

ANALYSIS OF THE USE OF SHELL AND TUBE HEAT EXCHANGER FUEL PREHEATER ON VISCOSITY AND FUEL CONSUMPTION

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ABSTRACT

This study aims to analyze the addition of a shell and tube type heat exchanger fuel preheater to be a reference for reducing several percent of the use of endangered fossil fuels. Heat exchangers are heat exchangers that have the potential to be used as an effort to save fuel oil. This type of research uses experimental research. The object of this study is the viscosity value and fuel consumption using pertamax fuel with the addition of a heat exchanger. The results of the study are test of viscosity values and fuel consumption carried out at each variation of fuel temperature of 50°C with a fuel consumption value of 0.7 ml/minute at 1000 RPM, 3.3 ml/minute at 2000 RPM, 3.9 ml/minute at 3000 RPM, and 4.3 ml/minute at 4000 RPM. The lowest fuel viscosity value is at a fuel temperature of 50°C with a viscosity value of 0.457 cP.

Keywords : *shell and tube type heat exchanger, viscosity value, fuel consumption*