

A3.01 Checking engine oil level and changing engine oil and filters

Checking the engine oil level



Check the level with the engine warm.

- A) Run the engine at idle until the oil reaches a temperature of 85 - 90 °C.
- B) Run the engine at 4500 rpm for 1 minute.
- C) Run the engine at idle for 2 minutes then check the oil level (without turning the engine off).



If 3 minutes elapse before checking the level (rather than 2 minutes, as specified above), repeat steps (B) and (C) before checking the oil level.

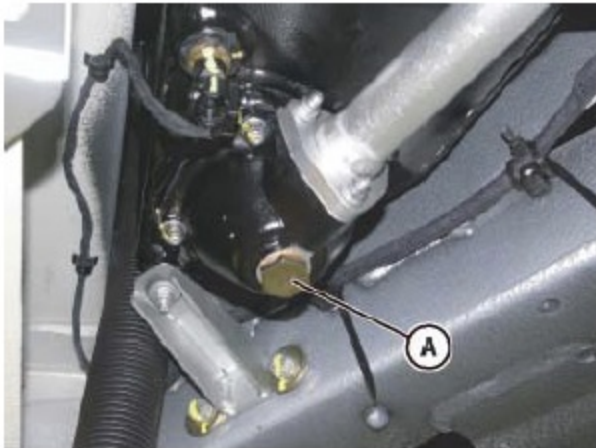
- D) Remove the dipstick (1) from the tank and check the level: the level must be between the **MIN** and **MAX** notches on the dipstick.
 • Difference between **MAX** - **MIN** = 1.5 l.
- E) If level is low, top up with specified oil. Oil level must be between the **MIN** and **MAX** markings on the dipstick.
- F) Run the engine at 4500 rpm for 1 minute.
- C) Run the engine at idle for 2 minutes then check the oil level (without turning the engine off).
- The first oil check was performed between the 2nd and 3rd minutes, therefore the second check must also be carried out at the same time interval.
 e.g. If the first check was carried out at approx. 2 min. 30 sec. the second check must also be performed at approx. 2 min. 30 sec.
- H) Remove the dipstick (1) from the tank and check the level: the level must be between the **MIN** and **MAX** notches on the dipstick.

Draining the engine lubrication system

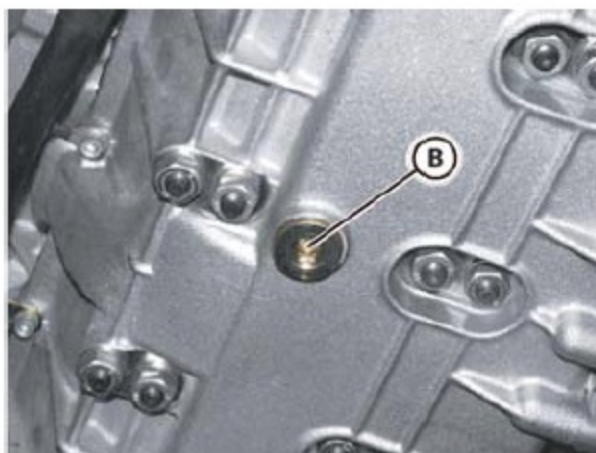


Pour the oil drained from the system into a container and seal it. DO NOT dispose of used oil in the environment.

- Remove the front section of the underfloor (M2.12).



- Unscrew the oil draining cap (A) on the tank.



- Unscrew the cap (B) on the crankcase sump and drain all the oil.

Replacing the engine oil filter



Tightening torque		Nm	Class
Oil filter - connector union	Filter	30 Nm	B

The oil filter must be replaced at every oil change.

The engine oil filter is mounted on the oil-water pump, on the right hand side of the engine.

- Remove the front section of the underfloor (M2.12).
- Drain the engine lubrication system (A3.01).



- Fit the tool (95971560) on the filter (A) using the wrench (USAG D156).
- To illustrate the operation more clearly, the photo was taken without the exhaust branching.
- Turning counterclockwise (as indicated by the arrow), unscrew the engine oil filter (A).
- Remove the filter between the chassis bar and the clutch housing.


- Before refitting the new filter, clean the mating surface on the oil pump.



- Clean the mating surface of the oil filter cartridge.
- Check that the external body of the oil filter cartridge is intact.
- Ensure that the rubber filter cartridge gasket (1) seated perfectly, with the round part visible, and that it has no nicks and/or cracks.
- Lubricate the rubber filter cartridge gasket (1) with a thin film of engine oil.




- Fit the new oil filter cartridge (A) using the tool (95971560) and the torque wrench (USAG D156).
- To illustrate the operation more clearly, the photo was taken without the exhaust branching.
- Turning clockwise (as indicated by the arrow), screw in the engine oil filter (A).
- Tighten the engine oil filter (A).

		
Tightening torque	Nm	Class
Filter	30 Nm	B

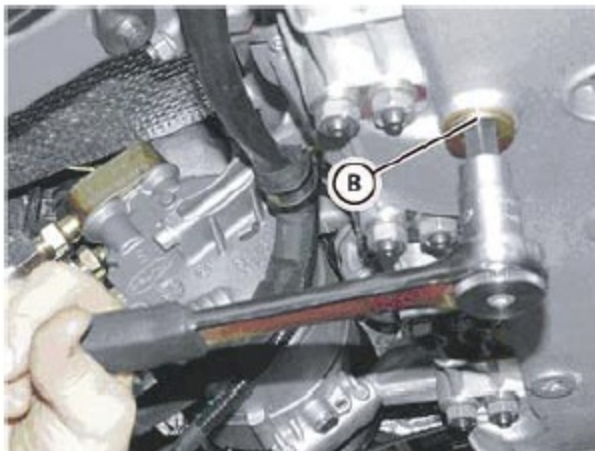
- Fill the engine lubrication system (A3.01).
- Refit the front flat undertray section (M2.12).

Filling the engine lubrication system


		
Tightening torque	Nm	Class
22 mm threaded cap for oil orifices on crankcase	Threaded cap	60 Nm
		B



- Screw the lower cap (A) onto the engine oil tank.



- Always replace the cap seal (B) with a new one
- Tighten the cap (B) on the oil sump.


		
Tightening torque	Nm	Class
Threaded cap	60 Nm	B




- Unscrew the cap (C) on the oil tank and remove.

- Fill the system with 11.7 l of the specified oil.
- The quantity of oil required may vary slightly relative to the amount indicated for filling the tank when empty; this is due to unavoidable pooling within the system.
- Refill slowly and do not exceed the reference notches on the dipstick.

- Fully tighten the oil filler cap on the tank.
- Start the engine and leave running at idle speed to reach a temperature of 95°C (approx. 10 minutes after starting).

 PAO additive must be added to the lubrication circuit at each engine oil change.

- Unscrew the oil tank cap and add, pouring slowly and in small quantities at a time, 800 g of PAO code No. 232571 additive to the tank (filling process should take about 10 minutes to complete).
- Check that there are no oil leaks from the draining caps and the filter cartridge.
- Check the engine oil level ( A3.01).
- Fully tighten the oil filler cap on the tank.