

MATERIAL HANDLING EQUIPMENT

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ABSTRACT

Root-cause identification for quality & productivity related problems are key issues for manufacturing process. It has been a very challenging engineering problem particularly in multistage manufacturing, where maximum no. of processes & activities are performed. However, it may also be implemented with ease in each & every individual setup & activities in any manufacturing process. Conventional manufacturing thought limits the rejection plans to rejection which needs to be scrapped and implies direct loss. But present scenario in manufacturing industries, which is facing a very competitive environment, needs to consider not only rejection leading to scrap but also rejection which can be reworked or reuse. This project focuses on material handling equipment i.e. it reduces rejection due to the metal to metal contact, scratches etc.

Keyword: Trolley, metal rods, plastic material plates, fabrication and assembly operations.

1. INTRODUCTION

Material handling (MH) is an activity that uses the right method to provide the right amount of the right material the right place, at the right time, in the right sequence, in the right position, and at the right cost [1]. An MH system is responsible for transporting materials between workstations with minimum obstruction and joins all the workstations and workshops in a manufacturing system by acting as a basic integrator. MH task accounts for of the total cost of a product, and efficient MH can be responsible for reducing the manufacturing system [2].

Material handling (MH) involves “short-distance movement that usually takes place within the confines of a building such as a plant or a warehouse and between a building and a transportation agency.” [3]. It can be used to create “time and place utility” through the handling, storage, and control of material, as distinct from manufacturing (i.e., fabrication and assembly operations), which creates “form utility” by changing the shape, form, and makeup of material [4].

This is the Industrial project conducted in Birla Precision Technology Ltd. Aurangabad this project focuses on material handling equipment i.e. it reduces rejection due to the metal to metal contact, scratches, dents and damages etc. The investigation was done with the help of design & casting department within the industry. The various defects that occurs in the operation time. In this project, it describes remedial action that to be done in order to reduce the rejections further more. We implementing one table on which we provided bolt vertically, due to this human effort is reduced and saving manufacturing. Problem analysis by using some technical methods and root cause analysis technique and cost of product and reduce rejection due to the scope of metal to metal, damages and

scratches and dents etc. In real world, many people need a system to recover, designs, drawings, artworks etc. damage may be due to various reasons like scratches, overload, due to speed etc.

2. RELATED WORK

- This is an Industrial project conducting in Birla Precision Technology Ltd. Aurangabad.
- This project focuses on reduce the rejection due to improper placing of work piece on table we had reduced the rejection due to material handling by providing bolts on the table .So it reduces the rejection like dent, damages etc.
- The investigation was done with the help of design & casting department within the industry. The various defects that occurs in the operation time.
- In this project, it describes remedial action that to be done in order to reduce the rejection. Problem analysis by using some technical methods and root cause analysis technique and further more. Due to these human efforts is reduced and saving manufacturing cost of product and rejection cost etc.

3. IDEA ABOUT THE PROJECT

There was a rejection of the job due to on the products. Due to improper placing of product on the table. There was a scope of metal to metal contact. These are happing during the transfer of job from one place to another place. The employees place the job on one tray after finishing but not properly so that job comes contact with each other and dents and cracks are happening. Thus after all above observation we implemented one table with wheel like as a vehicle. On that we provided metal bolts vertically with some gap between them.so that the job has placed properly on the table. Due to that job does not comes contact with each other so its prevent the dents and cracks and similarly we reduced the rejection of the jobs.

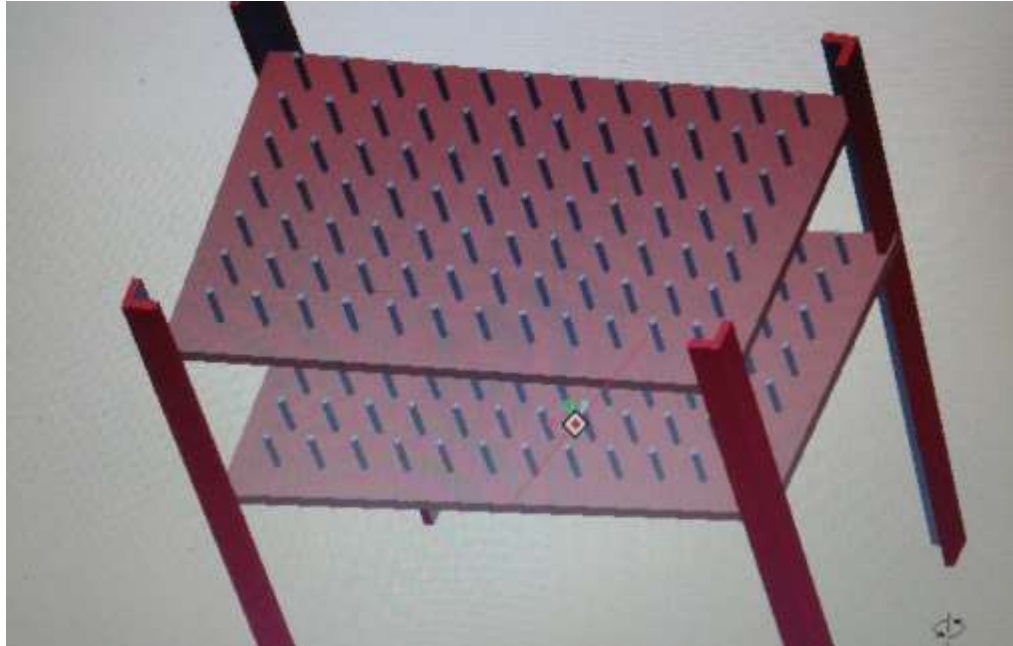
4. PICTURES



A]



B]



C]

figure A] - Before implementing the project, **B]** - After Implementing the Project, **C]** - Design of table

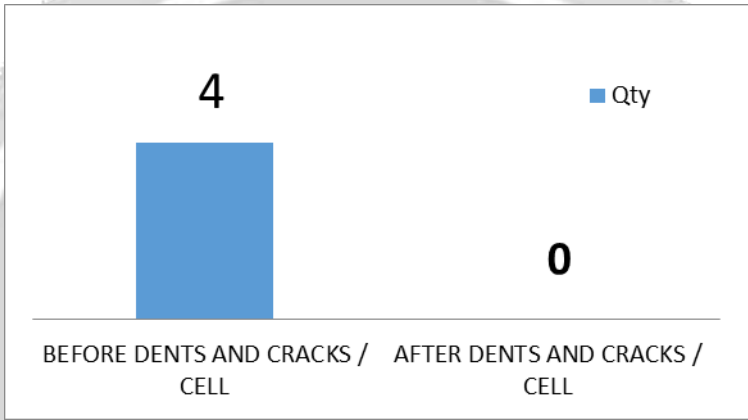
5. DIMENSIONS OF MATERIAL HANDLING EQUIPMENT:-

- A. Table and plate:
1. Length of plate = 1200 mm
 2. Width of plate = 700m mm
 3. Thickness of plate = 25 mm
 4. Height of angle = 1250 mm
 5. Distance between two plates = 200 mm
- B. Round bar with insulating material:
1. Diameter = 10 mm
 2. Height = 72 mm
 3. Distance between two rods = 150 mm
 4. Total no. of work piece placed = $9*5$ (row*column) = 45 jobs

6. EXPERIMENT RESULTS

A] Reduction in dents & cracks:-

X-axis: Solution
Y-axis: rejected jobs/cell



7. CONCLUSION

We have implemented a material handling table. Our algorithm successfully detects the failure on line which consists of so many jobs. We have applied our algorithm on many images and found that it successfully detect the problem due to the scope of the metal to metal. Problem of selecting the most appropriate MH equipment for a specific task is a strategic issue, greatly nuancing the performance and of the manufacturing organizations.

8. REFERENCES

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