62)

Clutch spring with green mark

- Correct the washer ❷ according to the measured value.

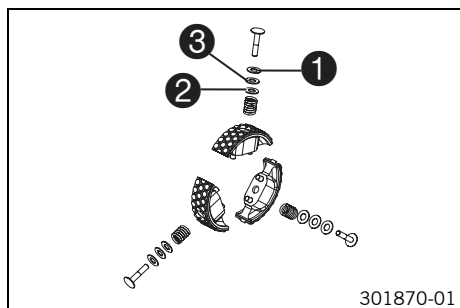
Guideline

A washer of 0.2 mm (0.008 in) changes the clutch engagement speed by about:	100 rpm
---	---------



Info

The spacing washer ❶ of 1.2 mm (0.047 in) must always be fitted. If you fit the washer ❷, the clutch engagement speed is increased. If you remove the washer ❷, the clutch engagement speed is reduced.



Clutch spring with yellow mark

- Correct the washer ❸ according to the measured value.

Guideline

A washer of 0.2 mm (0.008 in) changes the clutch engagement speed by about:

100 rpm



Info

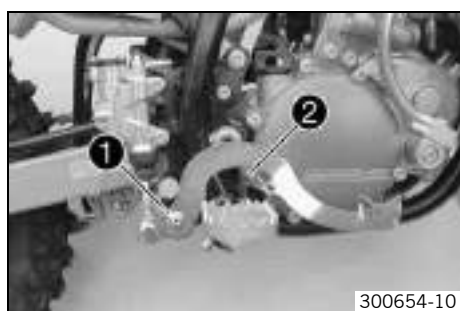
The spacing washer ❶ of 1.7 mm (0.067 in) and the spacing washer ❸ of 0.5 mm (0.02 in) must always be fitted.

If you fit the washer ❷, the clutch engagement speed is increased.

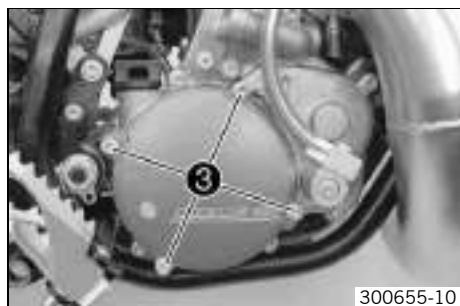
If you remove the washer ❷, the clutch engagement speed is reduced.

- Assemble the centrifugal clutch. 🛠️ (📖 p. 62)
- Fit the centrifugal force clutch. 🛠️ (📖 p. 61)
- Check the clutch engagement speed. 🛠️ (📖 p. 59)

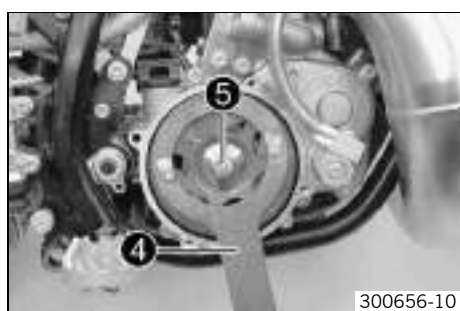
Removing centrifugal clutch 🛠️



- Remove nut ❶.
- Disconnect spring ❷.
- Take off the footbrake pedal.



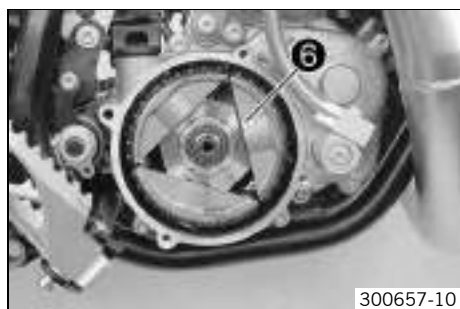
- Lay the motorcycle on its side.
- Remove screws ❸.
- Take off the clutch cover.



- Hold the clutch drum using the special tool ❹.

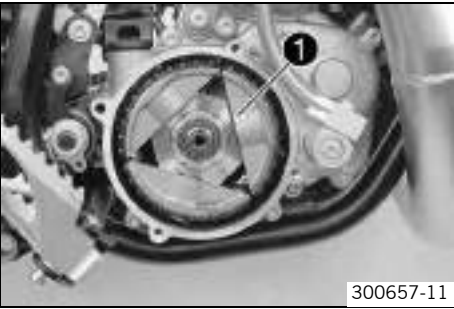
Holding spanner (54629012100)

- Remove screw ❺.
- Remove the clutch drum.

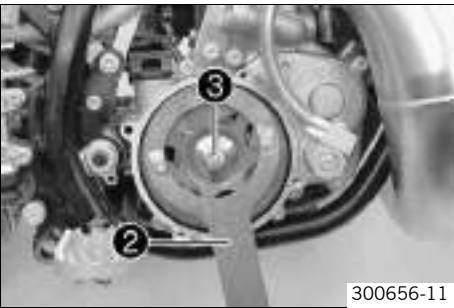


- Take off the centrifugal clutch ❻.

Fitting centrifugal force clutch



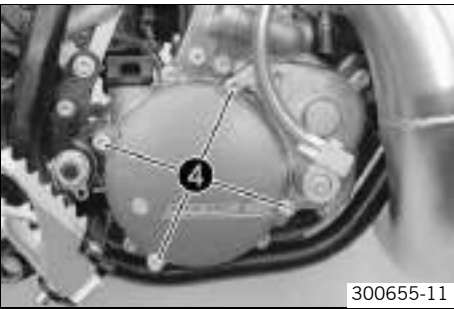
- Position the centrifugal force clutch ❶.



- Position the clutch drum.
- Hold the clutch drum with the special tool ❷.
- Mount and tighten screw ❸.

Guideline

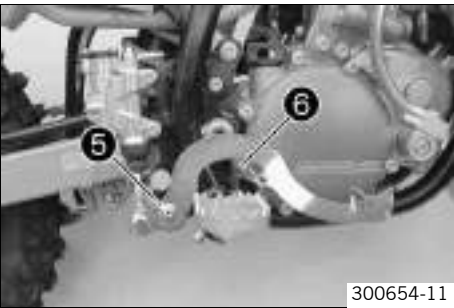
Screw, clutch drum	M8	30 Nm (22.1 lbf ft)	Loctite® 243™
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- Position the clutch cover with the gasket.
- Mount and tighten screws ❹.

Guideline

Screw, clutch cover	M6	10 Nm (7.4 lbf ft)	
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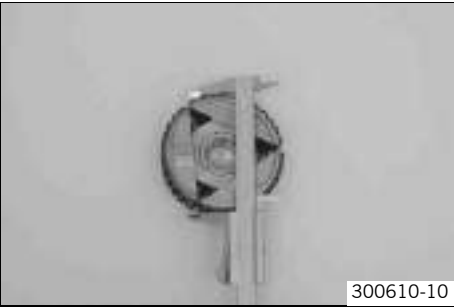
- Position the foot brake pedal.
- Mount and tighten nut ❺.

Guideline

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

- Mount the spring ❻.
- Check the gear oil level. (⚙ p. 57)
- Check the clutch engagement speed. ⚙ (⚙ p. 59)

Checking/measuring clutch



Condition

Centrifugal clutch removed.

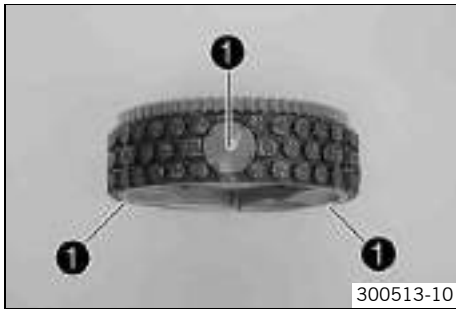
- Measure clutch.

Guideline

Clutch shoe height	≥ 98.00 mm (≥ 3.8583 in)
--------------------	--------------------------

- » if the specified value is not met:
 - Replace the clutch linings.
- Dismantle the centrifugal clutch. ⚙ (⚙ p. 62)
- Check clutch linings for damage.
 - » If the clutch linings are damaged:
 - Replace the clutch linings.
- Assemble the centrifugal clutch. ⚙ (⚙ p. 62)

Dismantling centrifugal clutch



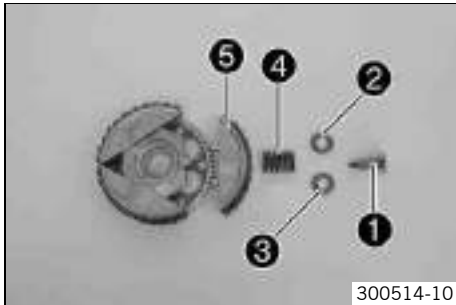
300513-10

Condition

Centrifugal clutch removed.

- Loosen screws 1 with special tool.

Mortise key (45229021000)



300514-10

Clutch spring with green mark

- Remove screw 1 with spacing washer 2 and spring 4.

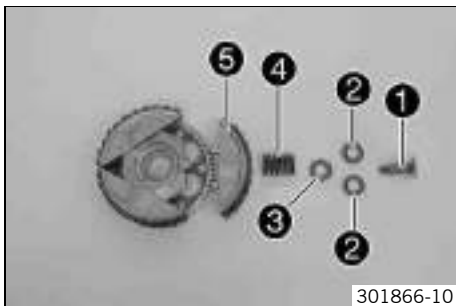


Info

Washer 3 is used for adjusting the clutch engagement speed and does not have to be fitted.

All clutch springs must be marked with the same color.

- Remove clutch shoe 5.
- Repeat these steps on the other clutch shoes.



301866-10

Clutch spring with yellow mark

- Remove screw 1 with spacing washers 2 and spring 4.



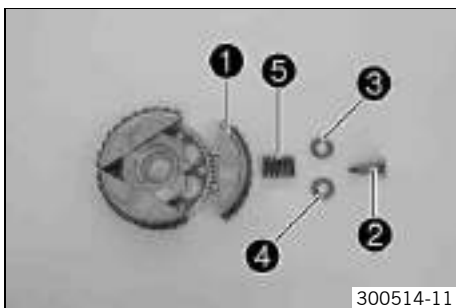
Info

Washer 3 is used for adjusting the clutch engagement speed and does not have to be fitted.

All clutch springs must be marked with the same color.

- Remove clutch shoe 5.
- Repeat these steps on the other clutch shoes.

Assembling centrifugal clutch



300514-11

Condition

Centrifugal clutch removed.

Clutch spring with green mark

- Position the clutch shoe 1.
- Fit screw 2 with spacing washer 3 and spring 5.

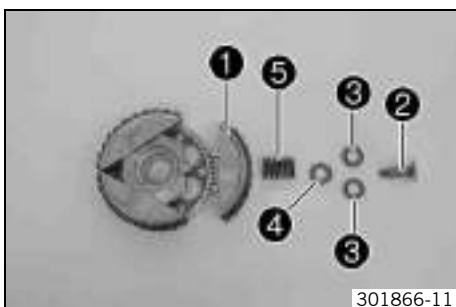


Info

Washer 4 is used for adjusting the clutch engagement speed and must be fitted consistently on all clutch shoes depending on the clutch engagement speed.

All clutch springs must be marked with the same color.

- Repeat these steps on the other clutch shoes.



301866-11

Clutch spring with yellow mark

- Position the clutch shoe 1.
- Fit screw 2 with spacing washers 3 and spring 5.



Info

Washer 4 is used for adjusting the clutch engagement speed and must be fitted consistently on all clutch shoes depending on the clutch engagement speed.

All clutch springs must be marked with the same color.

- Repeat these steps on the other clutch shoes.



- Tighten screws ② with special tool.

Guideline

Screw, clutch spring	M6	7 Nm (5.2 lbf ft)
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Mortise key (45229021000)

Faults	Possible cause	Action
Engine turns but does not start	Operating error	– Go through the steps of starting the engine. (☛ p. 15)
	Motorcycle was out of use for a long time and there is old fuel in the float chamber	– Empty the carburetor float chamber. ☛
	Fuel feed interrupted	– Check the fuel tank breather. – Clean the fuel tap. (50 SX Mini) – Check/set the carburetor components. ☛ (50 SX) – Check/set the carburetor components. ☛
	Engine flooded	– Clean and dry the spark plug, or change it if necessary.
	Spark plug oily or wet	– Clean and dry the spark plug, or change it if necessary.
	Electrode distance (plug gap) of spark plug too wide	– Adjust the plug gap. Guideline Spark plug electrode gap 0.60 mm (0.0236 in)
	Fault in ignition system	– Check the ignition system. ☛
	Short-circuit cable in cable harness frayed, short-circuit button defective	– Check the short circuit button. ☛
	Socket connector or ignition coil is loose or oxidized	– Clean the socket connector and treat it with contact spray.
	Water in carburetor or jets blocked	(50 SX Mini) – Check/set the carburetor components. ☛ (50 SX) – Check/set the carburetor components. ☛
Engine has no idle	Idling jet blocked	(50 SX Mini) – Check/set the carburetor components. ☛ (50 SX) – Check/set the carburetor components. ☛
	Adjusting screws on carburetor distorted	(50 SX Mini) – Carburetor - adjust the idle speed. ☛ (☛ p. 55) (50 SX) – Carburetor - adjust the idle speed. ☛ (☛ p. 54)
	Spark plug defective	– Change spark plug.
	Ignition system defective	– Check the ignition coil. ☛ – Check the spark plug connector. ☛
Engine does not speed up	Carburetor running over because float needle dirty or worn	(50 SX Mini) – Check/set the carburetor components. ☛ (50 SX) – Check/set the carburetor components. ☛
	Loose carburetor jets	(50 SX Mini) – Check/set the carburetor components. ☛ (50 SX) – Check/set the carburetor components. ☛
	Fault in ignition system	– Check the ignition system. ☛
Engine has too little power	Fuel feed interrupted	– Check the fuel tank breather. – Clean the fuel tap. (50 SX Mini) – Check/set the carburetor components. ☛ (50 SX) – Check/set the carburetor components. ☛
	Air filter very dirty	– Clean the air filter. ☛ (☛ p. 53)

Faults	Possible cause	Action
Engine has too little power	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. 🛠️
	Ignition system defective	– Check the ignition coil. 🛠️ – Check the spark plug connector. 🛠️
	Diaphragm or reed valve housing damaged	– Check the diaphragm and reed valve housing.
	Noticeable wear	– Overhaul the engine.
	Clutch engagement speed too low or too high	– Check the clutch engagement speed. 🛠️ (🔧 p. 59)
Engine stalls or is popping into the carburetor	Lack of fuel	– Turn the knurled screw on the fuel tap all the way counterclockwise. – Fill up with fuel. (🔧 p. 17)
	Engine takes in bad air	– Check the intake flange and carburetor for tightness.
	Socket connector or ignition coil is loose or oxidized	– Clean the socket connector and treat it with contact spray.
Engine overheats	Too little coolant in cooling system	– Check the cooling system for leakage. – Check the coolant level. (🔧 p. 49)
	Too little air stream	– Switch off engine when standing.
	Radiator fins very dirty	– Clean radiator fins.
	Foam formation in cooling system	– Drain the coolant. 🛠️ (🔧 p. 50) – Refill the coolant. 🛠️ (🔧 p. 50)
	Damaged cylinder head or cylinder head gasket	– Check the cylinder head or cylinder head gasket.
	Bent radiator hose	– Change the radiator hose. 🛠️
White smoke emission (steam in exhaust gas)	Damaged cylinder head or cylinder head gasket	– Check the cylinder head or cylinder head gasket.
Gear oil exits at the vent hose	Too much gear oil added	– Check the gear oil level. (🔧 p. 57)
Water in the gear oil	Damaged shaft seal ring or water pump	– Check the shaft seal ring and water pump.

Cleaning motorcycle**Note**

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

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

**Warning**

Environmental hazard Hazardous substances cause environmental damage.

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

**Info**

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

- Before you clean the motorcycle, seal the exhaust system to prevent penetration by water.
- First remove coarse dirt particles with a gentle water spray.
- Spray very dirty areas with a normal motorcycle cleaner and then clean with a brush.

Motorcycle cleaner (☛ p. 78)

**Info**

Use warm water containing normal motorcycle cleaner and a soft sponge.

- After rinsing the motorcycle with a gentle water spray, allow it to dry thoroughly.

**Warning**

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

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

- After cleaning, let your child ride the vehicle a short distance until the engine warms up and the brakes are dried.

**Info**

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

- Push back the protection covers on the handlebar instruments to allow water to evaporate.
- After the motorcycle has cooled off, oil or grease all moving parts and bearings.
- Clean the chain. (☛ p. 33)
- Treat bare metal parts (except for brake discs and exhaust system) with anti-corrosion materials.

Cleaning and polishing materials for metal, rubber and plastic (☛ p. 78)

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

Cleaning and polishing materials for metal, rubber and plastic (☛ p. 78)

- To prevent electrical problems, treat electric contacts and switches with contact spray.

Contact spray (☛ p. 78)

Storage



Warning

Danger of poisoning Fuel is poisonous and a health hazard.

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



Info

If you want to garage the motorcycle for a longer period, take the following actions.

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

- Clean the motorcycle. (🔧 p. 66)
- Change the gear oil. 🛢️ (🔧 p. 57)
- Check the antifreeze and coolant level. (🔧 p. 49)
- Drain the fuel from the tank into a suitable container.
- Check the tire air pressure. (🔧 p. 47)
- The storage place should be dry and not subject to large temperature fluctuations.



Info

KTM recommends jacking up the motorcycle.

- Jack up the motorcycle. (🔧 p. 20)
- Cover the motorcycle with a porous sheet or blanket. Do not use non-porous materials since they prevent humidity from escaping, thus causing corrosion.



Info

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

Putting into operation after storage

- Remove the motorcycle from the work stand. (🔧 p. 20)
- Fill up with fuel. (🔧 p. 17)
- Checks before putting into operation. (🔧 p. 15)
- Take a test ride.

Design	1-cylinder 2-stroke engine, water-cooled, with reed intake
Displacement	49.0 cm ³ (2.99 cu in)
Stroke	40 mm (1.57 in)
Bore	39.5 mm (1.555 in)
Crankshaft bearing	2 grooved ball bearings
Conrod bearing	Needle bearing
Piston pin bearing	Needle bearing
Pistons	Aluminum cast
Piston rings	1 rectangular ring
Engine lubrication (50 SX)	Mixture oil lubrication
Engine lubrication (50 SX Mini)	Separate lubrication
Primary transmission	61:33 straight cut spur gear
Clutch	3-lining automatic clutch on the main shaft / centrifugal force
Gearbox	Rigid 1-stage reduction gear
Transmission ratio	19:42
Ignition	SELETTTRA 2p D36
Spark plug	NGK LR 8 B
Spark plug electrode gap	0.60 mm (0.0236 in)
Cooling	Water-cooled
Starting aid	Kickstarter

Capacity - gear oil

Gear oil	0.20 l (0.21 qt.)	Gear oil (ATF Dexron 3) (☛ p. 76)
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Capacity - coolant

Coolant	0.5 l (0.5 qt.)	Coolant (☛ p. 76)
		Coolant (mixed ready to use) (☛ p. 76)

Screw, bearing retainer	M5	5 Nm (3.7 lbf ft)	–
Screw, kickstarter	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, oil pump (50 SX Mini)	M5	6 Nm (4.4 lbf ft)	–
Screw, stator clamp	M5	6 Nm (4.4 lbf ft)	–
Screw, water pump wheel	M5	5 Nm (3.7 lbf ft)	Loctite® 243™
Bleeder flange of engine case	M6	4 Nm (3 lbf ft)	Loctite® 243™
Screw generator cover	M6	6 Nm (4.4 lbf ft)	–
Screw, clutch cover	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch spring	M6	7 Nm (5.2 lbf ft)	–
Screw, engine housing	M6	10 Nm (7.4 lbf ft)	–
Screw, engine sprocket cover	M6	10 Nm (7.4 lbf ft)	–
Screw, exhaust flange	M6	10 Nm (7.4 lbf ft)	–
Screw, gear oil level check	M6	10 Nm (7.4 lbf ft)	–
Screw, ignition coil	M6	5 Nm (3.7 lbf ft)	–
Screw, intake flange	M6	5 Nm (3.7 lbf ft)	Loctite® 243™
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)	–
Screw, cylinder head	M7	18 Nm (13.3 lbf ft)	–
Nuts, cylinder base	M8	20 Nm (14.8 lbf ft)	–
Screw, clutch drum	M8	30 Nm (22.1 lbf ft)	Loctite® 243™
Stud bolt, cylinder base	M8	10 Nm (7.4 lbf ft)	–
Spark plug	M10x1	10... 12 Nm (7.4... 8.9 lbf ft)	–
Nut, primary gear	M10x1.25	40 Nm (29.5 lbf ft)	Loctite® 243™
Nut, rotor	M10x1.25	15 Nm (11.1 lbf ft)	–
Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)	–

50 SX

Carburetor type	Dell'Orto PHBG 19BS
Needle position	3rd position from top
Idle mixture adjusting screw	
Open	3 turns
Main jet	85
Jet needle	W9
Idling jet	58
Needle jet	260AU
Throttle slide	60
Cold start jet	60

50 SX Mini

Carburetor type	Dell'Orto PHVA 12XS
Needle position	4th position from top
Idle air adjusting screw	
Open	1 turn
Main jet	60
Jet needle	A10
Idling jet	35
Needle jet	211FA
Throttle slide	40
Cold start jet	60

Frame	Central tube frame of chrome molybdenum steel tubing, powder-coated
Fork	Marzocchi
Shock absorber	WP Suspension 3614 BAEM
Suspension travel (50 SX)	
Front	185 mm (7.28 in)
Rear	185 mm (7.28 in)
Suspension travel (50 SX Mini)	
Front	110 mm (4.33 in)
Rear	171 mm (6.73 in)
Fork offset	14 mm (0.55 in)
Brake system	
Front	Disc brake, brake caliper, fixed
Rear	Disc brake, brake caliper, fixed
Brake disc diameters	
Front	160 mm (6.3 in)
Rear	140 mm (5.51 in)
Brake discs - wear limits	
Front	2.2 mm (0.087 in)
Rear	2.2 mm (0.087 in)
Tire air pressure off road	
Front	1.0 bar (15 psi)
Rear	1.0 bar (15 psi)
Secondary drive ratio (50 SX)	11:40
Secondary drive ratio (50 SX Mini)	10:42
Chain	1/2 x 3/16"
Rear sprockets available	38, 39, 40, 41, 42
Steering head angle (50 SX)	66°
Steering head angle (50 SX Mini)	67.4°
Wheelbase (50 SX)	1,032 mm (40.63 in)
Wheelbase (50 SX Mini)	914 mm (35.98 in)
Seat height unloaded (50 SX)	684 mm (26.93 in)
Seat height unloaded (50 SX Mini)	558 mm (21.97 in)
Ground clearance unloaded (50 SX)	252 mm (9.92 in)
Ground clearance unloaded (50 SX Mini)	184 mm (7.24 in)
Weight without fuel, approx. (50 SX)	39.8 kg (87.7 lb.)
Weight without fuel, approx. (50 SX Mini)	39.0 kg (86 lb.)

Tires

Validity	Front tire	Rear tire
(50 SX)	60/100 - 12 36M TT Pirelli SCORPION MX Mid Soft 32 NHS	2.75 - 10 37J TT Pirelli SCORPION MX Mid Soft 32 NHS
(50 SX Mini)	2.50 - 10 33J TT Pirelli SCORPION MX Mid Soft 32 NHS	2.75 - 10 37J TT Pirelli SCORPION MX Mid Soft 32 NHS
Additional information is available in the Service section under: http://www.ktm.com		

Capacity - fuel

Fuel tank capacity, approx. (50 SX)	2.3 l (2.4 qt.)	Super unleaded gasoline, mixed with 2-stroke engine oil (1:60) (☛ p. 77)
Fuel tank capacity, approx. (50 SX Mini)	2.0 l (2.1 qt.)	Super unleaded (ROZ 95 / RON 95 / PON 91) (☛ p. 77)

50 SX

Fork part number	45101000644	
Fork	Marzocchi	
Spring rate		
Weight of rider: 25... 35 kg (55... 77 lb.)	2 N/mm (11 lb/in)	
Air chamber length	100±2.5 mm (3.94±0.098 in)	
Fork length	692 mm (27.24 in)	
Fork oil	210 ml (7.1 fl. oz.)	Fork oil (SAE 7.5) (☛ p. 76)

50 SX Mini

Fork part number	45201000233	
Fork	Marzocchi	
Spring rate		
Weight of rider: 25... 35 kg (55... 77 lb.)	2 N/mm (11 lb/in)	
Air chamber length	100±2.5 mm (3.94±0.098 in)	
Fork length	578 mm (22.76 in)	
Fork oil	210 ml (7.1 fl. oz.)	Fork oil (SAE 7.5) (☛ p. 76)

50 SX

Shock absorber part number	03.18.9E.02
Shock absorber	WP Suspension 3614 BAEM
Rebound damping	
Standard	10 clicks
Spring preload	
Standard	3 mm (0.12 in)
Spring rate	
Weight of rider: < 25 kg (< 55 lb.)	30 N/mm (171 lb/in)
Weight of rider: 25... 35 kg (55... 77 lb.)	35 N/mm (200 lb/in)
Weight of rider: > 40 kg (> 88 lb.)	40 N/mm (228 lb/in)
Spring length	130 mm (5.12 in)
Gas pressure	10 bar (145 psi)
Static sag	20 mm (0.79 in)
Riding sag	45... 55 mm (1.77... 2.17 in)
Fitted length	275 mm (10.83 in)
Shock absorber oil	Shock absorber oil (SAE 2.5) (50180342S1) (☛ p. 77)

50 SX Mini

Shock absorber part number	03.18.9E.04
Shock absorber	WP Suspension 3614 BAEM
Rebound damping	
Standard	12 clicks
Spring preload	
Standard	5 mm (0.2 in)
Spring rate	
Weight of rider: < 25 kg (< 55 lb.)	65 N/mm (371 lb/in)
Weight of rider: 25... 35 kg (55... 77 lb.)	75 N/mm (428 lb/in)
Weight of rider: > 35 kg (> 77 lb.)	85 N/mm (485 lb/in)
Spring length	120 mm (4.72 in)
Gas pressure	10 bar (145 psi)
Static sag	15 mm (0.59 in)
Riding sag	40... 50 mm (1.57... 1.97 in)
Fitted length	245 mm (9.65 in)
Shock absorber oil	Shock absorber oil (SAE 2.5) (50180342S1) (☛ p. 77)

Spoke nipple	M3.5	3 Nm (2.2 lbf ft)	–
Rear brake caliper screw	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Remaining nuts, chassis	M6	15 Nm (11.1 lbf ft)	–
Screw, ball joint, push rod on foot-brake cylinder	M6	10 Nm (7.4 lbf ft)	–
Screw, bottom triple clamp	M6	10 Nm (7.4 lbf ft)	–
Screw, front brake disc	M6	15 Nm (11.1 lbf ft)	Loctite® 243™
Screw, rear brake disc	M6	15 Nm (11.1 lbf ft)	Loctite® 243™
Screw, rear sprocket	M7	15 Nm (11.1 lbf ft)	Loctite® 243™
Engine carrying screw	M8	25 Nm (18.4 lbf ft)	–
Nut, rim lock	M8	10 Nm (7.4 lbf ft)	–
Remaining nuts, chassis	M8	30 Nm (22.1 lbf ft)	–
Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)	–
Screw, front brake caliper	M8	20 Nm (14.8 lbf ft)	Loctite® 243™
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)	–
Screw, top triple clamp	M8	25 Nm (18.4 lbf ft)	–
Nut, swingarm pivot	M10	45 Nm (33.2 lbf ft)	–
Remaining nuts, chassis	M10	50 Nm (36.9 lbf ft)	–
Remaining screws, chassis	M10	45 Nm (33.2 lbf ft)	–
Screw, bottom shock absorber	M10	45 Nm (33.2 lbf ft)	–
Screw, handlebar support	M10	40 Nm (29.5 lbf ft)	Loctite® 243™
Screw, top shock absorber	M10	45 Nm (33.2 lbf ft)	–
Front wheel spindle nut	M12x1	40 Nm (29.5 lbf ft)	–
Nut, rear wheel spindle	M12x1	40 Nm (29.5 lbf ft)	–
Nut, steering stem	M20x1.5	10 Nm (7.4 lbf ft)	–
Steering head nut	M20x1.5	10 Nm (7.4 lbf ft)	–

2-stroke engine oil

According to

- JASO FC (☛ p. 80)

Guideline

- Only use high quality 2-stroke engine oil of a well-known brand. KTM recommends **Motorex®** products.

Fully synthetic

Supplier

Motorex®

- **Cross Power 2T**

Brake fluid DOT 4 / DOT 5.1

According to

- DOT

Guideline

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

Supplier

Castrol

- **RESPONSE BRAKE FLUID SUPER DOT 4**

Motorex®

- **Brake Fluid DOT 5.1**

Coolant

Guideline

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

Mixture ratio

Antifreeze protection: -25... -45 °C (-13... -49 °F)	50 % corrosion inhibitor/antifreeze 50 % distilled water
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Coolant (mixed ready to use)

Antifreeze	-40 °C (-40 °F)
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Supplier

Motorex®

- **Anti Freeze**

Fork oil (SAE 7.5)

According to

- SAE (☛ p. 80) (SAE 7.5)

Guideline

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

Supplier

Motorex®

- **Racing Fork Oil**

Gear oil (ATF Dexron 3)

According to

- Dexron III (ATF Dexron 3)

Guideline

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

Supplier

Motorex®

- **ATF Dexron 3**

Shock absorber oil (SAE 2.5) (50180342S1)

According to

- SAE (☛ p. 80) (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)

Super unleaded gasoline, mixed with 2-stroke engine oil (1:60)

According to

- DIN EN 228
- JASO FC (☛ p. 80) (1:60)

Mixture ratio

1:60	2-stroke engine oil (☛ p. 76) Super unleaded (ROZ 95 / RON 95 / PON 91) (☛ p. 77)
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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 611**

Cleaning and polishing materials for metal, rubber and plastic**Guideline**

- KTM recommends **Motorex®** products.

Supplier**Motorex®**

- **Protect & Shine 645**

Contact spray**Guideline**

- KTM recommends **Motorex®** products.

Supplier**Motorex®**

- **Accu Contact**

Long-life grease**Guideline**

- KTM recommends **Motorex®** products.

Supplier**Motorex®**

- **Fett 2000**

Motorcycle cleaner**Guideline**

- KTM recommends **Motorex®** products.

Supplier**Motorex®**

- **Moto Clean 900**

Offroad chain spray**Guideline**

- KTM recommends **Motorex®** products.

Supplier**Motorex®**

- **Chain Lube 622**

Oil for foam air filter**Guideline**

- KTM recommends **Motorex®** products.

Supplier**Motorex®**

- **Twin Air Liquid Bio Power**

Universal oil spray

Guideline

- KTM recommends **Motorex®** products.

Supplier

Motorex®

- **Joker 440 Universal**

JASO FC

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

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.

A**Air filter**

- cleaning 53
- installing 53
- removing 52

Antifreeze

- checking 49

B**Brake discs**

- checking 36

Brake fluid

- front brake fluid, adding 38
- of rear brake, adding 42

Brake fluid level

- front brake, checking 37
- rear brake, checking 42

Brake linings

- front brake linings, changing 40
- front brake, checking 39
- front brake, installing 39
- front brake, removing 39
- rear brake, changing 44
- rear brake, checking 43
- rear brake, installing 44
- rear brake, removing 43

C**Carburetor**

- idle 53-54
- idle speed, adjusting 54-55

Centrifugal clutch

- adjusting clutch engagement speed 59
- removing centrifugal clutch 60

Centrifugal force clutch

- checking clutch engagement speed 59
- fitting centrifugal force clutch 61

Chain

- cleaning 33

Chain guide

- adjusting 36

Chain tension

- adjusting 35
- checking 34

Chassis number

- 9

Choke

- 11

Cleaning

- 66

Coolant

- draining 50
- refilling 50

Coolant level

- checking 49

Cooling system

- 48

D**Dust boots**

- cleaning 24

E**Engine**

- running in 14

Engine - Work on individual parts

- assembling centrifugal clutch 62
- checking/measuring clutch 61
- dismantling centrifugal clutch 62

Engine number

- 9

Environment

- 6

F**Filler cap**

- closing 11
- opening 10

Filling up

- fuel 17
- oil 17

Foot brake pedal

- basic position, adjusting 41
- free travel, checking 41

Fork legs

- installing 27
- removing 26

Fork overhang

- adjusting 23

Front fender

- installing 31
- removing 30

Front wheel

- installing 45
- removing 45

Fuel tap

- 10

Fuel, oils, etc.

- 5

G**Gear oil**

- adding 58
- changing 57
- draining 58
- refilling 58

Gear oil level

- checking 57

H**Hand brake lever**

- adjusting play 37
- basic position, adjusting 37
- checking play 37

Handlebar position

- adjusting 32

K**Kickstarter**

- 12

L**Lower triple clamp**

- installing 29
- removing 28

M**Main silencer**

- installing 51
- installing glass fiber yarn filling 52
- removing 51
- removing glass fiber yarn filling 52

Maintenance 5**Motorcycle**

- cleaning 66

O**Oil level**

- checking 55

Oil pump

- bleeding 56

Oil tank cap

- closing 11
- opening 11

Owner's manual

- general information 6

P**Play in throttle cable**

- adjusting 33
- checking 32

Plug-in stand 12**Putting into operation**

- advice on first use 13
- after storage 67
- checks before putting into operation 15

R**Rear sprocket / engine sprocket**

- checking for wear 34

Rear wheel

- installing 46
- removing 46

Rebound damping

- shock absorber, adjusting 20

Riding sag

- adjusting 22

S**Seat**

- mounting 48
- removing 48

Seat height

- adjusting 24

Service schedule 18-19**Shock absorber**

- installing 23
- removing 22
- riding sag, checking 21
- static sag, checking 21

Shock absorber part number 9**Short circuit button** 10**Spare parts, accessories** 5**Spoke tension**

- checking 47

Spring preload

- shock absorber, adjusting 21

Start number plate

- installing 31
- removing 31

Starting 15**Steering head bearing**

- greasing 30

Steering head bearing play

- adjusting 25
- checking 25

Storage 67**T****Technical data**

- carburetor 70
- chassis 71-72
- chassis tightening torques 75
- engine 68
- engine tightening torques 69
- fork 73
- shock absorber 74

Throttle grip 10**Tire air pressure**

- checking 47

Tire condition

- checking 47

Transport 5**Troubleshooting** 64-65**U****Use definition** 5**V****Vehicle level** 23**View of vehicle**

- left front 7
- right rear 8

W**Warranty** 5**Work rules** 5



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