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## EXPLANATION - UPDATING

**3.206.029-E Repair Manual 450/505 SX-F**  
Basic version Model year 2007

**10/2006**



## INTRODUCTION

This repair manual offers extensive repair-instructions and is an up-to-date version that describes the latest models of the series. However, the right to modifications in the interest of technical improvement is reserved without updating the current issue of this manual.

A description of general working procedures common in workshops has not been included. Safety rules common in the work shop have also not been listed. We take it for granted that the repairs are made by qualified professionally trained mechanics.

Read through the repair manual before beginning with any repair work.

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**⚠                      WARNING                      ⚠**

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**STRICT COMPLIANCE WITH THESE INSTRUCTIONS IS  
ESSENTIAL TO AVOID DANGER TO LIFE AND LIMB.**

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**!                      CAUTION                      !**

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**NON-COMPLIANCE WITH THESE INSTRUCTIONS CAN LEAD  
TO THE DAMAGE OF MOTORCYCLE COMPONENTS OR  
RENDER MOTORCYCLES UNFIT FOR RIDING!**

**“NOTE” POINTS OUT USEFUL TIPS.**

Use only **ORIGINAL KTM SPARE PARTS**.

The KTM high performance engine is only able to meet user expectations if the maintenance work is performed regularly and professionally.



REG.NO. 12 100 6061

In accordance with the international quality management ISO 9001 standard, KTM uses quality assurance processes that lead to the highest possible product quality.

KTM Sportmotorcycle AG  
5230 Mattighofen, Austria

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## REPLY FAX FOR REPAIR MANUALS

We have made every effort to make our repair manuals as accurate as possible but it is always possible for a mistake or two to creep in.

To keep improving the quality of our repair manuals, we request mechanics and shop foremen to assist us as follows:

If you find any errors or inaccuracies in one of our repair manuals – whether these are technical errors, incorrect or unclear repair procedures, tool problems, missing technical data or torques, inaccurate or incorrect translations or wording, etc. – please enter the error(s) in the table below and fax the completed form to us at 0043/7742/6000/5349.

**NOTE:**

- Enter the complete item no. for the repair manual in column 1 (e.g.: **3.206.029-E**).  
You will find the number on the cover page or in the left margin on each right page of the manual.
- Enter the corresponding page number in the repair manual (e.g.: **5-7C**) in column 2.
- Enter the current text (inaccurate or incomplete) in column 3 by quoting or describing the respective passage of the text. If your text deviates from the text contained in the repair manual, please write your text in German or English if possible.
- Enter the correct text in column 4.

Your corrections will be reviewed and incorporated in the next issue of our repair manual.

Item no. of repair manual	Page	Current text	Correct text

Additional suggestions, requests or comments on our Repair Manuals (in German or English):

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Name mechanic/shop foreman

Company/work shop





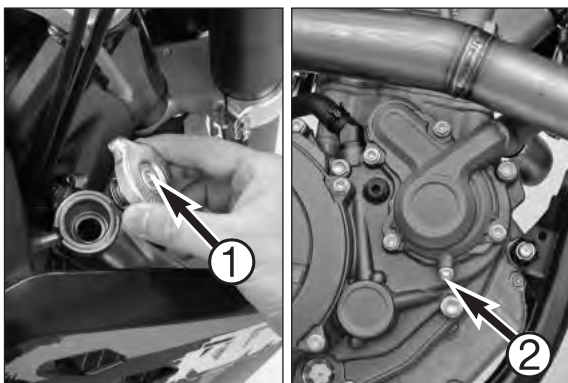
# GENERAL INFORMATION

# 2

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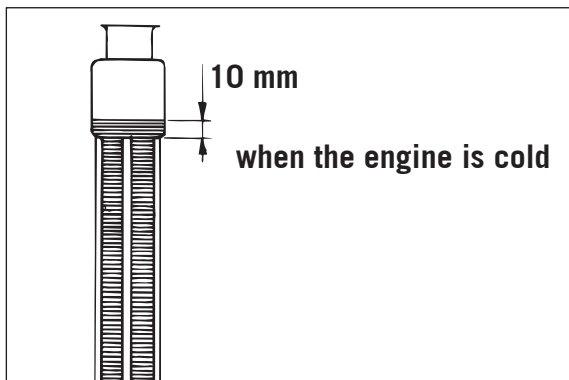
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### Changing the cooling liquid

- Remove the radiator cap ① when the engine is cold.
- Remove the drain plug ② on the water pump cover and allow the cooling liquid to drain into a suitable pan.
- Remount the drain plug ② and tighten to 10 Nm.
- Fill the cooling system with cooling liquid in a ratio of 50% antifreeze and 50% distilled water (freeze protection down to at least -25°C) to 10 mm over the radiator fins.
- Mount the radiator cap ①.
- Go for a short ride and check the cooling liquid level again.



### Checking the cooling liquid level

- When the engine is cold, the cooling liquid should be approx. 10 mm over the radiator fins (see illustration).

### Engine oil

Automobile engine oil used to be used for four-stroke motorcycles before there were separate motorcycle specifications. Different technical developments made it necessary to have a separate specification for four-stroke motorcycles - the JASO T903 MA standard. Whereas car engines require long changing intervals, motorcycle engines require a higher power output at higher speeds. Most motorcycle engines also use the same oil to lubricate the transmission and the clutch. The JASO MA standard responds to these special requirements.

Only use fully synthetic engine oils that meet the JASO MA quality requirements (see information on the can).

KTM recommends Motorex Power Synt 4T in the 10W/50 viscosity (for temperatures over 5°C, 41°F) or 5W/40 (for temperatures under 5°C, 41°F).

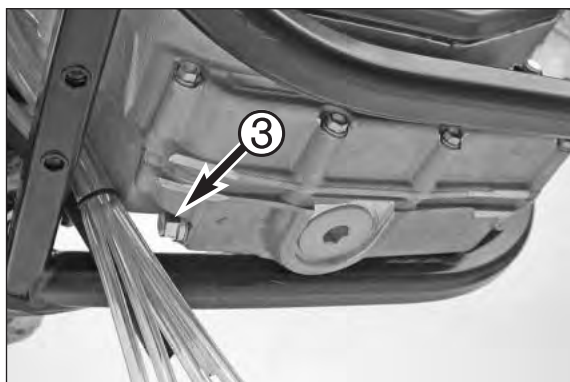
### Changing the engine oil

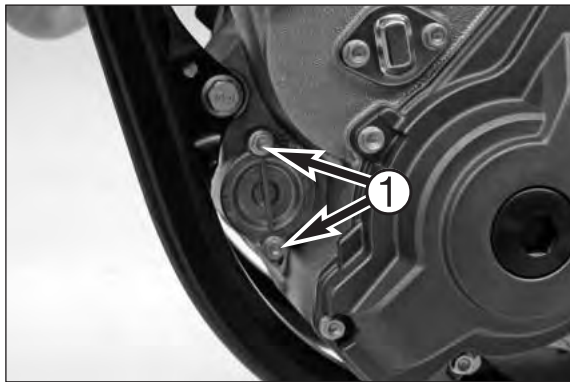
▲ CAUTION ▲

AN ENGINE AT OPERATING TEMPERATURE AND THE ENGINE OIL IT CONTAINS ARE VERY HOT – DO NOT BURN OR SCALD YOURSELF.

NOTE: When changing the engine oil, it is necessary to clean the oil screen and to replace the oil filter. Engine oil has been changed with the engine at an operating temperature..

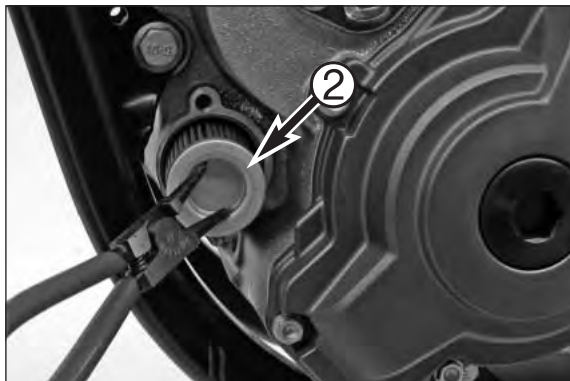
- Place the motorcycle on a level surface.
- Remove the oil drain plug ③ and allow the engine oil to drain into a pan.
- Relieve the plug ④ by tapping gently a few times with a hammer.
- Remove the plug with the oil screen.
- Allow the engine oil to drain completely and clean the sealing areas.
- Thoroughly clean all parts.
- Check the O-rings for damage and replace if necessary.
- Mount the oil drain plug with a new seal ring and tighten to 20 Nm.
- Mount the plug with the oil screen and tighten to 30 Nm.



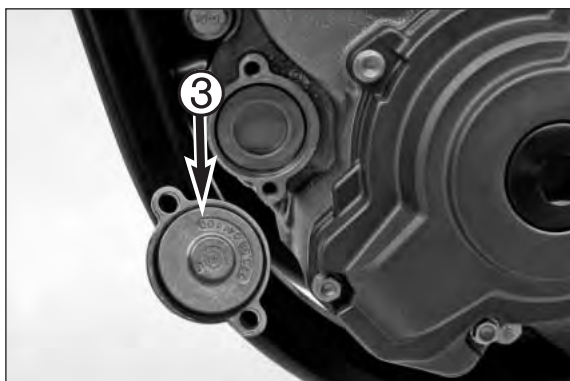


### Changing the oil filter

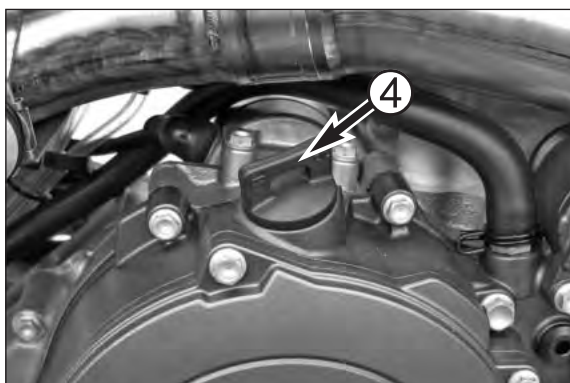
- Place a pan under the engine to drain the oil. Remove the 2 screws **1** and take off the oil filter cover and O-ring.



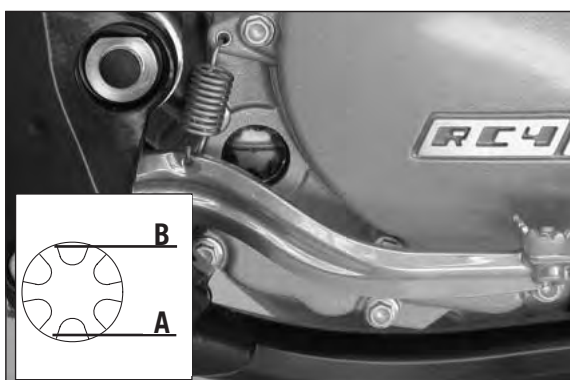
- Pull the oil filter insert **2** out of the housing with circlip pliers 510.12.011.000.
- Clean the oil filter cover, the sealing area on the O-ring and the engine case. Check the O-ring in the oil filter cover for damage and replace if necessary.



- Lay the motorcycle down on its side and fill the oil filter housing approx. 1/3 full with engine oil; insert the oil filter in the housing.
- Grease the O-ring in the oil filter cover and mount the cover **3**. Mount the screws and tighten to 10 Nm.



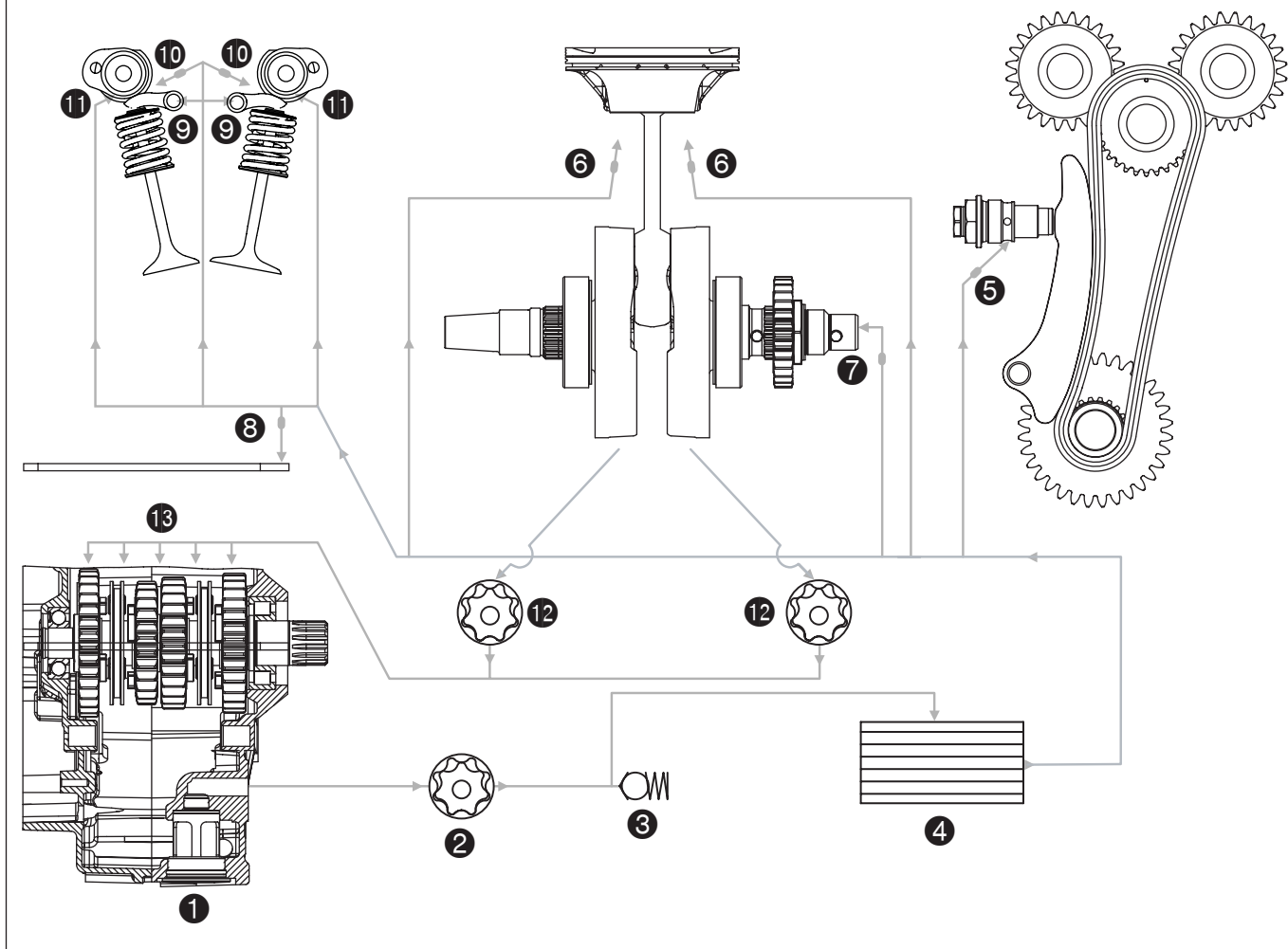
- Stand the motorcycle up again.
- Remove the oil filler screw **4** in the clutch cover and add approx. 1.3 liters of fully synthetic engine oil (Motorex Power Synt 4T 10W/50 for temperatures over 5°C or 5W/40 for temperatures under 5°C).
- Start the engine and check all screw connections and the oil filter cover for leaks.
- Finally, check the engine oil level and correct if necessary.



### Checking the engine oil level

- You can check the engine oil level with the engine cold or warm. Stand the motorcycle upright on a level surface (not on the side stand).
- The oil should be visible at the lower edge **A** of the inspection window if the engine is cold.
- If the engine is warm, the engine oil should reach the upper edge **B** of the inspection window.
- Correct the engine oil level if necessary.
- Check the engine for leaks.

## Engine oil circuit



## Engine oil circuit

- ❶ oil screen
- ❷ Pressure oil pump
- ❸ Bypass valve
- ❹ Oil filter insert
- ❺ Throttle to meter the oil for the timing chain tensioner
- ❻ Oil spraying nozzle for piston
- ❼ Jet to meter the oil to the lower conrod bearing
- ❽ Throttle to meter the oil to the clutch pushrod
- ❾ Oil duct for the cam lever support
- ❿ Oil spraying nozzle for the camshaft
- ⓫ Oil duct for the camshaft support
- ⓬ Suction pump for the crankcase
- ⓭ Oil duct for transmission lubrication



## Checking the oil pressure

- Remove the plug for the oil duct from the cylinder head.
- Screw on oil pressure adapter 773.29.006.000 and tighten.
- Connect EFI pressure gauge 610.29.094.000 without the T-piece to the oil pressure adapter; tighten the banjo bolt.

### ! CAUTION !

- CHECK THE ENGINE OIL LEVEL AND CORRECT IF NECESSARY.
- MAKE SURE THE OIL FILTER IS IN A GOOD CONDITION.
- Allow the engine to warm up and measure the oil pressure with the engine at operating temperature (engine oil temperature approx. 100°C):

min. 1.0 bar at 1600 rpm

- Remove the special tools, screw the plug on with a new O-ring and tighten to 10 Nm.