

ELECTRIC REVERSED TRIKE

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ABSTRACT

The title of the project is electric reversed trike. The electric reversed trike, also known as electric reversed tricycle, is a vehicle powered by electricity. The vehicle has an electrical DC motor, which is a 24V DC truck wiper motor and it draws its power from the batteries, which are the motorcycle battery. The stop start of the motor is controlled by the switch, also known as the pedal. To stop the vehicle, the driver has to open the switch and step on the brake pedal to halt the motion of the vehicle.

The body or structure of the vehicle is made of rectangular mild steel tube. The dimension of the mild steel tube is 2.5cm x 5cm (1x2 inches). The whole body of the vehicle is welded together by using arc welding or MIG welding. The whole structure without the parts installed weighs around 6 to 7 kg, which is very light.

The wheels of the vehicle are bicycle wheels. There are a total of three wheels, two wheels at the front, which are the steering wheels and one at the back which the driving or transmission wheel. The gearing of the vehicle utilizes the motorcycle sprockets. Two sprockets are used where one on the motor shaft and one on the driving wheel. The motor shaft sprocket has 12 teeth while the driving sprocket has 47 teeth.

To determine the required torque and force of the vehicle, Newton's law of motion equations are used to calculate them. There are few factors need to be considered in the calculation of required motor torque and power, which are the frictional force cause by the weight of the vehicle and driver and the gear ratio of the sprockets.

The vehicle has its advantages and also disadvantages. The advantage of the vehicle is that it utilizes green energy and does not release greenhouse gases to the environment that causes global warming. Besides, it is convenient to use because it can act as a transport. The disadvantages of the vehicle is that it moves very slowly and the usage time of the batteries is low, which the batteries will be fully discharged within half an hour.