

TWO AXES PNEUMATIC JCB

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ABSTRACT

The present this is provides the comparative study with regard to Design and Working of Pneumatic Two Axes JCB arm. In this we have studied on the hydraulic and pneumatic cylinders and by replacing the hydraulic cylinder by pneumatic cylinder we have increased the working speed of the excavator and by using the gears we have given the 360 degree rotation to the arm. And the arm can be move in two direction. Due to the replacement of the hydraulic cylinder by pneumatic we can reduce the cost of the excavator. The various heavy parts are reduced so the weight of the vehicle is reduced.

The project includes the design of the arm, cylinder, Gear and Base of the vehicle. This is done by using AUTO-CAD 2018. This is made by using two factor one is System Design and another one is Mechanical Design. The system design mainly concerns the various physical constraints and ergonomics, space requirements, arrangement of various components on main frame at system, man+machine interactions, No. of controls, position of controls, working environment of machine, chances of failure, safety measures to be provided, servicing aids, ease of improvement, weight of machine from ground level, total weight of machine and a lot more. The Mechanical design phase is very important from the view of designer as whole success of the project depends on the correct design analysis of the problem.