FINAL YEAR PROJECT REPORT

DIPLOMA IN MECHANICAL ENGINEERING

FACULTY OF MECHANICAL ENGINEERING
MARA UNIVERSITY OF TECHNOLOGY
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DEVELOPMENT OF CYCLOZOS™-BASED CATALYTIC CONVERTER FOR MOTORCYCLES

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ABSTRACT

The project work is to design and fabricate Cyclozos Based Catalytic Converter and install it to the KRISS Modenas 110 cc motorcycles. Through this, we have utilized the capabilities of CAD software, which involves the design of the component from simple two-dimensional design systems to sophisticated, integrated three-dimensional design. Besides that we applied all the skills of fabrication include joining, welding, bending, machining, and etc processes to produce this part.

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1.0 INTRODUCTION

There are millions of cars and motorcycles on the road in the world, and each one is potentially a source of air pollution. Especially in large cities, the amount of pollution that all the vehicles produce together can create big problems.

To solve those problems, cities, states and the federal government create clean-air laws, and many laws have been enacted that restrict the amount of pollution that vehicles can produce. To keep up with these laws, automakers have made many refinements to the engines and fuel systems. To help reduce the emissions further, they have developed an interesting device called a catalytic converter, which treats the exhaust before it leaves the vehicle and removes a lot of the pollution.

The catalytic converter does a great job at reducing the pollution, but it can still be improved substantially. One of its biggest shortcomings is that it only works at a fairly high temperature. When you start your engine cold, the catalytic converter does almost nothing to reduce the pollution in your exhaust.

One simple solution to this problem is to move the catalytic converter closer to the engine. This means that hotter exhaust gases reach the converter and it heats up faster, but this may also reduce the life of the converter by exposing it to extremely high temperatures. Preheating the catalytic converter is a good way to reduce emissions. The easiest way to preheat the converter is to use electric resistance heaters. Unfortunately, the lower voltage of the electrical systems don't provide enough energy or power to heat the catalytic converter fast enough. Most