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:

15,21-30,31,43,45,48,50,51,63,64,72,78,79,89,91,92,98,102,106,113-169,180,182,183, 188-394

Remove page (s)	Replace by page (s)	Insert page (s)	after page
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11-1 to 11-11	11-1 to 11-20		
12-1 to 12-18	12-1 to 12-26		
13-1 to 13-60	13-1 to 13-141		

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.

EXPLANATION - UPDATING

3.206.009-E Repair Manual LC8
Basicversion Modelyear 2003

4/2003

3.206.016-E Updating of Rep.Manual 3.206.009-E
Modelyear 2004
(Engine number with first digit “4“)

11/2003

3.206.025-E Updating of Rep.Manual 3.206.009-E
Modelyear 2005
(Engine number with first digit “5“)

01/2005

3.206.035-E Updating of Rep.Manual 3.206.009-E
Modelyear 2005/06
(Engine number with first digit “5“ and “6”)

01/2006

950 Supermoto, 990 Adventure, 950 Super Enduro,
ABS, technical details, technical data,
technical specifications, wiring diagrams

Edition: 01/2006

INTRODUCTION

This repair manual offers extensiv 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 profesionally trained mechanics.

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

⚠ WARNING ⚠

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

! CAUTION !

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.

TÜV MANAGEMENT SERVICE ISO 9001
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. In the event of such modifications, please ask your local KTM dealer for information.

KTM Sportmotorcycle AG
5230 Mattighofen, Austria

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.: 3.206.035-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.: 5-7**) 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):

Name mechanic/shop foreman **Company/work shop**

GENERAL INFORMATION 2

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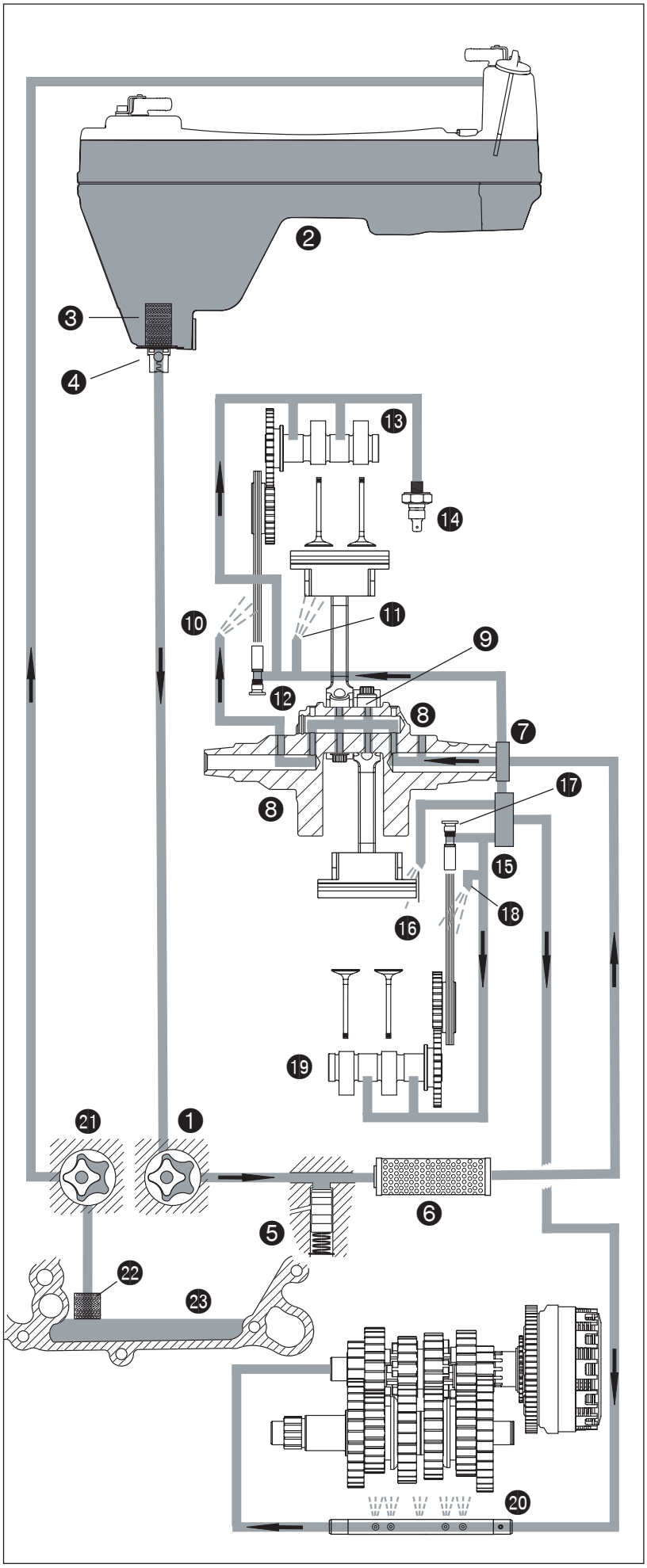
Art.-No. 3.206.035-E



Oil system

Pressure pump ❶ draws engine oil from oil tank ❷ through oil filter ❸ and the oil return valve ❹ and pumps it past the pressure relief valve ❺ through the oil filter ❻ into the annular groove ❼.
The main bearing ❽, the conrod bearings ❾ and the spraying nozzle ❿ (front timing chain) are supplied with oil through holes in the crankshaft. An oil duct leads to spraying nozzle ⓫ (piston cooling), the timing chain tensioner ⓬, the camshaft ⓭ and the oil pressure switch ⓮ in the front cylinder.
Another oil duct leads from the annular groove to a distributor groove ⓯ in the clutch cover. From there an oil duct leads to the spraying nozzle ⓰ (piston cooling). Another oil duct supplies the timing chain tensioner ⓱, the spraying nozzle ⓲ (timing chain) and the camshaft ⓳ on the rear cylinder with oil.

Another oil duct leads to the oil injection tube ⓴ which lubricates the transmission gears. Oil is conducted to the pushrod and to the clutch through the injection tube, another oil duct and the reducing jet.

The suction pump ㉑ draws the oil from the oil sump ㉓ through the screen ㉒ into the oil tank ❷.

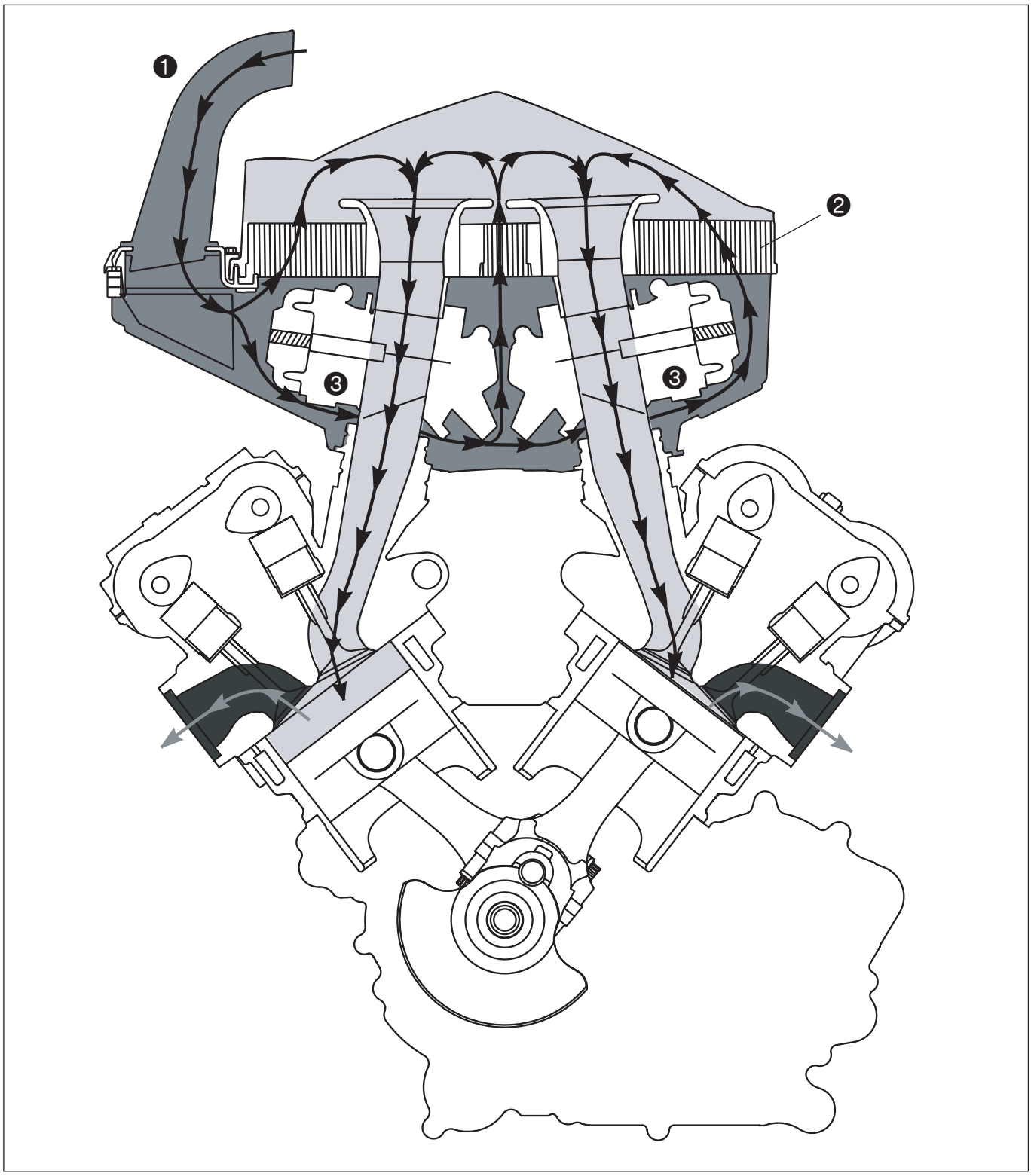
NOTE: each piston is lubricated and cooled by 2 jets starting with the 2005 model.

Art.-No. 3.206.035-E

Intake system

Fresh air is drawn into the filter box through the intake snorkel ❶, past the carburetors ❷ and through the air filter ❸.
The cleaned air is conducted to the combustion chamber through the carburetors and intake ports.

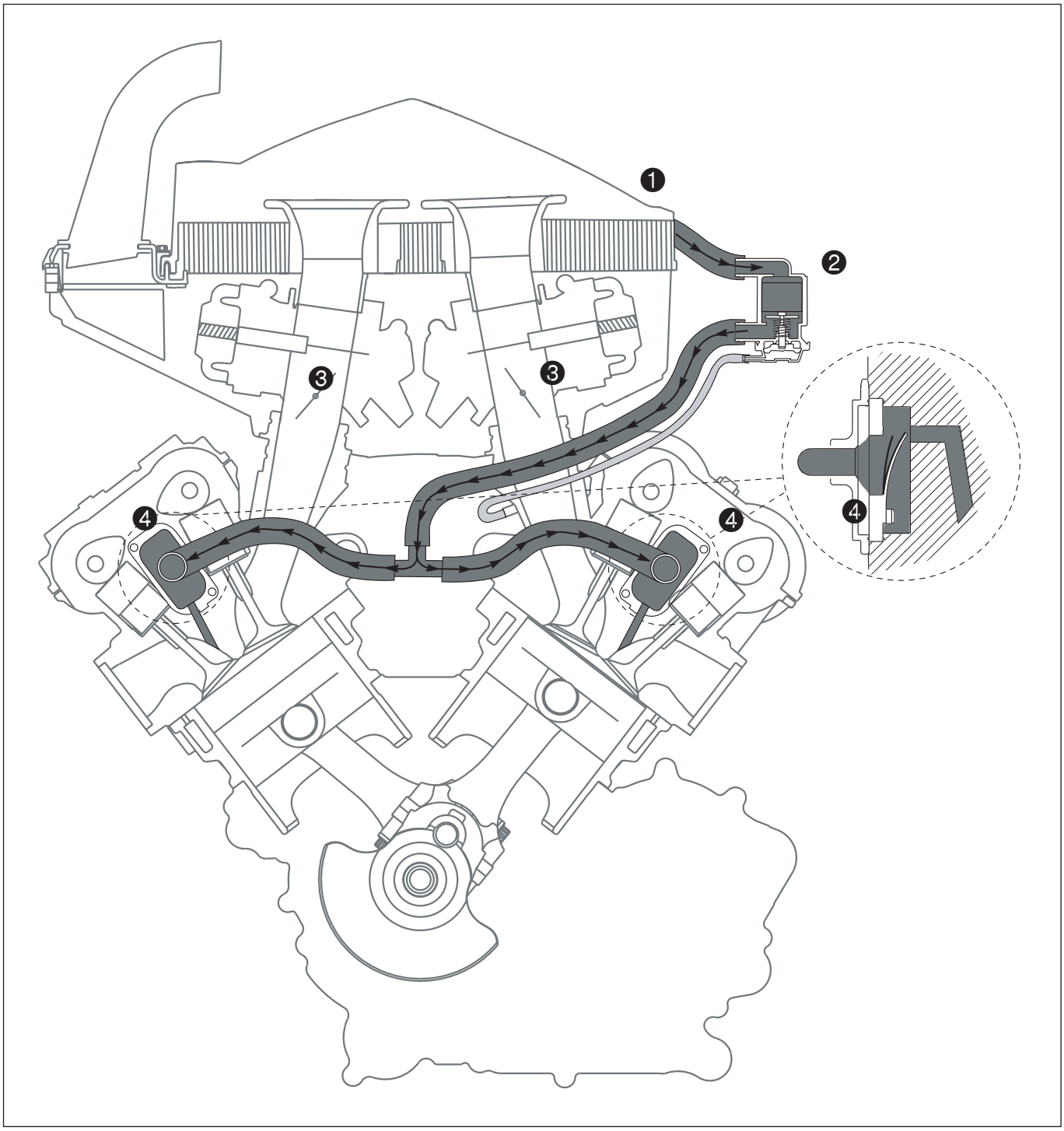
The diagram for the injection engine is similar; the air flows to the intake ports through the throttle body instead of through the carburetor.



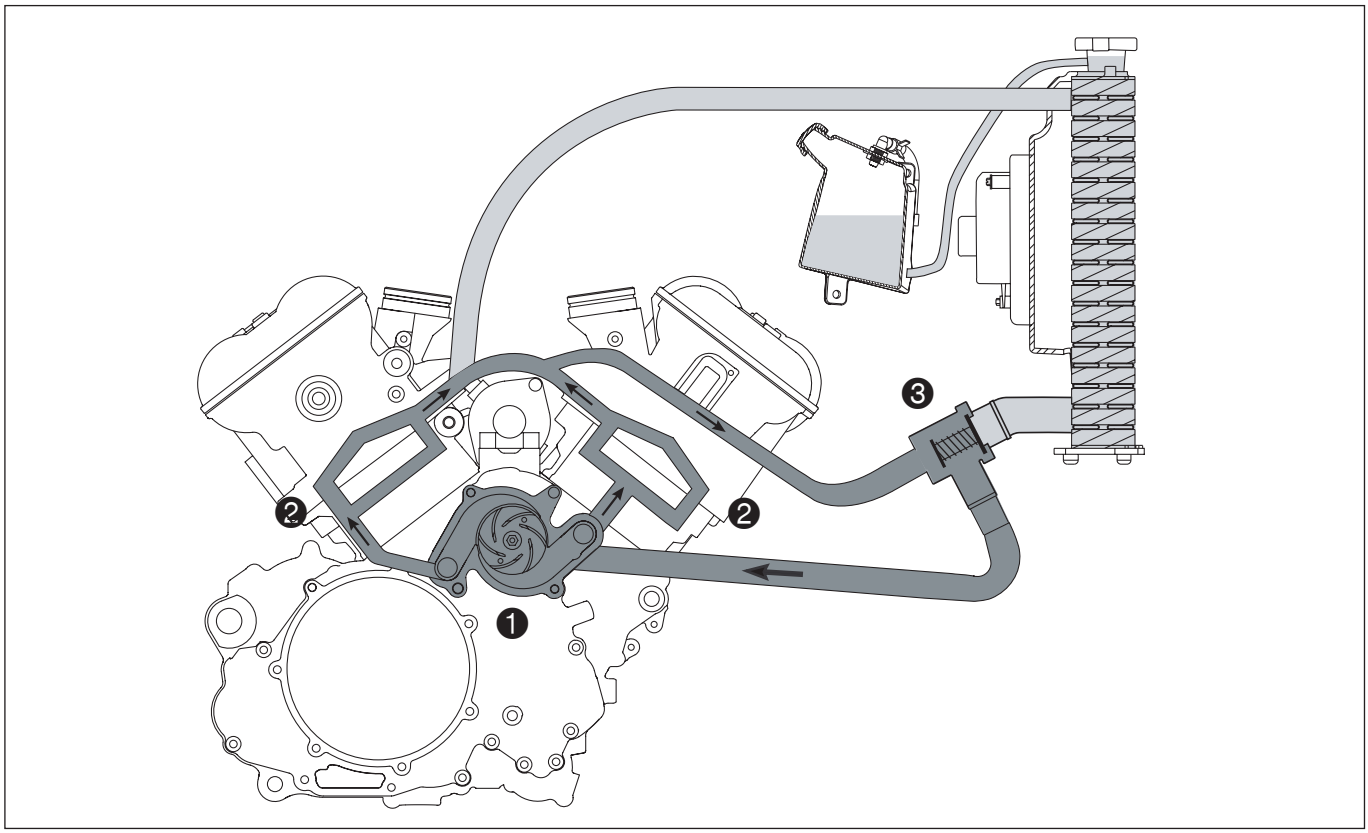
Secondary air system

The secondary air system supplies fresh air to the emissions in the exhaust port, resulting in the afterburning (oxidation) of the emissions. A line leads from the filter box ❶ to the control valve ❷ which opens as soon as the throttle valves ❸ are opened. The line continues to the reed valves ❹ in the cylinder heads which are actuated by the pressure pulsation in the exhaust system. As a result, cleansed fresh air arrives in the exhaust port. The oxygen content in the air and the high exhaust gas temperature cause the emissions to oxidize.
If the throttle valves are closed and the engine goes into an overrun condition, the underpressure in the intake port will rise and the control valve will close. This prevents exhaust backfire (combustion of the unburned fuel/air mixture).

The secondary air system operates in a similar manner in models equipped with an injection engine; a solenoid valve controlled by the control unit is used instead of the control valve.

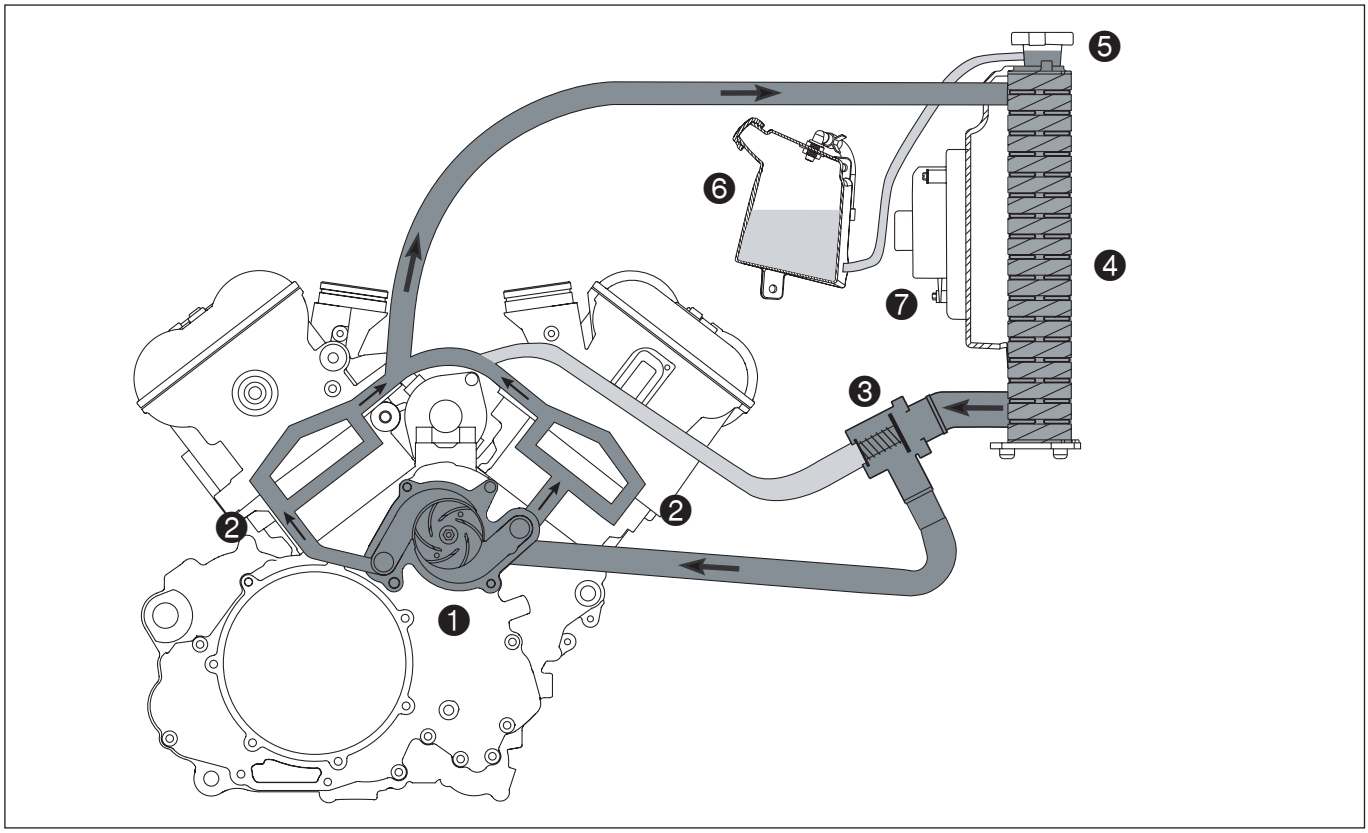


Cooling system



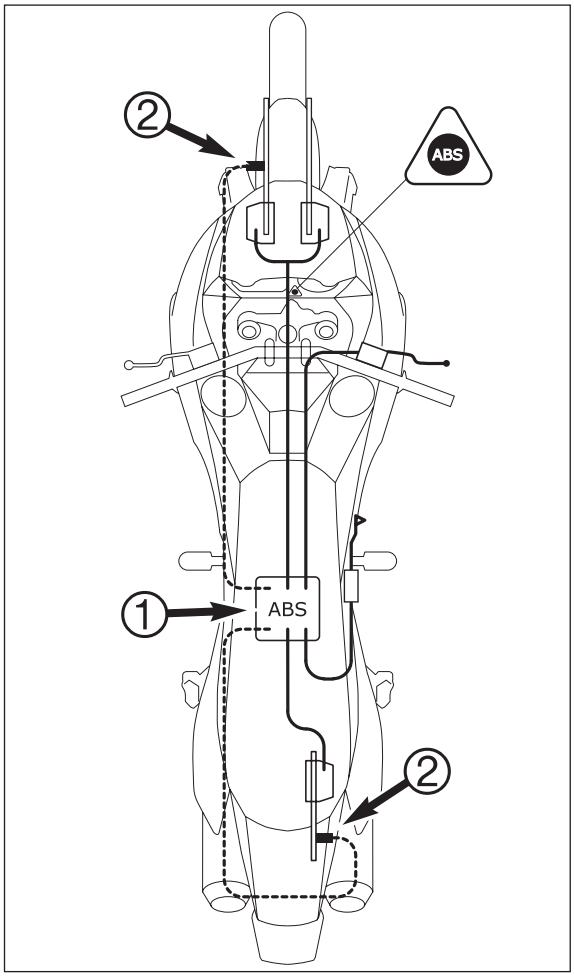
Closed thermostat

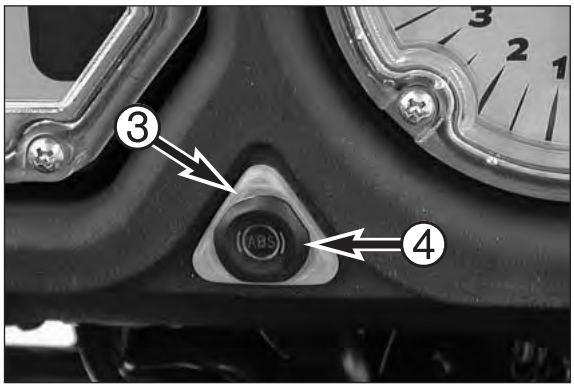
The thermostat is closed if the temperature of the cooling liquid drops below 75° C. The water pump ❶ pumps the cooling liquid through the cylinder and cylinder heads ❷ and the thermostat ❸.



Open thermostat

The thermostat ❸ opens at 75° C. The water pump ❶ pumps the cooling liquid through the cylinder and cylinder heads ❷, the aluminum cooler ❹ and the thermostat. The pressure in the cooling system (max. 1.4 bar) is regulated by a valve in the radiator cap ❺. The cooling liquid level in the compensating tank ❻ must be between the MIN and MAX marks when the engine is cold. The fan ❼ switches on at 102° C.





ABS (antilock brake system)

The ABS is a safety system that prevents the wheels from locking when driving straight ahead without the influence of lateral forces. The ABS unit ❶, consisting of a hydraulic unit, an electronic control unit and the electric pump motor, is located under the seat. Sensors ❷ on the front and rear wheel send pulses to the control unit to indicate how fast the wheel is turning.

The KTM 990 Adventure ABS operates with two independent brake circuits (front and rear wheel brake). During normal service the brake system works just like a conventional brake without the ABS. The ABS control phase sets in when the control unit detects that one of the wheels is starting to lock. It releases the pressure in the respective brake circuit and prevents the wheel from locking. You can feel the control function as a slight pulsing in the brake lever.

The ABS warning lamp ❸ must light up when the ignition is switched on and go out at a speed of approx. 5 KPH after you drive off. If it stays on or lights up while driving, the ABS is defective.

The ABS can be switched off with the ABS button ❹.

! CAUTION !

- Do not mount wheels with a different rim diameter. The ABS function can no longer be guaranteed.
- The ABS is designed to be used with the tires authorized by KTM. The ABS function cannot be guaranteed if other tires are used.
- Maximum ABS control can no longer be guaranteed if the tire pressure is incorrect.
- The ABS system is designed for the 990 Adventure model and may not be installed in the 990 Adventure S since the 990 Adventure S model has a different center of gravity; 990 Adventure S forks/shock absorbers may not be mounted on 990 Adventure models with ABS.
- All other modifications that displace the motorcycle's center of gravity (e.g. lowering) jeopardize the proper functioning of the ABS system.

ABS warning lamp

The ABS warning lamp ❸ must light up when the ignition is switched on and go out at a speed of approx. 5 KPH after you drive off. If it stays on or lights up while driving, the ABS is defective. The ABS is no longer active and the wheels can lock when braking.

NOTE:

- The brake system will still function but ABS control will no longer be active.
- The ABS warning lamp can also light up if there is a large deviation between the speed of the front and rear wheel in extreme driving situations, e.g. during a wheelie or if the rear wheel slips when accelerating on loose ground. The ABS will no longer be active and the wheels can lock when braking. To activate the ABS again, stop and switch the ignition off/on. If the warning lamp goes off again at a speed of approx. 5 KPH after you drive off, the ABS is active and fully operative.

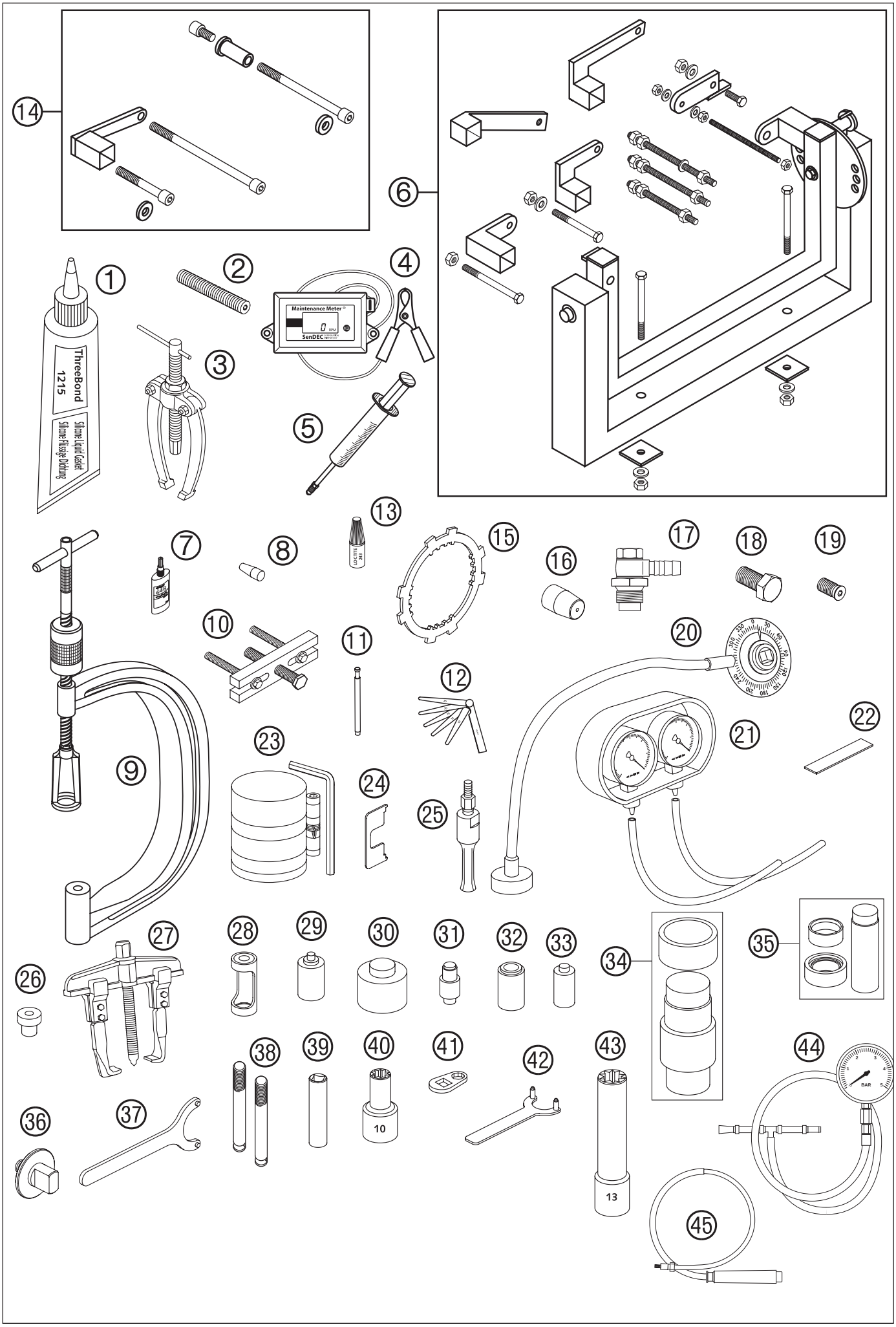
ABS button

The ABS button ❹ switches off the ABS. To switch off the ABS, stop the motorcycle and press the ABS button for at least 3 seconds with the engine running. Let go of the ABS button as soon as the ABS warning lamp starts blinking fast. The ABS warning lamp will blink slowly to indicate that the ABS is switched off.
To switch the ABS on again, stop and switch off the ignition. The ABS will be active again when you switch on the ignition.

See the KTM ABS training documents for a detailed description of the ABS system.

SPECIAL TOOLS – ENGINE

FIG	PART NO	DESCRIPTION
1	309098	Seal Three-Bond
2	0113 080802	Crankshaft locking bolt
3	151.12.017.000	Gear puller
4	451.29.075.000	Tachometer
5	503.29.050.000	Bleeding syringe for hydraulic clutch
6	560.12.001.000	Universal-engine work stand
7	584.29.059.000	Loctite 648 green 20 ml
8	585.29.005.000	Protection sleeve for shaft seal ring of water pump
9	590.29.019.000	Valve spring mounter
10	590.29.021.044	Puller
11	590.29.026.006	Limit plug gauge 6,05 mm
12	590.29.041.000	Feeler gauge for valve clearance
13	6 899 785	Loctite 243 blu 10 ml
14	600.29.002.000	Engine holder for engine work stand
15	600.29.003.000	Clutch holder
16	600.29.005.000	Protection sleeve for shaft seal ring of output shaft
17	600.29.006.000	Oil pressure adapter
18	600.29.009.000	Magneto extractor
19	600.29.009.010 600.29.009.110	Pressure screw for magneto extractor up to the 2004 model Pressure screw for rotor extractor from the 2005 model
20	600.29.010.000	Degree wheel
21	600.29.011.000	Carburator synchronisation tool
22	600.29.012.000	Plastigauge-measuring strips
23	600.29.015.000	Piston ring mounting tool
24	600.29.016.000	Setting gauge for float level
25	600.29.018.000	Internal gear puller 28 mm
26	600.29.031.000	Protection sleeve for crankshaft (for pulling of the primary gear)
27	600.29.033.000	Puller for primary gear
28	600.29.041.000	Valve spring mounter insert
29	600.29.043.010	Pressing tool for seal of clutch release shaft
30	600.29.043.020	Pressing tool for seal of output shaft
31	600.29.043.030	Pressing tool for seal and bearing of shifting shaft
32	600.29.043.040	Pressing tool for seal of water pump
33	600.29.043.050 600.29.043.060	Pressing tool for seal of balancer shaft Pressing tool for bearing of water pump
34	600.29.044.050	Pressing tool for main bearings (In/out)
35	600.29.046.028	Pressing tool for supporting bearing (In)
36	600.29.050.000	Pretensioning tool - lower part
37	600.29.051.000	Pretensioning tool - hook wrench
38	600.29.058.000	Puller for spreader components
39	600.29.073.000	Spark plug wrench 16 mm
40	600.29.075.000	Special nut for conrod
41	600.29.081.000	Special tool for cylinder head nuts
42	600.29.082.000	Holder for water pump wheel
43	600.29.083.000	Special nut for cylinder head nuts
44	610.29.094.000	EFi-tool for pressure check
45	625.29.093.000	Intermediate adapter for ignition cable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Silicone Flüssige Dichtung
Maintenance Meter
SenDEC
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