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# IMPORTANT INFORMATION/UPDATING INSTRUCTIONS

To be able to continue using the existing loose-leaf repair instructions, simply print the following pages and insert them in the existing repair instructions:

**1,3,7,9,28,49,65,74,81,93,95,96,102,106,225,228,230-232,234,237,238,  
303-313,316,354-363,366-369,430-501**

Remove page (s)	Replace by page (s)	Insert page (s)	after page
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## KTM REPAIR MANUAL IN LOOSE-LEAF FORM

### STORING THE REPAIR MANUAL IN THE BINDER

- Put the index into the binder.
- Put the front page of the repair manual (210x297 mm) into the transparent pocket provided for this purpose on the outside of the binder.
- Put the spine label (170x45 mm) into the transparent pocket provided for this purpose on the spine of the binder.
- Put the summary list of contents (150x297 mm) into the transparent pocket provided for this purpose on the inside of the binder or insert this page on the beginning of the manual.
- Then insert the individual chapters of the manual between the sheets of the index according to the page number printed in the right bottom corner of each page.  
Example: page no. 3-5; 3 = chapter 3; 5 = page 5  
All pages with a page number that begins with the digit 3, for example, must be put under the index heading „Chapter 3“.
- Index sheets that have not been marked with a certain chapter are for your personal convenience. The respective headings can be entered in the list of contents.



## LEGENDE - UPDATE

<b>3.205.49-E</b>	<b>Repair Manual LC4</b> Basic version 1998 model year (Engine number with first digit "8")	<b>6/1998</b>
<b>3.205.73-E</b>	<b>Update of Rep.Manual LC4</b> Model year 1999 (Engine number with first digit "9")	<b>7/1999</b>
<b>3.205.89-E</b>	<b>Update of Rep.Manual LC4</b> Model year 2000/2001 (Engine number with first digit "0" and "1")	<b>9/2000</b>
<b>3.210.30-E</b>	<b>Update of Rep.Manual LC4</b> Model year 2002 (Engine number with first digit "2")	<b>12/2001</b>
<b>3.206.006-E</b>	<b>Update of Rep.Manual LC4</b> Model year 2003 (Engine number with first digit "3")	<b>4/2003</b>
<b>3.206.014-E</b>	<b>Update of Rep.Manual LC4</b> Model year 2004 (Engine number with first digit "4")	<b>11/2003</b>
<b>3.206.024-E</b>	<b>Update of Rep.Manual LC4</b> Model year 2005 (Engine number with first digit "5")	<b>03/2005</b>

**Modification / Update:**

technical details model 2005, special tools chassis,  
cutting and riveting the chain

technical data, maintenance schedules and wiring diagrams for 2005



## 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 modes common in work shops 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 the 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 DAMAGE OF MOTORCYCLE COMPONENTS OR RENDER  
MOTORCYCLES UNFIT FOR TRAFFIC !**

„NOTE” POINTS OUT USEFUL TIPS.

Use only **ORIGINAL KTM SPARE PARTS** when replacing 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 reserves the right to modify any equipment, technical specifications, colors, materials, services offered and rendered, and the like so as to adapt them to local conditions without previous announcement and without giving reasons, or to cancel any of the above items without substituting them with others. It shall be acceptable to stop manufacturing a certain model without previous announcement.

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 manual – 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 to table:

- Enter the complete item no. for the repair manual in column 1 (e.g.: **3.210.66-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

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### MODELS WITHOUT FRAME OIL

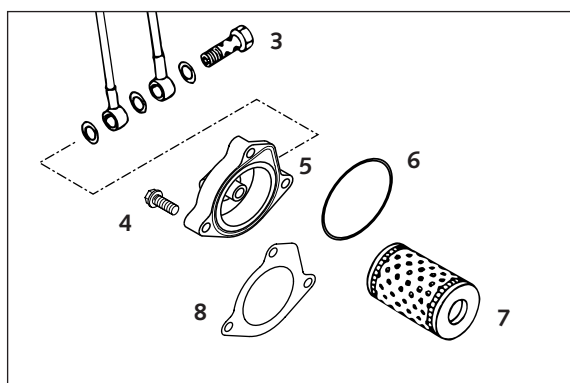
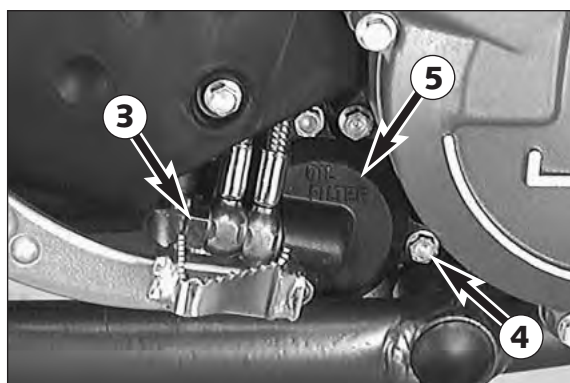
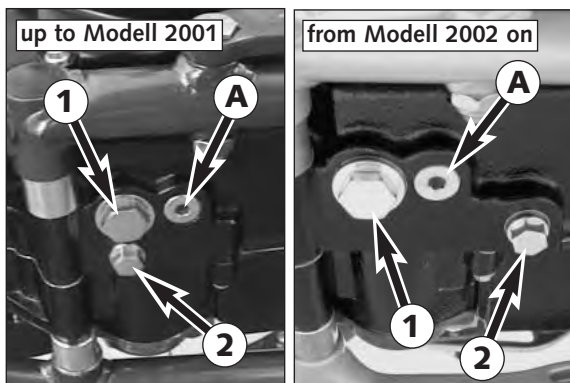
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## Changing the engine oil (models without frame oil)

NOTE: 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.

NOTE: A third plug was installed in the 660 SMC model. Tightening torque: 20 Nm



### 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 and plug 2 with 20 Nm.
- Remove the oil dipstick at the clutch cover, pour in engine oil and replace the oil dipstick.

Oil capacity (up to model 2002) : 1.40 l  
Oil capacity (from model 2003 on) : 1.50 l

## Changing the oil filter

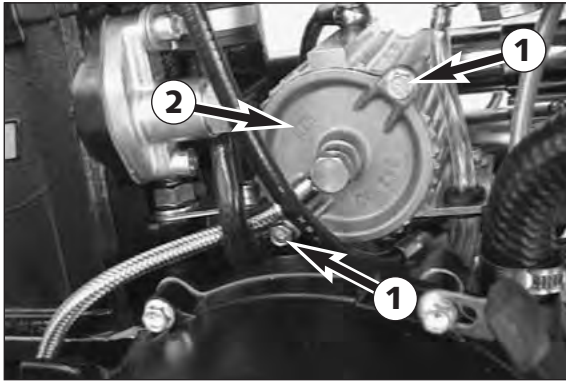
Replace the oil filter when changing the engine oil.

- Press the foot brake pedal and place a screwdriver or similar between foot brake pedal and stopper roll so that the oil filter cover is more accessible.
- Remove banjo bolt 3 and the three bolts 4.
- Remove oil filter cover 5 and oil filter.
- Clean filter housing, oil filter cover and sealing surfaces. Check oil duct in oil filter cover if clogged.

- Press the new O-ring 6 into the groove of the filter cover (if necessary fix with grease). Mount a new oil filter 7 on the connection piece of the oil filter cover and mount the whole unit.

NOTE: From model 2001 onwards the gasket 8 is mounted with a changed filter cover 5. If the new gasket 8 should be used on older engines, the filter cover must be flat regrinded or renewed (see Technical Info Nr. 0201/30/01).

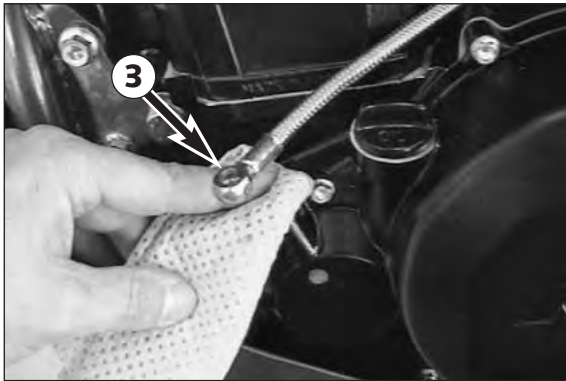
- Mount three bolts and tighten with 5 Nm.
- Mount hollow bolt with seal rings and tighten with 15 Nm.



### Changing the microfilter

Replace the microfilter while changing the engine oil.

- To do so, remove bolts ❶ and take off the microfilter cover ❷.
- Remove the microfilter, clean its parts and check the O-ring on the microfilter cover for signs of damage.
- Insert a new microfilter into the filter housing, tilt the motorcycle sideways and fill the microfilter housing with engine oil.
- Slightly grease the O-ring and mount the microfilter cover. Then put the motorcycle back on its stand.



- It is necessary to bleed the microfilter so that all lubricating points can be quickly supplied with engine oil.
- To do this, fill with oil and remove the jet screw from the oil line on the clutch cover.
- Start the engine and close off the bore on the clutch cover with a rag.
- Allow the engine to run at idle until oil runs out of the oil line ❸.
- Turn off the engine. Mount the jet screw, using two new seal rings.
- Torque the jet screw to 10 Nm and check for leaks.
- Start the engine and let it idle for 1 - 2 minutes.

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**! CAUTION !**

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DO NOT REV UP THE ENGINE IMMEDIATELY AFTER AN OIL CHANGE ! KEEP IN MIND THAT IT TAKES SOME TIME UNTIL ALL LUBRICATING POINTS ARE PROPERLY PROVIDED WITH ENGINE OIL.

- Allow the engine to run until warm. Then, turn off the engine, and place the motorbike on a flat, level surface in an upright position (center stand). Wait for 5 minutes. Unscrew and remove the oil dipstick, and wipe it clean with a cloth.
- Screw the dipstick in all the way and remove it again. The oil level should be between the two marks on the oil dipstick, however, it must never rise above the MAX mark. Otherwise, engine oil would get into the air filter box by way of the engine venting system. Add engine oil, if necessary.
- Finally, check oil system and engine for leaks.

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**! CAUTION !**

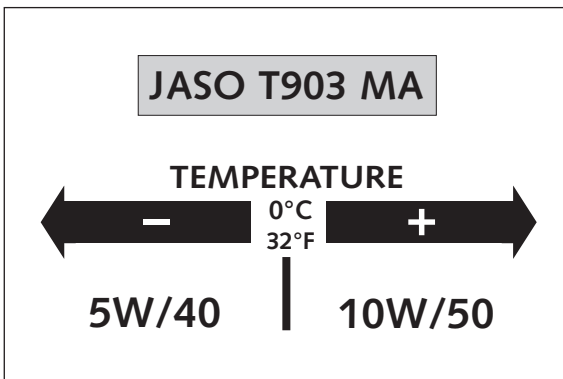
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- ONLY USE HIGH-QUALITY OILS MEETING OR SURPASSING THE QUALITY REQUIREMENTS OF JASO T903 MA (FOR SPECIFICATIONS SEE CONTAINERS).
- INSUFFICIENT OIL OR POOR QUALITY OIL RESULTS IN PREMATURE WEAR OF THE ENGINE.
- YOU MAY USE EITHER MINERAL OILS OR SYNTHETIC OILS FULFILLING THE ABOVE CRITERIA.

**NOTE: Dispose of used oil properly !**

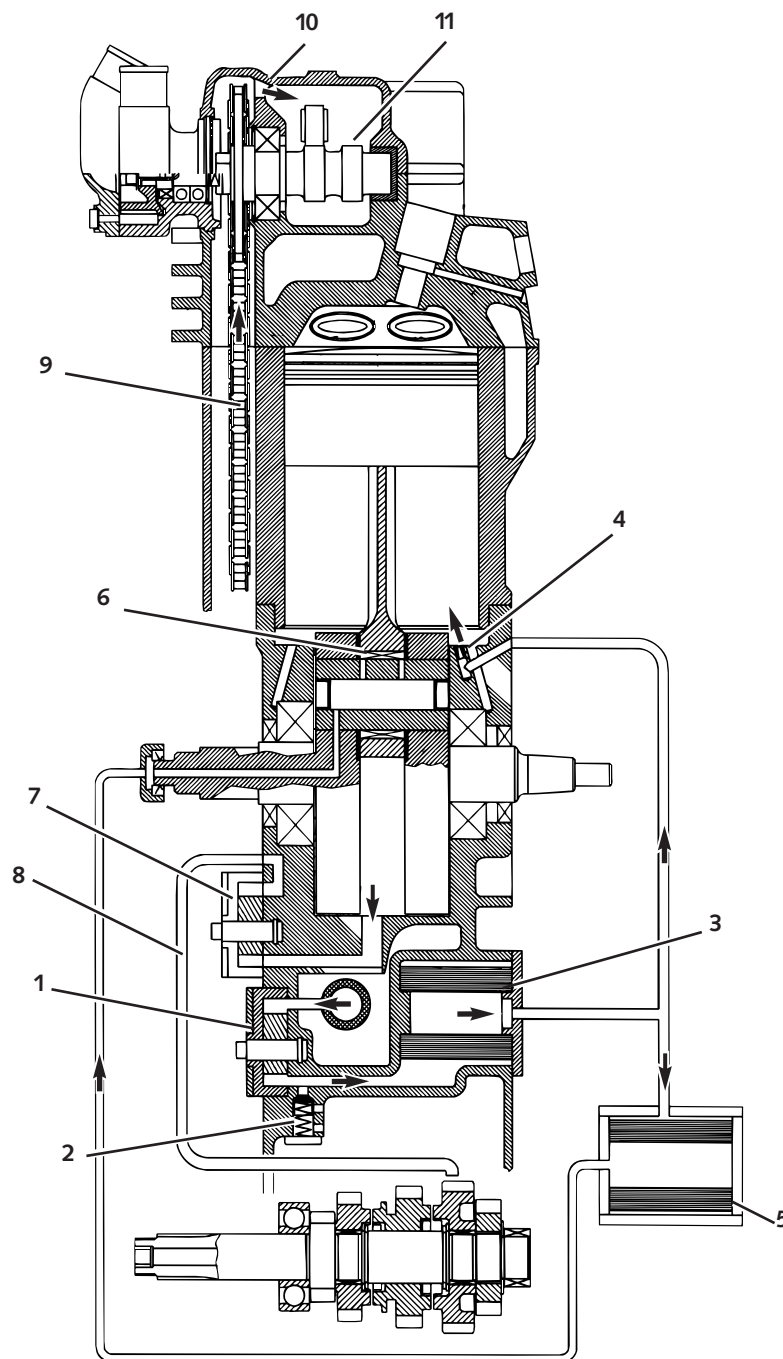
**Under no circumstances may used oil be disposed of in the sewage system or in the open countryside.**

**1 liter oil contaminates 1.000.000 liter water.**



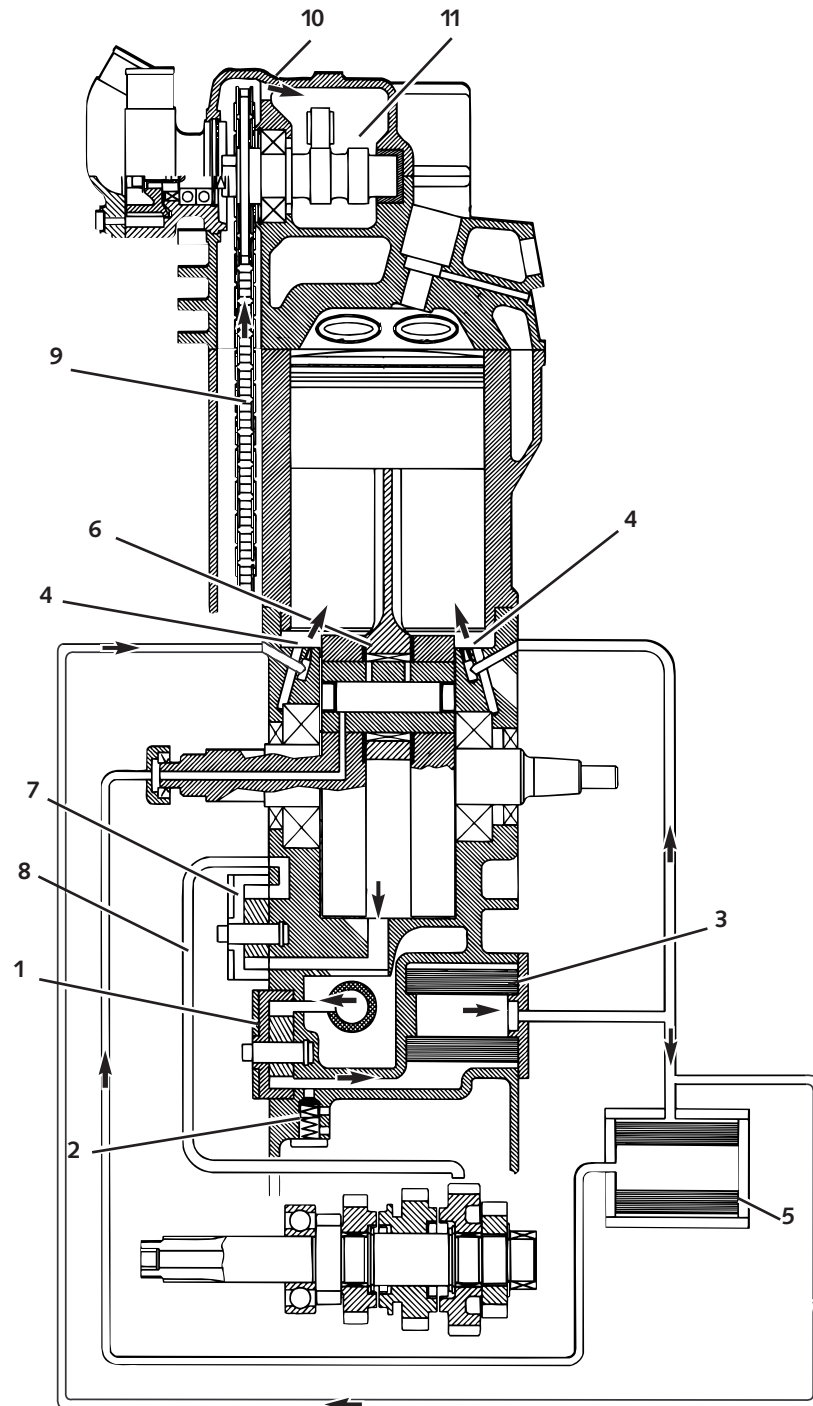
### Oil circuit

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.



**Oil circuit 660 SMC (model 2003)**

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 second jet ④ and the microfilter ⑤, which filters out even the finest impurities. The cleaned engine oil is pumped through the oil lead and the clutch cover to 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 (models with frame oil)

NOTE: For improved cooling of the engine oil, the front tube of the frame was integrated into the oil circuit. Thus, when you change the oil, you also have to drain the engine oil from the front tube and bleed the oil system.

If the oil system is not bled at all or bled insufficiently, the bearings of the engine will not get enough lubrication, which in turn may result in engine failure.

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

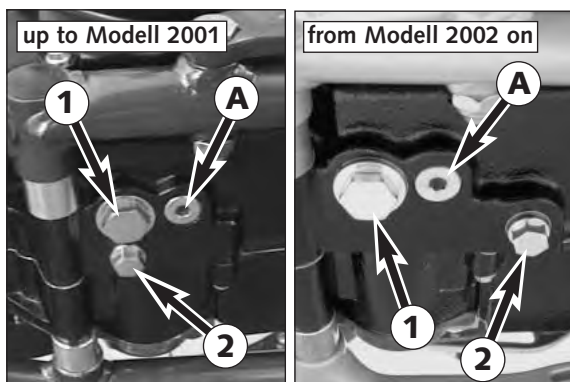
⚠ **WARNING** ⚠

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. When working on a motorcycle with engine guard, remove the latter before commencing to change the engine oil.
- Remove the two plugs ① and ②, and drain oil into a container.

! **CAUTION** !

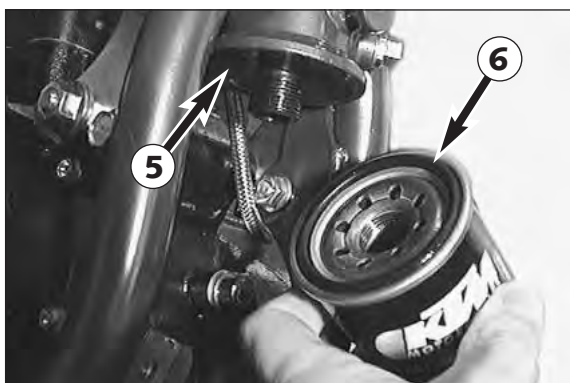
PLUG ① MUST NOT BE REMOVED, THIS IS PART OF THE BY-PASS VALVE.



### Changing the fine screen filter

Replace the fine screen ③ filter when changing the engine oil.

- Loosen the three bolts and remove the cover.
- Undo the spin-on filter ③ with the corresponding special tool, twist it off manually and let the engine oil out of the front pipe of the frame.
- Unscrew plug ④ at the lower end of the front pipe and drain oil (up to model 2000).



- Clean sealing surfaces on the front pipe ⑤, fill new fine screen filter with engine oil, and oil rubber gasket ⑥. Replace fine screen filter and screw it back in place, your bare hand will do.

! **CAUTION** !

USE ONLY ORIGINAL KTM FINE SCREEN FILTERS. USING ANOTHER FILTER BRAND CAN RESULT IN DAMAGE TO THE ENGINE!



- From **model 2001 onwards** the drain plug ⑦ of the frame oil is located in the oil filter flange, draining is only possible after removing the oil filter.

- 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 sealing areas and install plugs with gaskets. Tighten plug ① with 30 Nm, plug ② with 20 Nm and plug ④ with 10 Nm (up to model 2000). Drain plug of frame oil (model 2001 onwards) is to be mounted without a gasket and tightened to 10 Nm.