MODIFICATION OF A CONVENTIONAL WATER - COOLED ENGINE TO AN AIR - COOLED ONE

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MODIFICATION OF A CONVENTIONAL WATER – COOLED ENGINE TO AN AIR-COOLED ONE

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SUMMARY

The title of the project is "Modification of a conventional water-cooled engine to an air – cooled one".

The objectives of this project are to measure the fuel consumption and the operating temperature, of water and oil of a water cooled engine at different revolutions.

Then the belt drives must be removed from the water pump and fun. The engine must be modified such that cold air can be forced into the normal water passages to cool the engine.

The fuel consumption, the oil temperature and the inlet and outlet temperature of the air must be measured at different revolutions.

After that the effectiveness of this air cooling system should be discussed and suggestions for further work should be made.

This book is going to examine the main types of cooling systems that already exist in chapter 2.

In chapter 3 the engine specifications the mechanical losses and fan outputs are examined. In that chapter the engine characteristics of the project are shown and various losses related to the energy produced from the fuels are determined.

In chapter 4 the method of cooling that was chosen is analysed. The sequence of events, the procedure of manufacturing and preparing the engine to accept the system and the methods used is described.

Results presentation and discussing takes place in chapter 5. Also the calculations needed in order to support the practical approach are stated. Alternative solutions and suggestions for improvements are stated.

Chapter 6 deals with the conclusions and recommendations. The benefits of the project to the society and the author are mentioned.
The method chosed for the cooling of an engine-which is normally water cooled and was designed in 1959 from Alex Isigones (Morris Mini 850 cc) which is an engine that tend to have high temperature indications – is an internal air cooled system that is going to be examined if there will be decrease in fuel consumption, increase in mechanical efficiency and also the engine temperature cylinder head temperature, oil temperature.

This project also includes a practical determination of these objectives (actually is based on the practical measurement).

The steps proceeded are shown in detail as well as the machinery used to produce various components such as air inlet manifold and exhaust manifolds to suit a Toyota Glanza turbocharger Kit.

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