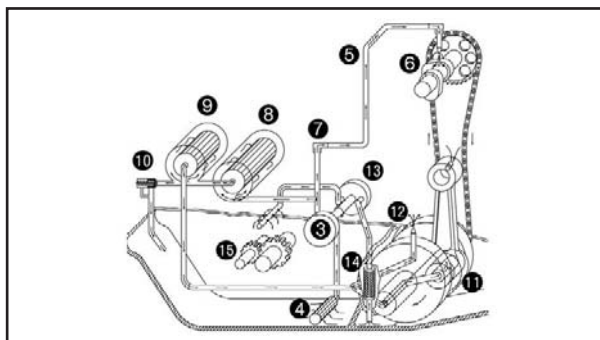


Oil circuit

Oil pump **3** sucks the engine oil from the gearbox oil sump through long oil unit **4**. The oil flows through oil line **5** into the cylinder head to camshaft lubrication point **6**. The oil quantity is adjusted by means of oilway screw **7**. A pipe branches off to long oil unit **8**, where the coarser particles are filtered from the oil. The oil then comes to short oil unit **9**, which filters off the finer particles. Once it has been so cleaned, the engine oil is pumped through bypass valve **10** to connecting rod bearing **11** and then sprayed from below onto the piston through jet **12**. The second oil pump **13** sucks the oil from the crankcase through short oil unit **14**, lubricating gears **15**.



Checking the engine oil level

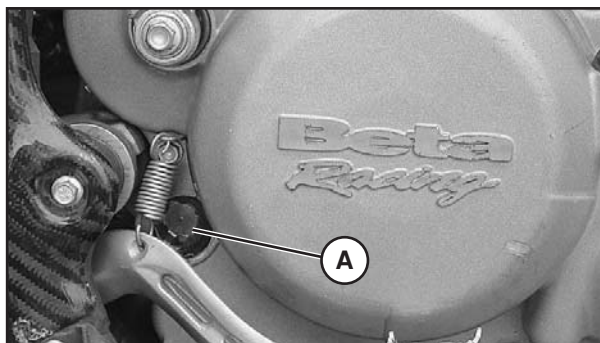
The engine oil level can be checked indifferently when the engine is cold or hot.

Place the vehicle in an upright position on level ground (do not use the side stand).

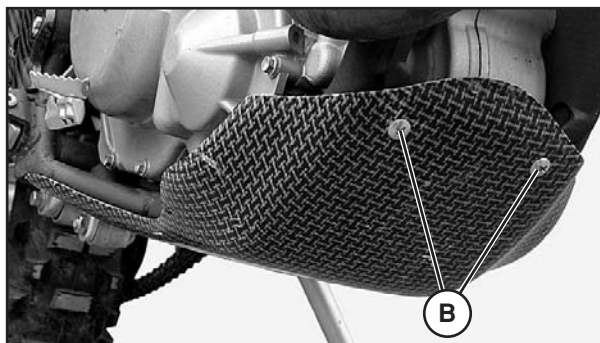
When the engine is cold, the oil should reach the lower edge of sight **A**.

When the engine is hot, the oil should reach the upper edge of the sight.

If necessary top up with engine oil.



WARNING: An insufficient quantity of engine oil or the use of low quality oil lead to early engine wear.



Changing the engine oil and the oil filter

Before performing this operation, remove (if present) lower bumper **A** after unscrewing the three screws **B** as shown in the figure.

Whenever the oil is changed, be sure to clean the short and long oil units and replace both oil filters.

Renew the oil while the engine is at operating temperature.



WARNING: An engine at operating temperature and the oil it contains are very hot and can cause burns.



Park the vehicle on level ground, remove screw **C** and drain the oil into a container.

Thoroughly clean the screw (with the magnet). When the oil has drained out completely, clean the sealing surface, refit screw **C** with the seal ring and tighten to 20 N-m.



ENVIRONMENT: Dispose of spent oils in compliance with applicable laws.

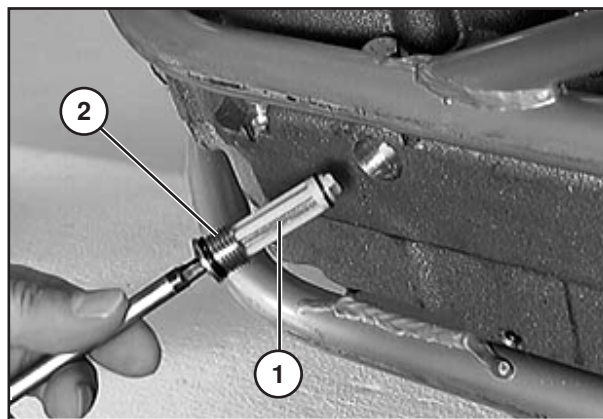


Cleaning the short oil unit

Short oil unit **1** is fitted into socket-head screw **2** on the lower side of the engine. Insert an Allen key into the socket and unscrew the oil drain screw.

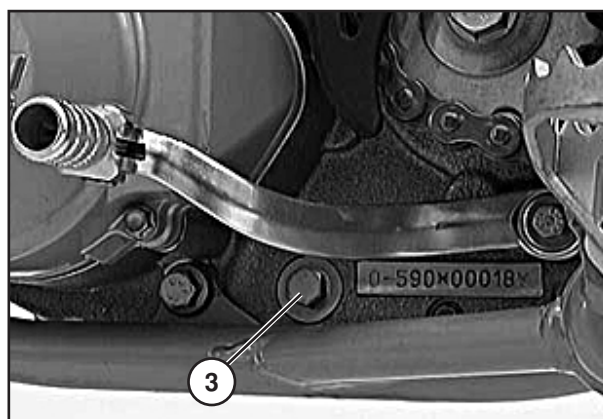
Remove the oil unit, thoroughly clean its components and blow them with low-pressure compressed air. Check the O-rings for damage and if necessary replace them.

Replace the oil unit with the screw and tighten the latter to 10 N·m.

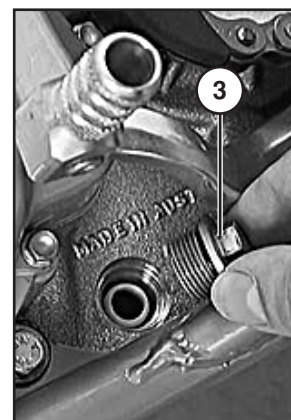
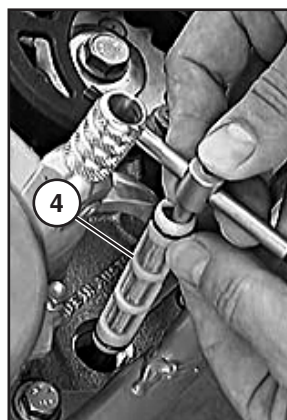


Cleaning the long oil unit

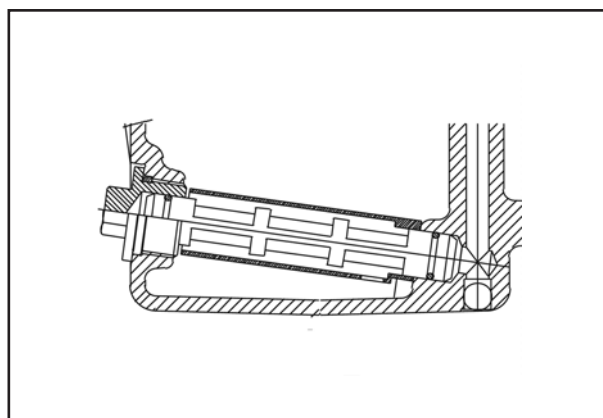
The long oil unit is fitted into hexagonal-head screw **3** next to the engine number. Remove the screw with the oil unit, thoroughly clean the components and blow them with low-pressure compressed air. Check the O-rings for damage and if necessary replace them.



Fit long oil unit **4** using a 300 mm spanner as shown in the figure, then insert the spanner through the opening in the hole on the opposite side of the crankcase. Push the oil unit into the crankcase until it stops and remove the spanner. Refit screw **3** and tighten to 15 N·m.



The oil unit is fitted at an angle (see figure). To avoid malfunctions, be sure to observe this position.

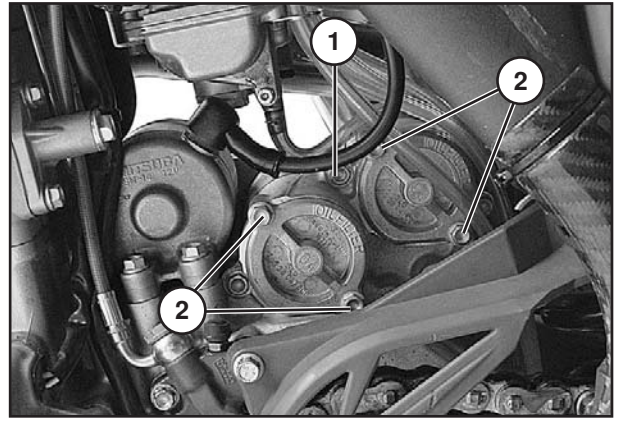


Replacing the oil filter

Remove screw **1** and place a container under the engine to collect the drained oil. Remove the four screws **2** and take off the two oil filter covers.

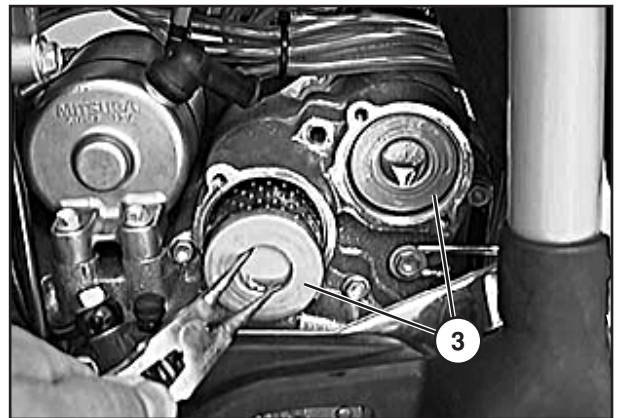


ENVIRONMENT: Dispose of spent oils in compliance with applicable laws.



Using a pair of Seeger ring pliers, pull out the two filter elements **3** from the crankcase.

Clean the oil filter covers, the O-ring sealing surfaces and the crankcase. Check the O-rings and the oil filter covers for damage and replace as necessary.



Turn the vehicle upside down and half fill the two oil filter casings with engine oil.

Fit the long filter unit in the front and the short filter unit in the back of the crankcase.

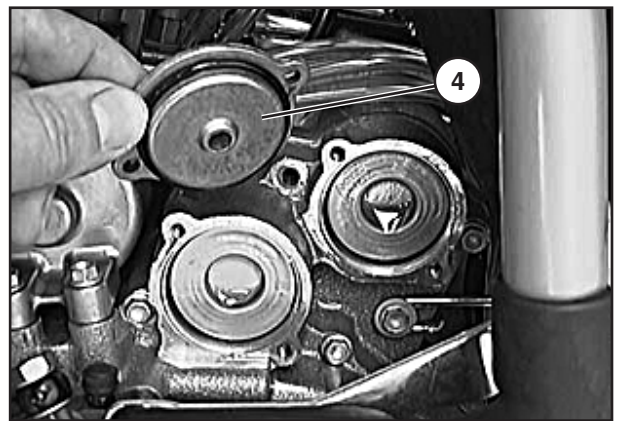
Grease the oil filter cover O-rings and fit covers **4**.

Fit screws **2** and tighten them to 6 N·m.

Tighten screw **1** to 8 N·m.

Lift up the vehicle.

Remove screw fastening **5** from the clutch cover and pour in 1.25 litres of the recommended engine oil (see table in Chapter 3).



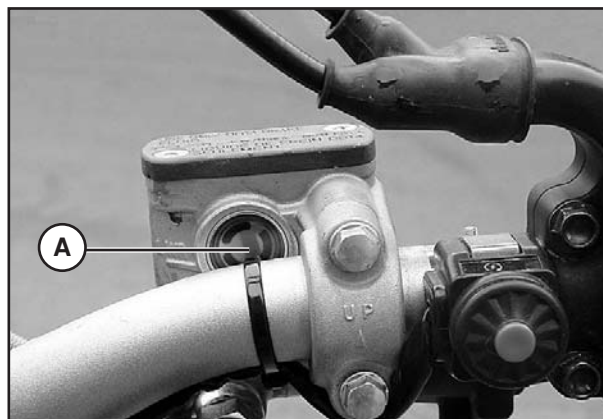
WARNING: Before actually starting the engine, actuate the kickstart several times to allow the oil to spread throughout the system.

Subsequently start the engine and check all screw fastenings and oil filter covers for signs of leakage. Finally check the engine oil level and top up as necessary.



Checking the front brake fluid level

Check the brake fluid level by looking through sight **A**. The level should never fall below the mark in the sight.

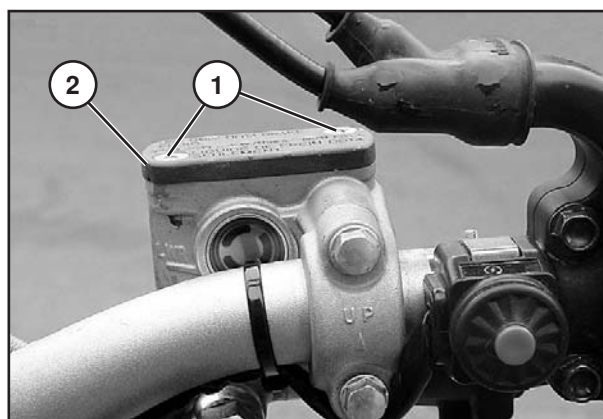


Restoring the front brake fluid level

To restore the brake fluid level, unscrew the two screws **1**, lift cap **2** and pour in fresh fluid (IP DOT 4) until the level is 5 mm below the upper rim of the reservoir.

IMPORTANT: We recommend using DOT 4 brake fluid. Should this fluid be unavailable, use DOT 5.1 instead. Do not on any account use DOT 5 brake fluid, a purple liquid with a base of silicone requiring special seals and tubes.

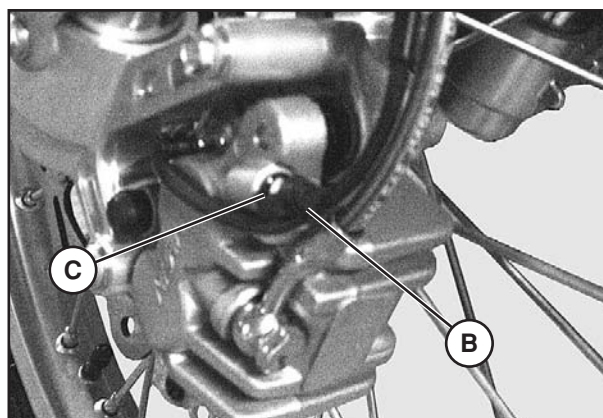
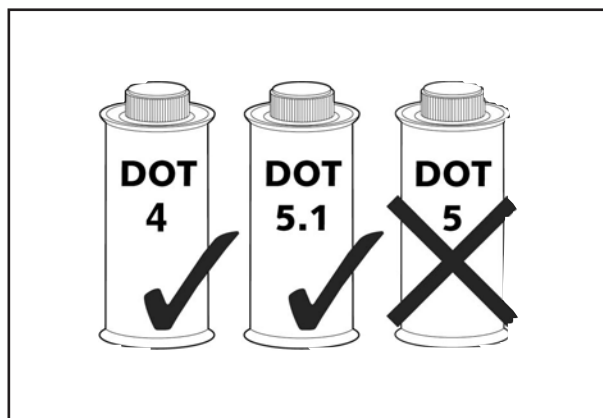
WARNING: Brake fluid is highly corrosive. Take care not to drip it onto the paintwork.



Bleeding the front brake

To bleed air from the front brake circuit, follow these steps:

- Remove rubber cap **B** from valve **C**.
- Open the brake fluid reservoir cap.
- Insert one end of a small tube into valve **C** and place the other end in a container.
- Unscrew valve **C** (while pulling the lever) and repeatedly pull the brake lever until the oil comes out in an uninterrupted flow with no air bubbles. During this operation it is important that the brake lever should never be released completely. Keep pouring brake fluid into the brake pump reservoir to compensate for the fluid that is flowing out.
- Tighten the valve and remove the tube.
- Replace the cap.
- Fit the reservoir cap on the brake pump.



Checking the rear brake fluid level

Ensure the brake fluid level by looking through sight **D**. The level should never fall below the mark in the sight.

Restoring the rear brake fluid level

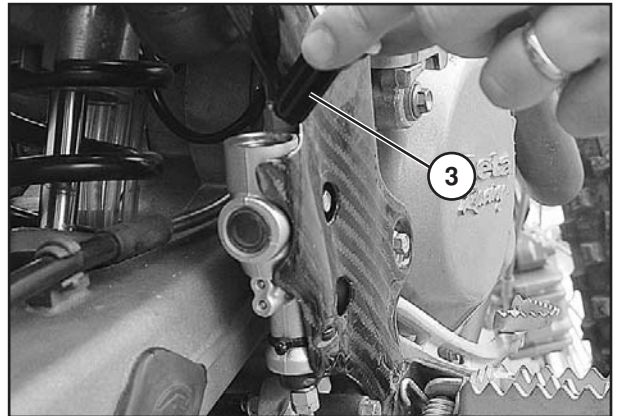
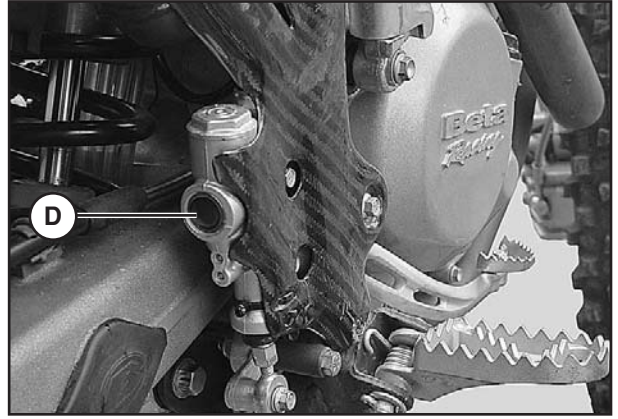
To restore the brake fluid level, unscrew cap **3** and pour in fresh fluid (IP DOT 4) until the level reaches the mark in sight **D**.



IMPORTANT: We recommend using DOT 4 brake fluid. Should this fluid be unavailable, use DOT 5.1 instead. Do not on any account use DOT 5 brake fluid, a purple liquid with a base of silicone, as it requires special seals and tubes.



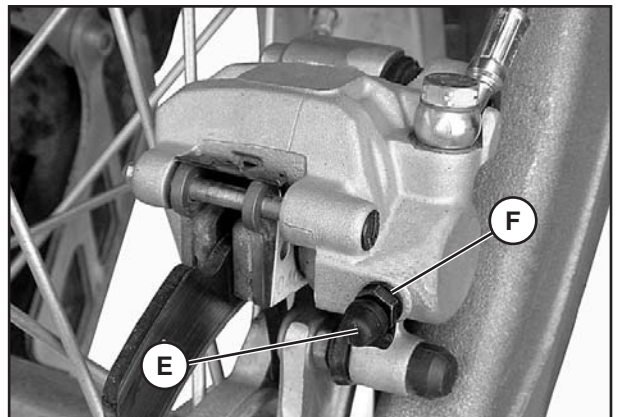
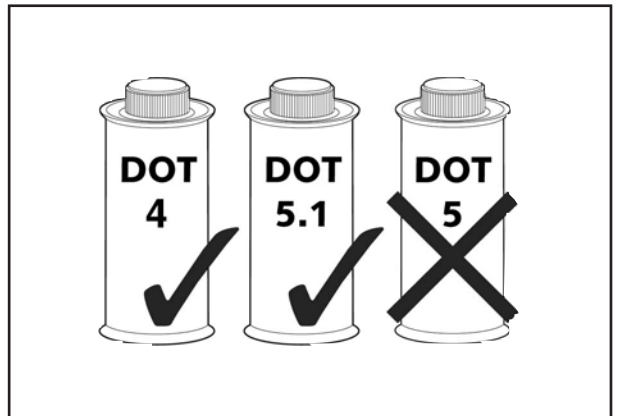
WARNING: Brake fluid is highly corrosive. Take care not to drip onto the paintwork.



Bleeding the rear brake

To bleed air from the rear brake circuit, follow these steps:

- Remove rubber cap **E** from valve **F**.
- Unscrew the brake fluid reservoir cap.
- Insert one end of a small tube into valve **F** and place the other end in a container.
- Unscrew valve **F** (while operating the pedal) and repeatedly actuate the brake pedal until the oil comes out in an uninterrupted flow with no air bubbles. During this operation it is important that the brake pedal should never be released completely. Keep pouring brake fluid into the brake pump reservoir to compensate for the fluid that is flowing out.
- Tighten the valve and remove the tube.
- Replace the cap.
- Fit the reservoir cap on the brake pump.




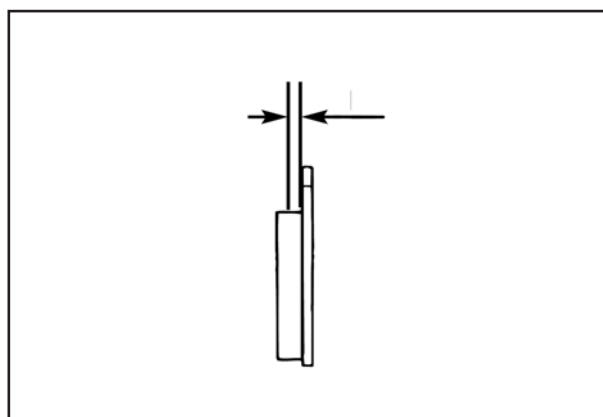
Checking the front brake pads

To check the wear of the front brake pads, visually inspect the caliper from below. The lining on the visible ends of the two brake pads should be at least 2 mm thick. Should the lining be thinner, immediately replace the brake pads.



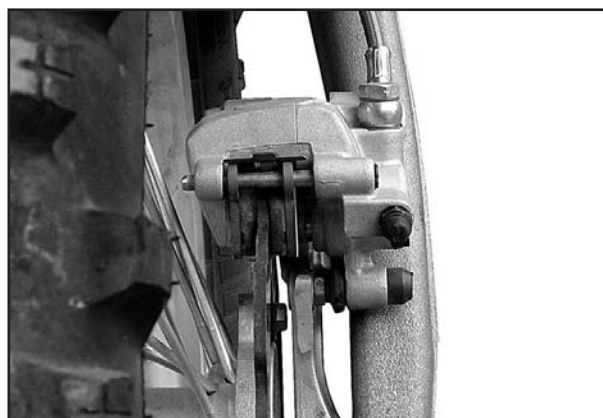
NOTE: Perform the check at the intervals specified in the *Maintenance* table in Chapter 3.

 **WARNING:** Any delay in the replacement of the brake pads can result in poor braking and lead to brake disc damage.




Checking the rear brake pads

To check the wear of the rear brake pads, visually inspect the caliper from behind. The lining on the visible ends of the two brake pads should be at least 2 mm thick. Should the lining be thinner, immediately replace the brake pads.



NOTE: Perform the check at the intervals specified in the *Maintenance* table in Chapter 3.

 **WARNING:** Any delay in the replacement of the brake pads can result in poor braking and lead to brake disc damage.

