

PROCESS IMPROVEMENT THROUGH KAIZEN LEAN TOOL

(A CASE STUDY IN SMALL SCALE ORGANIZATION)

¹ Pramod Kumar, ² Jaiprakash Bhamu

¹Assistant Professor, ²Associate Professor

¹Department of Mechanical Engineering

¹Vivekananda Global University, Jaipur

Abstract : This paper entitled "Process Improvement through Kaizen Lean Tool (A case study in small scale organization)" is focus on to concerns with the better improvement by some modification in cold forging, threading, packing and dispatch processes of small scale fastener manufacturing industry. In this paper it is tried to short out the mix-up problem of identical nuts in the fasteners manufacturing company for automotive vehicles. The Paper also focuses on the improvements and suggestions that can give the minimum rejection level of the products. Each organization has an intention to manufacture and supply of high quality products at most competitive price on long term basis. With the increased demand and the support extended by the Customers, the Company engorged its activities by entering into OE manufacturing of Cold forged components, Sheet metal items and Machined Items for all leading Indian Automotive Manufacturers. Today with the grace of enormous, dedicated team work and continuous customer support, we have to update ourselves with modern facilities to meet the demands. By adapting these Kaizen techniques the processes can be made more efficient and effective.

Key words: Kaizen, Minimum rejection, continuous improvements, effective process; High quality

I. INTRODUCTION:

Kaizen is a Japanese word for the idea that defines management's role in continuously encouraging and implementing small improvements involving everyone. Kaizen is lean manufacturing tool which is very efficient for continuous improvement and also play important role to remove non value added activities from the shop floor of the assembly line. This tool is a technique which includes the members from employees to higher management to get better improvements.. It focuses on the simplification by breaking down complex processes into their sub-processes and then improving them.

For the paper we have completed some experiments before and after the improvements and modifications in faster manufacturing processes, data are collected before and after modifications and on the basis of these information's the cost and rejection levels of the products are identified. To find out the results the certain procedure is followed.

1.1 Methodology used for problem solving:

- Existing problems are identified
- Problem which impacted most is selected
- Objective decided
- Problem defined
- Collection of data through validated measuring tools
- Analysis of root causes by fishbone and why-why analysis
- Data analysis after
- Action Plan development
- Solutions developed
- Verify achievements
- Identification of tangible and intangible benefits

II. PROBLEM: Mix-Up of M12x1.5 Nyloc Nut with M12x1.25 Nyloc Nut

This problem is generally found in the fastener manufacturing companies. The Process Flow of these nuts generally used is:

Raw material received from main store



Cold Forging





III. IDENTIFICATION OF PROBLEM AND ACTION PLAN TAKEN FOR MIX-UP AND WRONG DISPATCH:

3.1 Modification in Cold Forging:



Fig: 3.1.1 Before Improvement

Fig: 3.1.2 After Improvement

S.No	Problem	Reason	Action	Status
1.	Excessive storage of nuts in the bin	Slipping of over pieces	1. Fill and store the nuts as per capacity of bin during storage and handling. 2. Provide work instructions for material handling and safety	Modified and updated

3.2 In process Modifications:



Fig: 3.2.1 Before Improvement



Fig: 3.2.2 After Improvement

Table: 3.2.1 Action Plan taken in In-Process

S.No.	Problem	Reason	Action	Status
2.	Mixing of parts from one bin to another	Over slipping and no cover on bin was provided	Cover provided on the bin and chances of mix-up of parts from one bin to another eliminated	Modified and updated

3.3 Threading Machine Modifications:

Problem: There was no cover on machine before Improvement



Fig: 3.3.1 After improvement

S. No.	Problem	Reason	Action	Status
3.	Dropage of Without Threaded Nuts from Hoper & mix-up	No cover was provided on machine hoper	Cover provided on the hoper	Modified and updated

3.4 Washer Crimping Modifications:

(a) Similar Pitch items if produced in same setting will be highlighted & hence stopped similarly Wrong Washer will also be highlighted an stopped.

(b) Specifications Of Procedures (SOP) For Threading & Crimping Operation Revised, Washer Color.

3.5 Cold forging / Threading / Plating / Final inspection Modifications:

Problem: No drop box was in each section to store slip over pieces before Improvement



Fig: 3.5.1 Cold Forging (drop box provided)



Fig: 3.5.2 Threading (drop box provided)



Fig:3.5.3 Plating (drop box provided)



Fig:3.5.4 Final Inspection(drop box provided)

New Plating Re-Work Rack Provided And Materials Will Be Kept In Respective Racks

3.7 Packing & Dispatch Modifications:

Problem: No Packing Person Name and PDI Verification



Fig: 3.7.1 After Improvement

Packing tag with part details, qty., batch code, packing date, packing person name provided

IV.TANGIBLE AND INTANGIBLE BENEFITS:

As per these continuous improvements techniques it is clear that there are so many tangible and intangible benefits including following :

- Utilization hours increased
- Reduction in Manpower.
- Cost Reduction
- Productivity improvement
- Over time reduction
- Capacity increased
- Reduction in wastage
- Improve in aesthetics

V.CONCLUSION:

it concludes that Kaizen technique is very effective to solve the work related problems in the organizations. This way of improving the production processes and getting cost effectiveness is very precious for building far above the ground productivity of the company. The main objectives of such types of kaizen activities in the small scale industries are to increase the productivity, to reduce labor costs improve the quality and customer satisfaction, to improve the feasibilities.

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