H.T.I.

MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

RETROFITTING OF A GASOLINE ENGINE THAT RUNS ON PURE ALCOHOL

M/945

LUCAS KOUNNIS

JUNE 2002

HIGHER TECHNICAL INSTITUTE

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RETROFITTING OF A GASOLINE ENGINE THAT RUNS ON PURE ALCOHOL FUEL

by

Lucas Kounnis

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INTRODUCTION

The idea to develop an engine to run on alcohol fuel in our country, Cyprus, has moved my interest when I learned that alcohol industries in Cyprus have thousands of tons of alcohol waste stored in warehouses that they can't use it, and also can't through it away.

So the idea of using this alcohol waste as a fuel will not only solve the problem of storing it but will also help to solve the problem of depending on others, to keep providing us with fuel. Our country is using fuel to produce electricity, for transportation means, everything depends on fuel. Imagine if someday the deposits of fuel are no longer available. What will happen to all of us?

Alcohol if a similar fuel to gasoline, but converting the engine to run on alcohol it's not simple. It's important to consider when modifying the engine to obtain fuel economy, drivability, while engine wear and exhaust emissions are minimized.

Conversion of the engine, as described below, involves modifying the carburetor, ignition system, and raising the compression ratio. For experimental reasons pure alcohol was used, instead of waste alcohol, to run the engine of my car.