A COMPREHENSIVE STUDY ON CAR ENGINES

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ABSTRACT

Over the recent years, there has been an immediate demand on producing low and zero emission car. In order to accomplish this, other fuel sources such as solar and electric powered vehicles have been the main research focus of many car makers to replace the use of hydrocarbons. Now, most of their efforts are a reality by the introduction of electric car, hybrid car and drive-by-wire car. Some can already be seen on road, and more advance model is yet to come. However, the very basic workings of a vehicle remains largely the same. To understand this, I had to start from the very basic car engine construction and by dissembling Proton Saga 4G13 engine model. It is a four cylinder engine that uses gasoline as its fuel. From there, I familiarize myself with each parts, studied each function and the process flow. Chapter one is mainly about the background of the engine, reasons of choosing that particular model as a datum, what I hope to achieve from this study and how I was going to achieve it. Chapter two is a continuation of the previous chapter focus is on other car systems that complement the engine operations, the chemical processes and the corporate profile of Proton. In chapter three, the classification of engines is discussed in details together with types of IC engines. The following chapter four, the function, work principle and construction of each part and other parts that make up the engine is further explained. Due to time constraint, chapter five will only touch on certain terminologies that is normally encountered when purchasing a car, oil and filling the fuel tank . Chapter six is step by step account of the overhauling project. In discussion, the categories of 4G13 engine model is stated, factors that determines an engine design and my recommendation of increasing the performance of 4G13 engine. While in conclusion, the engine function and process is explained as a whole and the present scenario of IC engines.

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