

Design and Performance Analysis of Kids Bike

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Abstract: The project titled 'THE DESIGN OF KIDS BIKE' is carried out by five members of student and it is designed for the kids A mini bike also recent we know as a mini motor are pocket bike, is a miniature motorcycle. Most traditional mini bikes use two stroke engine to turn the rear wheel via a chain. Small cheap gasoline engines like once produced for yard equipment are most often used, though most designs require a horizontal crankshaft engine. It works with hard to reach the kids below the age between 9 to 12, of which 75 percentages must be referrals, epically from the juvenile justice system. Minibikes bike are used as an effective nov tool quickly established trusting rapport between alienated youth and the outreach youth worker. In this project 50cc engine is being used. We also bring out the new design of fuel tank, shock absorber, frame, side indicator, head lamp and tail lamp etc. being used. This is our "MOTTO".

Key words: Design • Minibikes

INTRODUCTION

Mini bikes and pocket bikes are two phrases that are used interchangeably to refer to miniature motor GP bikes. They look the same and run like the real thing, except that they are much smaller. Mini bike riding is one of the fastest growing sport in the United States. Many motor GP fans want to have a taste of riding these extremely fast vehicles, but don't want to pay the hefty price tag for a real motor GP vehicle. Hence, a smaller version. In general, there are two types of mini bikes: gas and electric pocket bikes. The more hardcore fans can opt for gas mini bikes, as they are closer to the real thing. Also, they are easier to operate and can go faster than electric mini motorcycles. For this reason, electric minibikes are more suitable for young children, as they go slower. Due to the rising demand for mini bikes, there is no lack of variety to meet the market demand. There are all sorts of different make and model for pocket rocket bikes. It is wise to do a little bit of research on these make and models before making a buying decision. For instance, if you are new to mini bike riding, you may wish to start with a smaller capacity mini bike that's easier to control. Once you get the hang of riding the pocket bike, you may then buy a powerful one and sell the old one away. You may also decide to try

out an electric mini bike just to feel the difference between riding a gas and electric mini bike. You will become a much better rider [1].

Finally, always keep in mind safety concerns when riding mini bikes. Never grow overconfident or underestimate the speeds of mini bikes. Doing so may expose you to unnecessary danger. Treat mini pocket bike racing as a hobby and observe all safety guidelines. Your mini bike riding hobby will reward you with many pleasurable experiences. Today in extremely fast and sophisticated life what people live requirement is been developed for fast and sophisticated products and one of the product in bikes market is pocket bike. This kind of bike is more than ordinary street motorbike. These bikes are 'miniature sized motorcycles', usually built with gas-powered engines and can reach speeds of up to 50 mph! Though pocket bikes are more than ordinary to any street motorbike it cannot meet the requirements of motor assister as well as it do not meet the standards, which are required by the law. Also these bikes are not permitted to be driven on any public roadway. In India these kinds of bikes, most of which are being imported from China and are now seen frequently on private roads. These bikes are low to the ground, so motorists may not see them and hence dangerous (and illegal in some states) to be driven

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on public roads. Pocket bikes can be driven easily by the youngsters who are 14 yrs and above but one needs to be careful as it is powered by 40-49 cc gasoline engines, which makes it highly specialized, miniature racing motorcycle. Pocket Bike racing is the hottest trend in motor sports which is growing popular in Urban India. Mind blowing acceleration is worth to enjoy competitive racing, which needs skill and precise control. One who can drive it properly can become master in the area of driving pocket bikes. It is highly advisable to wear proper protective equipment while driving these speed machines [2].

Analysis: Various analyses are carried out using ansys to establish the structural integrity of the frame.

Analysis 1

Analysis name : Simulation of rider weight
Pre-processor : ANSYS 10.0
Solver : ANSYS 10.0
Element type(s) : SHELL 63

Boundary:

The frame is constrained on the back. This analysis simulates the rider weight and other components weight on the frame. The frame is loaded with a vertically downward acting load on the head of the frame. The frame is constrained in all degrees of freedom as shown in the Figure [3-6].

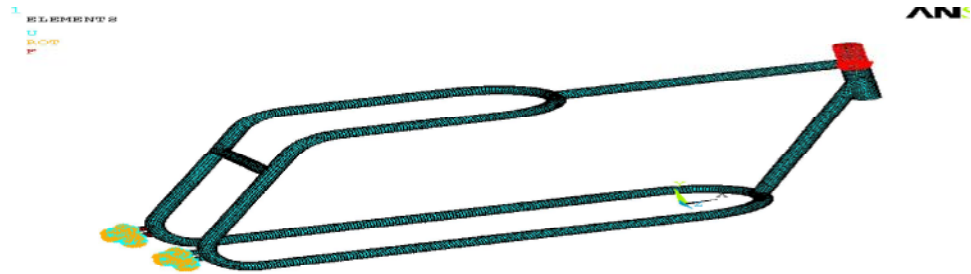


Fig. 1: Loading and boundary conditions for rider and components weight simulation.

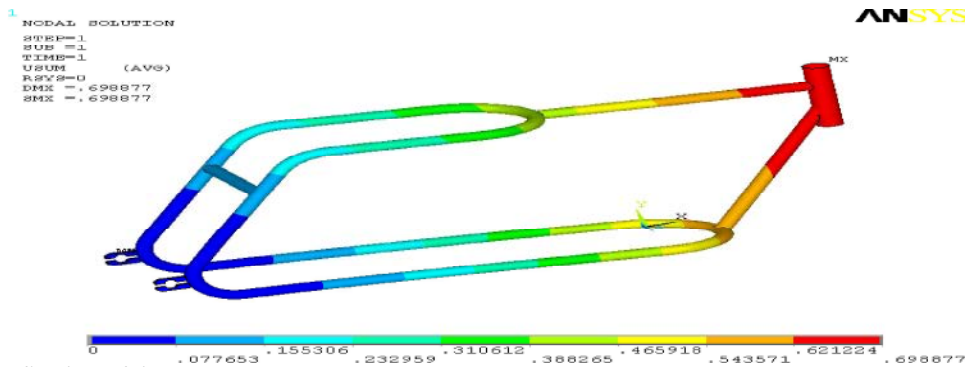


Fig. 2: Deflection of the Frame

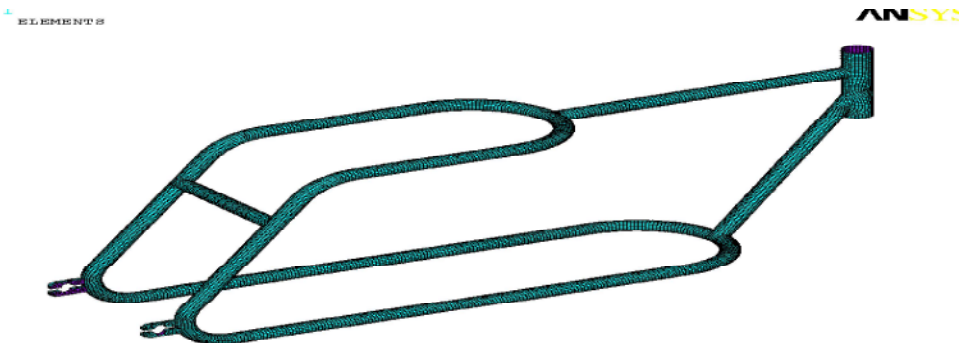


Fig. 3: Meshed Model of the Tube

1
AREAS
TYPE NUM

ANSYS

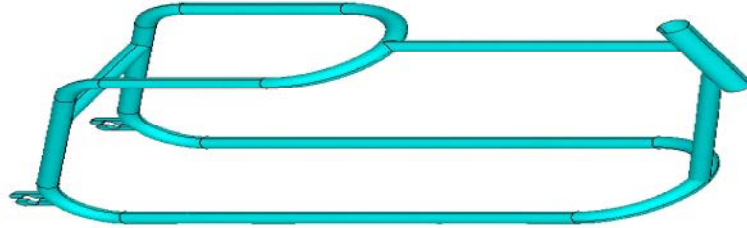


Fig. 4: Surface Model of the Frame

1
AREAS
TYPE NUM

ANSYS

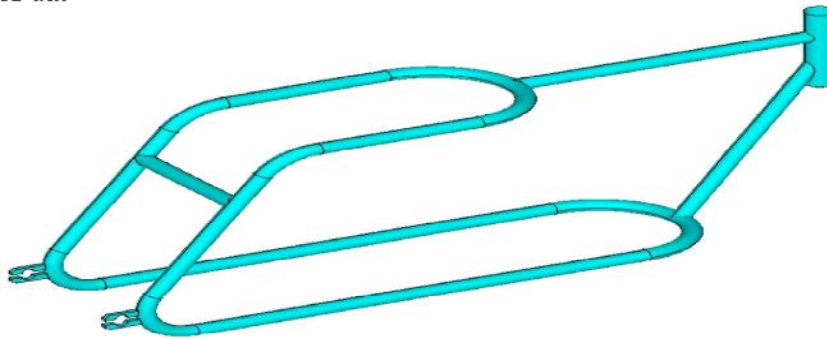


Fig. 5: Surface Model of the Frame 1

1
AREAS
AREA NUM

ANSYS

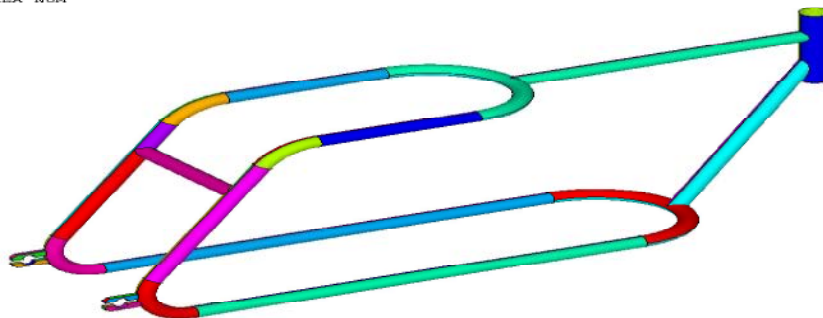


Fig. 6: Surface Model of the Frame 2

1
ELEMENTS

ANSYS

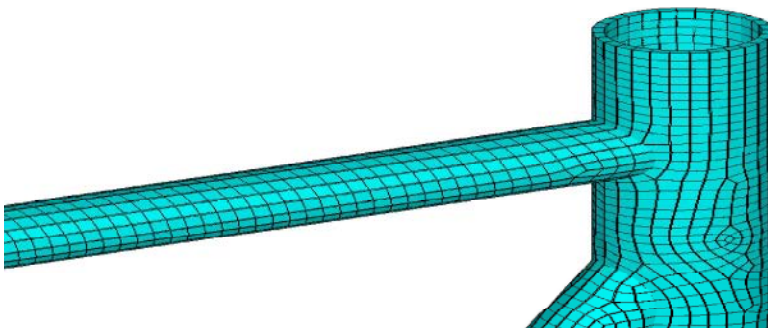


Fig. 7: Thickness of the Frame

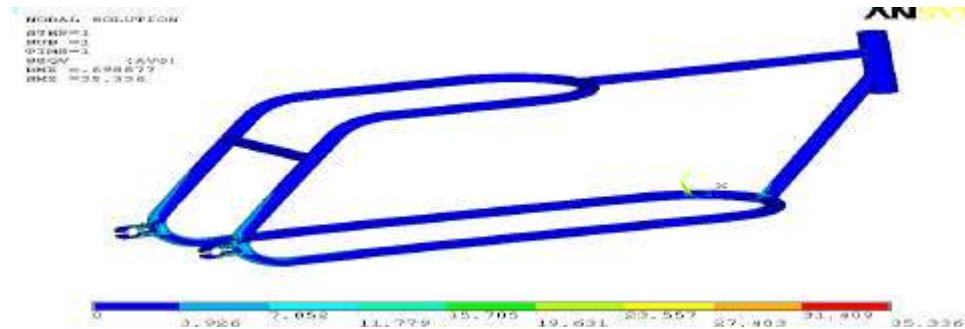


Fig. 8: Vonmises Stress

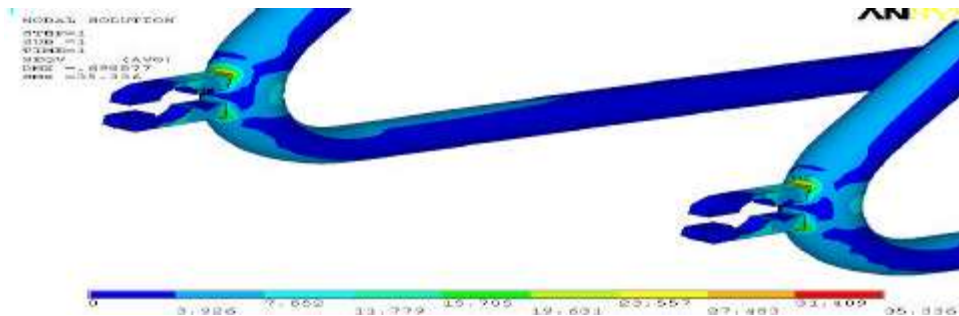


Fig. 9: Vonmises Stress



Fig. 10: Top View of Kids Bike

CONCLUSION

A mini bike also recent we know as a mini motor are pocket bike, is a miniature motorcycle. Most traditional mini bikes use two stroke engine to turn the rear wheel via a chain. Small cheap gasoline engines like once produced for yard equipment are most often used, though most designs require a horizontal crankshaft engine. It works with hard to reach the kids below the age between 9 to 12, of which 75 percentages must be referrals, epically from the juvenile justice system. Minbikes bike are used as an effective nov tool quickly established trusting rapport between alienated youth and the outreach youth worker. In this project 50cc engine is being used. We also bring out the new design of fuel tank, shock absorber, frame, side indicator, head lamp and tail lamp etc. being

used. This gives a chance to work in various machines lathe, welding, grinding, fitting on the whole; the project work gives us more hopes to march towards a better tomorrow. We once again thank all the staffs' members and those who helped giving shape to our creative thinking of our project work namely.

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