UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATE A GO-KART MOTOR FIXING HOLDER AND GEARING SYSTEM

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ABSTRACT

This study focuses on the design and analysis of motor fixing holder and gearing systems for small-scale vehicles, which is s go-kart. The primary objective is to achieve an optimal balance between power output, torque, and speed, ensuring both performance and efficiency. The research encompasses the selection of appropriate motors, whether gasoline or electric, and the integration of gearing systems, including centrifugal clutches and torque converters. Through theoretical analysis and practical experimentation, the project evaluates various gear ratios to determine their impact on acceleration, top speed, and overall handling. This investigation also considers the effects of weight distribution which is related to power-to weight ratio and safety features on the system's performance. The findings aim to provide guidelines for designing efficient and reliable motor fixing holder and gearing systems, enhancing the understanding of their applications in recreational and competitive go-kart. Ultimately, this study contributes to the advancement of vehicular engineering by offering insights into the interplay between mechanical components and dynamic performance.

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INTRODUCTION

1.1 Background of Study

Go-kart is a type of small sport car, close wheeled car, open wheeled car or quadracycle. Go-karts come in all shapes and forms, from non-motorized models to high-performance racing karts. Karting is a type of racing in which a compact four-wheel unit called a go-kart is used. The first go-kart was created by Art Ingels in Los Angeles in 1956. [1]

Electric go-kart is a simple four-wheeled, small engine, single seated racing car used mainly in United States. An electric go-kart is a type of go-kart powered by electric motors as opposed to traditional petrol engine. Electric motors are electromechanical machines that convert electric energy into mechanical energy. The power is delivered to the load by converting electrical energy per the following laws of science in a motor. On electric go-karts, the safety of the batteries largely depends on the type of motor and batteries.

As of 2022, electric go-karts are mostly used for rental go-karts for recreational usage. For serious kart racing, traditional 2-stroke petrol engines are mostly used, but development of high- performance electric karts is taking place and races are already being held with electric go-karts.

The aim of this study are to design a prototype of go-kart motor fixing holder and gearing system, to design a holder for the motor to make sure it properly fixes to the frame and to fabricate a go-kart gearing system based on the design prototype.