

## **A STUDY AND ANALYSIS OF RELIABILITY ON INJECTOR NOZZLE OF DIESEL ENGINE**

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### **Abstract**

This paper proposes a procedure for Reliability assessment of repairable equipment, an injector nozzle used for fuel injection in trucks. Fuel injector nozzle as an important component of an engine system and the amount of nozzle opening pressure drop is considered in relation to preventive maintenance actions carried out for fuel economy maintenance, hydrocarbon emissions. The off car fuel injector delivery pressure drop and the periodicity have been used as data for reliability analysis using parametric and non-parametric techniques. The test procedures use statistical models 'fitted' to experimental data. For the case of a diesel injector nozzle, the Weibull distribution is shown to produce superior estimates. This paper also discusses how to use the proposed methodology for decision-making about fuel injector service, changes and its performance.

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**Keywords:** Injector nozzle opening pressure, Parameter estimation, Reliability, Weibull distribution.