

Design and Fabrication of ATV Quad Bike

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ABSTRACT

The title of our project is ATV (All Terrain Vehicle) quad bike. It consists of four wheel drive. The main purpose of our project is the conversion of four stroke two wheeler petrol engine to four stroke four wheeler petrol engine. In this suspension system will be more compared with normal bikes. It can run in any path (mud, rocky surface) In this we are using 150 cc petrol engine having 5 gear transmission and it carries about 200 kgs load. We are designing the frame in auto cad software and fabrication will be done with required dimensions.

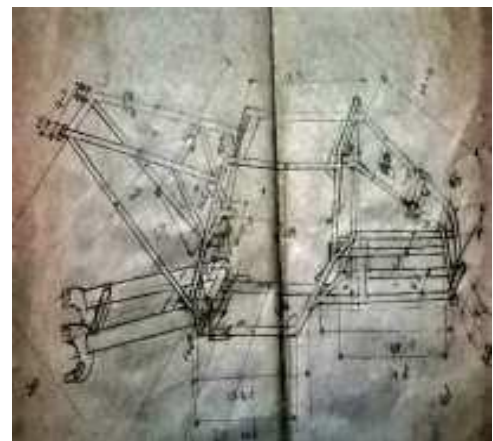
INTRODUCTION ATV Quad Bike:

An all-terrain vehicle (ATV), also known as a quad, quad bike, three wheeler, four wheeler, or quadricycle is defined by the American National Standards Institute (ANSI) as a vehicle that travels on low pressure tires, with a seat that is straddled by the operator, along with handlebars for steering control. As the name implies, it is designed to handle a wide variety of terrain than most other vehicles. Also it is a street legal vehicle in some Countries, it is not street legal vehicles within most states and provinces of Australia, the United States or Canada. By the current ANSI definition, ATVs are intended for use of single operator. Although some companies have developed are referred to as tandem ATVs. The rider sits on and operates these vehicles like a motorcycle, but the extra wheels give more stability at slower speed. Although equipped with three or four wheels, six wheels exit for specified applications.

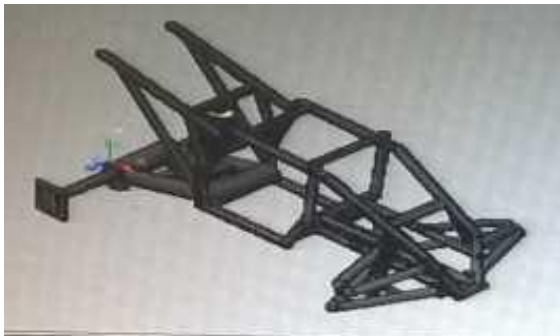
Design Methodology:

- The primary objective of the frame is to ensure driver's safety, provide reliable mounting
- Locations for the engine and other vehicle components, be aesthetically appealing, low in cost and low in weight
- Various factors are taken into consideration to reflect the same.
- Generated the design through the AUTO CAD software is as follows.

Paper Work:



**Frame Design in
AUTOCAD Software**



Specification of ATVQuad Bike Tabular Form:

Over all width	23 cm
Over all height	82 cm
Front & rear wheel	19*7-8, 18*9.50-8
ground clearance	32 cm
Seat height	10 cm
Tank height	10 cm
Engine mounting space	49 cm
Front & rear axial length cm	80 cm & 60
Minimum turning radius	32 cm

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Applications:

The applications are as follows below:

Tourism: in tourism ATV BIKES used for entertainment, especially there is also ATV children bikes used in tourism

Construction fields; in this mainly used for the purpose of loading and UN loading the material.

Military: in military mainly used for carrying the weapons and also easily move in hilly and uneven surfaces.

Advantages:

1. Major advantages by using ATV QUAD BIKE are that it produces less pollution through exhaust or silencer.
2. It is designed and fabricated by less in economically less.
3. Main advantage is simple in construction while comparing to tractor.

4. also having more fuel efficiency compare to original engine.

5. It can run in any path.

6. Lighter vehicles cause less damage to roads, resulting in lower maintenance cost.

Disadvantages:

- The main disadvantage having less torque or output power comparing to tractor.
- Might have chances in tilting in the vehicles.
- Wheel alignment should be good and uniform
- Drivers must be strictly follows the tips for driving or riding the quad bike.

Future Scope:

We are constructing this vehicle to serve public

- Agriculture
- Irrigation Fields
- Quick Action in Sea Shore

Agriculture:

It is cheaper compared to tractor and more fuel efficient and less in weight simple and easy to construct.

Irrigation Fields:

ATV used is cheaper and fuel efficient and it carries load about 200 kgs by using water drum and drum carrier.

Quick Action in Sea Shore:

Generally in sea shore if any incident happens police man has to go by road and they have to reach the location so by using this vehicle they can go faster and less time consumption.

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OVERALL VIEW OF THE ATV QUAD BIKE

