Determination of Oil Change Interval for Diesel Engines According to the Quantity of Non-Ferrous Metals

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The article deals with the determination of the life of the lubricant based on the determination of the degree of wear or deterioration of the engine oil by wear particles. Non-ferrous particulates of a large diesel engine and their determination based on laboratory tribotechnical diagnostic tests are characteristic for the purposes of article. The combination of Atomic Absorption Spectrometry and Thin Layer Chromatography is used for measurements. The statistical method of discriminatory analysis is used to evaluate the article. The lifetime of the lubricant is thus determined according to objectively determined criteria realized by normalized and customized analyzes of the lubricant at a high degree of accuracy. The proposed and verified method demonstrates the degree of achievement of individual lubricant wear limits of non-ferrous metals in a large compression-ignition engine. The clear advantage of the proposed method is the precise determination of the optimal oil change interval and the possibility of early detection of a vehicle defect.

Keywords: Engine Oil, Wear Particles, Nomogram the Wear, Discriminant Analysis, Atomic Absorption Spectrometry

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