

# REVIEW ON PALLET USED ON PLANOMILLER MACHINE

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## ABSTRACT

*This paper describes the design and development of pallet which can be used on planomillar machine. After studying problem in indurstry for no common facilities for holding different types of workpiece on same machine bed for each job there will be the new clamping arrangement required and lots of time of workers is west for locating workpiece on machine bed. After completion of machining process the machine has been stopped for changing complete job with new one this is called as non-productive time of machine. We have to reduce non-productive time of machine as well as cost of production. We have designed and developed a pallet which is universal for holding all types of job on planomillar machine bed. After completion of project is is noticed that there will be saving of one half hour for one job. Cost saving is also observe .Using the pallet loading the loading and the unloading time is reduce. When using the Pallet the required man power is less and the productivity of the machine is increase. Pallet loading is very easy to loading and unloading from the planomillar machine bed. This paper is related to the design of pallet loading which is efficient and more effective.*

**Keyword:** *stress in pallet, productivity and equivalent deformation.*

## 1. INTRODUCTION

This project is related to the pallet loading which use for the face is milling operation are done on the Planomiller machine. The planomillar machine is use for the milling operating on the various jobs. The company is placed in at M.I.D.C., Ahmednagar and company name is superb engineers, during the visit to superb engineer productivity the problem was discussed has been assigned the project of designing and manufacturing pallet. The previous design is less efficient. In previous manufacturing process no pallet are used for processing hence the time of placing job on machine bed is more. The cycle time for production is more and floor to floor time taking is more. During this project, various causes was identified and solution by using collected data from the industry. The pallet loading are used for holding the job and reduce the floor to floor time. In this project we are using two pallet one is use for the internal setup and another is use for the external setup. The setup mounted on machine bed is internal setup and the setup which can be done while the machine is still running is external setup.

## 2. LITERATURE REVIEW

Ana Sofia Alevs has studied, single minute exchange of die (SMED) is important tools to decrease waste and improve flexibility in manufacturing processes. SMED decreases the non-productive time by standardizing the operations for trade apparatuses, utilizing straightforward strategies and simple applications. It is easily changeable the job on machine bed. Also reduces the investment of the company. The methodology of SMED is very important in application as well as adapt them to the reality in the companies to be successful implementation. [1]

Khushee Ram et al has studied that, the improvement in the setup handle of a mechanical machines in the company. It reduces the setup time. The concept of SMED improves mechanical and product efficiency because of reduction in setup time. The SMED concept is focuses on Flexibility and responsiveness. This paper shows the internal as well as external setup. The setup mounted on machine bed is internal setup and that part of the setup which can be done while the machine is still running is external setup. [2]

O. Karacal et al has studied, the behavior of pallet system under loading was determined according to material behavior and strain-stress distribution. The results of this paper are helpful for pallet design, material selection and material handling. After the calculation we are selecting the mild steel for the pallet. [3]

A Bajwoluk et al has studied, the effect of pallet component geometry due to temp gradient. The gradient is very important factor for the determination of the thermal stresses in the pallet. It means that by shaping the geometry of pallet components, we can up to some extent, influence the generation of thermal stresses during the palette operation cycle. [4]

Abdullah Waseem et al has studied, the Analysis of different Materials for Pallet in ansys, the Pallets are used mostly in lifting the heavy and large jobs in industries. In this paper the selection of material for the pallet. The material for the making pallet are strong and ductility hence the mild steel use for the manufacturing the pallet. Analysis is done by considering uniformly distributed static force on pallet. [5]

Lucian Mihaila et al has studied the automatic pallet changer mechanism, which is hydraulically driven, it also comes with its guiding and transmission systems. The most important advantage is less consumption of time. In this mechanism material handling is easy, which reduces in man power. The main purpose of this paper changing of pallet by using machine centering. The automatic pallet changer mechanism presented in this paper can be attached to any ordinary machine tool along its travel axis. [6]

Javad Mokhlesi et al says that pallets play important role in whole distribution systems by the supply chain. It denotes use of pallets in today's fast growing industry. Pallet utilization was studied from this topic. [7]

## CONCLUSION

In this project we can produced a more efficient pallet to reduce the cycle time and various cost of the production. This pallet can reduce the man power and floor to floor time. Manufacturing and use of pallets on machine bed of planomillar machine for increasing the productivity, by introducing concept SMED (single minute exchange of Die). By using common pallet which will be universal for various type of jobs on planomillar machine and it is more economical for industry.

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