

DESIGN AND FABRICATION OF MULTI BELT GRINDING MACHINE

A Project report submitted in partial fulfillment of the requirements for award of

Degree of

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING

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CERTIFICATE

This is certify that the project work entitled “**DESIGN AND FABRICATION OF MULTI BELT GRINDING MACHINE**” is a bonafied record of work done by **G.RAMESH (14811A0336), K.SURESH (14811A0348), M.SANDEEP (14811A0369), K.GANESH KUMAR (14811A0353)** in partial fulfilment of the requirement for the award of Bachelor of technology in MECHANICAL ENGINEERIN by Jawaharlal Nehru technological university, Kakinada during the year 2014-2018.

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PROJECT GUIDE

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ABSTRACT

Machining processing industries have continuously developed and improved technologies and processes to transform finished product to obtain better super finished product quality and thus increase products. Abrasive machining is one of the most important of these Processes and therefore merits special attention and study. Belt grinding is an abrasive machining process used on metals and other materials. It is typically used as a finishing process in industry. The machine we designed and fabricated used for grinding any shape of object like Circular, Rectangular, and Polygon. In our project the work abrasive belt is used to grinding the material. The abrasive belt is rotated by the single phase induction motor. The main objective of this project is to design and fabricate an abrasive belt grinding which can be used as versatile grinding machine.

Grinding is the process of removing metal by the application of abrasives which are bonded to form a rotating wheel or belt. When the moving abrasive particles contact the work piece, they act as tiny cutting tools, each particle cutting a tiny chip from the work piece. Grinding is used to finish work pieces that must show high surface quality (e.g., low surface roughness) and high accuracy of shape and dimension. Therefore we have designed belt grinding machine in miniature and portable form which can give very precise machining. Hence our project namely abrasive belt grinder is a Special type of Machine. According to the type of material to be grind, the grinding tool can be changed. This project gives details of grinding various shapes and sizes of components. This machine can be widely applied in almost all type of industries. By varying the pulley sizes we can get a high end speed of over 10,000 rpm if needed. The only change I would make is to have a totally enclosed motor to keep out the grit.

KEYWORDS: Advanced machining, Grinding process, Belt grinding, Abrasive Machining, Finished product, Surface roughness.