

IMPROVEMENT OF CARBURATED TYPE ENGINE TRAINER
WITH AUTO LPG CONVERSION KIT

Design Project

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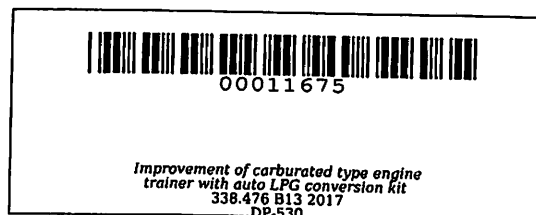
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**IMPROVEMENT OF CARBURATED TYPE ENGINE TRAINER
WITH AUTO LPG CONVERSION KIT**

Undergraduate Design Project
Submitted to the Faculty of the
College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfillment
of the requirements for the degree
Bachelor of Industrial Technology
Major in Automotive Technology



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ABSTRACT

BACOS, ROGELIO JR., D. and TERO, PAUL JOHN C., Improvement of Carbureted Type Engine Trainer with Auto LPG Conversion Kit. Undergraduate Design Project. Bachelor in Industrial Technology, major in Automotive Technology. Cavite State University, Indang, Cavite. May 2017. Adviser: Mr. Danielito R. Escaño.

Auto LPG carbureted type engine is popular in the automotive industry nowadays. A fundamental knowledge of the carbureted type engine must help to develop and to upgrade its components into a new one. Auto LPG or commonly known as Automotive Liquefied Petroleum Gas is now used as an alternative for the internal combustion of the engine. The design project served as a simulator designed for automotive students to effectively understand and expeditiously learn about the modernization of a technology that arise in the country.

The development and improvement of carbureted type engine trainer to Auto LPG was constructed using the following methods: canvassing and purchasing; reconditioning the engine; installation of the components; checking the project design; final testing and evaluation. The existing design project was added using an angular bar that serve as frame for the LPG tank and gasoline tank. The LPG tank together with the battery was mounted in 42" x 6" x 1/4" while the gasoline tank which was made up of fabricated Freon tank was mounted in 30" x 8" x 1/4". The acrylic glass which was mounted in front of the engine was drilled for the indicators to be installed but same dimension was used. The project focused mainly on the observation of the conversion of the existing engine, its system, familiarization, and basic troubleshooting. Different activities were provided to allow students to easily familiarize and to easily capture the systems main purpose. The

existing engine was rewired to properly run the engine in its good condition. All needed information regarding to the conversion has a big impact to the success of the project.

The project proved to be more effective in providing knowledge about the conversion of Auto LPG, its principles and components to automotive students. It will open new opportunities for students in enhancing their skills in converting and by conducting actual activities provided on the trainer and familiarizing basic components of the system. The project development had an initial cost of P 31,328.00.

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INTRODUCTION

The Toyota 4AF engines are the family of in-line for internal combustion engine that is produced by Toyota Motor Corporation. The carbureted type engine is a device that blends air and fuel for the internal combustion engine. Carburetor allows air and fuel into the engine through the valves, mixing them together in the different amounts to suit a wide range of different driving conditions. The Liquefied Petroleum Gas or LPG is a hydrocarbon fuel and a mixture of propane and butane. As modern technology arises, Auto LPG or commonly known as Autogas is now used as an alternative for the internal combustion of the engine, to lessen the exhaust emission that destroys our environment.

Auto LPG carbureted type engine is popular in the automotive industry nowadays. A fundamental knowledge of the carbureted type engine must help to develop and to upgrade its components into a new one. An Auto LPG carbureted type engine also needs the proper installation of the components. AutoGas is the common name for Liquefied