

Important!

This procedure for measuring oil consumption may not be used for the S 85 due to the oil pan design.

Many complaints about oil consumption are caused by the oil level being measured using the wrong method.

The oil consumption should be measured after a distance of 7,500 km at the earliest, as the process of running in the engine will not have been essentially completed and the engine oil consumption stabilised until this distance has been covered.

Engine oil consumption that may occur in an engine can only be determined by the customer on the basis of the refilled engine oil quantity. As soon as the engine oil level falls below the MAX mark on the dipstick, many customers top up the engine oil without paying attention to a number of basic rules, such as the vehicle must be standing on level ground, a certain period of time must be left to allow the oil to flow back to the sump. In such cases, the available container sizes (e. g. 1-litre can) make it easy to top up above the MAX mark. Too much added engine oil is damaging to the engine and is consumed more quickly due to the splash effect.

It is therefore recommended to allow the engine oil level to the MIN mark and only then to add the required engine oil quantity. The distance between the marks is equivalent to approx. 1.0 to 1.5 litres.

The procedure for checking the oil level is given in the Owner's Handbook for the vehicle concerned.

The service delegates will only deal with claims made under warranty if exact measurements by weighing are available (see below).

Measuring oil consumption by weighing:

To assess a warranty or goodwill claim, only the following oil consumption measurement method by weighing can be accepted (this must have been carried out by a BMW contractual partner):

Note:

The engine must not leak any oil.

Engine oil may only be drained off when the engine is at its normal operating temperature. The engine oil temperature must be at least 95 °C and read off on the diagnosis system.

Preparation:

1. Eliminate any leaks and traces of oil before measuring the engine oil consumption.
2. Allow the engine to run at idling speed for 5 minutes, during which the engine oil temperature must not

drop below 90 °C.

3. Unscrew the main flow oil filter cover (the engine oil will flow back into the oil sump from the oil filter housing).

Tightening specifications: O-ring slightly oiled, 1. initial tightening 30 Nm, 2. release oil filter cover 180°, 3. final torque 40 Nm.

4. Unscrew the oil drain plug.

Tightening specifications: Replace sealing ring, tighten 40 Nm.

5. Allow the engine oil to drain off for 15 minutes.

If necessary, remove the fan/fan cowl.

6. Turn the engine once through 360 degrees by the vibration damper.

7. Allow the engine oil to drain off for 15 minutes.

8. Retighten the primary flow oil filter.

9. Pour in the specified engine oil quantity for the engine type in question (with filter change).

10. Drive the vehicle for a distance of at least 1,000 km/500 miles. Increasing the mileage will produce significantly better measuring results.

Measurement procedure:

11. Check the engine for leaks; if the engine is not tight, the examination will not be meaningful.

12. Prepare the measuring container to be able to capture the oil quantity.

13. Allow the engine to run at idling speed for 5 minutes, during which the engine oil temperature must not drop below 90 °C.

14. Unscrew the main flow oil filter cover (the engine oil will flow back into the oil sump from the oil filter housing).

Tightening specifications: O-ring slightly oiled, 1. initial tightening 30 Nm, 2. release oil filter cover 180°, 3. final torque 40 Nm.

15. Unscrew the oil drain plug.

Tightening specifications: Replace sealing ring, tighten 40 Nm.

16. Allow the engine oil to drain off for 15 minutes.

If necessary, remove the fan/fan cowl.

17. Turn the engine once through 360 degrees by the vibration damper.
18. Allow the engine oil to drain off for 15 minutes.
19. Weight the **amount of drained engine oil**. (Engine oil has a density of about 0.86 g/cm³ at room temperature.)

Amount of oil added (cm³) - amount of oil drained off (g): 0.86 g/cm³

Engine oil consumption = $\frac{\text{Amount of oil added (cm}^3\text{) - amount of oil drained off (g)}}{\text{mileage reading when draining - mileage reading when adding engine oil}}$

Example:

Volume of oil added at mileage reading 44,800: 4.000 cm³

Weight of oil added at mileage reading 45,900: 2.700 g

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4.000 cm³ - 2.700 g : 0.86 g/cm³

Engine oil consumption = $\frac{4.000 \text{ cm}^3 - 2.700 \text{ g} : 0.86 \text{ g/cm}^3}{45,900 \text{ km} - 44,800 \text{ km}} = 0.78 \text{ cm}^3/\text{km}$

0.78 cm³/km = 0.78 l/1,000 km

Test certificate for engine oil consumption:

Vehicle data: _____

BMW (type): _____

Chassis number: _____

Added oil quantity (in ccm): _____ at kilometre reading: _____
ccm

less drained off oil quantity (in g) : 0.86 _____ at kilometre reading: _____

(g/ccm)

ccm

=> oil consumption:

_____ ccm

=> mileage: _____ km

Oil consumption [l/1000 km] =

_____ [ccm] oil consumption _____ [km] mileage

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Oil consumption after balancing out: _____ l/1000 km

Oil grade: _____

Oil grade: _____

Viscosity: _____

Cause of damage: _____

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Dealer address_____
Signature