"REVIEW PAPER ON PNEUMATIC TRICYCLE"

Kadus S. P[1], Muke G.K[2], Shejwal G.V[3], Thokal P.J[4], Ghatode R.S[5]

1Student, Dept. of Mechanical, SGREF's G H Raisoni College of Engineering, Maharashtra, India
2Student, Dept. of Mechanical, SGREF's G H Raisoni College of Engineering, Maharashtra, India
3Student, Dept. of Mechanical, SGREF's G H Raisoni College of Engineering, Maharashtra, India
4Student, Dept. of Mechanical, SGREF's G H Raisoni College of Engineering, Maharashtra, India
5Professor, Dept. of Mechanical, SGREF's G H Raisoni College of Engineering, Maharashtra, India

ABSTRACT

This project is design, fabrication and development of a DESIGN AND FABRICATION OFPNEUMATIC TRICYCLE it is rear wheel drive. The conceptual design of this model taken from manuallyoperated tricycle. The complete body looks like a Tricycle in which manual operation is replaced by automaticoperation.This product is a pneumatic vehicle, useful for handicapped people, equipped with pneumatic ratchet, pressure regulator, DC air compressor, air tank, chain sprocket transmission drive. The power transmissiontakes place from ratchet to rear wheel through chain drive. Only one person allowed on the Tricycle at anytime. Modification by attach support is to make structure more strong at critical point. The materials, mild steelis choose as a main structure fastening by joint. Components of model attach by bolt and nut. Part by partcreate then be fabricate together. At the end of the project, the model tested by several people and theircomment then being recorded and performed some tests

1 INTRODUCTION

The people's quest for manufactured goods has beengrowing rapidly over the years. Therefore, to meet up withthe high demand, manufacturers have reacted by introducinginnovative ways of manufacturing high quality products at afaster rate. Production processes has witnessed numerouschanges and evolution with the introduction of numerousinnovative manufacturing concepts which include LeanProduction System, Cellular Manufacturing, Single MinuteExchange of Dies, as well as Take Time Analysis

Thesecreative approaches have necessitated the need for a reliableand cheaper tools and work-holding devices.As the efficient running of a manufacturing companywhich demands a prompt and simple work positioningstrategy for correct operations depends largely on theinterchangeability of machine components and work-pieces,to ensure un-complication of assembly, and unit costreduction, as well as to become competitive, reduce theenormous manufacturing cost, and also increase theirprofitability, the industry has resorted to streamlining itssupply chain in a bid to maintaining a very low amount ofinventory.

This has also led to the demand for a better andcost effective work-holding devices which will ensure betterquality products, reduce lead time, and also increasethroughput.Also, although some machining operations are so straightforward,like in turning where the job is secured tightly onthe chuck while the turning operations are easily performed,some jobsin other operations may not be easily held on eitherthe three or four jaw chucks, and may also require the toolsto be guided by the means of a different device. This explainsthe need for production standard work-holding devices too.

1.1 PROBLEM STATEMENT

In manually operated tricycle there are some limitations -

a) It requires muscular energy to operate the handle of sprocket gear.

b) More efforts are required to operate this handle.

c) While operating the handle it is difficult to control the other control systems like braking and steering mechanism.

d) It Gives fatigue to operator.

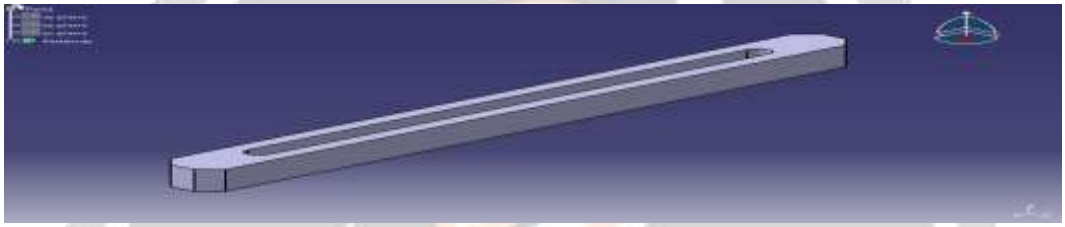
e) Handicapped people may not able to apply the required efforts to drive the tricycle.

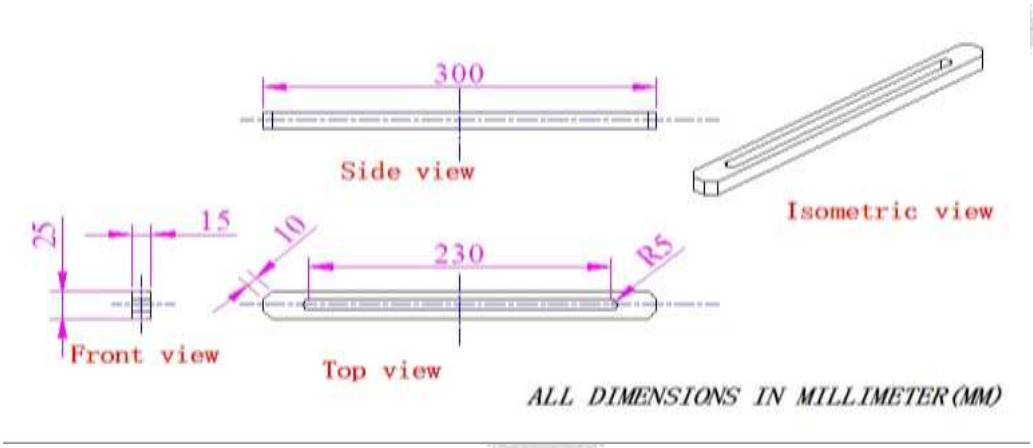
1 .2 FUTURE SCOPE

1. Now a days the market demands are increasing day by day to meet their requirement an automated system is needed .so we have developed a new machine tool which will meet this requirement.
2. By making some modifications we can give this project a new direction towards an ecofriendly vehicles.
3. This could be helpful for the handicapped people to travel with ease.

2 PROCESS SHEET

2.1 Part name: FRAME





Part weight –2kg

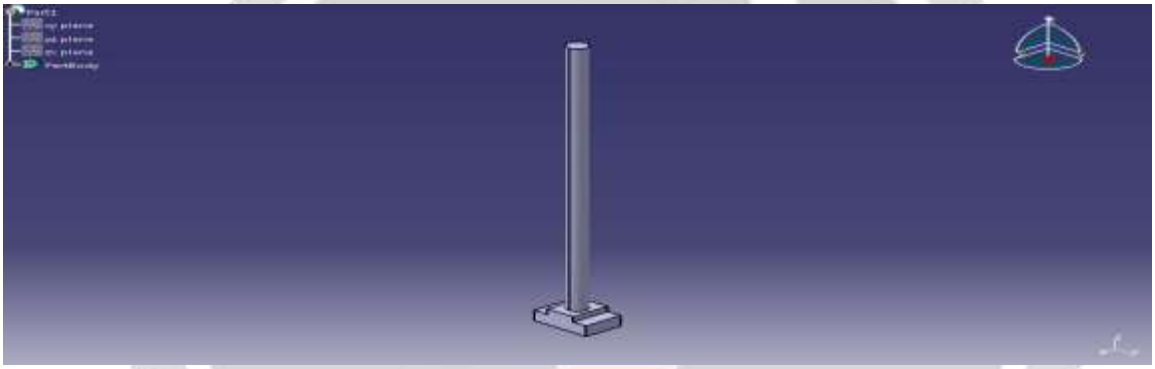
Part material – MS

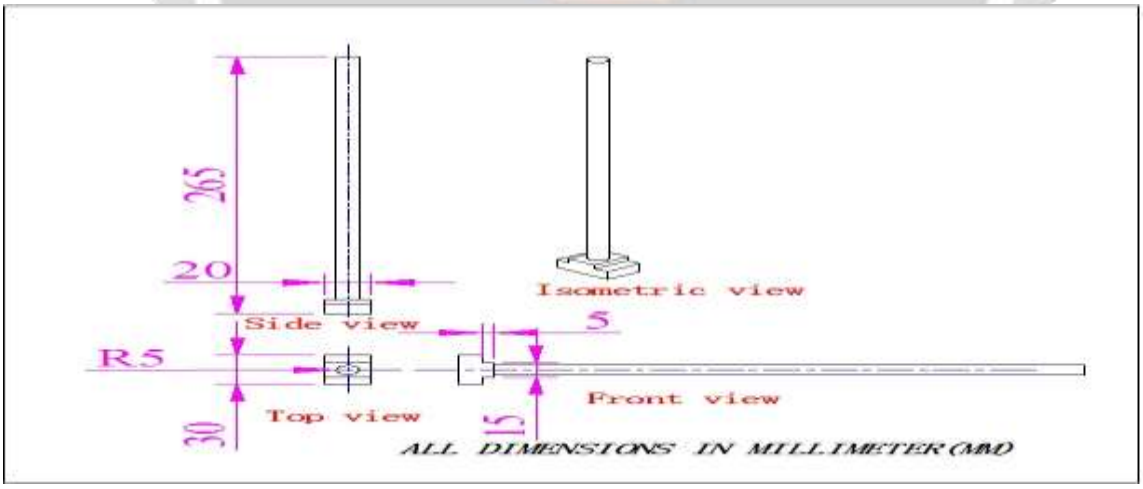
Part quantity – 4

Part size -300 X 25 X25 mm

Sr. No.	Operation	Machine	Tool	Time
1	Cutting the material as per our required size.	Power hacksaw	Hacksaw blade	20 min
2	Cut Slot the sample as per program given from engineering department	CNC	CNC machine	60 min
3	Hardening as per the requirement	Hardening	Hardening	30 min

2.2 Part name: T-BOLT





Part weight –1.5kg

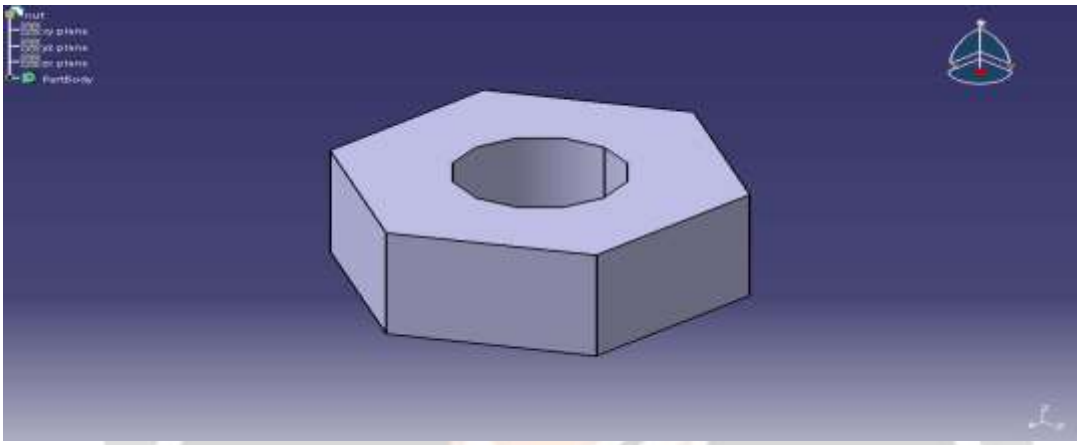
Part material –MS

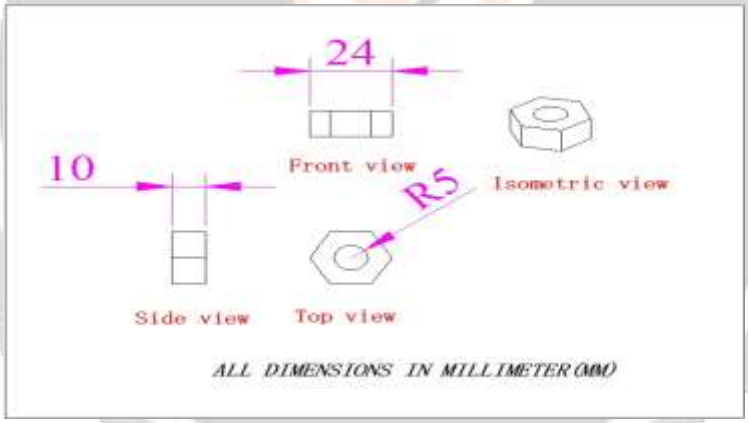
Part quantity – 04

Part size -30 x 265 mm

sr. No.	Operation	Machine	Tool	Time
1	Select standard part as per requirement	STD	STD	-

2.3 Part name: BOLT





Part weight –250 gm

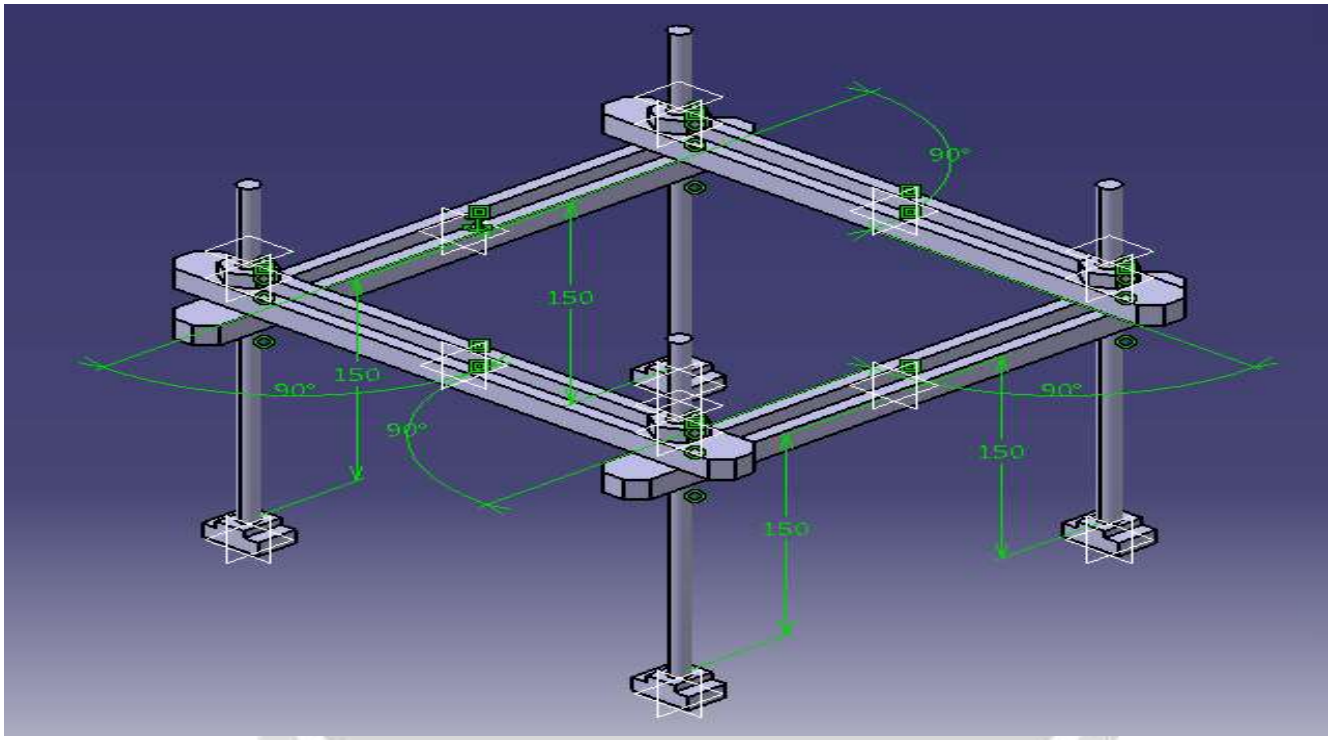
Part material –MS

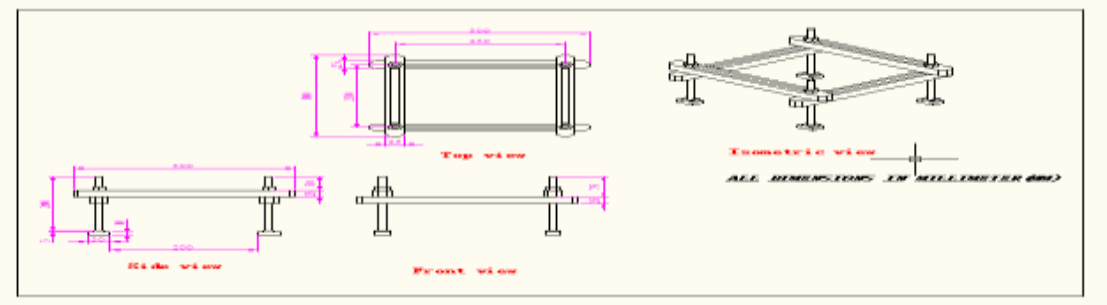
Part quantity – 4

Part size –M10

sr. No.	Operation	Machine	Tool	Time
1	Select standard part as per requirement	STD	STD	-

2.4 SOLID MODELLING





2.5 Used materials and their properties:

Following are the material details used in the project-

Materials properties	Mild Steel
Density	7.85 g/cm3
Thermal conductivity	54 w/(m.k)
	370 mpa
Yield strength	250 mpa

CONCLUSIONS

Even though the vehicle is in early stage of development, itholds a lot of promise and provides scope for furtherresearch. Thus we designed and manufactured the vehiclemodel which is eco-friendly and does not cause pollution likeinternal combustion engines. This vehicle will help in Reducing the problem of global warming since internalcombustion engines contribute to the problem the most.It uses non-conventional energy source i.e. atmospheric air.This will help to save the non-renewable sources of energy.So, the successful policy for the 21st century will depend onthe non-conventional sources. Pneumatic vehicle can provesolution to depleting natural resources and can be thetechnology of tomorrow.

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