

# DESIGN OF PORTABLE THREE WHEELER

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**Abstract:** In India, millions of cars are presently running on road. This might create several problems like traffic jams, parking problems etc. As population growth of India is tremendously large, the demand of individual person is also in-creased like they want their car cheap in cost and small in size. To overcome the problems of Traffic Jam, we developed the portable three wheeler. In this paper we discussed the design of the portable three wheeler.in this paper we disussed the design and anlysisi of the chassis and driving shaft.

**Keywords:** portable, suitcase

## I INTRODUCTION

India is developing country,now aPopulation of India is increasing day by day. This causes increase of demand of car, bikes..the use of cars bikes ,vehicle creates traffic problem, parking problem. The economy status of public is increased so now a days around 60% family have at least one car So demand of current scenario is to developed the compact ,size automobile. To minimize the traffic and mainly parking problem, vital need to developed the compact automobile or foldable car.

To overcome the problem we designed and developed the portable three wheeler which is foldable. It is basically portable vehicle which is enclosed in suitcase .

## II. SUITCASE CAR



The above is the picture of portable three wheeler. It is the vehicle which is enclosed inside the suitcase. Portable three wheeler is formed by attaching the various part present in suitcase. The various parts like wheels, hand seat, fuel tank are detachable type. The total 5 to 6 minutes require converting the suitcase into portable three wheeler.

It is car in closed in suitcase of dimension 780mmx560mmx320mm .It is powered by an 80cc two stroke engine, the vehicle holds enough fuel for around one hours of driving at speeds up to 25 km/hr. It is built around a small steel chassis and it steered by handlebar .The weight of current model is around 35 kg.the performance parameter is mileage of 50km/lit . the maximum speed obtain is 25kmh

It consist following main parts

- Chassis

- .transmission system
- .engine
- Braking system
- Suitcase.

### III.ADVANTAGES

- Problem of parking is eliminated.
- It can be used in remote villages, metro cities like Mumbai, Delhi where parking and traffic is a main problem.
- Handicapped person can also use it.

### IV.LIMITATION

- Present model is little bit heavier.
- Less ground clearance.

### V. CHASSIS

The important part of the portable three wheeler is chassis because it carries whole load of the vehicle and driver It consist two part rear chassis and front chassis the front chassis is made up of hollow square bar . front chassis carries the retractable handle which is mounted by providing the arrangement on it. The rear chassis is also made up of hollow square bar which is joined to the suitcase. The engine is mounted on one side of the chassis by nut bolt arrangement the driving shaft rest at bearing which is rest on bottom of the chassis .The modelling and FEA analysis of the chassis is shownas follows.

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3d name: Simulation/Static Study  
Type: Deformed Shape Deformation  
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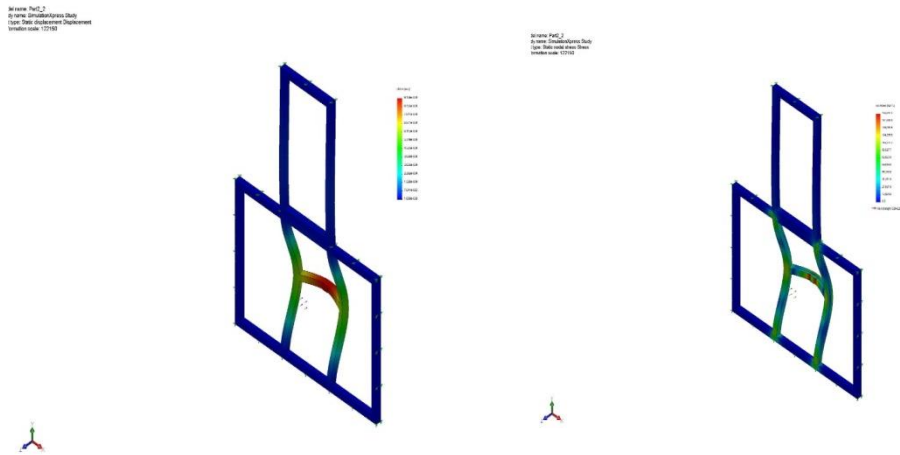


fig.3

3d name: Pkg2\_2  
3d name: Simulation/Static Study  
Type: Factor of Safety Factor of Safety  
Color: Blue (1) (2/2/15)



fig.4



## VI DRIVING SHAFT

the driving shaft is made up hollow circular shaft of steel material. Hollow shaft leads to high torque transmitting capacity and weight optimization. The shaft carries driven sprocket and brake. The design of shaft is done as per ASME CODE AND FEA analysis is also done.

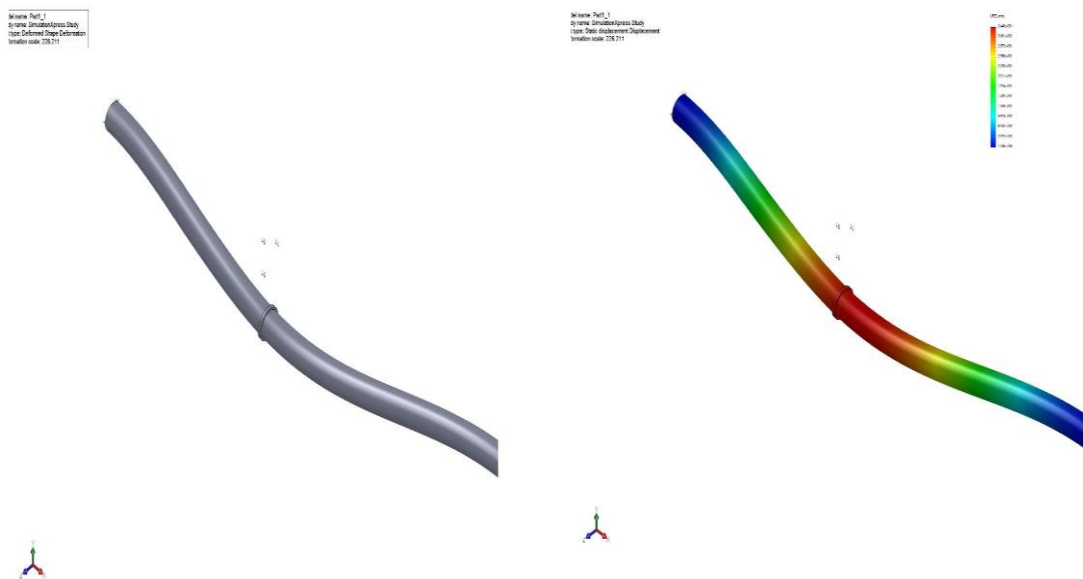


Fig.8

Fig, 7

