

## **ANALYSIS OF OPEN ARCHITECTURE VERTICAL ARTICULATED ROBOT**

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### **Abstract**

The objective of the paper is for the Mechanical Design of components, analysis of open architecture vertically articulated robot. It is a live project based upon the motion of the robot manipulators and the torque required, which is used for attaining the required torque. Robot consists of 5 degrees of freedom, a robot manipulator consisting of a series of links equipped with actuators. The action of each link is controlled by the actuator in order to perform a desired motion cycle. By means of timing belt and pulleys power is transmitted from the actuators to various links. The calculation of bearing is a very important criterion to withstand radial loads in different velocities and to suit the various applications such as high torque, low speed, less noise etc.

The torsion spring is in essential component for minimizing the “jerks in movements” of arms while working with various speed and for transmitting the small torque. The end-effector performance of the vertically articulated robot is analysed by conducting the repeatability trials and designed robot has come out to be fairly good.