THE INFLUENCE OF ENGINE OVERLOAD AT MAIN COMPONENTS OF DIESEL ENGINE USING BIOSOLAR FUEL

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Abstract
In an operational, diesel engine tries to avoid the overload condition. This condition cause an engine overheat which decreases the time between overhaul from the diesel engine so that the maintenance cost will increase. There are some regulations which allow the diesel engine operation in an overload condition should be only permitted for one hour. This research attempts to know the influence of engine overload for one hour operation toward the main components of diesel engine. The testing object of this research was taken place to the four stroke single cylinder of diesel engine with high RPM. A generator of 110% diesel power was used as a load for an hour. The result of an hour testing shows that the main components such as : piston ring is still in the permitted standard gap between 0,3 – 0,5 mm, as well as the gap of piston and cylinder liner between 0,1 – 0,13 mm. The result of compression pressure measurement after one hour overload testing shows there is no decreasing of pressure of 16 kg/cm². In the second overload testing for 2 hours 10 minutes, the diesel engine performance is decreasing, it shown by the decreasing of the power accompanied by thicked black exhaust gas. The inspection shows that diesel engine’s main component, which receives more or less 2 hours load is no longer in the permitted standart of 0,55 mm for piston ring and 0,14 mm for the gap between piston and cylinder liner.

Keywords : Overload, Biosolar, Main Component of Diesel Engine
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