

KTM

BEDIENUNGSANLEITUNG
OWNER'S HANDBOOK
MANUALE D'USO
MANUEL D'UTILISATION
MANUAL DE INSTRUCCIONES

400/620
SX/SC/EGS

ART. NR. 3.205.30
9.97

' 98



IMPORTANT

WE STRONGLY SUGGEST THAT YOU READ THIS MANUAL CAREFULLY AND COMPLETELY BEFORE GOING ON YOUR FIRST RIDE. IT CONTAINS A GREAT DEAL OF INFORMATION AND ADVICE WHICH WILL HELP YOU USE AND HANDLE YOUR BIKE PROPERLY. IN YOUR OWN INTEREST, PLEASE PAY PARTICULAR ATTENTION TO NOTICES THAT ARE MARKED AS FOLLOWS:

△ **WARNING** △

IGNORING THESE INSTRUCTIONS, CAN ENDANGER YOUR BODY AND YOUR LIFE.

! **CAUTION** !

IGNORING THESE INSTRUCTIONS COULD CAUSE DAMAGE TO PARTS OF YOUR MOTORCYCLE OR THAT THE MOTORCYCLE IS NOT ROAD-SAFE ANYMORE.

Please insert the series numbers of your motorcycle in the boxes below

Frame number

Engine number

Stamp of dealer

COMSUMER INFORMATION FOR AUSTRALIA ONLY

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED

Owners are warned that the law may prohibit:

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

Introduction

We would like to congratulate you on your purchase of a KTM motorcycle. Let us also take this opportunity to thank you for putting your trust in us; we will not let you down.

You are now owner of a sporty and modern motorcycle which you are bound to have a great time with provided you care for it properly. Your owner's handbook will furnish you with important information on how to operate and maintain your new KTM motorcycle. At the time of printing, the handbook covered the most up-to-date models in this series. It is, however, possible that we may have made slight modifications in the meantime due to development in our motorcycle design.

Many motorcyclists have a good working knowledge of motorcycle mechanics; if this is true in your case, you will be able to use this manual to carry out most of the maintenance steps yourself. If, on the other hand, you are not very familiar with motorcycles, it might be better to have a professional KTM dealer perform those steps marked by * found in the chapter entitled "Maintenance Work on Chassis and Engine" of this manual.

Take special care to follow the recommended run in, inspection, and maintenance intervals. Heeding these guidelines will significantly increase the life of your motorcycle. Be sure to have any maintenance jobs performed by an authorized KTM dealer. Address your special requests to an authorized KTM dealer who, should the need arise, will be supported by the KTM importer.

We wish you a lot of fun when driving !



KTM Austria's certificate of achievement for its Quality System ISO 9001 is the beginning of an on-going total re-engineering quality plan for a brighter tomorrow.

KTM SPORTMOTORCYCLE AG
5230 MATTIGHOFEN, AUSTRIA

Attachments for the models SX and SC: 1 spare parts manual chassis
1 spare parts manual engine
1 owner handbook for WP Extreme fork
1 owner handbook for WP shock absorber

ALL RIGHTS RESERVED TO MAKE ALTERATIONS TO DESIGN AND MODEL.

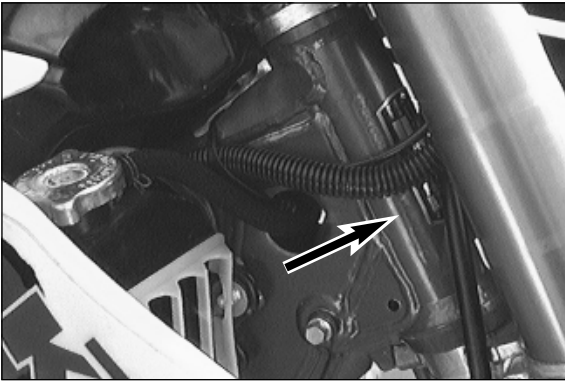
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SERIAL NUMBER LOCATIONS

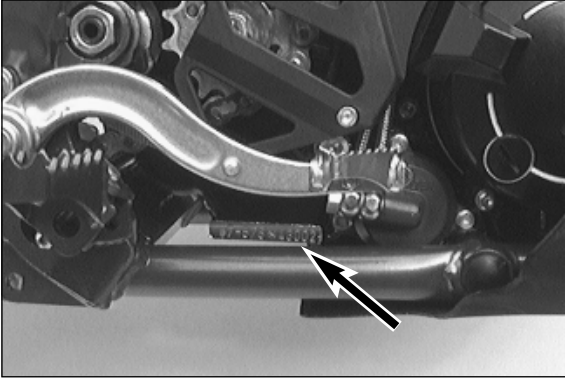
Chassis number

The chassis number is stamped on the right side of the steering head tube. Write this number into the relevant area on page 1.



Engine number, engine type

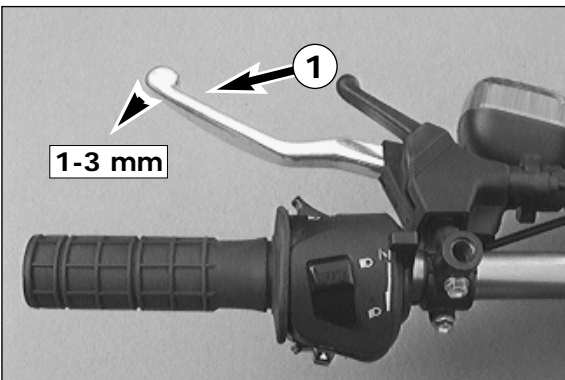
The engine number and engine type are stamped on the right hand side of the engine below the chain sprocket. Write this number into the relevant area on page 1.



OPERATION INSTRUMENTS

Clutch lever

The clutch lever ❶ is fitted on the left hand side of the handle bar. When engine is cold, there should always be a play of 1–3 mm (0,04–0,1 in) at this lever (measured at outer edge).



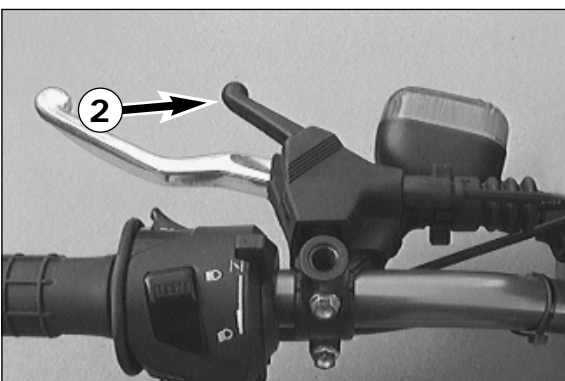
! CAUTION !

IF THERE IS NO PLAY ON THE CLUTCH LEVER, THE CLUTCH WILL START TO SLIP. THE CLUTCH WILL THEN OVERHEAT, DESTROYING THE CLUTCH LININGS.

Hand decompression lever

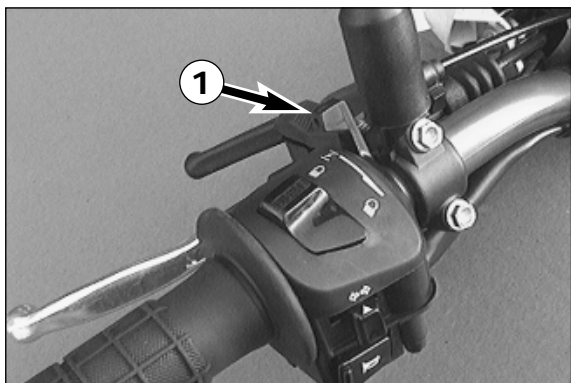
The hand decompression lever ❷ is only used in two special cases:

- When the engine stalled.
When you then start the engine, you may feel a hard resistance on the kickstarter, because the automatic decompressor cannot lock into place. If this happens, pull the hand decompression lever and stand on the kickstarter. You can then start the engine normally again.
- When you want to push-start the motorcycle.
While pushing, pull the decompression lever to make it easier to get the engine going.



! CAUTION !

THE SETTING OF THE DECOMPRESSION CABLE SHOULD BE REGULARLY CHECKED. A LACK OF PLAY IN THE DECOMPRESSION LEVER CAN RESULT IN ENGINE DAMAGE.

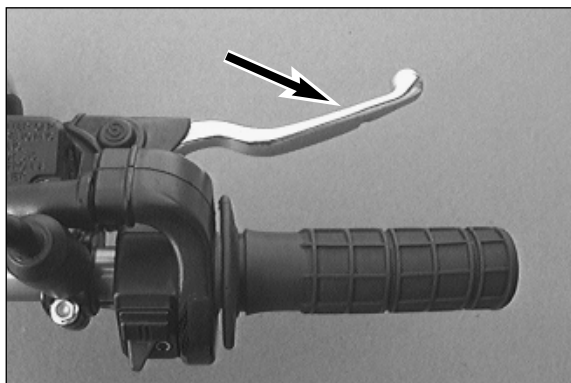


Choke lever (EGS)

If the choke lever ❶ is pulled backwards, a bore will be opened in the carburetor through which the engine may draw in additional fuel. This produces a „rich“ fuel/air mixture necessary for cold start. If the choke lever is pushed forward up to the stop, the bore will be closed again. In this position the choke cable must have a play of approx. 2mm.

! CAUTION !

IF THERE IS NO PLAY IN THE CHOKE CABLE, THE COLD STARTER SYSTEM CANNOT BE COMPLETELY CLOSED. THIS RESULTS IN HIGH FUEL CONSUMPTION, AN UNEVEN RUNNING ENGINE, AN EXTREME WEAR OF PISTON AND CYLINDER.

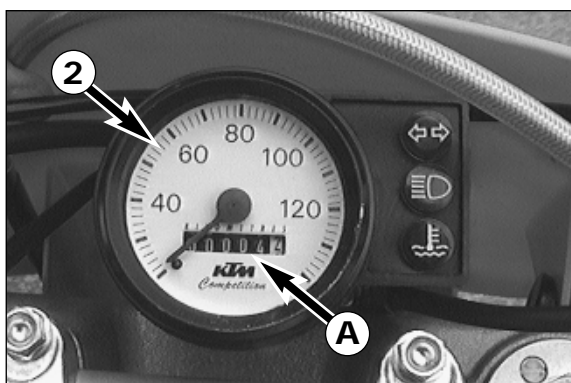


Hand brake lever

The hand brake lever is mounted on the handle bars on the right and actuates the front wheel brake.




⚠ WARNING ⚠

IF THE RESISTANCE IN THE HAND BRAKE LEVER OR FOOT BRAKE PEDAL FEELS „SPONGY“ (TOO MUCH GIVE), THIS IS AN INDICATION THAT SOMETHING IS WRONG WITH THE BRAKE SYSTEM. DON'T RIDE YOUR MOTORCYCLE ANYMORE WITHOUT FIRST HAVING THE BRAKE SYSTEM LOOKED OVER BY A KTM DEALER.



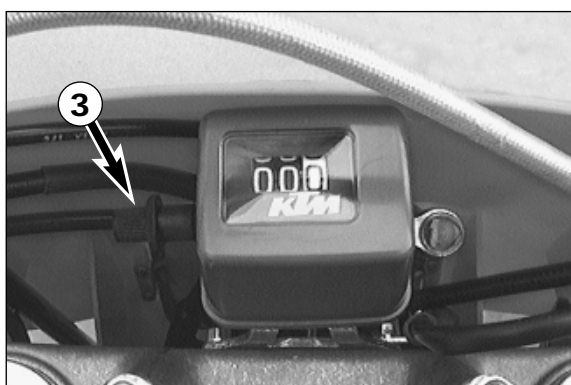
Speedometer, control lamps (SC)

The mileage indicator ❶ in the speedometer ❷ indicates overall mileage.

-  The green control lamp flashes when the indicator is working in the same rhythm as the flashing indicator.
-  The blue control lamp lights up when the high beam is on.
-  The red cooling liquid temperature warning lamp lights up at a cooling liquid temperature of 110°C.

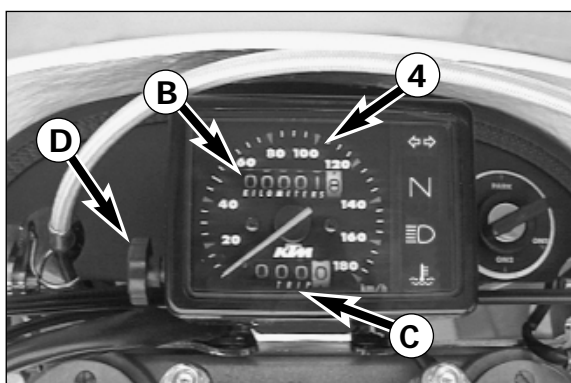
! CAUTION !

PAY ATTENTION TO THE DIRECTIONS IN THE CHAPTER „COOLING SYSTEM“ ON PAGE 26.







Odometer (SC - USA)

The odometer is a mileage indicator and can be set to 0 by means of the adjustment wheel ❸.



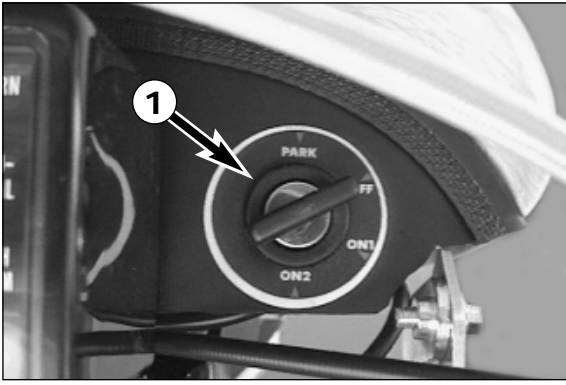
Speedometer, control lamps (EGS)

The mileage indicator ❶ in the speedometer ❷ indicates overall mileage. The day mileage indicator ❸ can be set to 0 by means of the adjustment wheel ❹. Turn the adjustment wheel forward until only zeros can be seen in the display.

-  The green control lamp flashes when the indicator is working in the same rhythm as the flashing indicator.
-  The green control lamp lights up when the gear is switched to idle.
-  The blue control lamp lights up when the high beam is on.
-  The red cooling liquid temperature warning lamp lights up at a cooling liquid temperature of 110°C.

! CAUTION !

PAY ATTENTION TO THE DIRECTIONS IN THE CHAPTER „COOLING SYSTEM“ ON PAGE 27.

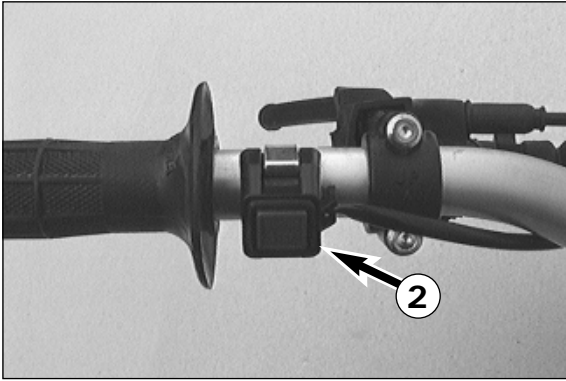


Ignition lock

Switch positions of ignition lock ❶:

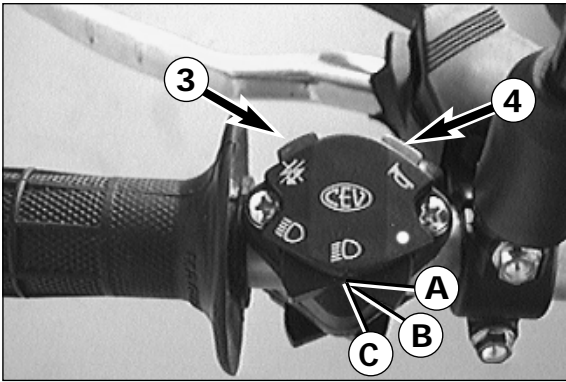
- OFF** = Ignition off, light off
- PARK** = Ignition off, parking light on (only versions with battery)
- ON 1** = Ignition on, light on (if engine is running)
- ON 2** = Ignition on, light on (if engine is running)

The ignition key can be withdrawn in positions OFF and PARK.



Short circuit button (SX)

The short circuit button ❷ turns off the engine. When pressing this button, the ignition circuit is short-circuited.

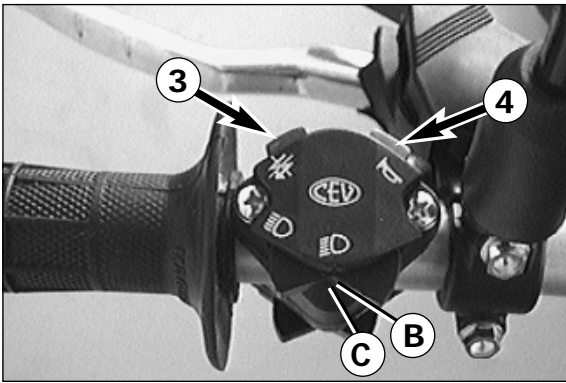


Combination switch (SC)

The light switch has 3 switch positions.

- ❶ = Light off
- ❷ = Low beam light
- ❸ = High beam light

The red short circuit button ❹ serves to switch off the engine. Leave the switch pressed, until the engine stops. With the button ❺ the horn will sound.



Combination switch (SC - Aus, SGP)

The light switch has 3 switch positions.

- ❷ = Low beam light
- ❸ = High beam light

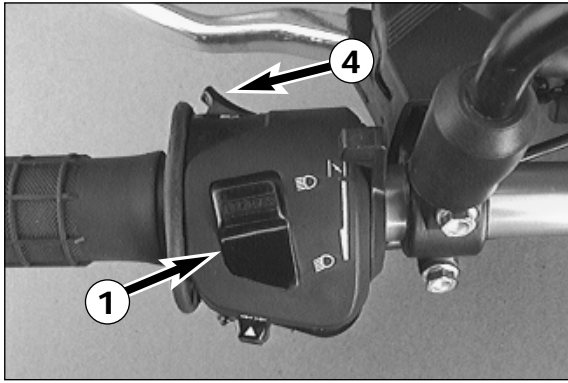
The red short circuit button ❹ serves to switch off the engine. Leave the switch pressed, until the engine stops. With the button ❺ the horn will sound.



Flasher switch (SC)

↶ Flasher left

↷ Flasher right



Combination switch (EGS)

The rocker switch LIGHTS ① actuates the high beam or low beam.

☰☉ = High-beam light

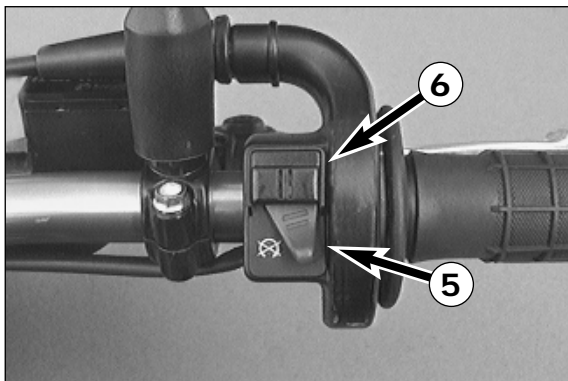
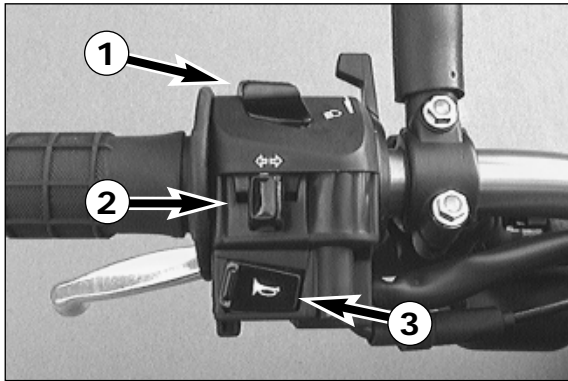
☰☉ = Low-beam light

The indicator switch ② returns to central position after actuation. Press indicator switch towards switch housing to switch off the indicator.

The horn is sounded with button ③.

The light signal (high beam) is actuated with button ④.

NOTE: The engine must be running in order to check that the electric components are functioning correctly.



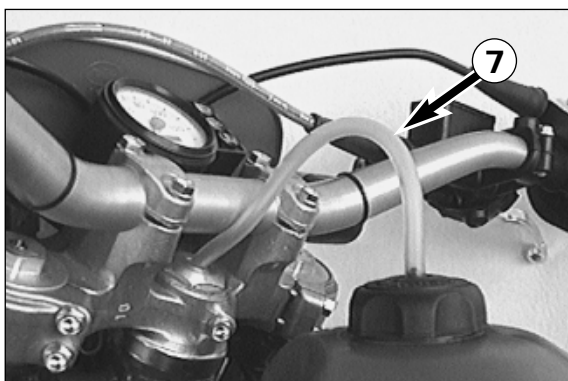
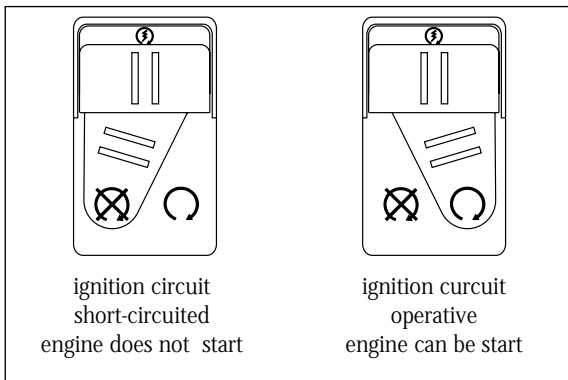
Emergency OFF switch (EGS)

The emergency OFF switch ⑤ is mainly a safety and emergency switch and should normally be ON.

☒ When this symbol is concealed by the switch, the ignition circuit will be short-circuited.

☉ When this symbol is concealed by the switch, the ignition circuit will be operative and the engine should start when cranked.

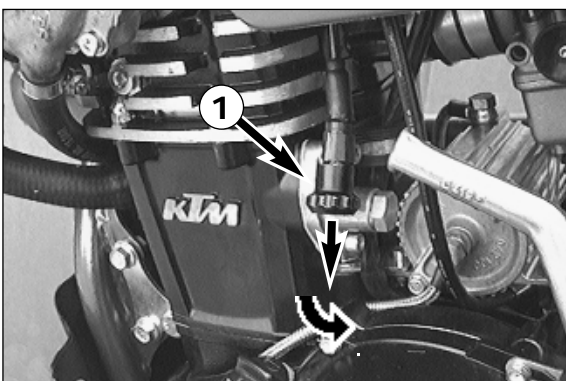
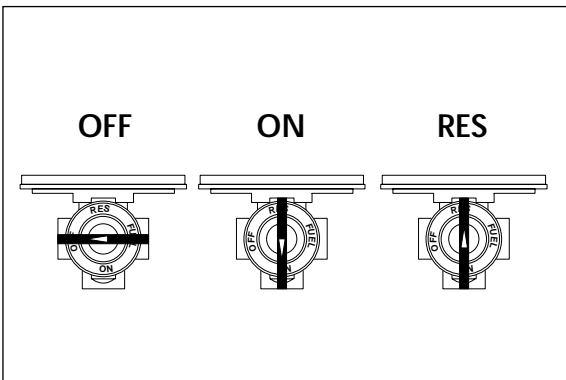
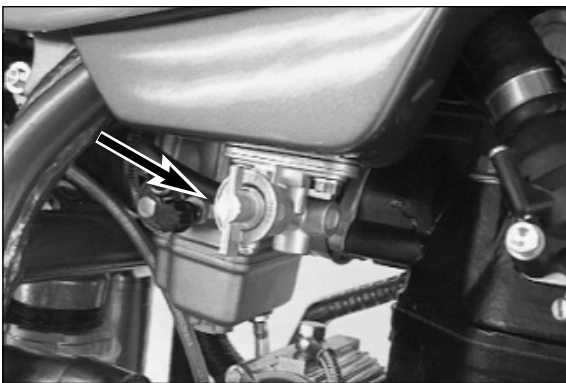
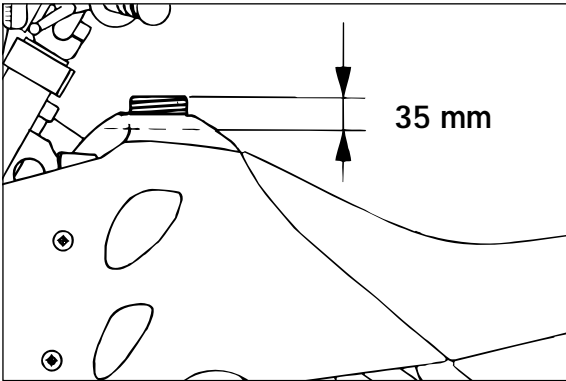
The Button ⑥ is inoperative.



Filler cap

To open filler cap: Pull the tank venting hose ⑦ from the steering head and turn the filler cap counter-clockwise.

To close filler cap: Screw on the filler cap clockwise. Place the tank venting hose ⑦ in the steering head, avoiding any kinks.



Fuel

The LC4 engine needs premium gasoline with an octane number of 95 or higher.

! CAUTION !

USE LEADED OR UNLEADED PREMIUM GRADE GASOLINE (95 OCTANES). NEVER USE ANY GASOLINE HAVING LESS THAN 95 OCTANES BECAUSE IT MAY DAMAGE THE ENGINE.

⚠ WARNING ⚠

GASOLINE IS HIGHLY FLAMMABLE AND POISONOUS. EXTREME CAUTION SHOULD BE USED WHEN HANDLING GASOLINE. DO NOT REFUEL THE MOTORCYCLE NEAR OPEN FLAMES OR BURNING CIGARETTES. ALWAYS SWITCH OFF THE ENGINE BEFORE REFUELLING. BE CAREFUL NOT TO SPILL GASOLINE ON THE ENGINE OR EXHAUST PIPE WHILE THE ENGINE IS HOT. WIPE UP SPILLS PROMPTLY. IF GASOLINE IS SWALLOWED OR SPLASHED IN THE EYES, SEEK A DOCTOR'S ADVICE IMMEDIATELY.

Fuel expands when its temperature rises. Therefore do not fill the tank to the top (see fig.).

Fuel tap

OFF In this position the fuel tap is closed. No fuel may flow to the carburetor.

ON When using the motorcycle, the rotating handle must be set to the ON position. Now fuel may flow to carburetor. In this position the tank empties down to the fuel reserve of approx. 1,5 liters.

RES The reserve tank, approximately 1,5 liters, cannot be tapped until the rotating handle is turned to the RES position. Fill the tank as soon as possible and remember to turn the rotating handle back to the **ON** position so that you will have backup fuel next time, too.

! CAUTION !

THE FUEL TAP SHOULD BE LOCKED WHENEVER THE MOTORCYCLE IS PARKED. IF THE TAP IS NOT CLOSED THE CARBURETOR MAY OVERFLOW AND FUEL GET INTO THE ENGINE.

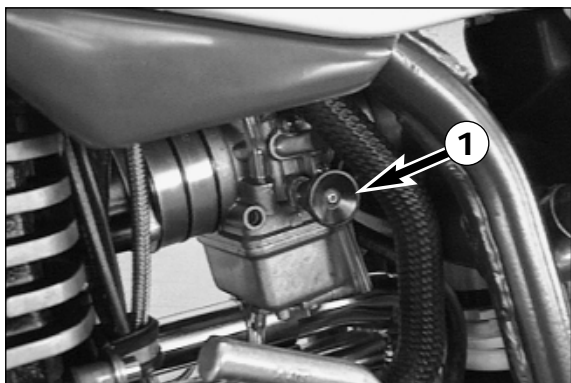
Choke (SX, SC)

In these models the choke operating element is located on the engine. Pull the knob ❶ and turn it (approx. 90°) to open a bore in the carburetor through which the engine can take in additional fuel. The result is a „fat“ fuel-air mixture of the type needed for cold starts.

To close the bore in the carburetor, turn the knob again (approx. 90°); the knob moves back into its initial position. In this position, the play of the choke cable must be approximately 2 mm (0.1 in).

! CAUTION !

IF THERE IS NO PLAY IN THE CHOKE CABLE, THE COLD STARTER SYSTEM CANNOT BE COMPLETELY CLOSED. THIS RESULTS IN HIGH FUEL CONSUMPTION, AN UNEVEN RUNNING ENGINE, AN EXTREME WEAR OF PISTON AND CYLINDER.

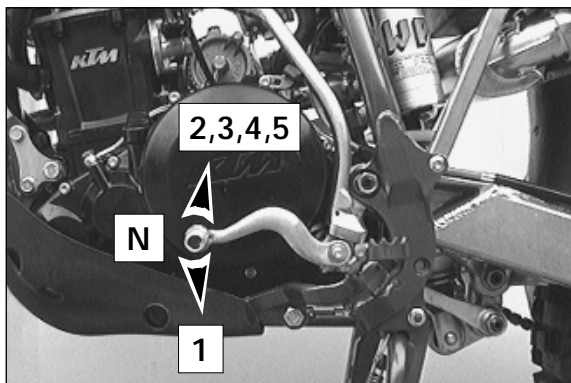


Hot-start device

The carburetor is equipped with a hot-start device which makes it easier to start the engine when hot. Press the hot-start button ❶ until it engages. This will slightly lift the throttle valve. Once the engine is running, pull the hot-start button back into its original position.

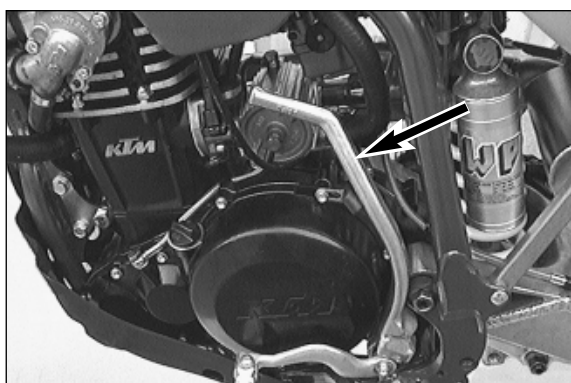
NOTE:

Always pull the hot start device back into the initial position as soon as the engine is running. An activated hot starting device will have a negative impact on the cold starting properties of the engine.



Shift lever

The shift lever is mounted on the left side of the engine. The position of the gears is shown in the illustration. Neutral, or the idle speed, is located between first and second gear.



Kickstarter

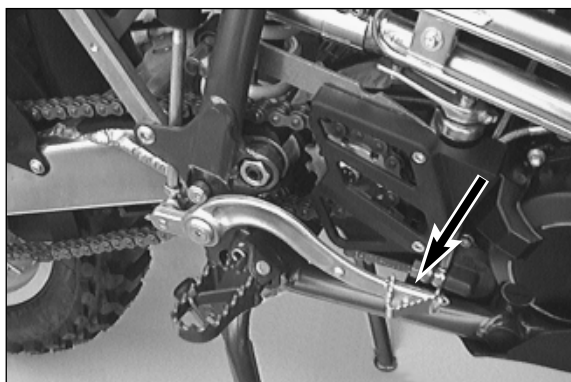
The kickstarter is mounted on the left side of the engine. Its upper part can be swivelled.



WARNING



WHEN STARTING THE ENGINE, PUT ON MOTORCYCLE BOOTS IN ORDER TO AVOID INJURIES. YOU MAY SLIP OFF THE KICKSTARTER, OR THE ENGINE MAY STRIKE BACK WHEN KICKING NOT VEHEMENTLY ENOUGH.



Foot brake pedal

The foot brake pedal is disposed in front of the right foot rest. Its basic position can be adjusted to your seat position (see maintenance work).



WARNING



IF THE RESISTANCE IN THE HAND BRAKE LEVER OR FOOT BRAKE PEDAL FEELS "SPONGY" (TOO MUCH GIVE), THIS IS AN INDICATION THAT SOMETHING IS WRONG WITH THE BRAKE SYSTEM. DON'T RIDE YOUR MOTORCYCLE ANYMORE WITHOUT FIRST HAVING THE BRAKE SYSTEM LOOKED OVER BY A KTM DEALER.



Handlebar lock

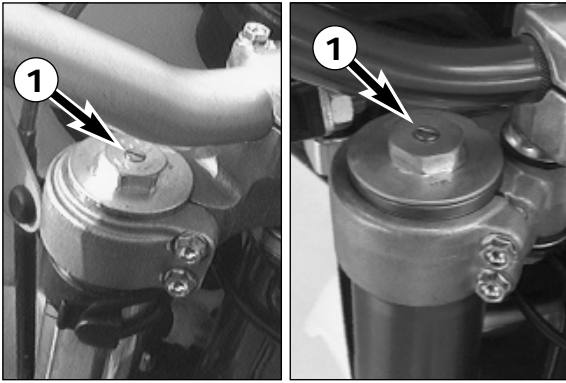
The handlebar can be locked by means of the lock located on the control head. Fully turn handlebar to right to lock, insert key, turn to left, press in, turn to right and withdraw.



CAUTION



NEVER LEAVE THE KEY INSERTED IN THE LOCK. IF YOU TURN THE STEERING TO THE LEFT THE KEY COULD GET DAMAGED.



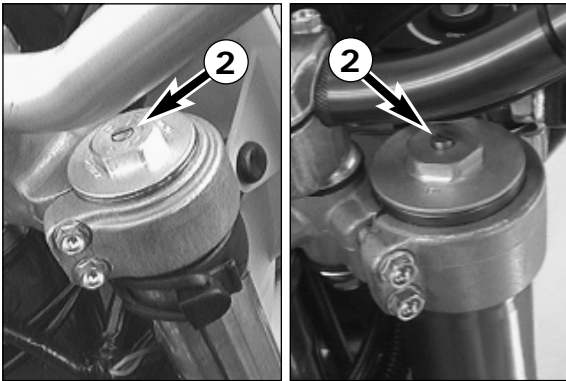
Compression damping of fork

The compression damping mechanism is built into the left fork tube. It only regulates the degree of damping during compression.

By using the knob ❶ (COM), the degree of damping of the compression can be adjusted. Turn the knob clockwise to increase damping, turn it counterclockwise to reduce damping during compression.

BASIC SETTING:

- turn rotary knob clockwise as far as it will go
- turn it back by as many clicks as are specified for the relevant type of fork
- WP09.18.S7.40 8 clicks
- WP09.18.S7.44 12 clicks
- WP06.18.Q7.12 (K4T96L3) 10 clicks



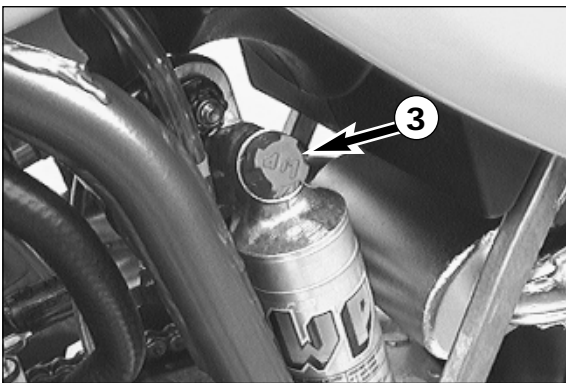
Rebound damping of fork

The rebound damping mechanism is built into the right fork tube. It only regulates the degree of damping during rebounding.

By using the knob ❷ (REB), the degree of damping of the rebound can be adjusted. Turn the knob clockwise to increase damping, turn it counterclockwise to reduce damping during rebounding.

BASIC SETTING:

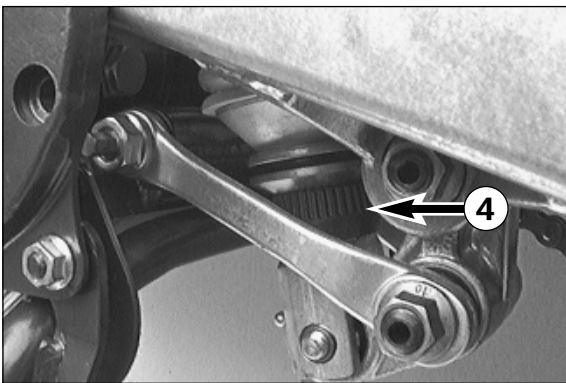
- turn rotary knob clockwise as far as it will go
- turn it back by as many clicks as are specified for the relevant type of fork
- WP09.18.S7.40 12 clicks
- WP09.18.S7.44 12 clicks
- WP06.18.Q7.12 (K4T96L3) 14 clicks



Compression damping of shock absorber

With the knob ❸ the degree of damping of the compression can be adjusted to 7 positions. Turn the knob counterclockwise to increase damping, turn it clockwise to reduce damping during rebounding.

- WP01.18.S7.98 3
- WP01.18.Q7.82 3
- WP01.18.Q7.81 (K4T96S) 3



Rebound damping of shock absorber

With the setting wheel ❹ the degree of damping of the rebound can be adjusted to 11 positions. Turn the knob to the left side to increase damping, turn it to the right side to reduce damping during rebounding.

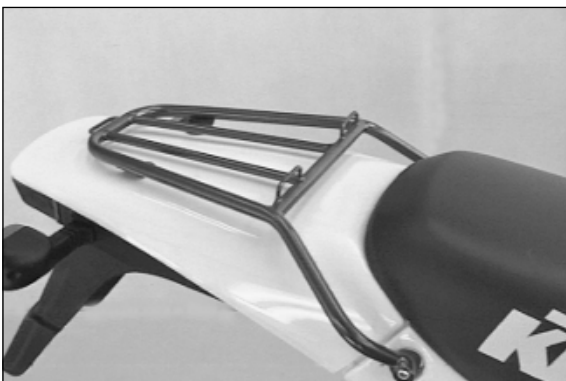
- WP01.18.S7.98 5
- WP01.18.Q7.82 4
- WP01.18.Q7.81 (K4T96S) 4



WARNING



- NEVER CHANGE DAMPING BETWEEN THE TEST DRIVES MORE THAN 2 CLICKS.
- THE DAMPING UNITY OF THE SHOCK ABSORBER IS FILLED WITH HIGH COMPRESSED NITROGEN. NEVER TRY TO TAKE THE SHOCK ABSORBER APART OR TO DO ANY MAINTENANCE WORK YOURSELF. SEVERE INJURIES COULD BE THE RESULT.



Baggage rack (EGS)

The baggage rack may be loaded with up to 10 kg. The two lateral hoops serve as handles for the passenger

Check the following before each start

When you start off, the motorcycle must be in perfect mechanical condition. For safety reasons, you should make a habit of performing an overall check of your motorcycle before each start.

The following checks should be performed:

- 1 **CHECK THE OIL LEVEL**
Insufficient oil results in premature wear and consequently to engine damage.
- 2 **FUEL**
Check that there is sufficient fuel in the tank; when closing the filler cap, check that the tank venting hose is free of kinks.
- 3 **CHAIN**
A loose chain can fall from the chain wheels; an extremely worn chain can tear, and insufficient lubrication can result in unnecessary wear to the chain and chain wheels.
- 4 **TIRES**
Check for damaged tires. Tires showing cuts or dents must be replaced. The tread depth must comply with the legal regulations. Also check the air pressure. Insufficient tread and incorrect air pressure deteriorate the driving performance.
- 5 **BRAKES**
Check correct functioning of the braking system. Check for sufficient brake fluid in the reservoir. The reservoirs have been designed in such a way that brake fluid does not need to be refilled even when the brake pads are worn. If the level of brake fluid falls below the minimum value, this indicates a leak in the braking system or completely worn out brake pads. Arrange for the braking system to be checked by a KTM specialist, as complete failure of the braking system can be avoided.
Also check the state of the brake hose and the thickness of the brake linings.
Check free travel at hand brake lever and foot brake lever.
- 6 **CABLES**
Check correct setting and easy running of all control cables.
- 7 **COOLING FLUID**
Check the level of cooling fluid when the engine is cold.
- 8 **ELECTRICAL SYSTEM**
Check correct functioning of headlamps, tail-lights, brake lights, indicators, control lamps and horn while the engine is running.
- 9 **LUGGAGE**
If you are taking luggage with you, check that this is securely fastened.

⚠ WARNING ⚠

- WEAR SUITABLE CLOTHING WHEN DRIVING A MOTORCYCLE. CLEVER KTM DRIVERS ALWAYS WEAR A HELMET, BOOTS, GLOVES AND A JACKET, REGARDLESS OF WHETHER DRIVING ALL DAY OR JUST FOR A SHORT TRIP. THE PROTECTIVE CLOTHING SHOULD BE BRIGHTLY COLORED SO THAT OTHER VEHICLE CAN SEE YOU AS EARLY AS POSSIBLE. YOUR PASSENGER WILL ALSO NEED SUITABLE PROTECTIVE CLOTHING.
- DO NOT DRIVE AFTER HAVING CONSUMED ALCOHOL.
- ONLY USE ACCESSORIES THAT HAVE BEEN RELEASED BY KTM. FOR EXAMPLE, FRONT PANELLING CAN IMPAIR THE DRIVING PROPERTIES OF THE MOTORCYCLE. CASES, EXTRA TANKS ETC. CAN ALTER THE WEIGHT DISTRIBUTION AND THUS ALSO IMPAIR THE VEHICLES DRIVING PROPERTIES.
- THE FRONT AND REAR WHEEL ARE ALLOWED TO BE FITTED ONLY WITH TIRES THAT HAVE THE SAME PROFILE TYPE.

⚠ WARNING ⚠

IMPORTANT INSTRUCTIONS FOR MODELS SX AND SC:

- THE ABOVE MODELS WERE DESIGNED AND BUILT FOR ONE PERSON ONLY - NO ADDITIONAL PASSENGER ALLOWED!
- NEITHER DO THE SX-MODEL MEET THE APPLICABLE STATUTORY REGULATIONS AND SAFETY STANDARDS. USING THEM ON PUBLIC ROADS, HIGHWAYS, FREEWAYS ETC. IS AGAINST THE LAW.
- WHEN RIDING YOUR MOTORCYCLE, PLEASE BEAR IN MIND THAT OTHER PEOPLE MAY FEEL MOLESTED BY EXCESSIVE NOISE.

Instructions for initial operation

- Verify that your KTM dealer performed the PREPARATION OF VEHICLE jobs (see Customer Service Manual).
- Read these operating instructions carefully before your first ride.
- Familiarize yourself with the operating elements.
- Adjust the hand brake lever and foot brake lever to the most comfortable positions for you.
- Get used to handling the motorcycle on an empty parking lot or open space, before starting on a longer drive. Also try to drive as slowly as possible and in standing position, to improve your feeling for the vehicle.
- Do not drive along off-road tracks which go beyond your ability and experience.
- Hold the handle bars with both hands and leave your feet on the foot rests while driving.
- Remove your foot from the foot brake lever when you are not braking. If the foot brake lever is not released the brake pads rub continuously and the braking system is overheated.
- A passenger is allowed only if your motorcycle is fitted and registered for such purposes. The passenger must hold tight to the strap or hold on to the driver during the drive, with his feet on the passenger foot rests.
- Do not make any alterations to the motorcycle and always use ORIGINAL KTM SPARE PARTS. Spare parts from other manufacturers can impair the safety of the motorcycle.
- Motorcycles are sensitive to alterations in the distribution of weight. If you are taking luggage with you, this should be secured as close as possible to the middle of the vehicle; distribute the weight evenly between the front and rear wheel. Never exceed the maximum permissible laden weight and the axle weights. The maximum permissible laden weight is made up of the following components:
 - Motorcycle ready for operation and tank full
 - Luggage
 - Driver and passenger with protective clothing and helmet.
- Pay attention to running-in procedure.

Running in the LC-4 models

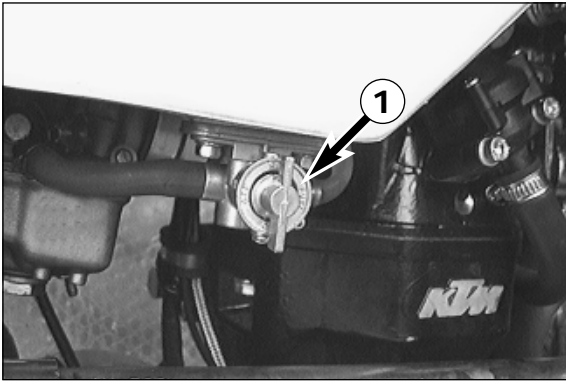
Even very precisely machined sections of engine components have rougher surfaces than components which have been sliding across one another for quite some time. Therefore, every engine needs to be broken in. For this reason, during its first 1000 kilometers (620 miles) the engine must not be revved up to its performance limits. The engine speed of 4800 r.p.m. must not be exceeded during the first 1000 kilometers (620 miles). During this break-in time, you should ride your motorcycle in different conditions (roads, easy off-road terrain). The following table shows you the maximum velocity values in the different gears at 4800 r.p.m. as based on the rear wheel transmission ratio of your motorcycle.

gear \ i	16:40 t	15:40 t	16:45 t	15:45 t	15:50 t	14:50 t
1 st	40 (25)	40 (25)	35 (22)	35 (22)	30 (19)	30 (19)
2 nd	55 (34)	55 (34)	50 (31)	50 (31)	40 (25)	40 (25)
3 rd	75 (46)	70 (43)	65 (40)	65 (40)	60 (37)	55 (34)
4 th	90 (56)	85 (53)	80 (50)	80 (50)	70 (43)	65 (40)
5 th	115 (71)	110 (71)	100 (62)	100 (62)	85 (53)	80 (50)

km/h (mph)

NOTE:

During the stage of running the engine in, that is the first 1000 KM (620 miles), the engine oil used should be of a mineral oil (non synthetic) formula. This also applies if the engine has been repaired.



Starting when the engine is cold

- 1 Open the fuel tap ❶
- 2 Switch on the ignition ❷ and the emergency OFF switch ❸.
- 3 Swing up the side stand or center stand.
- 4 Put the gear in neutral
- 5 Operate the choke ❹
- 6 Leave throttle closed and push the kickstarter hard ALL THE WAY.
- 7 If the engine starts, push the choke lever back a little bit, as soon as the engine runs unevenly.



WARNING



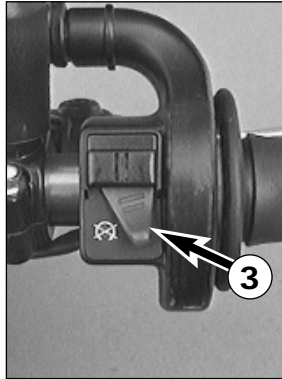
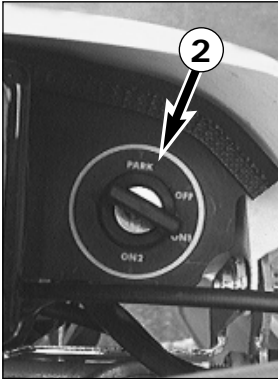
- TO AVOID INJURY WHEN STARTING THE ENGINE, ALWAYS WEAR BOOTS!
- DO NOT START THE ENGINE AND ALLOW IT TO IDLE IN A CLOSED AREA. EXHAUST FUMES ARE POISONOUS AND CAN CAUSE LOSS OF CONSCIOUSNESS AND DEATH. ALWAYS PROVIDE ADEQUATE VENTILATION WHILE THE ENGINE IS RUNNING.



CAUTION

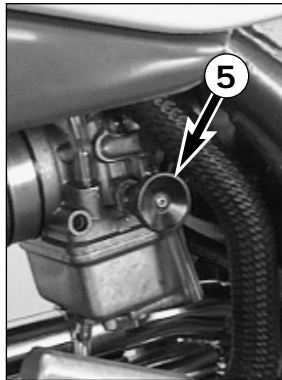
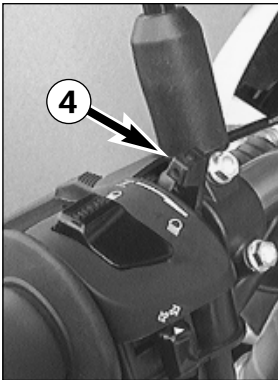


DON'T RIDE YOUR MOTORCYCLE WITH FULL LOAD AND DON'T REV ENGINE WHEN COLD. BECAUSE THE PISTON IS WARMING UP FASTER THAN THE WATER COOLED CYLINDER, IT CAN CAUSE ENGINE DAMAGE.



Starting when the engine is warm

- 1 Open the fuel tap ❶
- 2 Switch on the ignition ❷ and the emergency OFF switch ❸.
- 3 Swing up the side stand or center stand.
- 4 Put the gear in neutral
- 5 Leave the throttle closed and push the kickstarter hard ALL THE WAY



Starting when the engine is hot

- 1 Open the fuel tap ❶
- 2 Switch on the ignition ❷ and the emergency OFF switch ❸.
- 3 Swing up the side stand or center stand.
- 4 Put the gear in neutral
- 5 Push in the hot-start button ❺ on the carburettor as far as it will go
- 6 Leave the throttle closed and push the kickstarter hard ALL THE WAY
- 7 Once the engine is running, pull hot-start button back into its original position.

What to do when the engine is „flooded”

Pull in the hand decompression lever, open the throttle fully, kick the kick starter through the stroke 5 to 10 times and start the motor as described above.



Starting off

Pull the clutch lever. Put the engine into first gear, slowly release the clutch lever and open throttle at the same time.



WARNING



BEFORE YOU START OFF, CHECK THAT THE MAIN OR SIDE STAND HAS BEEN SWUNG UP FULLY. IF THE STAND DRAGS ON THE GROUND, THE MOTORCYCLE CAN GO OUT OF CONTROL.

Shifting/Riding

You are now in first gear, referred to as the drive or uphill gear. Depending on the conditions (traffic, hill size, etc.), you can shift to a higher gear. Close throttle, at the same time pull clutch lever in and shift to the next higher gear. Let clutch lever go again and give gas. If you turned on the choke, make sure you turn it off again as soon as engine is warm.

When you reach full speed through opening the throttle all the way, turn throttle back to 3/4; the speed hardly decreases although the engine will use less gas.

Only give as much gas as the engine can handle. Through quick and high revving of throttle, the gas usage increases.



By shifting down, use the brakes if necessary and close throttle at the same time. Pull clutch lever and shift down to the next gear. Let clutch lever go slowly and open throttle or shift down again.

⚠ WARNING ⚠

- OBSERVE THE TRAFFIC REGULATIONS, DRIVE DEFENSIVELY AND TRYING TO LOOK AHEAD AS FAR AS POSSIBLE SO THAT ANY HAZARDS CAN BE RECOGNIZED AS EARLY AS POSSIBLE.
- ADJUST YOUR DRIVING SPEED ACCORDING TO THE CONDITIONS AND YOUR DRIVING SKILLS.
- DRIVE CAREFULLY UN UNKNOWN ROADS OR ON UNFAMILIAR TRIALS.
- WHEN DRIVING OFF-ROAD, ALWAYS HAVE A FRIEND ON A SECOND MOTORCYCLE TO KEEP YOU COMPANY, SO THAT YOU CAN HELP EACH OTHER SHOULD DIFFICULTIES ARISE.
- REPLACE HELMET VISOR OR GOGGLE LENS WHEN SCRATCHED OR DAMAGED. IF BRIGHT LIGHT SHINES THROUGH A SCRATCHED VISOR OR LENS, THE OPERATOR WILL BE BLINDED.
- AFTER FALLING WITH THE MOTORCYCLE, CHECK ALL FUNCTIONS THOROUGHLY BEFORE STARTING UP OPERATIONS AGAIN.

! CAUTION !

- HIGH RPM RATES WHEN THE ENGINE IS COLD HAVE AN ADVERSE EFFECT ON THE LIFE OF YOUR ENGINE. WE RECOMMEND YOU RUN THE ENGINE IN A MODERATE RPM RANGE FOR A FEW MILES GIVING IT A CHANCE TO WARM UP. AFTER THAT NO FURTHER PRECAUTIONS IN THIS RESPECT NEED BE TAKEN. THE ENGINE HAS REACHED ITS OPERATING TEMPERATURE AS SOON AS THE RADIATORS BECOME WARM.
- NEVER HAVE THE THROTTLE WIDE OPEN WHEN CHANGING DOWN TO A LOWER GEAR. THE ENGINE WILL OVER-REV, DAMAGING THE VALVES. IN ADDITION, THE REAR WHEEL LOCKS SO THAT THE MOTORCYCLE CAN EASILY GET OUT OF CONTROL.
- LONG WHEELIES LEAD TO A DROP IN THE OIL PRESSURE WHICH CAN LEAD TO MOTOR DAMAGE.
- IF THE RED COOLING LIQUID TEMPERATURE WARNING LAMP LIGHTS UP WHILE YOU ARE DRIVING, PLEASE PROCEED AS SPECIFIED IN THE NOTES CONTAINED ON PAGES 26 (SX, SC) AND 27 (EGS)!
- IF ANY ABNORMAL VIBRATIONS OCCUR WHILE DRIVING, CHECK THAT THE ENGINE FASTENING BOLTS ARE TIGHT.
- IN THE EVENT THAT, WHILE RIDING ON YOUR MOTORCYCLE, YOU NOTICE ANY UNUSUAL OPERATION-RELATED NOISE, STOP IMMEDIATELY, TURN THE ENGINE OFF, AND CONTACT AN AUTHORIZED KTM DEALER.

Braking

Close throttle and apply the hand and foot brakes at the same time. When driving on sandy, wet or slippery ground use mainly the rear wheel brake. Always brake with feeling, blocking wheels can cause you to skid or fall. Also change down to lower gears depending on your speed.

When driving down hill, use the braking effect of the engine. Change down one or two gears but do not overspeed the engine. In this way, you will not need to brake so much and the brakes will not overheat.

⚠ WARNING ⚠

WHEN YOU BRAKE, THE BRAKE DISCS, BRAKE PADS, BRAKE CALIPER AND BRAKE FLUID HEAT UP. THE HOTTER THESE PARTS GET, THE WEAKER THE BRAKING EFFECT. IN EXTREME CASES, THE ENTIRE BRAKING SYSTEM CAN FAIL.

Stopping and parking

Apply the brakes fully and put the engine into neutral. To stop the engine, switch off the ignition or pull the short circuit button when the engine is idling, until the engine stops. Turn the fuel tap to the OFF position, park on an area where the ground is firm, and lock the motorcycle.

⚠ WARNING ⚠

- NEVER LEAVE YOUR MOTORCYCLE WITHOUT SUPERVISION IF THE ENGINE IS RUNNING.
- MOTORCYCLE ENGINES PRODUCE A GREAT AMOUNT OF HEAT WHILE RUNNING. THE ENGINE, EXHAUST PIPE, MUFFLER, BRAKE ROTORS, AND SHOCK ABSORBERS CAN BECOME VERY HOT. DO NOT TOUCH ANY OF THESE PARTS AFTER OPERATING THE MOTORCYCLE, AND TAKE CARE TO PARK IT WHERE PEDESTRIANS ARE NOT LIKELY TO TOUCH IT AND GET BURNED.

- ALWAYS TAKE OUT THE IGNITION KEY WHEN PARKING YOUR MOTORCYCLE SO THAT IT CANNOT BE USED BY UNAUTHORIZED PERSONS.

! CAUTION !

- CLOSE THE FUEL TAP WHEN LEAVING YOUR VEHICLE. OTHERWISE THE CARBURETTOR CAN FLOOD AND FUEL WILL ENTER THE ENGINE.
- NEVER LET THE PARKING LIGHT ON FOR LONGER THAN 90 MINUTES IF THE ENGINE IS SWITCHED OFF! IF THE OPERATING TIME EXTENDS THIS LIMIT, THE BATTERY WILL BECOME TOTALLY DISCHARGED AND THUS DESTROYED (ONLY MODELS WITH BATTERY).
- ALWAYS TAKE OUT THE IGNITION KEY WHEN PARKING YOUR MOTORCYCLE SO THAT IT CANNOT BE USED BY UNAUTHORIZED PERSONS.
- NEVER PARK YOUR MOTORCYCLE IN PLACES WHERE THERE EXIST FIRE HAZARDS DUE TO DRY GRASS OR OTHER EASILY FLAMMABLE MATERIALS.



NOTE REGARDING THE MAIN STAND:

We advise the following procedure to place the motorcycle on the main stand as effortlessly as possible:

- a) press main stand to ground using foot
- b) swing out kickstarter and pull at an angle toward the rear of motorcycle (see illustration)



NOTE REGARDING THE SIDE STAND:

Use your foot to kick side stand forward up to the stop and lean the motorcycle sideways. Make sure that the ground is solid and that your motorcycle is standing securely. Just in case, you can shift into first gear.

! CAUTION !

THE SIDE STAND IS DESIGNED TO BEAR ONLY THE LOAD OF THE MOTORCYCLE. THE SIDE STAND AND/OR THE FRAME CAN BE DAMAGED AND THE MOTORCYCLE CAN FALL OVER IF YOU MOUNT THE MOTORCYCLE, THUS PUTTING AN ADDITIONAL LOAD ON THE SIDE STAND.

PERIODIC MAINTENANCE SCHEDULE

9.97



IF THE MOTORCYCLE IS USED PRIMARILI FOR OFF ROAD RIDING OR COMPETITIVE RACING, THE 5000 KM (3000 MILES) SERVICE NEEDS TO BE CARRIED OUT AFTER EACH RIDE OR RACE

	KTM rider		KTM dealer			
	before each start	after washing	1st service, after 1000 km (600 miles) or 10 hours	after 2500 km (1500 miles) or 25 hours	after 5000 km (3000 miles) or once a year	at least once a year
Check engine oil level	●					
Change engine oil (SX, SC)			●	●		●
Change engine oil (EGS)			●		●	●
Clean oil screen and magnet of the drain plugs whenever you exchange the engine oil			●			
Change oil filter unit			●		●	●
Change microfilter (SX, SC)				●		●
Change fine screen filter (screwed filter) at the frame tube			●		●	●
Check oil lines for leakage and proper instalment			●		●	
Check valve clearance			●		●	
Clean spark plug and adjust electrode gap					●	
Change spark plug after 10 000 kilometers (6 200 miles)						
Check valve clearance					●	
Drain and clean carburator float bowl		●			●	●
Adjust idling					●	
Check breather hoses of engine gase and gas tank for correct position without buckles			●		●	
Clean air filter and air filter box		●			●	●
Check sprockets, chain guides and chain for wear	●		●		●	
Maintaining chain tension eccentrics (Duke)						●
Clean and lube chain	●	●			●	
Check chain tension	●		●		●	
Check cooling liquid level	●		●		●	
Check quality of antifreeze						●
Check cooling system for leaks	●		●		●	
Check exhaust system for leakage						●
Change exhaust muffler packing (aluminium-muffler)				●	●	
Check exhaust brackets			●		●	
Disassemble and clean spark arrestor discs (USA models)						
Check brake fluid level front and rear	●		●		●	
Change brake fluid						●
Check brake pad thickness	●				●	
Check brake discs					●	
Check condition and correct instalment of brake hoses	●		●		●	
Check freeplay and easy operation of hand brake lever and foot brake lever	●		●		●	
Check adjustment and function of fork	●				●	
Check fork for leaks					●	
Loosen breather screws at fork legs (overpressure)					●	
Change fork oil						●
Perform a full maintenance job for the telescopic fork						●
Clean dust scrubber on forks		●			●	●
Check steering head bearing clearance / adjust			●		●	
Clean and grease steering head bearings and its seals						●
Check adjustment and funktion of shock absorber	●				●	
Check O-ring of the shock absorber for wear					●	●
Servicing the shock absorber						●
Grease lubricating nipple of the Pro Lever suspension system					●	
Disassemble the Pro Lever suspension system and perform a full maintenance job on it						●
Servicing swingarm pivots						●
Check tightness of spokes and rim join	●		●		●	
Check wheel bearings for clearance	●				●	
Check chock absorber rubbers on the rear wheel hub					●	
Check tire condition and air pressure	●				●	
Check cables for damage and easy working	●				●	
Lube and adjust cables		●	●		●	
Check the electrical system	●		●		●	
Check battery holder and connections (Duke)					●	●
Check adjustment of head light					●	
Spray ignition lock, emergency OFF switch, short circuit button, and light switch with contact spray		●			●	
Check all screws, nuts and hose clamps for proper tightness	●		●		●	
Grease or lube all pivot points and sliding components		●	●		●	

MAINTENANCE WORK ON CHASSIS AND ENGINE



WARNING



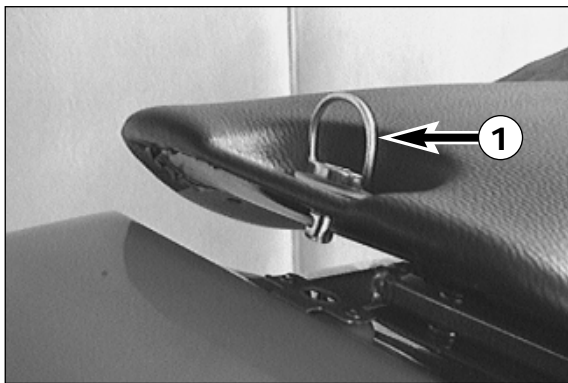
ALL MAINTENANCE AND ADJUSTMENT OPERATIONS THAT ARE MARKED WITH A * REQUIRE SPECIALIST KNOWLEDGE. FOR YOUR OWN SECURITY, LET THESE TASKS BE CARRIED OUT BY A KTM-DEALER



CAUTION

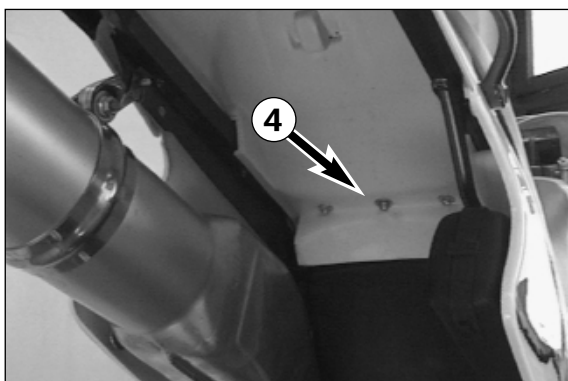
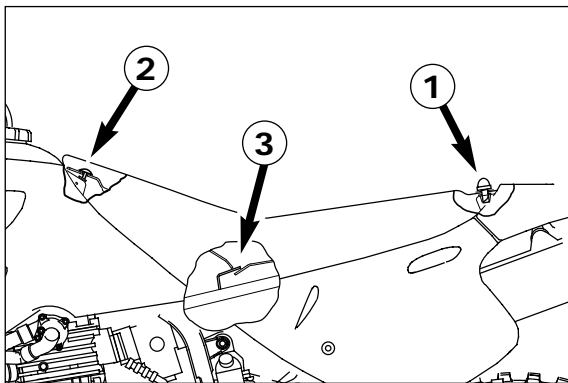


- WHEN CLEANING THE MOTORCYCLE, DO NOT USE A HIGH PRESSURE CLEANING UNIT IF POSSIBLE, OTHERWISE WATER WILL PENETRATE THE BEARINGS, CARBURETTOR, ELECTRIC CONNECTORS ETC.
- WHEN TRANSPORTING YOUR KTM, ENSURE THAT IT IS HELD UPRIGHT WITH RESTRAINING STRAPS OR OTHER MECHANICAL FASTENING DEVICES AND THAT THE FUEL TAP IS IN THE OFF POSITION - IF THE MOTORCYCLE SHOULD FALL OVER, BE AWARE OF ANY LEAKING FUEL FROM THE CARBURETOR OR FUEL TANK
- DO NOT USE TOOTHED WASHERS OR SPRING RINGS WITH THE ENGINE FASTENING SCREWS, AS THESE WORK INTO THE FRAME PARTS AND KEEP WORKING LOOSE. INSTEAD, USE SELF-LOCKING NUTS.
- LET YOUR MOTORCYCLE COOL DOWN BEFORE BEGINNING ANY MAINTENANCE WORK IN ORDER TO AVOID GETTING BURNED.
- REMOVE OILS, FATTY MATTERS, FILTERS, FUELS, WASHING DETERGENTS ETC. ORDERLY.
- UNDER NO CIRCUMSTANCES MAY USED OIL BE DISPOSED OF IN THE SEWAGE SYSTEM OR IN THE OPEN COUNTRYSIZE. 1 LITER USED OIL CONTAMINATES 1.000.000 LITERS WATER.



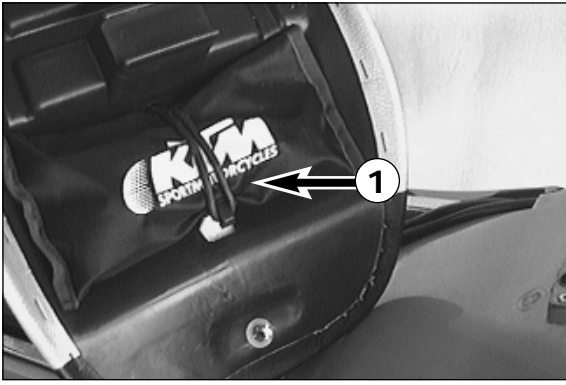
Removal of seat (SX, SC)

By using the quick-release fastener **1**, the seat can be removed without using tools. Turn the quick-release fastener about 180° counter clockwise and lift up the rear of the seat. Pull the seat backwards and unhook it from the front fastener screw **2**. When installing the seat, be sure to insert the rear portion of the seat into the metal clasp **3**.



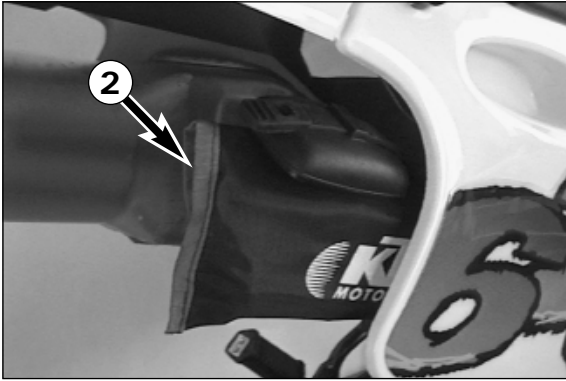
Removal of seat (EGS)

Remove the attachment screws **4** from the underside of the fender. Lift the rear of the seat, pull backwards, and unhook it from the fastener screw **2**. To install the seat, hook the seat into the attachment screw, set the rear portion down on the frame, and slide it forward. If necessary, press down on the front area of the seat so that the seat catches on the metal clasp **3**. Insert and tighten the attachment screws.



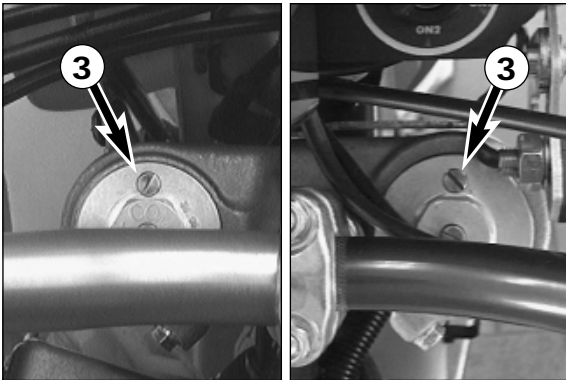
Tool set (SC)

The tool set **1** is located at the bottom of the seat.



Tool set (EGS)

The tool set **2** is located in the tool box under the right side cover.

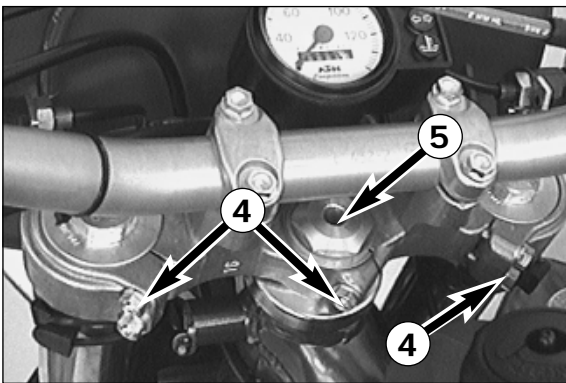


Breather plug front fork

After every 5 hours of use for competitive racing, slacken the breather plugs **3** a few turns in order to relieve excess pressure from the inside of the fork. To do this, place the motorcycle on a stand with the front wheel lifted off the ground. When riding the motorcycle mainly on street, it will be enough to have this job performed in the course of the periodical maintenance service.

! CAUTION !

EXCESSIVE PRESSURE IN THE INTERIOR OF THE FORK CAN CAUSE LEAKS IN THE FORK. IF YOUR FORK IS LEAKING, IT IS RECOMMENDED TO OPEN THE BREATHER PLUGS BEFORE HAVING THE SEALS REPLACED.



Check and adjust steering head bearing*

Check steering head bearing for play periodically. To check this put motorcycle on a stand so that the front wheel is off the ground. Now try to move the fork forward and backward. To adjust, loosen the five pinch bolts **4** of the top triple clamp and turn steering stem bolt clockwise **5** until there is no more play. Don't tighten the steering stem bolt all the way, otherwise the bearings will be damaged. With a plastic hammer, lightly rap on the triple clamp to release tension. Re-tighten the five pinch bolts.

WP Extreme fork: 15 Nm

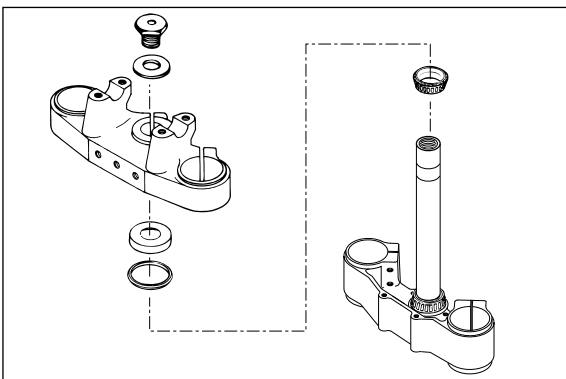
WP USD (UpSideDown) fork: 15 Nm

! WARNING !

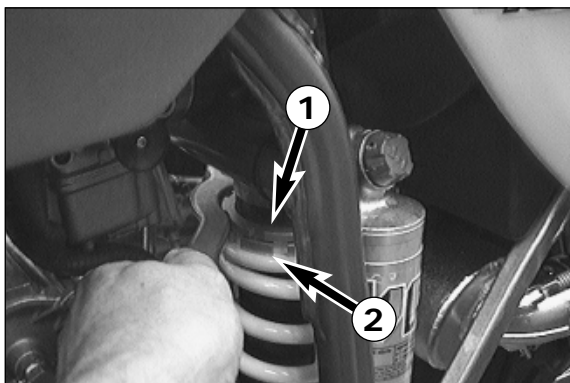
IF THE STEERING HEAD BEARING IS NOT ADJUSTED TO BE FREE OF PLAY, THE MOTORCYCLE WILL SHOW AN UNSTEADY DRIVING PERFORMANCE AND CAN GET OUT OF CONTROL.

! CAUTION !

IF YOU DRIVE WITH PLAY IN THE STEERING HEAD BEARING FOR LONGER PERIODS, FIRST THE BEARINGS AND THEN THE BEARING SEATS IN THE FRAME WILL BE DESTROYED.



At least once a year, the steering head bearings should be smeared with waterproof grease.



Changing the spring preloading of the shock absorber

KTM sets the shock absorber for a driver only, weighing approximately 75 kg (165 lb). If you want to take a passenger with you, or if you weigh considerably more or less than 75 kg (165 lb), you should change the spring preloading **A** accordingly. This is easily done.

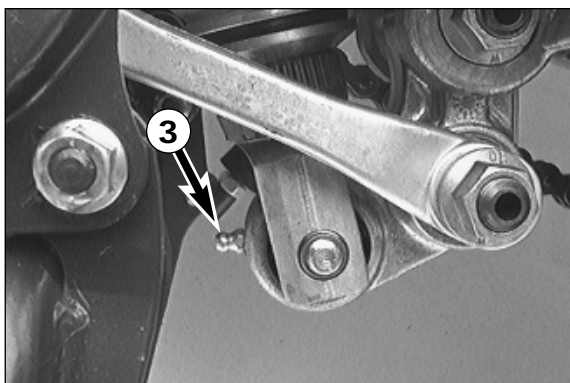
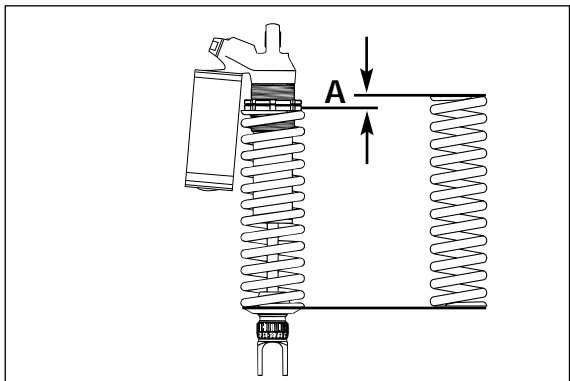
NOTE:

- Before changing the spring preload note down the basic setting, e.g. how many threads are visible above the adjusting ring.
- One rotation of the adjusting ring **2** changes the spring pretension by approximately 1,75 mm (0,07 in).

Loosen the locking ring **1** with the hook spanner from the tool set. Change the spring preload with the adjusting ring **2** and re-tighten the locking ring.

BASIC SETTING – SPRING PRELOAD

SX: 17 mm (0.7 in) / SC, EGS: 23 mm (0,9 in)

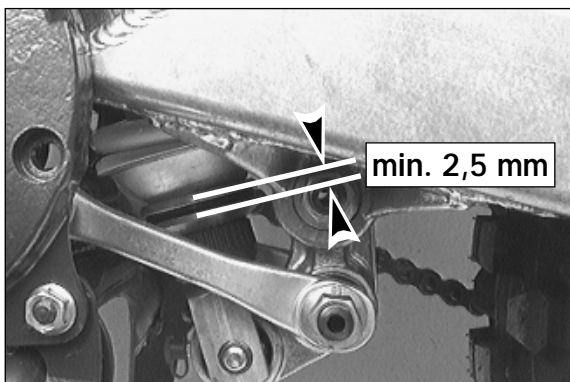


Lubricate rear suspension linkage

The bearings in the link lever must be greased in regular intervals. For this purpose, a lubricating nipple **3** is mounted on the link lever.

! CAUTION !

AFTER EACH TIME THE MOTORCYCLE IS WASHED, IT IS ESPECIALLY IMPORTANT TO GREASE THE LUBRICATING NIPPLE TO PUSH ANY WATER OUT OF THE BEARINGS.



Checking rubber ring on the WP rear shock absorber

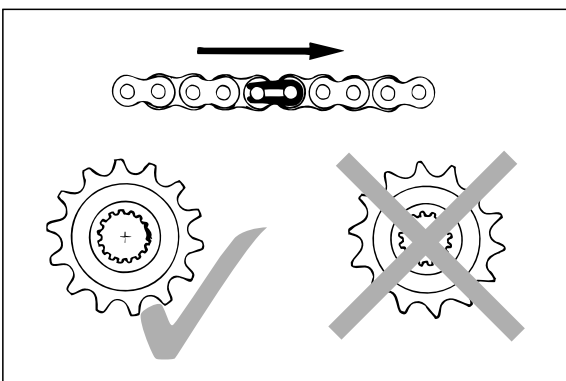
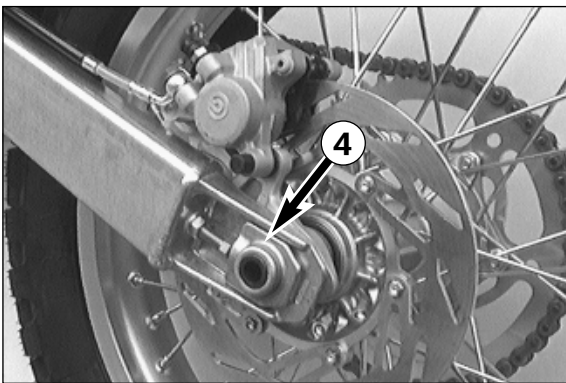
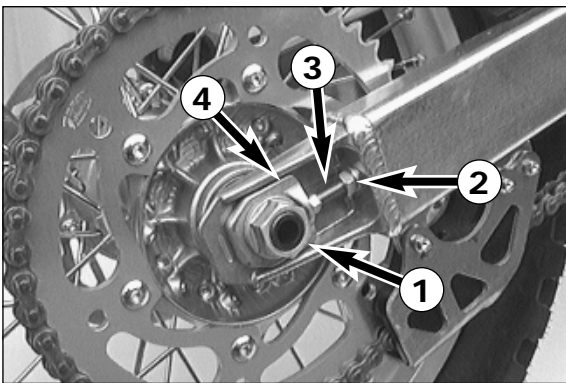
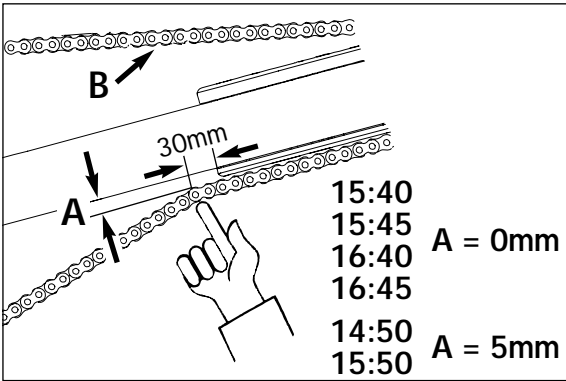
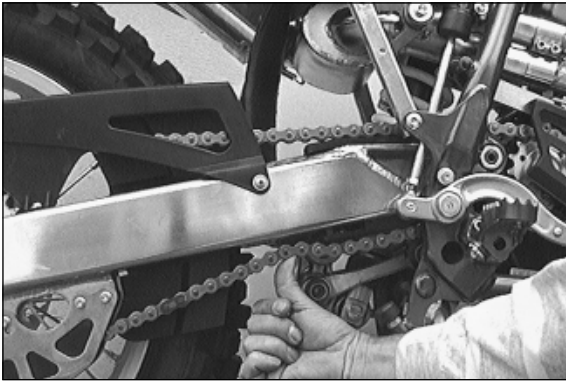
A rubber ring mounted on the rear shock absorber serves as a vibration damper. This ring gets pressed together with time and loses its shock absorbing quality. Measure the distance between the two discs at various points around their circumferences. The space should be at least 2.5 mm (0,1 in) wide. Have the rubber ring replaced by an KTM dealer when compaction due to wear has exceeded this lower limit.

! CAUTION !

NOT REPLACING THE RUBBER RING IN TIME CAN RESULT IN DAMAGE TO THE REAR SHOCK ABSORBER.

⚠ WARNING ⚠

THE DAMPING UNIT OF THE SHOCK ABSORBER IS FILLED WITH HIGH COMPRESSED NITROGEN. NEVER TRY TO TAKE THE SHOCK ABSORBER APART OR TO DO ANY MAINTENANCE WORK YOURSELF. SEVERE INJURIES COULD BE THE RESULT.



Checking chain tension

- For checking, put the motorcycle on its main stand or jack it up on its frame so that the rear wheel is relieved of any load.
- Push the chain upwards appr. 30 mm (1,2 in) from the end of the chain sliding component until the upper part of the chain is tensioned (see illustr.)
- Now, the distance **A** between chain and swingarm should be 0 mm respectively 5 mm (0,2 in) (**depending on final drive ratio**). The upper part of the chain **B** must be tight (see illustr.).
- Correct chain tension, if necessary!



WARNING



- If CHAIN TENSION IS TOO GREAT, PARTS WITHIN THE SECONDARY TRANSMISSION (CHAIN, SPROCKETS, DRIVE ASSEMBLY AND REAR WHEEL BEARINGS) WILL BE SUBJECTED TO UNNECESSARY STRESS, RESULTING IN PREMATURE WEAR AND EVEN CHAIN BREAKAGE.
- TOO MUCH SLACK IN THE CHAIN, ON THE OTHER HAND, CAN RESULT IN THE CHAIN JUMPING OFF THE SPROCKETS. IF THIS HAPPENS, THE CHAIN COULD ALSO BLOCK THE REAR WHEEL OR DAMAGE THE ENGINE.
- IN EITHER CASE THE OPERATOR IS LIKELY TO LOSE CONTROL OF THE MOTORCYCLE.

Correct chain tension

- Loosen collar nut **1**, loosen lock nuts **2**, and turn right and left adjusting screws **3** equally far. Tighten lock nuts **2**.
- Before tightening the collar nut, verify that the chain adjusters **4** are sitting close to the adjusting screws and that the rear wheel has been aligned with the front wheel.
- Tighten fcollar nut **1** with 80 Nm (59 ft.lb).

Chain maintenance

For long chain life, good maintenance is very important. Chains without O-rings should be cleaned in fireproof solvent regularly and afterwards treated with hot grease or chain spray (Shell Advance Bio Chain).

O-ring chains on the other hand are very simple to clean. The best way is to use lots of water, but never use brushes or cleaning liquids. After letting the chain dry, you can use a special O-ring chain spray (Shell Advance Bio Chain).



WARNING



NO LUBRICATION IS ALLOWED TO REACH THE REAR TYRE OR THE BRAKE DISKS, OTHERWISE THE ROAD ADHERENCE AND THE REAR WHEEL BRAKING EFFECTS WOULD BE STRONGLY REDUCED AND THE MOTORCYCLE COULD EASILY LOSE CONTROL.

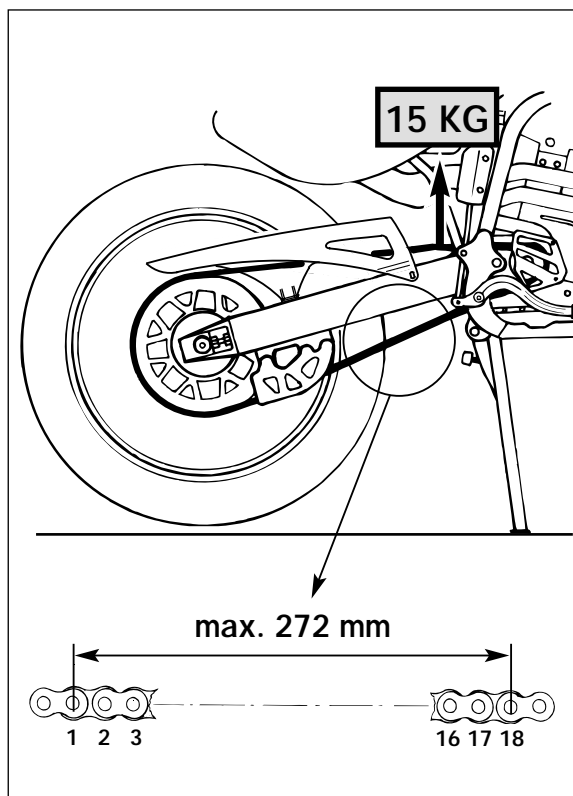


CAUTION



WHEN MOUNTING THE CHAIN MASTERLINK CLIP, THE CLOSED SIDE OF THE MASTERLINK CLIP MUST POINT IN RUNNING DIRECTION.

Also check sprockets and chain guides for wear, and replace if necessary.

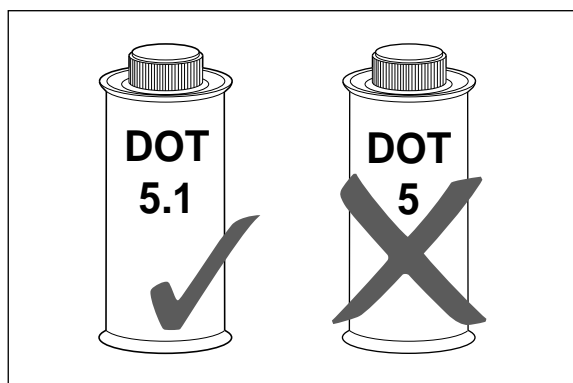


Chain wear

In order to check the chain wear, regard the following indications: Shift the gear into idling and pull the upper chain strand with approx. 10-15 Kilogramm (33 lb) upwards (see figure). Now one can measure a space of 18 chain reels at the lower chain strand. The chain should be replaced at the latest when a space of 272 mm (10,70 in) is measured. Chains do not always wear off evenly, therefore repeat the measurement at different places on the chain.

NOTE:

If you mount a new chain, the sprockets should also be replaced. New chains wear faster if used on old used sprockets.



General information about KTM disc brakes

BRAKE CALIPERS:

The brake calipers of this series use a „floating“ mount. This means that the brake calipers are not solidly attached to the caliper support, which enables them to „float“ for maximum braking contact.

BRAKE PADS:

The motorcycles are delivered with organic brake pads and have also been type-coded with these pads. Said pads are suitable for almost the entire range of application of these motorcycles.

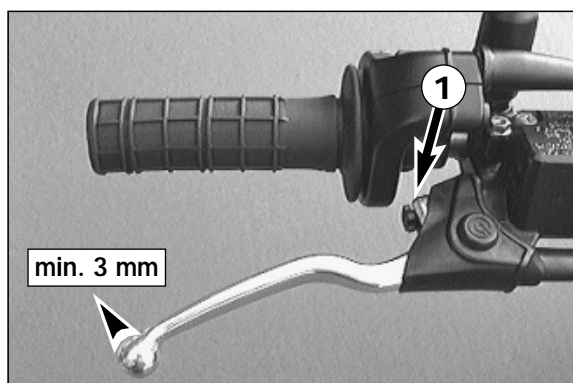
It is only for competitive racing in extremely dirty conditions (e.g., water in combination with sand and mud) that we recommend brake pads that have sintered linings. However, take notice of the fact that brake pads with sintered linings have not been type-coded! Besides, they may cause greater wear on the brake discs.

BRAKE FLUID RESERVOIRS:

The brake fluid reservoirs on front and rear wheel brakes have been designed in such a way that even if the brake pads are worn it is not necessary to top up the brake fluid. If the brake fluid level drops below the minimum level either the brake system has a leak or the brake pads are completely worn. In this case, consult an authorized KTM dealer immediately.

BRAKE FLUID:

KTM fills the brake systems with CASTROL DOT 5.1 brake fluid, one of the best brake fluids that is currently available. We recommend that you continue to use it. DOT 5.1 brake fluid is based on glycol ether and of an amber color. If you do not have any DOT 5.1 for refilling, you may use DOT 4 brake fluid. However, you should replace it as soon as possible by DOT 5.1.

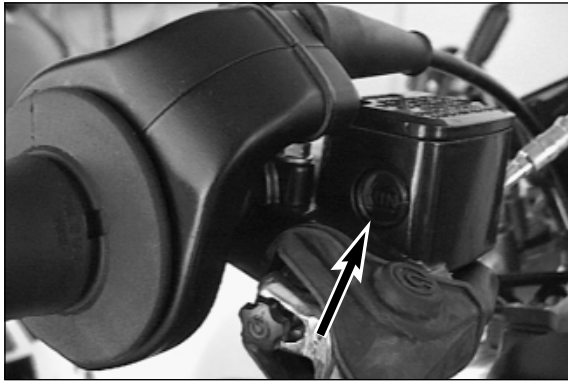


Adjusting of free travel at the hand brake lever

Free travel at the hand brake lever may be readjusted by using adjustment screw ❶. In this way, the position of the point of pressure (i.e., the resistance you feel on the hand brake lever when the brake pads are pressed against the brake disc) can be adjusted for any hand size.

! CAUTION !

AT THE HAND BRAKE LEVER, FREE TRAVEL MUST AT LEAST BE 3 MM. ONLY THEN MAY THE PISTON IN THE HAND BRAKE CYLINDER BE MOVED (TO BE RECOGNIZED BY THE GREATER RESISTANCE OF THE HAND BRAKE LEVER). IF THIS FREE TRAVEL IS NOT PROVIDED, PRESSURE WILL BUILD UP IN THE BRAKING SYSTEM, AND THE FRONT-WHEEL BRAKE MAY FAIL DUE TO OVERHEATING.



Checking of brake fluid level - front brake

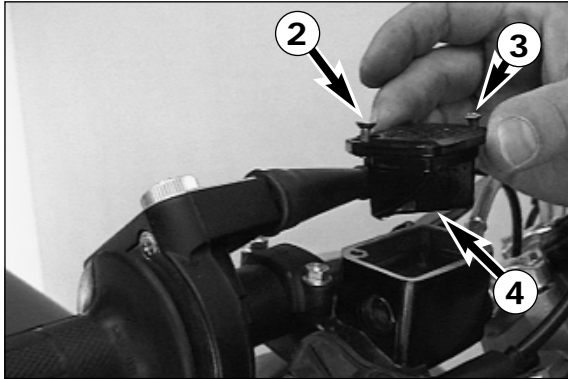
The brake fluid reservoir is linked with the hand brake cylinder at the handlebar and the reservoir is provided with an inspection glass. With the reservoir in a horizontal position, the brake fluid level should not drop below the middle of the glass. The reservoir should be kept completely full at all times for best performance.



WARNING



IF THE BRAKE FLUID LEVEL DROPS BELOW THE MINIMUM EITHER THE BRAKE SYSTEM HAS A LEAK OR THE BRAKE PADS ARE COMPLETELY WORN. IN THIS CASE, CONSULT AN AUTHORIZED KTM DEALER IMMEDIATELY.



Refilling the front brake fluid reservoir*

When the brake fluid falls to the middle of the inspection glass, new brake fluid has to be added.

Loosen screws ② and remove lid ③ and membrane ④.

Place hand brake cylinder in a horizontal position and fill the brake fluid reservoir to 5 mm (0,2 in) below the rim with clean brake fluid DOT 5.1 (Shell Advance Brake DOT 5.1). Replace membrane and lid, tighten screws. Rinse off spilled or overflowing brake fluid with water.



WARNING



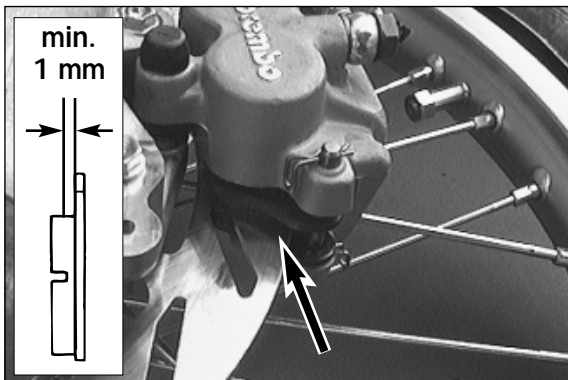
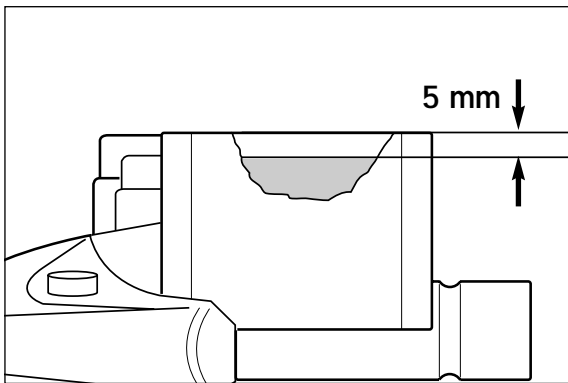
- NEVER USE DOT5 BRAKE FLUID! IT IS BASED ON SILICONE OIL AND OF A PURPLE COLOR. SEALS AND BRAKE HOSES MUST BE ESPECIALLY ADAPTED TO IT.
- STORE BRAKE FLUID OUT OF REACH OF CHILDREN.
- BRAKE FLUID CAN CAUSE SKIN IRRITATION. AVOID CONTACT WITH SKIN AND EYES. IF YOU GET BRAKE FLUID IN YOUR EYES, RINSE WITH PLENTY OF WATER AND CONSULT A DOCTOR.



CAUTION



- DON'T LET BRAKE FLUID GET IN CONTACT WITH PAINT, IT IS AN EFFECTIVE PAINT REMOVER.
- USE ONLY CLEAN BRAKE FLUID TAKEN FROM A TIGHTLY SEALED CONTAINER.



Checking the front brake pads

The brake pads can be inspected from below. The linings must be at least 1 mm (0,04 in) thick.



WARNING



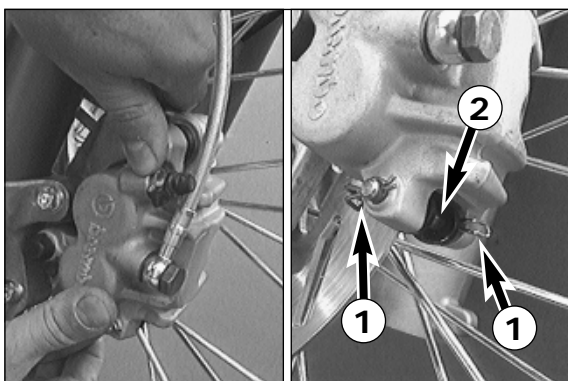
AT THEIR MOST WORN POINT BRAKE PAD LININGS SHOULD NOT BE THINNER THAN 1 MM, OTHERWISE THEY COULD LEAD TO BRAKE FAILURE. FOR YOUR OWN SAFETY DON'T PUT OFF HAVING YOUR BRAKE PADS CHANGED.



CAUTION

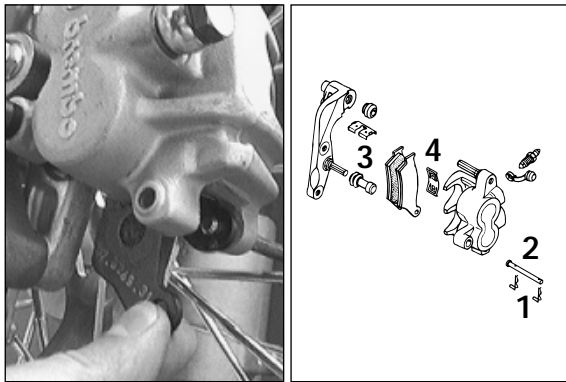


IF THE BRAKE PADS ARE REPLACED TOO LATE SO THAT THE LINING IS PARTLY OR ENTIRELY WORN, THE STEEL COMPONENTS OF THE BRAKE PAD WILL RUB AGAINST THE BRAKE DISC, THEREBY IMPAIRING THE BRAKING EFFECT AND DESTROYING THE BRAKE DISC.



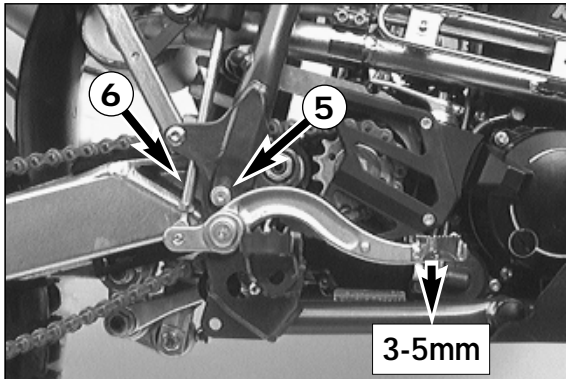
Replacing front brake pads*

Press the brake caliper toward the brake disk, to put the brake piston in its basic position. Remove clips ① and pull out bolt ②. Remove brake pads from the brake caliper. Clean the brake caliper and the brake caliper support with compressed air. Check the sleeves of the guide bolts for damage, and grease guide bolts if necessary.



Mount the right brake pad and fix it with the bolt. Mount the left brake pad and insert the bolt until it stops. Mount the clips.
When mounting the brake pads, be sure to check for correct fit of the sliding metal-sheet ⑥ in the caliper support and of the leaf spring ④.

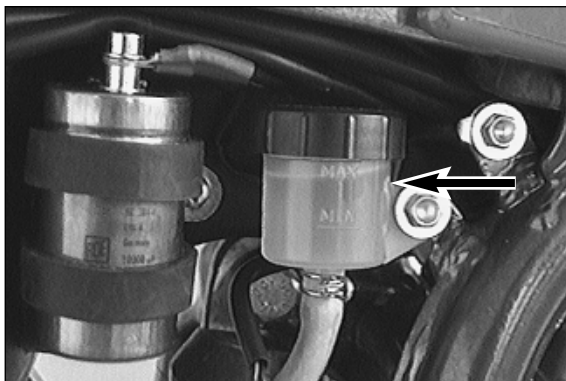
-
- ⚠ WARNING ⚠**
- IT IS VERY IMPORTANT TO KEEP THE BRAKE DISK FREE FROM OIL AND FATTY MATTERS. OTHERWISE, THE BRAKING EFFECT WOULD BE STRONGLY REDUCED.
 - AFTER ASSEMBLY, CHECK IF CIRCLIPS HAVE BEEN FITTED CORRECTLY.
 - HAVING PERFORMED ANY WORK ON THE BRAKING SYSTEM, ONE MUST ALWAYS ACTUATE THE HAND BRAKE LEVER OR FOOT BRAKE LEVER, RESPECTIVELY SO AS TO ENSURE THAT THE BRAKE PADS WILL LIE AGAINST THE BRAKE DISK AND THE PRESSURE POINT IS ESTABLISHED.



Changing the basic position of the brake pedal*

The basic setting of the foot brake pedal can be changed by turning the end stop roller ⑤. Using the push rod ⑥, the free play on the foot brake pedal must be set. Measured on the outside, the foot brake pedal must have 3-5 mm of free play, before the push rod can move the piston in the brake cylinder (to be recognised from the resistance on the foot brake pedal).

-
- ! CAUTION !**
- IF THIS CLEARANCE IS MISSING, PRESSURE ACCUMULATES IN THE BRAKING SYSTEM AND THE BRAKE PADS BEGIN TO RUB. THE BRAKING SYSTEM OVERHEATS AND CAN FAIL COMPLETELY IN EXTREME CASES.



Check the rear brake fluid level

The reservoir for the rear disc brake is located above the main brake cylinder. The level of brake fluid may not fall below the „MIN“ mark when the vehicle has been left standing upright

-
- ⚠ WARNING ⚠**
- IF THE BRAKE FLUID LEVEL DROPS BELOW THE MINIMUM EITHER THE BRAKE SYSTEM HAS A LEAK OR THE BRAKE PADS ARE COMPLETELY WORN. IN THIS CASE, CONSULT AN AUTHORIZED KTM DEALER IMMEDIATELY.

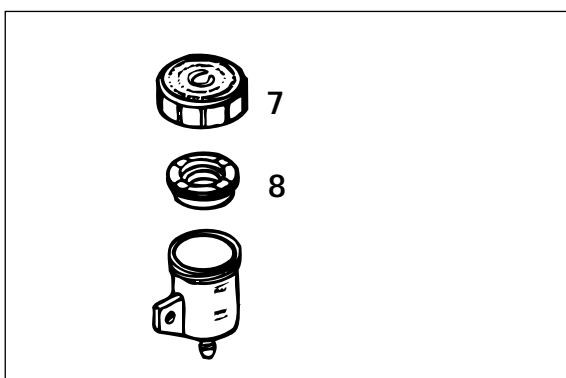


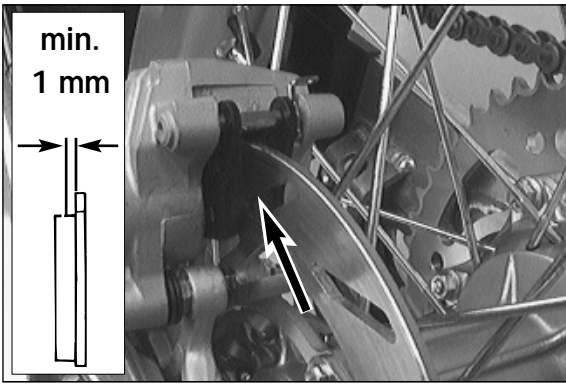
Refilling the rear brake fluid reservoir*

When the brake fluid level has dropped to the MIN mark, you need to refill the brake fluid reservoir. This is done by first unscrewing the cap ⑦ and rubber bellows ⑧. Add brake fluid DOT 5.1 (Shell Advance Brake DOT 5.1) until it reaches the MAX mark, then screw rubber bellows and cap back on. Rinse off spilled or overflowing brake fluid with water.

-
- ⚠ WARNING ⚠**
- NEVER USE DOT5 BRAKE FLUID! IT IS BASED ON SILICONE OIL AND OF A PURPLE COLOR. SEALS AND BRAKE HOSES MUST BE ESPECIALLY ADAPTED TO IT.
 - STORE BRAKE FLUID OUT OF REACH OF CHILDREN.
 - BRAKE FLUID CAN CAUSE SKIN IRRITATION. AVOID CONTACT WITH SKIN AND EYES. IF YOU GET BRAKE FLUID IN YOUR EYES, RINSE WITH PLENTY OF WATER AND CONSULT A DOCTOR

-
- ! CAUTION !**
- DON'T LET BRAKE FLUID GET IN CONTACT WITH PAINT, IT IS AN EFFECTIVE PAINT REMOVER.
 - USE ONLY CLEAN BRAKE FLUID TAKEN FROM A TIGHTLY SEALED CONTAINER.





Checking the rear brake pads

The brake pads can be inspected from the rear. The thickness of the linings may not be less than 1 mm (0.04 in).



WARNING



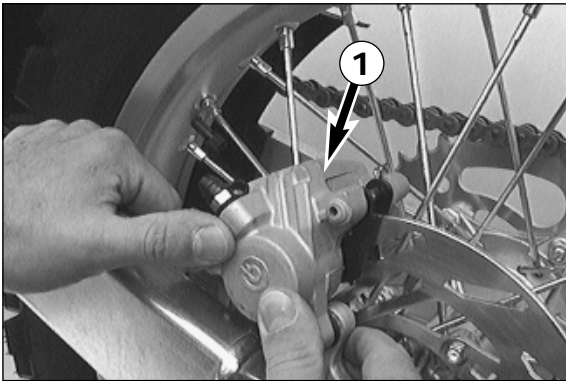
AT THEIR MOST WORN POINT BRAKE PAD LININGS SHOULD NOT BE THINNER THAN 1 MM, OTHERWISE THEY COULD LEAD TO BRAKE FAILURE. FOR YOUR OWN SAFETY DON'T PUT OFF HAVING YOUR BRAKE PADS CHANGED.



CAUTION



IF THE BRAKE PADS ARE REPLACED TOO LATE SO THAT THE LINING IS PARTLY OR ENTIRELY WORN, THE STEEL COMPONENTS OF THE BRAKE PAD WILL RUB AGAINST THE BRAKE DISC, THEREBY IMPAIRING THE BRAKING EFFECT AND DESTROYING THE BRAKE DISC.



Replacing the rear brake pads*

Press brake caliper **1** in direction of chain wheel for the brake piston to reach its basic position. Remove safety device **2**, knock out the guide pin **3** from the brake caliper with a drift towards the chain wheel and remove brake pads. Carefully clean the brake caliper with compressed air and check sleeves of the guide pins for damage.

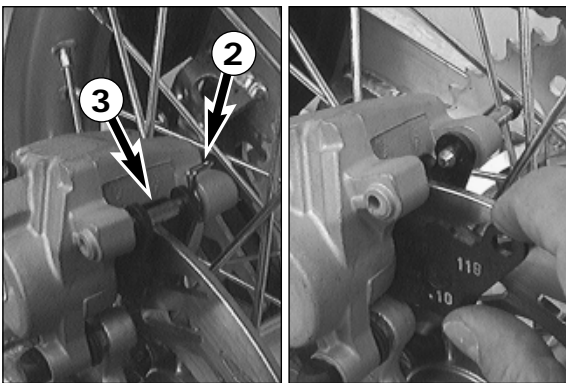
Slide left brake pad into the brake caliper and fix it with the pin. Slide in the right brake pad and knock the bolt in as far as it will go. Mount safety device **2**.



WARNING

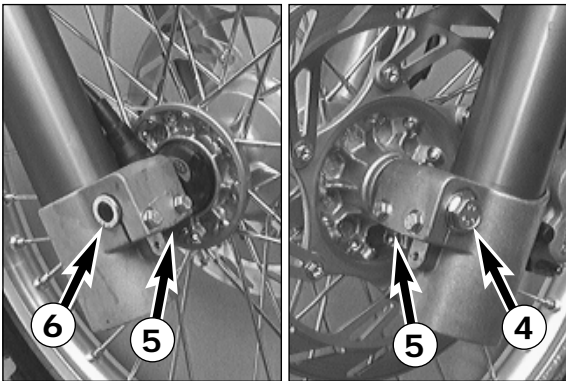


- IT IS VERY IMPORTANT TO KEEP THE BRAKE DISK FREE FROM OIL AND FATTY MATTERS. OTHERWISE, THE BRAKING EFFECT WOULD BE STRONGLY REDUCED.
- AFTER ASSEMBLY, CHECK IF CIRCLIPS HAVE BEEN FITTED CORRECTLY.
- HAVING PERFORMED ANY WORK ON THE BRAKING SYSTEM, ONE MUST ALWAYS ACTUATE THE HAND BRAKE LEVER OR FOOT BRAKE LEVER, RESPECTIVELY SO AS TO ENSURE THAT THE BRAKE PADS WILL LIE AGAINST THE BRAKE DISK AND THE PRESSURE POINT IS ESTABLISHED.



Dismounting and mounting the front wheel (SX, SC)

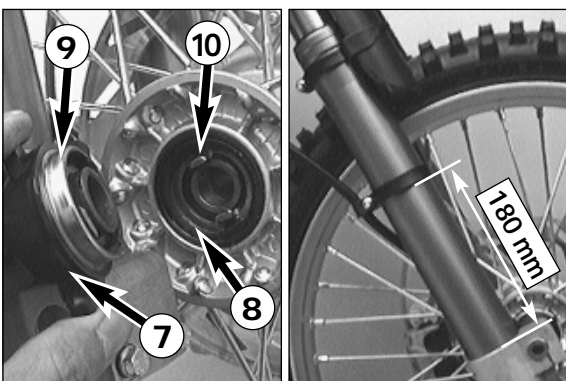
- To remove the front wheel, jack the motorcycle up on its frame so that the front wheel no longer touches the ground.
- Loosen the collar screw **4** and unscrew it approx. 5 turns.
- Loosen the 4 clamping screws **5** on the fork leg axle passage.
- Use the collar screw to push the wheel spindle forward and remove the collar screw.
- Hold the front wheel, pull out the wheel spindle **6**
NOTICE: the wheel spindle may be pulled out more easily, if you slide an open-end wrench (17mm) onto the flat portion of the wheel spindle.
- Remove front wheel carefully from the fork and take the speedometer drive **7** off the hub.



CAUTION



DO NOT OPERATE THE HAND BRAKE WHEN THE FRONT WHEEL HAS BEEN DISMOUNTED.



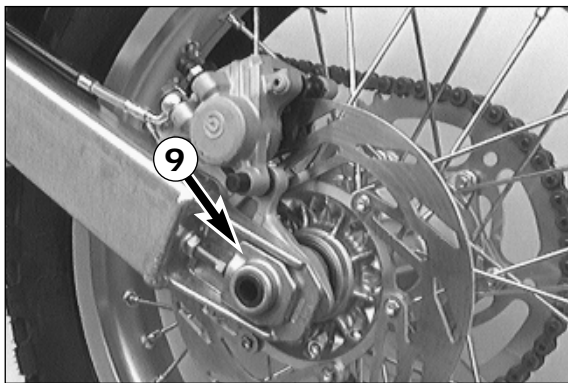
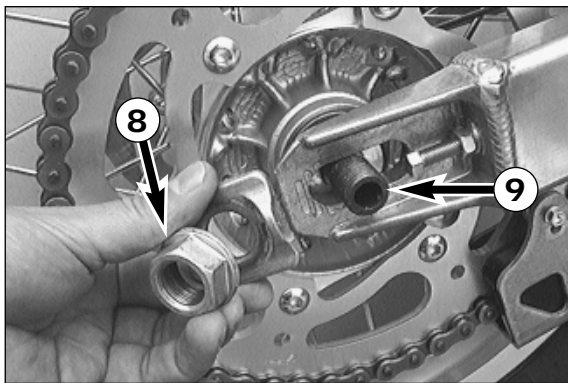
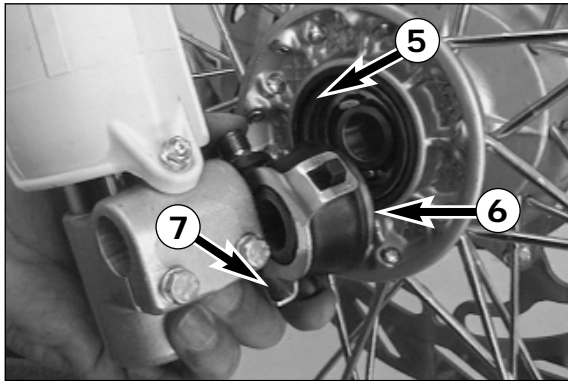
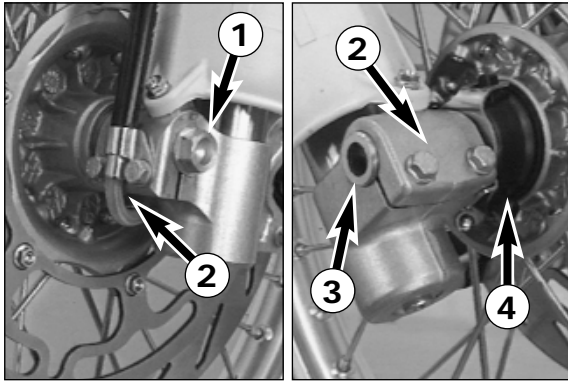
- Prior to mounting the front wheel, clean and grease sealing ring **8** and running surface **9** at the speedometer drive.
- To mount the front wheel, lift it into the fork. Insert speedometer drive into the hub. Make sure that the driving tabs **10** engage with the slots of the drive.
- Position front wheel and speedometer drive, and mount wheel spindle.
- Mount collar screw **4**, turn speedometer drive in a way that the flexible speedometer shaft will curve upwards in a slight bow and tighten collar screw to 40 Nm (30 ft.lb).
- Take the motorcycle off the stand and bounce the fork hard a few times to align the fork legs
- Then tighten clamping screws **5** to a max. torque of 10 Nm (7 ft.lbs)



WARNING



- IF YOU DON'T HAPPEN TO HAVE A TORQUE WRENCH AT HAND, MAKE SURE YOU HAVE THE TIGHTENING TORQUE CORRECTED BY A KTM DEALER AS SOON AS POSSIBLE. A LOOSE AXLE MAY LEAD TO AN UNSTABLE DRIVING BEHAVIOR OF YOUR MOTORCYCLE.
- AFTER MOUNTING THE FRONT WHEEL, KEEP OPERATING THE HAND BRAKE UNTIL THE PRESSURE POINT RETURNS.
- IT IS VERY IMPORTANT TO KEEP THE BRAKE DISK FREE FROM OIL AND FATTY MATTERS, EITHERWISE THE BRAKING EFFECTS WOULD BE STRONGLY REDUCED.



Dismounting and mounting the front wheel (EGS)

To remove the front wheel, jack the motorcycle up by the frame so that the front wheel no longer touches the ground. Loosen the collar screw **1**, and the 4 clamping screws **2** on the axle clamps. Screw off the speedometer drive cable from speedometer drive. Hold the front wheel, pull out the axle **3** remove front wheel carefully from the fork and take speedometer drive **4** off the hub.

! CAUTION !

DO NOT OPERATE THE HAND BRAKE WHEN THE FRONT WHEEL HAS BEEN MOUNTED.

Prior to mounting the front wheel, clean and grease seal **5** and running surface **6** at the speedometer drive.

When mounting the front wheel, insert speedometer drive into the hub, and introduce brake disk into brake caliper. Let tongue **7** of the retaining metal sheet be in contact with the flat area of the axle clamp and mount axle without forcing it on. Fasten speedometer drive cable. Mount the collar screw and tighten with 40 Nm (30 ft.lbs). Take the motorcycle off the stand and bounce the fork hard a few times to align the fork spars. Then screw clamping screws **2** tight to 7 Nm (5 ft.lbs).

⚠ WARNING ⚠

- IF YOU DON'T HAPPEN TO HAVE A TORQUE WRENCH AT HAND, MAKE SURE YOU HAVE THE TIGHTENING TORQUE CORRECTED BY A KTM DEALER AS SOON AS POSSIBLE. A LOOSE AXLE MAY LEAD TO AN UNSTABLE DRIVING BEHAVIOR OF YOUR MOTORCYCLE.
- AFTER MOUNTING THE FRONT WHEEL, KEEP OPERATING THE HAND BRAKE UNTIL THE PRESSURE POINT RETURNS.
- IT IS VERY IMPORTANT TO KEEP THE BRAKE DISK FREE FROM OIL AND FATTY MATTERS, EITHERWISE THE BRAKING EFFECTS WOULD BE STRONGLY REDUCED.

Dismounting and mounting the rear wheel*

Jack the motorcycle up on its frame so that the rear wheel no longer touches the ground. Loosen the collar nut **8**, hold the rear wheel and pull out the wheel spindle **9** until the rear wheel is free but the brake caliper support is still held. Push the rear wheel as far forward as possible, take the chain from the chain wheel and carefully take the rear wheel out of the swingarm.

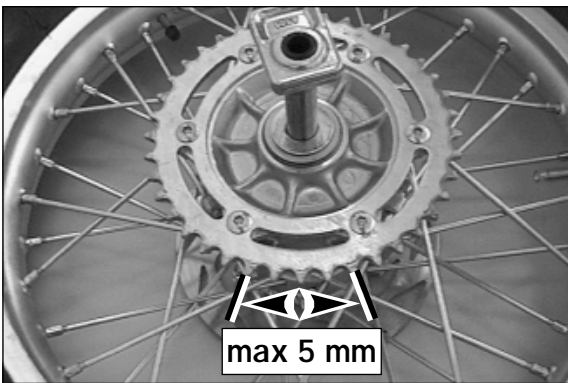
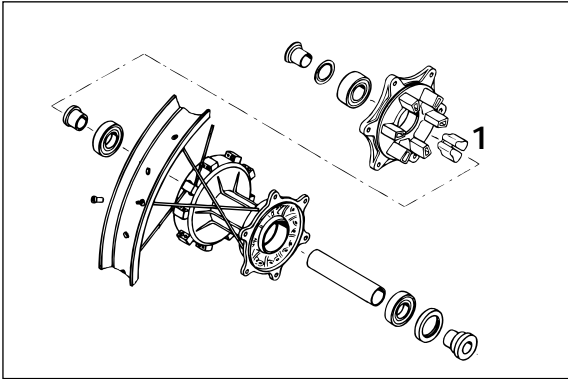
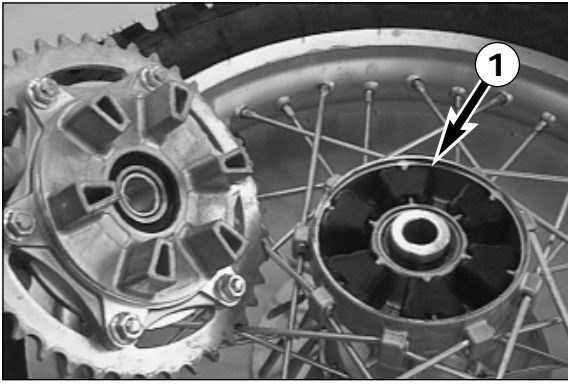
! CAUTION !

- DO NOT OPERATE THE REAR BRAKE WHEN THE REAR WHEEL HAS BEEN DISMOUNTED.
- IF THE AXLE IS DISMOUNTED, CLEAN THE THREAD OF THE WHEEL SPINDLE AND COLLAR NUT THOROUGHLY AND APPLY A NEW COAT OF GREASE TO PREVENT THE THREAD FROM JAMMING.

The rear wheel is remounted in reverse order. Before tightening the collar nut to 80 Nm (59 ft.lb), push the rear wheel forwards so that the chain tensioners lie on the tension screws.

⚠ WARNING ⚠

- IF YOU DON'T HAPPEN TO HAVE A TORQUE WRENCH AT HAND, MAKE SURE YOU HAVE THE TIGHTENING TORQUE CORRECTED BY A KTM DEALER AS SOON AS POSSIBLE. A LOOSE AXLE MAY LEAD TO AN UNSTABLE DRIVING BEHAVIOR OF YOUR MOTORCYCLE.
- AFTER MOUNTING THE REAR WHEEL, KEEP OPERATING THE REAR BRAKE UNTIL THE PRESSURE POINT RETURNS.
- IT IS VERY IMPORTANT TO KEEP THE BRAKE DISK FREE FROM OIL AND FATTY MATTERS, EITHERWISE THE BRAKING EFFECTS WOULD BE STRONGLY REDUCED.



TIRES - AIR PRESSURE		
	front	rear
Off road	1,0 bar (14 psi)	1,2 bar (17psi)
Road driver only	1,5 bar (21 psi)	2,0 bar (28 psi)
Road w. passenger	2,0 bar (28 psi)	2,2 bar (31 psi)

Check the cush-drive rubbers in the rear wheel hub (EGS)*

Some of the LC4 models have a cush-drive rear wheel hub. In this case, the engine power is conveyed from the rear sprocket via 6 cush-drive rubbers ❶ to the rear wheel. These 6 cush-drive rubbers wear with increased operation time, and should be checked for wear whenever the rear wheel is dismounted.

For this purpose, lie the rear wheel on a work bench with the sprocket facing upwards, and place the sprocket carrier into the hub. Now hold the rear wheel firmly and try to turn the sprocket. The sprocket may not turn more than a maximum of 5 mm (0,2 in) measured from the outside edge of sprocket. If freeplay in the sprocket is greater, all 6 cush-drive rubbers are to be replaced. Check the cush-drive rubbers for signs of damage and contamination.

! CAUTION !

IF THE CUSH-DRIVE RUBBERS ARE NOT REPLACED IN GOOD TIME, THE SPROCKET CARRIER AND THE REAR WHEEL HUB WILL BE DAMAGED. ONLY REPLACE ALL 6 CUSH-DRIVE RUBBERS, NEVER SINGLE RUBBERS.

Tires, air pressure

Tire type, tire condition, and air pressure level affect the way your motorcycle rides, and they must therefore be checked whenever you are getting ready to go anywhere on your motorcycle.

- Tire size can be found in the technical specifications and in their homologation certificate
- Tire condition has to be checked every time you want to ride your motorcycle. Before leaving, check tires for punctures and nails or other sharp objects that might have become embedded in them. Refer to the specific regulations in your country for minimum tire tread requirements. We recommend you replace the tires at the latest when the tread is down to 2 mm.
- Tire pressure should be checked regularly on a "cold" tire. Proper pressure ensures optimum driving comfort and extends the life of your tires.

⚠ WARNING ⚠

- DO NOT MOUNT TIRES WHICH HAVE NOT BEEN APPROVED BY KTM. OTHER TIRES COULD HAVE ADVERSE EFFECTS ON THE WAY YOUR MOTORCYCLE BEHAVES.
- FRONT AND REAR WHEELS MAY ONLY BE FITTED WITH TIRES HAVING THE SAME TREAD LAYOUT. USE HOMOLOGATED TIRES
- FOR YOUR OWN SAFETY REPLACE DAMAGED TIRES IMMEDIATELY.
- WORN TIRES CAN HAVE A NEGATIVE EFFECT ON HOW YOUR MOTORCYCLE PERFORMS, ESPECIALLY ON WET SURFACES
- IF AIR PRESSURE IS TOO LOW, ABNORMAL WEAR AND OVERHEATING OF THE TIRE CAN RESULT



Checking spoke tension

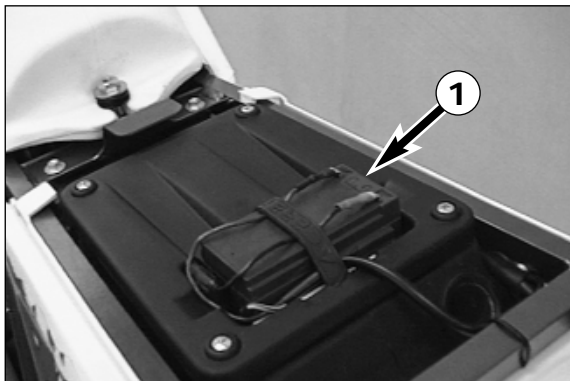
The correct spoke tension is very important for the stability of the wheels and thus for riding safety. A loose spoke causes the wheel to become unbalanced and before long other spokes will have come loose. Check spoke tension, especially on a new motorcycle, in regular intervals. For checking, tap on each spoke with the blade of a screwdriver (see photo). A clear tone must be the result. Dull tones are indicators of loose spokes. If necessary, have the spokes retightened and the wheel centered by a KTM dealer.



WARNING



SPOKES CAN TEAR IF YOU CONTINUE TO RIDE WITH THEM LOOSE. THIS MAY LEAD TO AN UNSTABLE HANDLING OF YOUR MOTORCYCLE.



Battery (A, CH)

The battery ❶ is mounted under the seat (remove the seat, see page 15). It is a high-quality, maintenance-free unit.

In order to avoid an oxidation at the connections, lubricate the battery terminals with non-corrosive grease regularly.

Never open up the valves!

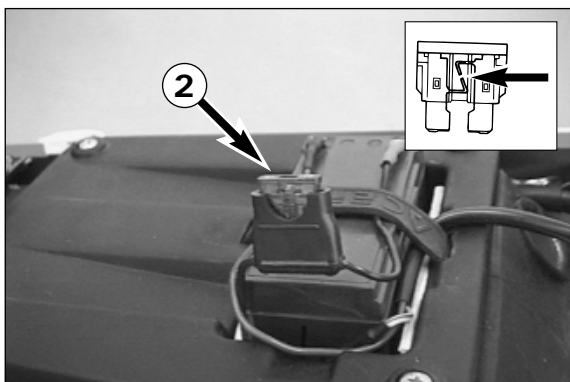


STORAGE:

Keep battery dry and clean. Charge battery, before storage. Best storage temperature is 0-35°C (31°F - 94°F). At 20°C (67°F) storage temperature the battery is to be recharged after 16 months at the latest. A discharged battery must be recharged after one week at the latest.

CHARGE:

- nominal voltage: 12 volts
- maximum charging current: 0.3 amperes,
recommended charging current: 0.2 amperes
- charging time depending on degree of discharge: 4-6 hours



Fuse parking light (A, CH)

One can find the fuse ❷ near the battery, under the seat. Only the parking light is protected by this fuse. All the other electrical components are powered directly by the generator when the engine is running.

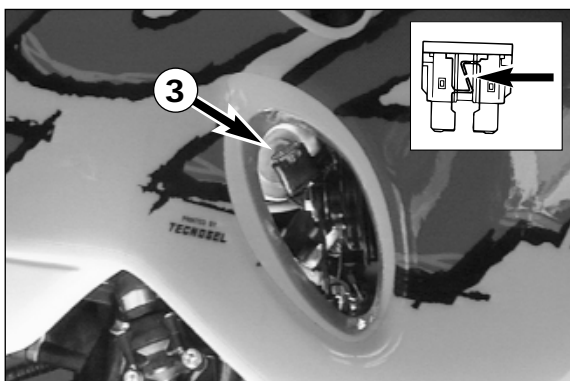
Replace a blown fuse only with equivalent one. If a new fuse that has just been set in, blows again, contact a KTM-dealer as soon as possible.



CAUTION



UNDER NO CIRCUMSTANCES IS A FUSE ALLOWED TO BE SET IN OR "REPAIRED". AN IMPROPER TREATMENT COULD DAMAGE THE WHOLE ELECTRICAL SYSTEM!



Fuse fan (EGS)

The fuse ❸ for the fan is located behind the right radiator. With its 5 amps it is only responsible for protecting the fan circuit. The fuse can be reached from below.

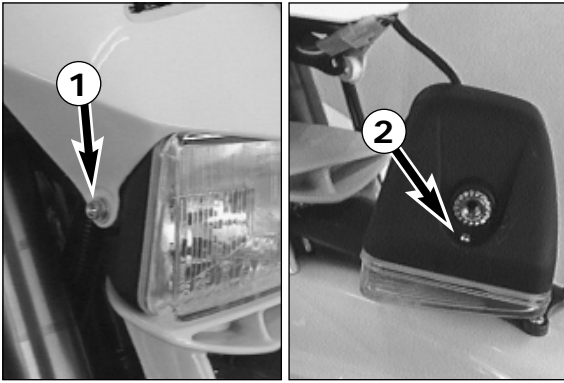
Replace a blown fuse only with an equivalent one. If a new fuse that has just been set in gets blown again, you are strongly advised to have it inspected by a KTM dealer.



CAUTION

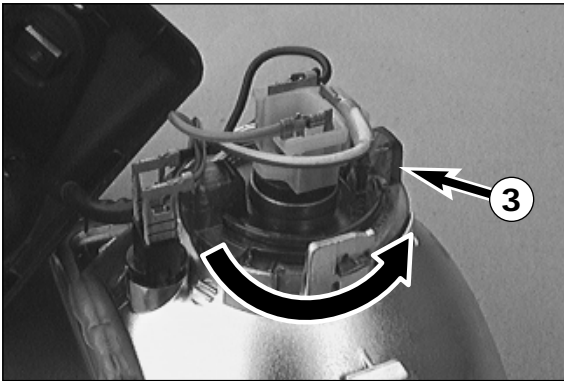


UNDER NO CIRCUMSTANCES IS A FUSE ALLOWED TO BE SET IN OR "REPAIRED". AN IMPROPER TREATMENT COULD DAMAGE THE WHOLE ELECTRICAL SYSTEM!



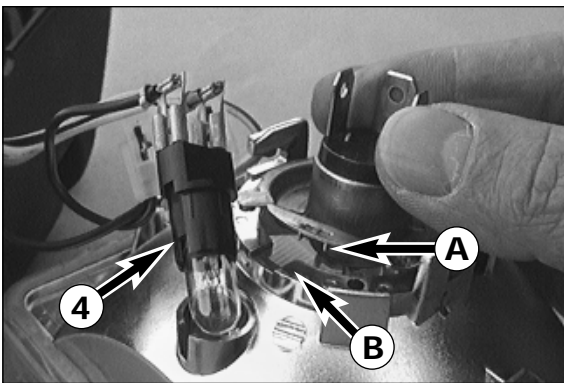
Replacing the headlight bulb (EGS)

Remove the screws ❶ from the left and right side and pull the headlight straight out of the headlight mask. Remove the screws ❷ from the left and right side and take out the headlight unit.



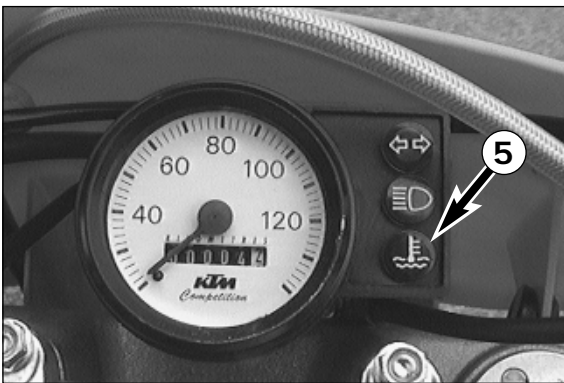
To change the headlight bulb, pull the plug from the bulb, turn the retaining clip ❸ counter clockwise, remove the bulb and dispose of the old bulb. Install the new bulb by aligning the light bulb pins ❹ with the socket groove ❺. Attach the retaining clip and plug. Start the motorcycle and check the headlight for proper operation.

Slide the headlight unit into the housing without using force and install the screws ❷. Mount the headlight.



Replacing the parking-light bulb (EGS)

Disassemble the headlight as described above and simply pull the bulb socket ❹ out of the reflector.



Cooling system (SX, SC)

Coolant is circulated by a water pump located in the engine. When the engine is cold the coolant circulates only through the cylinder and the cylinder head. After the engine has reached its operating temperature (about 70°C, 158°F), the thermostat opens and the coolant is also pumped through both aluminum radiators.

Air blowing in through the radiators cools the coolant. The slower the speed of the motorcycle, the less the coolant is cooled down. Dirty radiators also reduce the cooling efficiency.

For the models listed above no fan is mounted in order to save weight.

If little or no air passes through the radiators because traffic in the city slows you down or you have to wait at a red light, the temperature of the cooling liquid can increase to such an extent that the red cooling liquid temperature warning lamp ❺ will light up (110°). In this case, it is recommended to drive on with normal speed as the warning light usually goes out soon after the radiators are once again exposed to a sufficiently strong flow of air. Do not forget to check the cooling liquid level later after the engine has cooled down.

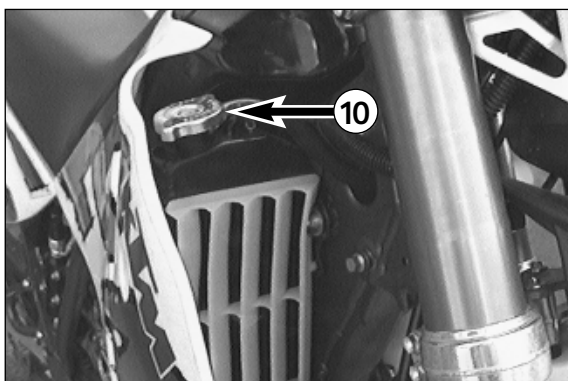
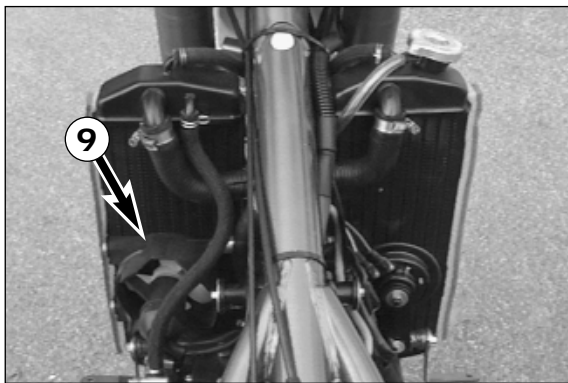
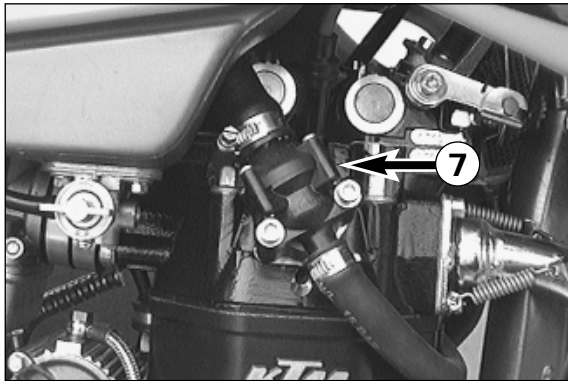
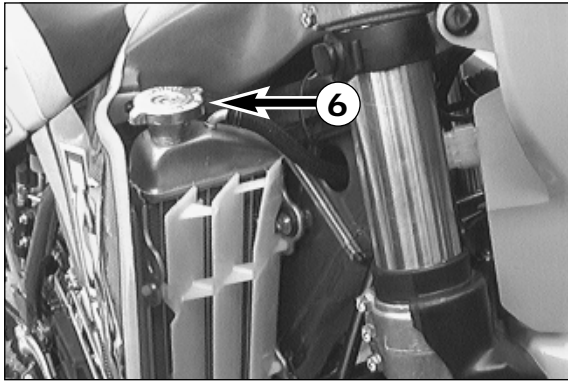


! CAUTION !

IF THE RED COOLING LIQUID TEMPERATURE WARNING LAMP LIGHTS UP EVEN THOUGH YOU ARE DRIVING ALONG BRISKLY, IT IS MOST LIKELY THAT THERE IS A DEFECT IN THE COOLING SYSTEM. IN THIS CASE, STOP IMMEDIATELY, SINCE OTHERWISE YOU MAY DAMAGE YOUR ENGINE. LET YOUR ENGINE COOL DOWN, CHECK THE COOLING SYSTEM FOR LEAKS, AND CHECK THE COOLANT LEVEL. CAUTION - SCALDING HAZARD! DO NOT DRIVE ON, UNTIL THERE IS SUFFICIENT LIQUID IN THE COOLING SYSTEM.

⚠ WARNING ⚠

IF POSSIBLE, ALWAYS CHECK LEVEL OF COOLING LIQUID WHEN ENGINE IS COLD. IF YOU HAVE TO OPEN THE RADIATOR CAP WHEN THE ENGINE IS HOT, USE A RAG TO COVER THE CAP AND OPEN SLOWLY TO RELEASE PRESSURE.



WARNING



IF POSSIBLE, ALWAYS CHECK LEVEL OF COOLING LIQUID WHEN ENGINE IS COLD. IF YOU HAVE TO OPEN THE RADIATOR CAP ⑥ WHEN THE ENGINE IS HOT, USE A RAG TO COVER THE CAP AND OPEN SLOWLY TO RELEASE PRESSURE.

A mixture of 40% anti freeze liquid and 60% water is used as coolant. However, the anti-freeze protection must be at least -25° C (-13° F). This mixture offers anti-freeze protection but also good corrosion protection and should therefore not be replaced by pure water.



CAUTION



FOR THE COOLING SYSTEM, USE ONLY WITH HIGH-GRADE ANTIFREEZE (SHELL ADVANCE COOLANT). USING LOWER-GRADE ANTIFREEZE AGENTS, CAN CAUSE CORROSION AND COOLANT FOAMING.

Pressure induced by heating of the coolant in the system is controlled by a valve in the radiator cap ⑥; a water temperature rising up to 120° C (248° F) is admissible, without fear of problems.

Cooling system (EGS)

Coolant is circulated by a water pump located in the engine. When the engine is cold the coolant circulates only through the cylinder and the cylinder head. After the engine has reached its operating temperature (about 70°C, 158°F), the thermostat ⑦ opens and the coolant is also pumped through both aluminum radiators.

Air blowing in through the radiators cools the coolant. The slower the speed of the motorcycle, the less the coolant is cooled down. Dirty radiators also reduce the cooling efficiency.

If little or no air blows through the radiators, for example when riding through slow traffic or waiting at traffic lights, the coolant temperature will rise. If the coolant temperature rises to 85° C (185°F), the fan ⑨ on the left radiator will switch on. This fan will provide additional air circulation through the radiator thereby preventing the cooling system from overheating.



CAUTION



IF THE RED COOLING LIQUID TEMPERATURE WARNING LAMP LIGHTS UP, THIS WILL MOST LIKELY BE DUE TO A DEFECT IN THE COOLING SYSTEM. IN THIS CASE, STOP IMMEDIATELY AND TURN OFF THE ENGINE. LET THE ENGINE COOL DOWN AND CHECK THE COOLING SYSTEM FOR LEAKS. ALSO CHECK IF THERE IS ENOUGH COOLING LIQUID. CAUTION - SCALDING HAZARD! DO NOT DRIVE ON, UNTIL THERE IS SUFFICIENT LIQUID IN THE COOLING SYSTEM. HOWEVER, CALL ON ONE OF KTM'S DEALERS AS SOON AS POSSIBLE IN ORDER TO HAVE THE DEFECT REMEDIED. IF YOU DRIVE ON EVEN THOUGH THE COOLING LIQUID TEMPERATURE WARNING LAMP IS LIT, YOU WILL DAMAGE YOUR ENGINE.



WARNING



IF THE RADIATOR CAP IS REMOVED WHEN THE ENGINE IS HOT, HOT COOLANT, THAT IS UNDER PRESSURE, CAN SPRAY OUT AND CAUSE SEVERE BURNS.

A mixture of 40% anti freeze liquid and 60% water is used as coolant. However, the anti-freeze protection must be at least -25° C (-13° F). This mixture offers anti-freeze protection but also good corrosion protection and should therefore not be replaced by pure water.

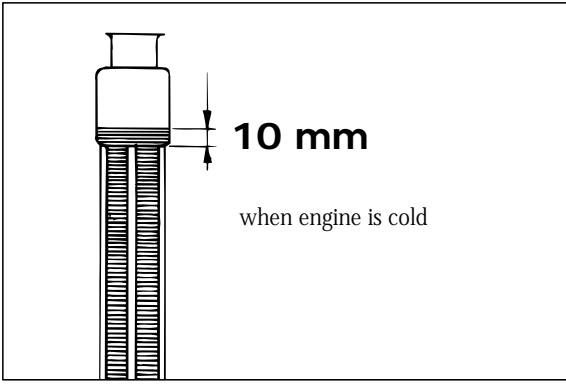


CAUTION



FOR THE COOLING SYSTEM, USE ONLY WITH HIGH-GRADE ANTIFREEZE (SHELL ADVANCE COOLANT). USING LOWER-GRADE ANTIFREEZE AGENTS, CAN CAUSE CORROSION AND COOLANT FOAMING.

Pressure induced by heating of the coolant in the system is controlled by a valve in the radiator cap ⑩; a water temperature rising up to 120° C (248° F) is admissible, without fear of problems.



Checking the coolant level

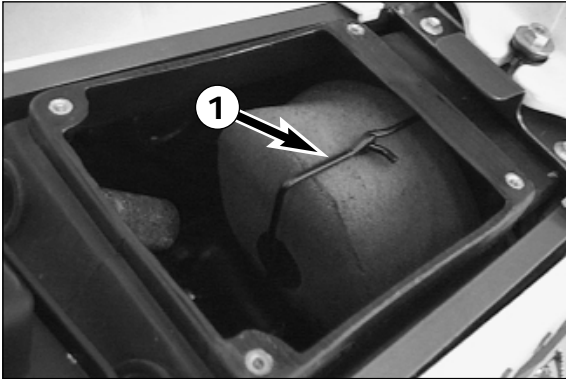
The coolant should be 10 mm (0,4 in) above the radiator fins when the engine is cold (see illustr.). In the event of the coolant being drained, always fill and bleed the system.



WARNING



IF POSSIBLE, ALWAYS CHECK LEVEL OF COOLING LIQUID WHEN ENGINE IS COLD. IF YOU HAVE TO OPEN THE RADIATOR CAP WHEN THE ENGINE IS HOT, USE A RAG TO COVER THE CAP AND OPEN SLOWLY TO RELEASE PRESSURE.



Cleaning of air filter*

To do this, remove the seat and the air filter cover from the air filter box. Unclip the filter holder **1**, swing back and remove air filter plus filter carrier from the filter box.

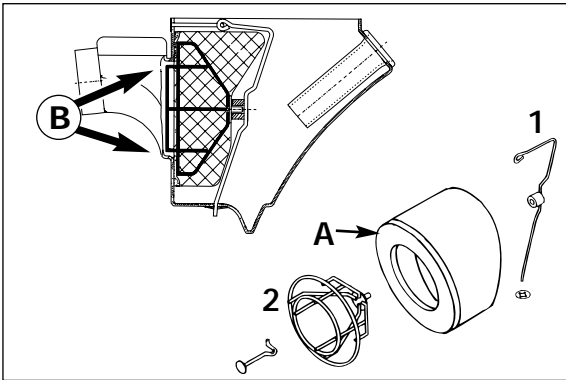


CAUTION



DO NOT CLEAN FOAM FILTER WITH FUEL OR PETROLEUM SINCE THESE DAMAGE THE FOAM. KTM RECOMMENDS THE PRODUCTS OF THE COMPANY PUTOLINE FOR AIR FILTER MAINTENANCE. „ACTION CLEANER“ FOR CLEANING PURPOSES AND „ACTION FLUID“ TO OIL THE FOAM FILTER.

Thoroughly wash the foam filter in special cleaning fluid and allow to dry well. Only press out the filter, do not wring out under any circumstances. Oil the dry foam filter with a high grade filter oil. Also clean the air filter box. Check carburetor collar for damage and that it is fitted correctly.



Mount the air filter on the filter support **2**. Grease the front side **A** of the filter, to improve the seal. Mount the air filter and the filter support in the filter box. Make sure they are centered **B**, and lock into place with the filter holder **1**.



Exhaust system *

Aluminium silencers are filled with glass fiber yarn. If exposed to heat for longer periods of time, however, the glass fiber yarn pack will come unravelled, which can reduce both overall performance and the performance of the silencer. Experience has shown that the front glass fiber pack **3** must be replaced more often than the rear pack **4**.

To replace the front glass fiber yarn pack, remove the silencer. Remove the front cap **5**, pull the front glass fiber yarn pack out of the silencer, mount a new pack on the internal exhaust pipe, insert the internal exhaust pipe into the silencer and replace the cap.

To replace the rear glass fiber yarn pack, drill the rivets open and remove the rear cap **6**.

Always renew the O-rings **7**.

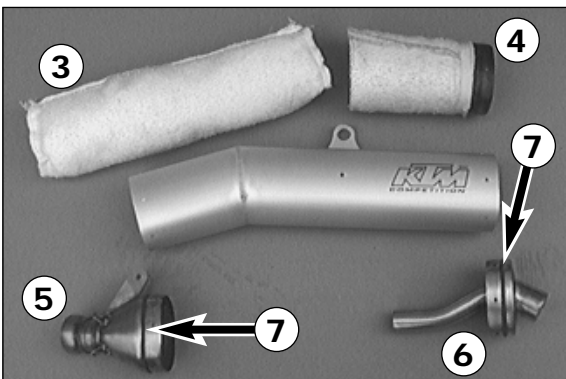
Glass fiber yarn packs are available in your KTM store.

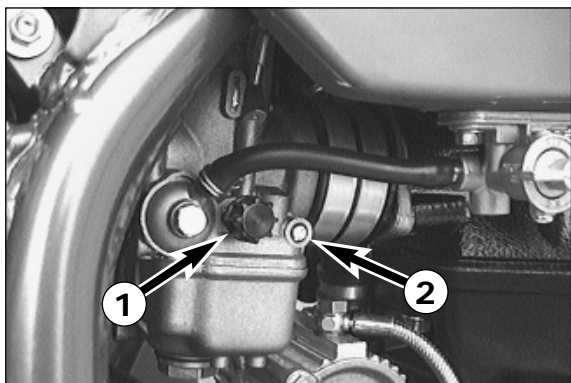


WARNING



THE EXHAUST SYSTEM BECOMES VERY HOT WHILE THE MOTORCYCLE IS RUNNING. TO AVOID BURNS DO NOT START WORK ON THE EXHAUST SYSTEM UNTIL IT HAS PROPERLY COOLED DOWN.





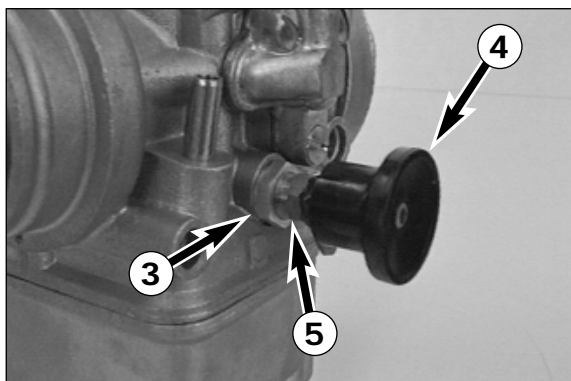
CARBURETOR – Adjust idling (DellOrto)*

Idling adjustment of the carburetor strongly affects the engine's starting behavior. That is, an engine whose idling speed is adjusted correctly will be easier to start than one whose idling speed has not been adjusted correctly.

Idling is controlled by the throttle stop screw ❶ and the mixture control screw ❷. The throttle stop screw is used to adjust the basic position of the throttle. The mixture control screw is used to control the idle mixture which arrives at the engine via the idle system. Turning it clockwise will reduce the amount of gasoline (lean mixture), turning it counterclockwise will increase the amount of gasoline (rich mixture).

TO ADJUST IDLING CORRECTLY, PROCEED AS FOLLOWS:

- 1 Turn in mixture control screw ❷ up to the stop, and turn it back out by 1.5 turns
 - 2 Warm up the engine
 - 3 Use throttle stop screw ❶ to adjust normal idling speed (1400-1500 r.p.m.)
 - 4 Turn mixture control screw ❷ slowly clockwise until idling speed starts to decrease. Memorize this position, and turn mixture control screw slowly counterclockwise until the idling speed will decrease again. Adjust the point of the highest idling speed between these two positions. (The highly competitive user will make his adjustment 1/4 turn leaner because his engine will heat up more in competitive use).
- NOTE: If you fail to obtain a satisfying result by following the procedure described above, an incorrectly dimensioned idling nozzle may be the cause. In case:
- a) the mixture control screw has been screwed in up to the stop without causing any change in rotational speed, a smaller idling jet has to be installed;
 - b) the engine dies when the mixture control screw is still open by 2 turns, a larger idling jet needs to be selected;
- Naturally, in cases of jet changes, you have to start your adjusting work from the beginning.
- 5 Now, use the slide stop screw to adjust the desired idling speed
 - 6 In cases of greater changes in outside temperature and extremely different altitudes, the idling speed should be readjusted.



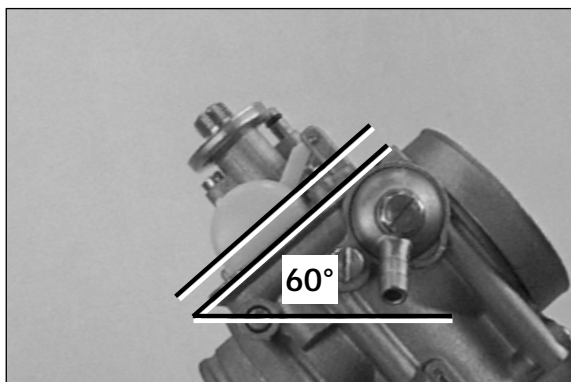
Basic information on carburetor wear

As a result of engine vibrations, throttle valve, jet needle, and needle jet are subjected to increased wear. This wear may cause carburetor malfunction (e.g., overly rich mixture). Therefore, these parts should be replaced after 10000 kilometers (6000 miles).

Adjust hot start device (DellOrto)*

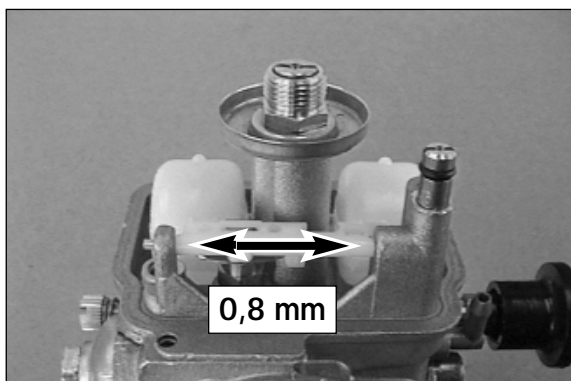
If the hot start button was removed when cleaning the carburetor, re-adjust the hot start device.

Install carburetor and adjust idling as described above. Then unlock nut ❸, press in hot start device ❹ and adjust engine rev with adjusting screw ❺ to 2000-2500 rpm. Tighten locking nut.



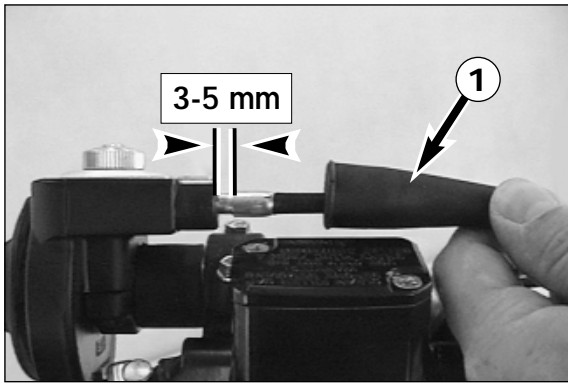
Check float level (DellOrto)*

Stand the carburetor diagonally at about 60° so that the spring in the float needle valve is not pressed together. In this position, the edge of the float should be parallel with the float bowl sealing surface (see illustration).



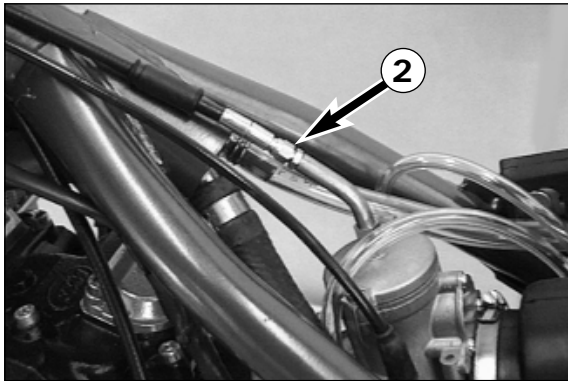
Checking axial play of float (DellOrto)*

For proper functioning of the float, there must be an axial play of 0.8 mm (0,03 in). If necessary, slightly abrade and deburr lateral float guide.

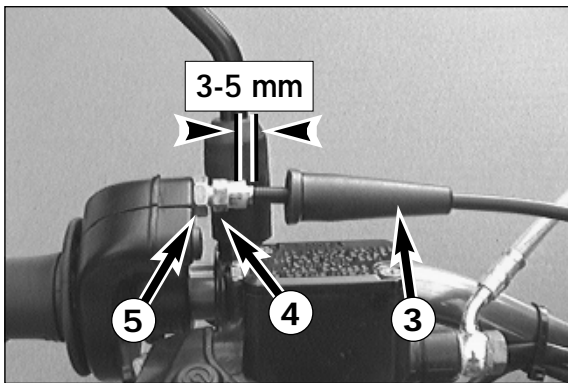


Adjusting the throttle cable (SX, SC)*

There must always be 3-5 mm play in the throttle cable. To check this, move back the protective cover ① on the twist grip. It must be possible to lift the outer covering of the cable 3-5 mm (0,12-0,20 in) from the counterbearing of the twist grip, until resistance is felt.



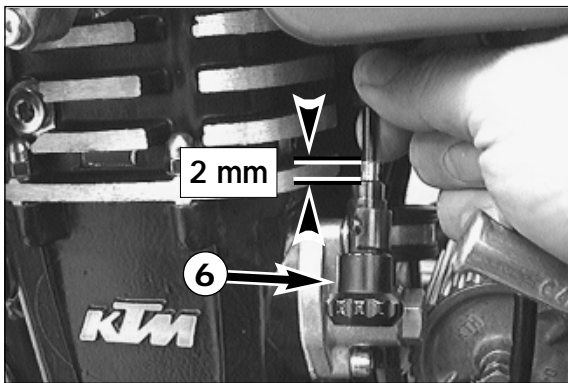
To adjust, remove the seat and the gas-tank, push the protective cover upwards, loosen the counter nut and turn the adjustment screw ② accordingly. Turn the adjustment screw clockwise for more play or counterclockwise for less play. Tighten the counter nut, replace the protective covers and mount the gas-tank and the seat.



Adjusting the throttle cable (EGS)*

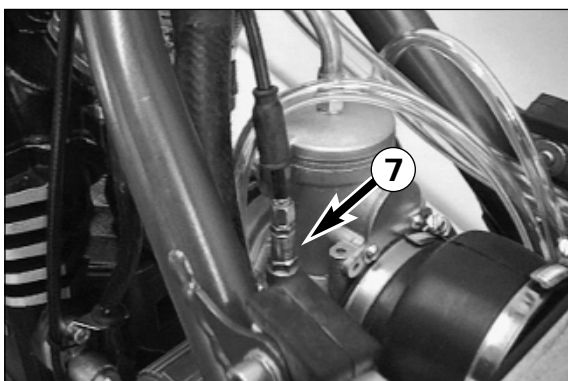
There must always be a 3-5 mm (0,12-0,20 in) play in the throttle cable. To check this, move back the protective cover ③ on the twist grip. You must be able to lift the outer covering of the cable 3-5 mm from the adjustment screw ④, until resistance is felt.

To adjust, loosen the counter nut ⑤ and turn the adjustment screw accordingly. Finally tighten counter nut and push back protective cover.

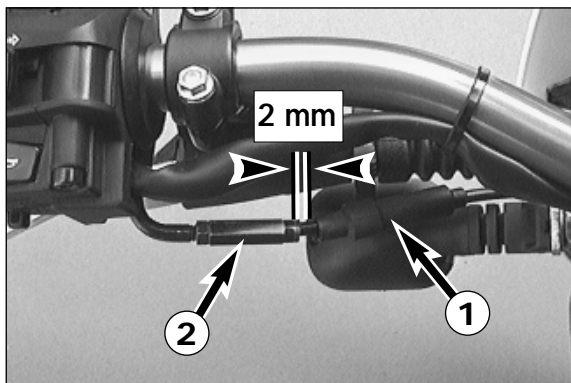


Adjusting the choke cable (SX, SC)*

The choke cable must have a play of approximately 2 mm at all times. To check the play turn the knob ⑥ into the initial position. Now it should be possible to lift the exterior case of the choke cable approximately 2 mm from the supporting surface of the choke knob before the upward movement is blocked by resistance.

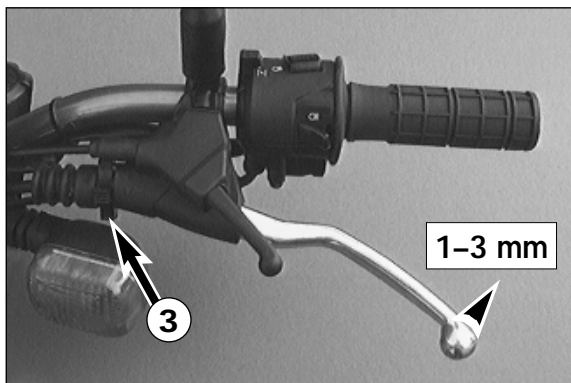


To adjust, remove the seat and the gas-tank, push the protective cover upwards, loosen the counter nut and turn the adjustment screw ⑦ accordingly. Turn the adjustment screw clockwise for more play or anticlockwise for less play. Tighten the counter nut, replace the protective cover and mount the gas-tank and the seat.



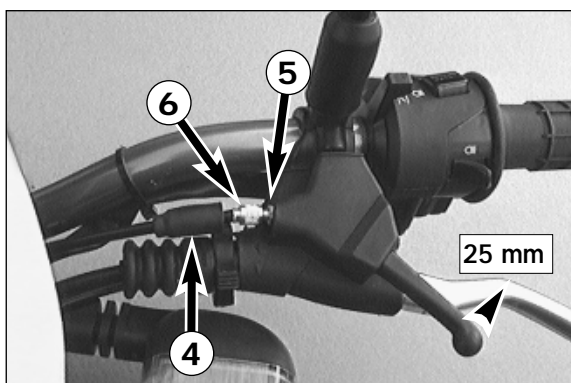
Adjusting the choke cable (EGS)*

At the choke cable, there must always exist a play of approx. 2 mm. To check this, push choke lever fully forward and pull protective cover ❶ from the adjuster piece ❷. Now, it must be possible to lift the outer covering of the cable by approx. 2 mm from the adjuster piece until feeling a resistance. If necessary, loosen lock nut and correct play by turning the adjuster piece. Tighten lock nut, and slide on protective cover.



Adjusting the clutch cable

When the engine is cold, the play at the clutch lever should be 1-3 mm (0,04-0,12 in) (measured at the outer edge). To adjust the clutch cable turn the adjustment nut ❸ accordingly.



Checking the adjustment of the hand decompression release cable*

To check, set piston at compression, so that the valves are closed. While doing this, slowly kick the kick starter through its stroke until the clicking sound (disengaging) of the automatic decompression release can be heard. Now the deko-lever must be operated 25 mm (1 in) until resistance is felt (the exhaust valves begin to open). To adjust move back the protective cover ❹, loosen the counter nut ❺ and correct the adjustment screw ❻ accordingly. Tighten counter nut and push back protective cover.

! CAUTION !

IF THERE IS NO PLAY IN THE DEKO-LEVER, THIS CAN RESULT IN ENGINE DAMAGE.

NOTE:

No adjustment need be made to the automatic decompressor.

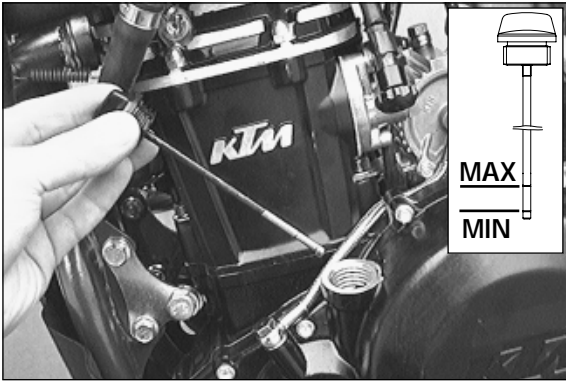
API: SF, SG, SH		
TEMPERATUR		
← -	0°C 32°F	+ →
10W 40		15W 40
10W 50		15W 50
10W 60		15W 60

Engine oil

Only use high-quality oils (Shell Advance Ultra 4) meeting or surpassing the quality requirements of API classes SF, SG, or SH (for specifications see containers). You may use either mineral oils or synthetic oils fulfilling the above criteria.

! CAUTION !

INSUFFICIENT OIL OR POOR QUALITY OIL RESULTS IN PREMATURE WEAR OF THE ENGINE.



Checking engine oil level

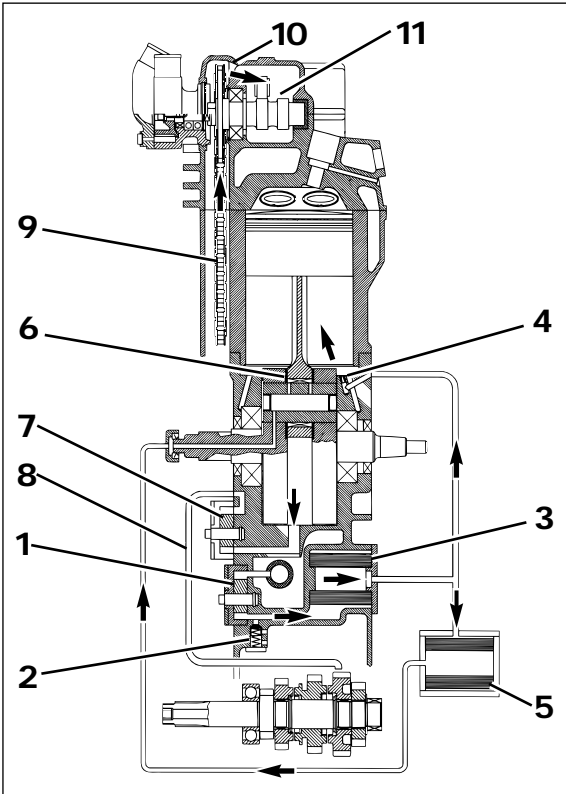
Allow the engine to run at idle for about 4 minutes. Turn off the engine and place the motorcycle on a flat, level surface (main stand). Take out the oil dipstick and wipe it off with a cloth.

SCREW THE OIL DIPSTICK COMPLETELY INTO THE FILLER HOLE AND THEN REMOVE IT. The oil level should be within the flat area of the oil dipstick. Add oil if necessary.

! CAUTION !

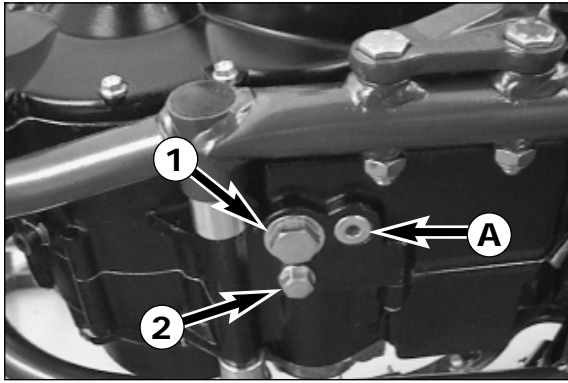
- INSUFFICIENT OIL OR POOR QUALITY OIL RESULTS IN PREMATURE WEAR OF THE ENGINE.
- CHECKING THE ENGINE OIL LEVEL WHEN THE ENGINE IS COLD RESULTS IN A FALSE READING IN THE OIL DIPSTICK AND THEREFORE AN INCORRECT OIL LEVEL.
- DO NOT OVERFILL THE CRANKCASE.
- DO NOT UNDERFILL THE CRANKCASE.

Check the engine for leaks.



Oil circuit (SX, SC)

The oil pump **1** pumps the engine oil past the by-pass valve **2** through the oil filter **3**. After the oil filter, an oil lead branches off to a jet **4** which sprays engine oil onto the piston pin bearing and piston head. The second oil lead takes the main flow of oil to the microfilter **5**, which filters out even the finest impurities. The cleaned engine oil is pumped through the oil lead and the clutch cover into the crankshaft to the connecting rod bearing **6** and drips into the crankcase. An additional oil pump **7** sucks the engine oil out of the crankcase and pumps it through the oil line **8** to the gear wheels of the 4th and 5th gear. Via the gear wheels, the engine oil reaches the oil sump. The timing chain **9** runs through the oil sump and transports the engine oil upwards to the cylinder head. Through the bore **10** the oil reaches the camshaft **11** and the valves.



Changing the engine oil (SX, SC)*

The engine oil change is to be carried out when the engine is still warm.



WARNING



AN ENGINE HAVING BEEN RUN WARM, AND THE ENGINE OIL IN IT ARE VERY HOT - DO NOT BURN YOURSELF.

Place the motorbike on a horizontal surface. Remove the two plugs (1 and 2), and drain oil into a container.



CAUTION

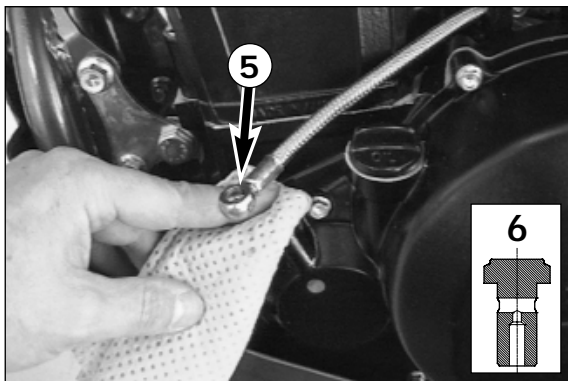
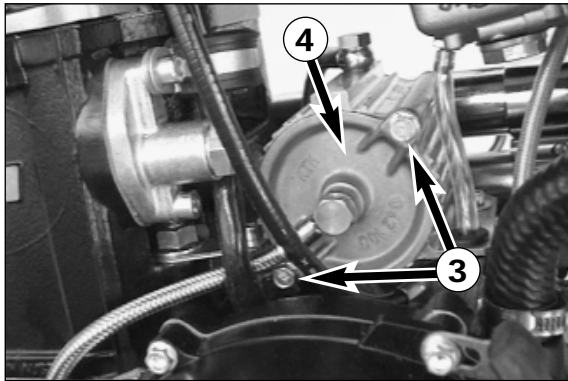


THE SCREW PLUG A MUST NOT BE REMOVED, THIS IS PART OF THE BY-PASS VALVE.

Clean the plugs thoroughly with a fireproof solvent and compressed air, in order to remove the metal abrasion. After all the oil has drained through, clean raised and flat faces and install plugs with seals. Tighten plug 1 with 30 Nm (22 ft.lb) and plug 2 with 20 Nm (15ft.lb).

Remove oil dipstick on the clutch cover and fill with 1.5 litre engine oil (Shell Advance Ultra 4).

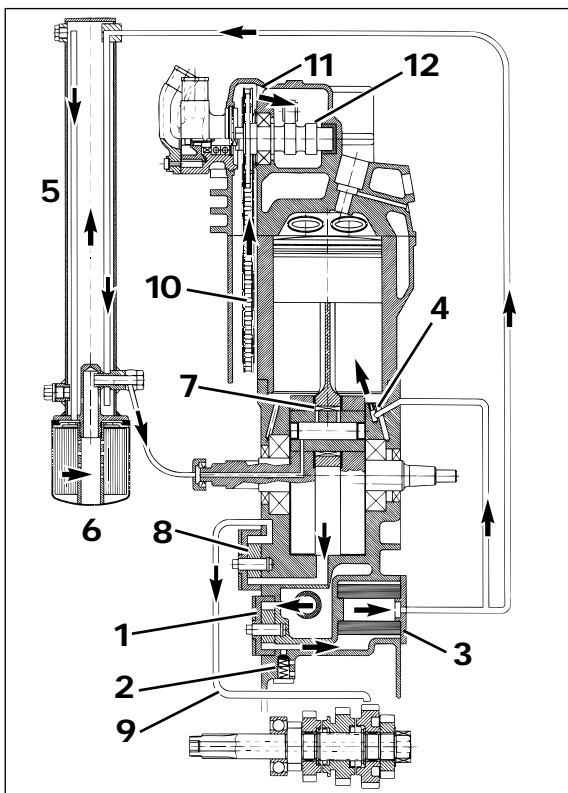
Warm up engine, check engine oil level and refill up to the marking MAX. Finally check the oil system for leaks.



Changing and bleeding the microfilter (SX, SC)*

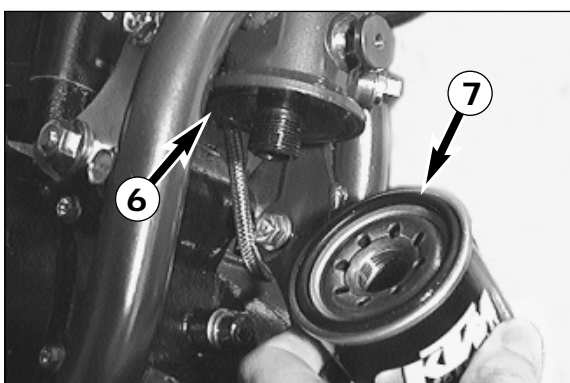
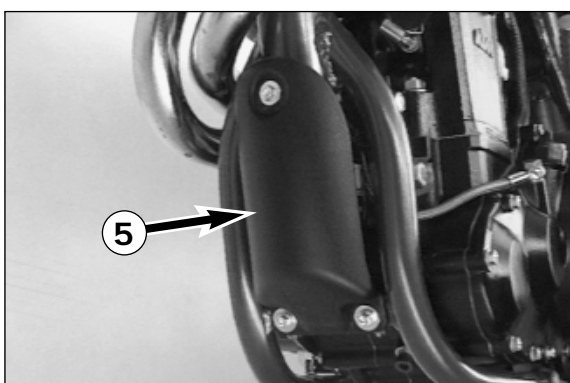
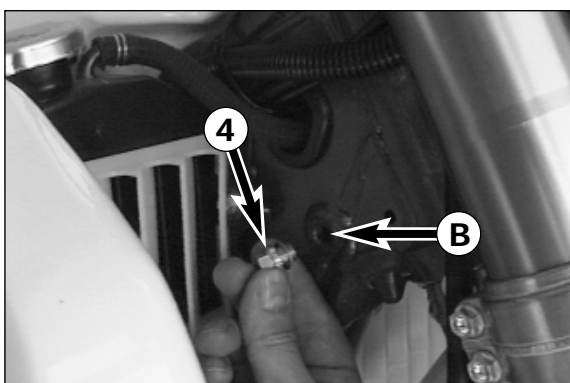
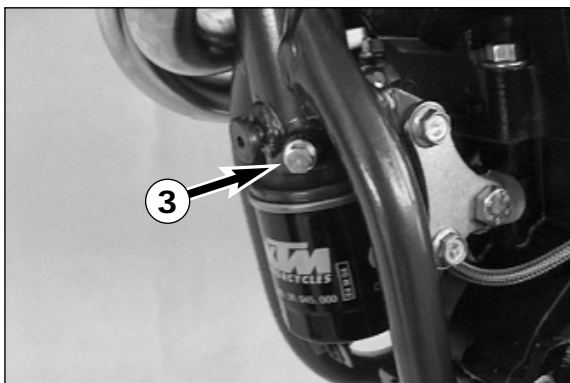
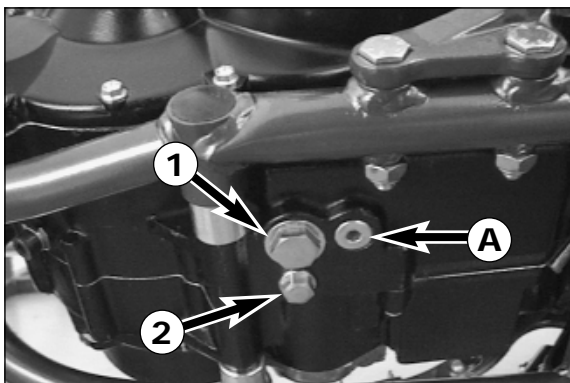
Replace the microfilter while changing the engine oil. To do so, remove hexagon screws 3 and take off the microfilter cover 4. Remove the microfilter, clean its parts and check the O-ring on the microfilter lid for signs of damage. Before installing the new micro filter, soak it in clean engine oil. Place a new microfilter in the filter housing, apply a thin layer of grease to the O-ring and mount the microfilter cover.

It is necessary to bleed the micro filter so that all friction areas can be quickly supplied with engine oil. To do this, fill with oil and remove the jet screw 6 from the oil line on the clutch cover. Start the engine and close off the oil filler hole on the clutch cover with a rag. Allow the engine to run at idle until oil runs out of the oil line 5. Turn the engine off. Install seal rings and the jet screw. Torque the jet screw to 10 Nm and check for leaks.



Oil circuit (EGS)

The oil pump 1 pumps the engine oil past the by-pass valve 2 through the oil filter 3. After the oil filter, an oil lead branches off to a jet 4 which sprays engine oil onto the piston pin bearing and piston head. The second oil lead takes the main flow of oil into the front pipe of the frame 5, where the engine oil is cooled down. Afterwards the engine oil runs through the fine screen filter 6, which filters out even the finest impurities. The cleaned engine oil is pumped through the oil lead and the clutch cover into the crankshaft to the connecting rod bearing 7 and drips into the crankcase. An additional oil pump 8 sucks the engine oil out of the crankcase and pumps it through the oil line 9 to the gear wheels of the 4th and 5th gear. Via the gear wheels, the engine oil reaches the oil sump. The timing chain 10 runs through the oil sump and transports the engine oil upwards to the cylinder head. Through the bore 11 the oil reaches the camshaft 12 and the valves.



Oil change and bleeding of the oil system (EGS)*

NOTE: For improved cooling of the engine oil the front pipe of the frame is integrated into the oil circuit. When changing the oil, the engine oil has also to be drained from the front pipe.

The engine oil change is to be carried out when the engine is still warm.

⚠ **WARNING** ⚠

AN ENGINE HAVING BEEN RUN WARM, AND THE ENGINE OIL IN IT ARE VERY HOT - DO NOT BURN YOURSELF.

Place the motorcycle on a horizontal surface. Remove the two plugs (1 and 2), and drain oil into a container. Remove cover, unscrew plug 3 at the lower end of the frame tube and drain oil.

! **CAUTION** !

THE PLUG 4 NEXT TO THE TOP OF THE CRANKCASE MUST NOT BE REMOVED, THIS IS PART OF THE BY-PASS VALVE.

Clean all 3 plugs thoroughly with a fireproof solvent and compressed air, in order to remove the metal abrasion. After all the oil has drained through, clean raised and flat faces and install plugs with seals. Tighten plug 1 with 30 Nm (22 ft.lb) and plug 2 and 3 with 20 Nm (15 lb.ft).

Remove oil dipstick on the clutch cover, fill with 2,0 litre engine oil (Shell Advance Ultra 4) and attach plug again.

! **CAUTION** !

IF THE ENGINE OIL HAS BEEN DRAINED FROM THE FRAME TUBE, YOU MUST BLEED THE OIL SYSTEM !

To allow the air to escape from the frame tube, remove plug 4 next to the steering head. Start engine and let it run in idle (1-2 minutes) until oil escapes at the bore B. As soon as oil starts to escape, turn off the engine, and mount plug together with the seal.

! **CAUTION** !

DO NOT REV UP THE ENGINE DURING THE BLEEDING PROCEDURE BECAUSE NOT ALL THE LUBRICATING POINTS WILL ALREADY HAVE BEEN SUPPLIED WITH SUFFICIENT AMOUNTS OF OIL.

Warm up engine, check engine oil level and refill up to the marking MAX. Finally, check the oil system for leaks.

NOTE: Dispose of used oil properly! Under no circumstances may used oil be disposed of in the sewage system or in the open countryside. 1 liter used oil contaminates 1.000.000 liters water.

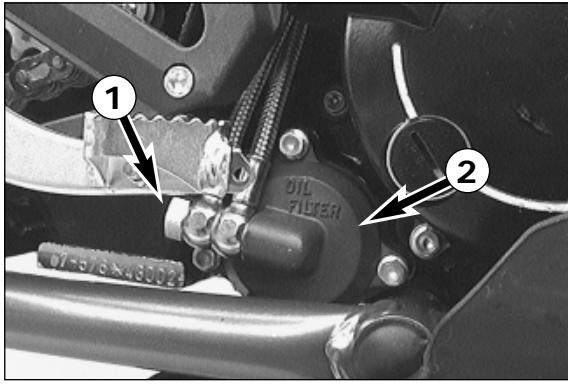
Changing the fine screen filter (EGS)*

Replace the fine screen filter when changing the engine oil. To do so, loosen the three screws and remove the cover 5. Loosen the fine screen filter with an oil filter wrench; you will be able to unscrew it the rest of the way with your bare hand. Let engine oil flow out of the main frame tube.

Clean sealing surfaces on the frame tube 6, fill new fine screen filter with engine oil, and oil rubber seal 7. Replace fine screen filter and screw it back in place, your bare hand will do. Start motor, bleed oil system (see Changing the Engine Oil) and make sure fine screen filter does not leak.

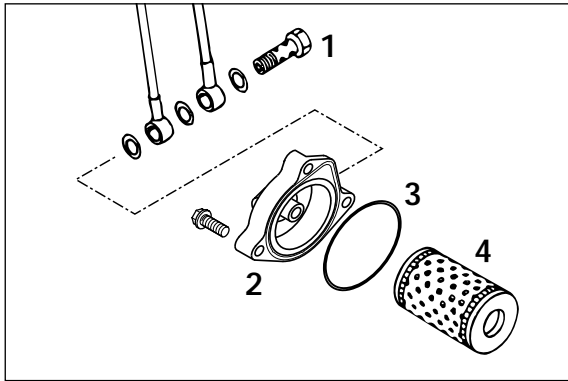
! **CAUTION** !

- USE ONLY ORIGINAL KTM FINE SCREEN FILTERS. USING ANOTHER FILTER BRAND CAN RESULT IN DAMAGE TO THE ENGINE.
- **IF THE ENGINE OIL HAS BEEN DRAINED FROM THE FRAME TUBE, YOU MUST BLEED THE OIL SYSTEM !**



Changing oil filter *

Replace the oil filter when changing the engine oil. Press the foot brake lever and place a screwdriver or similar between foot brake lever and stopper roll so that the oil filter cover is more accessible. Remove banjo bolt **1** and the three allen head screws. Remove oil filter cover **2** and oil filter. Clean filter case, oil filter cover, and sealing surfaces. Check oil channel in oil filter cover if clogged.



The O-ring **3** need not be replaced unless it is damaged. Press the O-ring into the groove of the oil filter cover, mount a new oil filter **4** on the oil filter cap and mount the unit. Insert the 3 screws and tighten them with 5 Nm (4 ft.lb). Mount the banjo bolt with the gaskets and tighten it with 15 Nm (11 ft.lb). Then start the engine and check the oil system for leaks.

TROUBLE SHOOTING

If you let the specified maintenance work on your motorcycle be carried out, disturbances can hardly be expected. Should an error occur nevertheless, we advise you to use the trouble shooting chart in order to find the cause of error.

We would like to point out that many operations cannot be performed by oneself. In case of uncertainty, please contact a KTM-dealer.

TROUBLE	CAUSE	REMEDY
Engine will not start	Operating error	Switch on ignition, switch on emergency OFF switch, open fuel tap, tank fuel, do not use choke i.e. the hotstart device. Pay attention to starting off information (see driving instructions).
	Fuel supply interrupted	Close fuel tap, loosen fuel hose at carburettor, lead into a basin and open fuel tap, – if fuel leaks out, clean carburettor – if no fuel leaks out, check tank ventilation, i.e. clean fuel tap
	Flooded engine	See driving instructions
	Sooty or wet spark plug	Clean or replace spark plug
	Electrode gap too large	Adjust spark plug elektrode gap to 0,6 mm
	Spark plug connector or spark plug faulty	Dismount spark plug, connect ignition cable, hold to ground (blank place on engine) and actuate kickstarter, a strong spark must be produced at the spark plug – If no spark is produced, loosen spark plug cap from ignition cable, hold about 5 mm from ground and actuate kickstarter – If a spark now occurs, replace spark plug cap – If no spark is produced, control ignition system
	If connector oxidates from generator to ignition coil	Remove fuel tank, clean connector and treat with contact spray
	Short circuit cable scored in wiring harness, ignition lock, emergency OFF switch or short circuit button faulty	Remove fuel tank, draw off blue/black cable from orange cable of ignition coil and check spark. – If a spark is produced, seek fault in short circuit current
	Water in short emergency OFF switch	Remove 2-pole connector located underneath the headlight mask, treat emergency OFF switch with contact spray
Engine will not idle	Water in carburettor or jets blocked	Dismount and clean carburettor
	Carburettor does not fit in properly at intake flange	Check if carburettor is fitted in correctly
	Idling jet blocked	Dismount carburettor and clean jets
Engine does not rev high	Adjusting screws on carburettor uncorrect adjusted	Adjust carburettor
	Ignition system faulty	Have ignition system checked
	Carburettor fuel level too high because float needle valve is dirty or worn out	Dismount carburettor and check if worn out
Engine does not rev high	Loose carburettor jets	Tighten jets
	Electronical ignition timing faulty	Have ignition system checked

TROUBLE	CAUSE	REMEDY
Engine will not reach full power	Fuel supply partially interrupted or carburettor dirty float is not tight, or no axial play Air filter very dirty Exhaust leaking or blocked Valve gap too small Loss of compression because hand decompressor has no play Electronical ignition timing faulty	Clean and check fuel system as well as carburettor replace or abrade the float Clean or replace air filter Check if exhaust is damaged, replace glass fibre yarn in exhaust silencer Adjust valve gap Check setting of the hand decompression cable Have ignition system checked
Engine stops or splutters in carburettor	Insufficient fuel Engine takes air out of control	Clean and check fuel system and carburettor Check intake flange and carburettor if firmly set
Engine gets too hot, cooling liquid temperature warning lamp lights up	Insufficient cooling liquid Not enough air stream (SX, SC) Defect of cooling fan, fuse of cooling fan, or thermostatic switch (EGS) Radiators very dirty Foam formation in cooling system Bent cooling hose Thermostat defective	Refill cooling liquid (see maintenance work), check cooling system for leaks Drive on briskly Check fuse, bypass thermostatic switch, check coolant level Clean radiators with water jet Replace cooling liquid, use anti freeze liquid with brand name Shorten or replace cooling hose Dismount and check thermostat (opening temperature 70°C, 158°F) or replace it
High oil consumption	Buckling gear ventilation hose Engine oil level too high Motor oil too thin (viscosity)	Dislocate i.e. replace non-buckling ventilation hose Check engine oil level when the engine is warm; correct if necessary Use thicker engine oil; see chapter „Engine oil“
All switched on lamps blown out	Capacitor or voltage regulator faulty	Remove right side cover and control connections. Have capacitor and voltage regulator checked
Parking light does not shine (only models with battery)	Fuse melted	Remove seat and replace fuse

CLEANING

Clean your motorcycle regularly in order to maintain the beauty of its plastic surfaces.

The best manner would be to use warm water that has been mixed with a normal brand-name washing detergent and a sponge. The hard dirt can be removed before washing with the help of a soft water jet.

!

CAUTION

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NEVER CLEAN YOUR MOTORCYCLE WITH A HIGH-PRESSURED CLEANER OR A HIGH-PRESSURED WATER JET. THE WATER COULD OTHERWISE RUN INTO THE ELECTRICAL COMPONENTS, CONNECTORS, SHEATHED CABLES, BEARINGS, CARBURETOR ETC. AND CAUSE DISTURBANCES OR LEAD TO A PREMATURE DESTRUCTION OF THESE PARTS.

- You should use normal brand-name detergents to clean the motorcycle. Especially dirty parts should be cleaned additionally with the help of a paint brush.
- After the motorcycle has been rinsed with a soft water jet, it should be dried by air pressure and a cloth. Then take a short drive until the engine has reached the working temperature and also use the brakes. By warming these components, the residual water can evaporate from inaccessible parts of the engine and the brakes.
- Slide back the protective covers on the handlebar-mounted instruments so that any water that may have seeped into this part of the motorcycle is allowed to evaporate.
- After the motorcycle has cooled down, oil and grease all the gliding bearing parts. Treat the chain with a chain spray too.
- To prevent failures in the electric system, you should treat the ignition lock, the emergency OFF switch, the short circuit button, the light switch and the socket connectors with contact spray.

CONSERVATION FOR WINTER OPERATION

In the event that the motorcycle is also used in winter and on roads where one has to expect salt spraying, you will have to take precautions against the aggressive road salt.

- clean motorcycle thoroughly and let it dry after each riding
- treat engine, carburetor, swing arm, and all other bare or galvanized parts (except for brake discs) with a wax-based anti-corrosion agent.

△

WARNING

△

KEEP ANTI-CORROSION AGENT FROM GETTING INTO CONTACT WITH THE BRAKE DISCS, FOR OTHERWISE THIS WILL SIGNIFICANTLY REDUCE THE BRAKING POWER.

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CAUTION

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AFTER RIDES ON SALTED ROADS, CLEAN MOTORCYCLE THOROUGHLY WITH COLD WATER AND LET IT DRY WELL!

STORAGE

Should you desire to make a pause over a longer space of time, please observe the following instructions:

- Clean motorcycle thoroughly (see chapter: CLEANING)
 - Change engine oil, oil filter and micro filter and fine screen filter (old engine oil contains aggressive contaminants).
 - Check antifreezer and amount of cooling liquid.
 - Let the engine warm up again, close fuel cock and wait until the engine dies off by itself. By this means, carburetor jets are prevented from becoming resinous by the old fuel.
 - Remove spark plug and fill in approx. 5 ccm of engine oil into the cylinder through the opening. Actuate kick-starter 10 times in order to distribute the oil onto the cylinder walls and mount the spark plug.
 - Set piston to compression so that the valves will be closed. While doing this, slowly kick the kick starter through its stroke until the clicking sound (disengaging) of the automatic decompression release can be heard.
 - Let fuel flow out of tank into an appropriate container.
 - Correct tire pressure.
 - Lubricate bearing points of the control levers, foot rests, etc. as well as the chain.
 - Service the rear suspension linkage
 - Disassemble and charge battery (see chapter: BATTERY).
- NOTE: Only the following models are equipped with a battery: EGS Austria, EGS Switzerland.
- The storage place should be dry and not be subject to too big temperature fluctuations.
 - Cover the motorcycle with an air permeated tarp or blanket. Do not use non air permeable materials as a possible humidity might not be able to escape and thereby cause corrosion.

!

CAUTION

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IT WOULD BE VERY BAD TO LET THE ENGINE RUN FOR A SHORT TIME DURING THE STORAGE PERIOD. THE ENGINE WOULD NOT GET WARMED UP ENOUGH AND THE THUS DEVELOPED STEAM WOULD CONDENSE DURING THE COMBUSTION PROCESS AND CAUSE THE VALVES AND EXHAUST TO RUST.

RE-INITIATION AFTER TIME OF STORAGE

- Mount the charged battery (regard polarity).
- Fill up tank with fresh fuel.
- Check motorcycle as before each start (see driving instructions)
- Take a short, careful test ride first.

TECHNICAL SPECIFICATIONS - CHASSIS 400/620 SX, SC, EGS '98

	620 SX	400/620 SC	400/620 EGS
Frame	Central chrome-moly-steel frame		
Fork	WP Extreme WP-USD Topadjuster		
Wheel travel front/rear	285/320 mm (11.2/12.6 in) 300/320 mm (11.8/12.6 in)		
Rear suspension	Central shock absorber (WP) with PRO-LEVER linkage to rear-swingarm with needle bearing		
Front brake	Disc brake with carbon-steel brake disc , brake caliper floated brake disc Ø = 260 mm (10.2 in)		
Rear brake	Disc brake with carbon-steel brake disc Ø 220 mm (8.7 in), brake caliper floated brake disc Ø = 300 mm (11.8 in)		
Tyres front	80/100-21	90/90-21	90/90-21 54S
Air press. offroad	1,0 bar (14 psi)	1,0 bar (14 psi)	-
Air press. road, driver only	-	1,5 bar (21 psi)	1,5 bar (21 psi)
Air press. road with passenger	-	-	2,0 bar (28 psi)
Tyres rear	110/90-19	140/80-18 70R	130/80-18 66S
Air pressure offroad	1,2 bar (17 psi)	1,2 bar (17 psi)	-
Air press. road, driver only	-	2,0 bar (28 psi)	2,0 bar (28 psi)
Air press. road with passenger	-	-	2,2 bar (31 psi)
Fuel tank capacity	9 liter (3 US gallons) 11,3 or 20 liter (3 or 5,3 US gallons) of that 1,5 liter (0,4 US gallons) reserve		
Final drive ratio	14:48, 14:50, 15:40, 15:45, 15:48, 15:50, 16:40, 16:45,		
Chain	5/8 x 1/4"		
Steering angle	62,5°		
Wheel base	1510 ± 10 mm (59,4 ± 0,4 in)		
Seat high	940 mm (37 in)		
Ground clearance	350 mm (13,8 in)		
Dead weight without fuel	115 kg (254 lbs)	400: 121 kg (267 lbs) 620: 122 kg (269 lbs)	400: 131 kg (289 lbs) 620: 133 kg (293 lbs)
Max. permissible front axle load			211 kg (466 lbs)
Max. permissible rear axle load			335 kg (737 lbs)
Max. permissible laden weight			350 kg (770 lbs)

STANDARD ADJUSTMENT - FORK			
	K4T97SX	K4T97SC	K4T96L3
Compression adjuster	8	12	10
Rebound adjuster	12	12	14
Spring	4,4 N/mm	4,2 N/mm	4,4 N/mm
Spring preload	8 mm	7 mm	10 mm
Air chamber length	140 mm	155 mm	130 mm
Capacity per fork leg	ca 800 ccm	ca 800 ccm	ca 500 ccm
Fork oil	SAE 5	SAE 5	SAE 5

NOTE FOR WHITE POWER FORKS:
The damping units in the left and the right fork leg are of different design. Make sure not to mix them up in case of repair or service works.

STANDART-ADJUSTMENT - SHOCK ABSORBER			
	WP 01.18.57.98	WP 01.18.Q7.82	WP 01.18.Q7.81
Compression adjuster	3	3	3
Rebound adjuster	5	4	4
Spring	66/260	63/260	66/260
Spring preload	17 mm	23 mm	23 mm

TORQUES			
Collar screw front axle	M 10	40 Nm	(30 ft.lb)
Brake caliper front	M 8	25 Nm	(19 ft.lb)
Collar nut rear axle	M 20x1.5	80 Nm	(59 ft.lb) + Loctite 242
Hex. nut swing arm bolt	M 14x1.5	100 Nm	(74 ft.lb)
Clamping screw top triple clamp	M 8 (Extreme) M8 (USD)	15 Nm	(11 ft.lb) 15 Nm (11 ft.lb)
Clamping screw bottom triple clamp	M 8 (Extreme) M8 (USD)	20 Nm	(15 ft.lb) 15 Nm (11 ft.lb)
Clamping screws fork leg axle passage	M 7/M8	7/10 Nm	(5/7 ft.lb)
Other screws chassis	M6 M8 M10	10 Nm 25 Nm 45 Nm	(7 ft.lb) (19 ft.lb) (33 ft.lb)

TECHNICAL SPECIFICATIONS – ENGINE 400/620 SX, SC, EGS '98

	400 LC4	620 LC4
Engine Design	Liquid-cooled single cylinder 4-stroke engine with balancer shaft	
Displacement	398 cm ³	609 cm ³
Bore / Stroke	89 / 64 mm	101 / 76 mm
Ratio	10,8 : 1	SX: 11,5 : 1 SC, EGS: 10,4 : 1
Fuel	unleaded premium gasoline with a least RON 95	
Valve timing	4 valves over rocker arm and 1 overhead camshaft, camshaft drive through single chain	
Camshaft	249° (249)	
Valve timing by 1 mm valve clearance	IO 22° BTDC EO 59° BBDC IC 47° ABDC EC 10° ATDC	IO 14° BTDC EO 56° BBDC IC 55° ABDC EC 13° ATDC
Valve diameter	Intake: 36 mm	Exhaust: 30 mm
Valve clearance cold	Intake: 0,20 mm	Exhaust: 0,15 mm
Crank shaft bearing	2 cylinder roller bearing	
Connecting rod bearing	needle bearing	
Top end bearing	bronze bushing	
Piston	forged/cast aluminium alloy	
Piston rings	1 compression ring, 1 taper face ring, 1 oil scraper ring	
Engine lubrication	forced-feed lubrication through Eaton-Oilpump with oil sump	
Engine oil	see below #	
Engine oil quantity	SX : 1,45 liters / SC, EGS: 1,6 liters including frame	
Primary ratio	straight geared spur wheels 30 : 81 teeth	
Clutch	multi disc clutch in oil bath	
Transmission	5-speed claw shifted	
Gear ratio	1st 14:35 2nd 15:24 3rd 18:21 4th 20:19 5th 22:18	
Ignition system	contactless thyristor ignition with electronic advanced system type SEM	
Ignition timing	adjustment to max. 38 ° BTDC at 6000 rpm	SX: adjustment to max. 38 ° BTDC at 6000 rpm SC, EGS: adjustment to max. 32 ° BTDC at 6000 rpm
Generator	12V 130W	
Spark plug	NGK D8EA	
Spark plug gap	0,6 mm	
Cooling system	liquid cooled, permanent rotation of cooling liquid through mechanic driven water pump	
Cooling liquid	1 liter, 40% antifreeze, 60% water, at least -25 ° C (-13 ° F)	
Starting equipment	decompressor automatic and hand actuated, cold and hot start knob on carburetor	

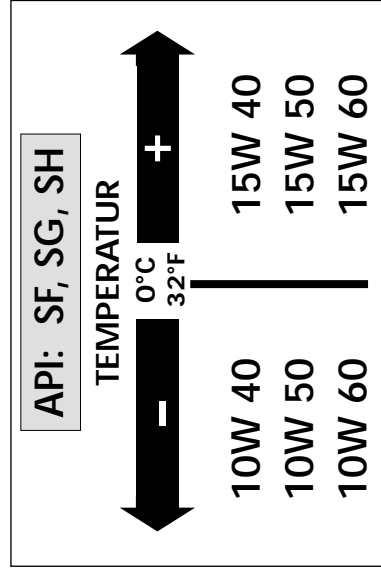
TOLERANCE, ASSEMBLY CLEARANCE	
Crank shaft	axial play0,03 - 0,12 mm (0,001-0,005 in) run out of crank studmax. 0,04 mm (0,0016 in) radial playmax. 0,05 mm (0,0019 in) axial playmax. 1,00 mm (0,04 in)
Connecting rod bearing	
Piston	assembly clearance 400/620max. 0,12 mm (0,005 in) compression ringsmax. 0,60 mm (0,023 in) oil scraper ringmax. 0,80 mm (0,031 in)
Piston rings end gap	
Valves	seat sealing intakemax. 1,50 mm (0,059 in) seat sealing exhaustmax. 2,00 mm (0,079 in) run out of valve headsmax. 0,03 mm (0,001 in) valve guides diametermax. 7,05 mm (0,277 in)
Oil pump	clearance outer rotor - housingmax. 0,20 mm (0,008 in) clearance outer rotor - inner rotormax. 0,20 mm (0,008 in)
Bypass valve	minimum spring length25 mm (1 in)
Clutch discs	wear limit organic2,5 mm (0,1 in)
Transmission shafts	axial play0,1 - 0,4 mm (0,004 in)
Clutch	minimum clutchspring length34,5 mm (new 37 mm) (1,36 in - new 1,45 in)

TIGHTENING TORQUES - ENGINE		
Hexagon nut at primary gear	M20x1,5	Loctite 242 + 170Nm (125 ft.lb)
Collar nut flywheel	M12x1 LH thread	60 Nm (44 ft.lb)
Hexagon nut for inner clutch hub	M18x1,5	Loctite 648 + 80 Nm (59 ft.lb)
Kickstarter stop screw	M12x1,5	70 Nm (52 ft.lb)
AH screws oil pump	M6	Loctite 242 + 8 Nm (6 ft.lb)
Hexagon screw camshaft gear	M10	35 Nm (26 ft.lb)
AH screw cylinder head top sect.	M6x25	8 Nm (6 ft.lb)
AH screw cylinder head top sect.	M6x50/M6x55 (12.9)	20 Nm (15 ft.lb)
AH screw cylinder head top sect.	M6x65/M6x70 (8.8)	8 Nm (6 ft.lb)
Cylinder head screws	M10	50 Nm (37 ft.lb)
Collar nuts at cylinder base	M10	40 Nm (30 ft.lb)
Hexagon screw chain sprocket	M10	Loctite 242 + 40 Nm (30 ft.lb)
Oil drain plug	M22x1,5	30 Nm (22 ft.lb)
Magnetic plug	M12x1,5	20 Nm (15 ft.lb)
Plug bypass valve	M12x1,5	20 Nm (15 ft.lb)
Banjo bolts oil lines	M8x1	10 Nm (7 ft.lb)
Banjo bolt oil lines	M10x1	15 Nm (11 ft.lb)
Jet screw clutch cover	M8x1	10 Nm (7 ft.lb)
Screw plug timing-chain tensioner	M12x1,5	20 Nm (15 ft.lb)
Counternuts valve adjusting screws	M7x0,75	20 Nm (15 ft.lb)

BASIC CARBURETOR SETTING

	400 SC (20 kW)	400 SC	400 EGS Classic	620 SC (20 kW)	620 SX 620 SC	620 EGS Classic with secondary air system	620 EGS Classic without secondary air system
Carburetor	PHM 38 SD	PHM 38 SD	PHM 38 SD	PHM 40 SD	PHM 40 SD	PHM 40 SD	PHM 40 SD
Carburetor setting number	300896	4894/6	300896	11 0996	4922	4922/2	110996
Main jet	150	190	150	155	195	170	155
Needle jet	DR 266	DR 270	DR 266	DR 268	DR 272	DR 268	DR 268
Idling jet	45	45	45	45	45	45	45
Jet needle	K 51	K 51	K 51	K 51	K 51	K 51	K 51
Needle position from top	3 rd	2 nd	3 rd	3 rd	2 nd	3 rd	3 rd
Mixture.adju. screw open	1,5 turn	1,5 turn	1,5 turn	1,5 turn	1,5 turn	1,5 turn	1,5 turn
Throttle valve	40	40	40	40	40	40	40
Starting jet	45	45	45	45	45	45	45
Performance restrictor	slide stop 22 mm	-	-	slide stop 26 mm	-	-	-

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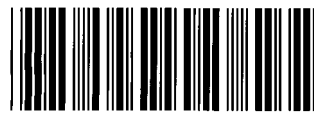
Engine oil

Use only oil brands, which meet quality requirements of API-classes SF, SG or SH (informations on bottles) or higher. Both, mineral and synthetic oils with above specifications can be used.

! CAUTION !

POOR OIL QUALITY OR MINOR QUANTITY EFFECT EARLY ENGINE-WEAR.

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