

Suitcase E-Trike

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Abstract: In this paper, an attempt has been made to review the Suitcase E-Trike. Suitcase E-Trike is an electric mini trike used for short Commute. It can be lifted and carried as a Suit-case by anyone. For calculation of load, stress and forces acting on various part of chassis of trike we learned the fundamentals of strength of materials. Type of motor we used in E-trike is the same motor which is used in electric scooters due to its small size and load carrying capacity. The innovation in this project is to produce a compact light weight and eco-friendly trike which can be used for short commute.

I. INTRODUCTION

As the population in the world is increasing there is also increase in the demand of automobiles. Due to this increasing number of automobiles there will be scarcity of space for driving and also for parking. The problems faced because of this increasing numbers are such as traffic jam, air pollution etc.

The suitcase e-trike is an electric trike which can be used as a mean of transport for short commute. The size of the suitcase e-trike is approx.5 times smaller than normal car.as the suitcase e-trike is compact it can be used in airport, shopping malls, industries, big campus of colleges etc. for covering short distances.

II. SUMMARY

The idea of suitcase car come from daily life problems as it's not practical to use large vehicles for short commutes because of the scarcity of parking spaces and also the increase in air and noise pollution. After searching thoroughly on internet and reference books we came across some previous projects that were related to our project problem definition.

III. LITERATURE

Suitcase car was originally designed and built in 1991 as a part of design competition held at Mazda's Engineer department. It was based on a simple idea that instead of waiting in a line for bus or taxi and comes with functional brake lights and turn signals. This vehicle was rebuilt in a black suitcase in 1994.

The speed of this 2 stroke engine under this suitcase car was 27miles/hour and it can run for 2 hours with the fully filled fuel tank. But because of use of 2 stroke engine it can cause noise and air pollution.

In order to overcome the disadvantages mentioned above about the suitcase car in the present invention we used the setup of battery and motor instead of a 2 stroke engine. Portable trike can be carried as a suitcase anywhere and if necessary can be assemble and drive it. In this e-trike we use three wheels out of which the power is given to the two rear wheels through a chain and shaft.

Whenever there is no use of this trike we can disassemble and keep this as a suitcase in our residence. From the calculations the suitcase e-trike can carry weight of 70-80 kg. Maximum speed of this trike can be 30-35 km/hr.

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