

## Instructions for changing the motor oil



Selection of the right motor oil is influenced by the operating conditions as well as the following criteria, which are important to take into account:

Right viscosity: (SAE classification) is selected according to the operating conditions, i.e. the outside temperature and the manufacturer's recommendations. The engine must start even in extremely low temperatures, and the oil must also reliably lubricate the engine in high temperatures and under heavy load.

Right quality: (API, ACEA and/or vehicle manufacturer's classifications) according to the manufacturer's requirements. The oil quality has an impact on, e.g., the oil change periods. The properties of high-standard motor oil last longer and enable long intervals between oil changes, recommended by the manufacturer. The vehicle manufacturer gives the minimum requirements and the viscosity classifications for the motor oil in the vehicle manual.

When selecting transmission oil, the right SAE classification and quality must be taken into account. Transmission oil is selected according to the operating conditions and the manufacturer's requirements. The quality requirements must always be checked in the owner's manual, at an authorised repair shop or from the oil company's recommendations. The quality requirements for manual transmission oil varies per make of car and may be API GL-1, GL-4, GL-5, automatic transmission oil, motor oil or the manufacturer's special oil. The transmission of new vehicles does not usually require an oil change but is of the so-called Fill for Life type.

When selecting differential oil, quality requirements must also be checked in addition to the SAE classification. Rear-wheel driven vehicles have separate hypoid differential oil, in which case the oil quality requirement is almost always API GL-5. If the differential oil is equipped with a fraction-driven differential gear lock, the oil must contain the necessary (LS-Limited Slip) additives.

- Good oxidation and heat resistance reduces carbon deposit formation, which, in turn, reduces knocking and after-run.
- A long service life enables the utilization of the maximum change intervals recommended by the manufacturers.
- Excellent viscosity/temperature properties and shear stability guarantee better wear protection.
- Good flow in low temperatures (pour point up to -60°C) and a high viscosity index ensure good functioning also in cold conditions.
- Low volatility reduces oil consumption.
- Good friction properties enable fuel savings and power increase.

Factors affecting on the selection of a lubricant:

Synthetic oils are more suitable for modern vehicles with a catalytic converter.

Synthetic or mineral oil?

Although a great number of various additives are used in modern lubricants to boost the lubrication properties of the complete product, the base oils used are significant in the performance of the product.