

عنوان مقاله:

The Analysis of Wheel Loader Diesel Engine Crankshaft Failure

محل انتشار:

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خلاصه مقاله:

The main purpose of this study is to review the cause for the crankshaft failure of six-cylinder diesel engine of a wheel loader after passing a short period of time. The failure had occurred after 4800 hours of in-service in the fifth crankpin of the crankshaft. Hardness and tensile tests were carried out to study their mechanical properties. Spectrophotometer machine was used to examine the chemical composition of the crankshaft material. To examine the material microstructure, its defects and the morphology of fracture surface, optical microscopes (OM) and scanning electronic microscopes (SEM) equipped with energy dispersive spectrometry (EDS) were used. The morphology of fracture surface showed that the fracture is of the smooth type and has occurred due to the fatigue. Main origin of the fatigue cracks appeared on the surface of the crankpin might be created by the existence of oil impurities, the impurities on the surface of the crankpin, inappropriate machining on the surface of the crankpin or severe wear and pitting from insufficient lubricating.

کلمات کلیدی:

Automotive engineering, Wheel loader, Crankshaft failure, Fatigue crack, Failure cause

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