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IMPROVEMENT IN PRODUCTIVITY BY ELIMINATION OF WASTE: A CASE STUDY

Engineering

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ABSTRACT

Productivity improvement is the very important aspect of any manufacturing company. Productivity improvement may require changing old process or it may require applying same process with some changes in it. Following are some benefits of production improvement. Thus production improvement has much advantage. Hence for any industry reduce waste, it is important to keep on improving productivity so as to take its advantages. The case study is based on the 'Productivity improvement' related to production of muffler assembly.

KEYWORDS

productivity improvement, waste, production, assembly

INTRODUCTION

Productivity improvement is defined as the adoption of new manufacturing process, application of new management principles, improvement in material handling, and full utilisation of sources. The result of all the activities is increase in rate of production. In modern terminology, high production rate is the indication of more profit and way of meeting increasing customer demands. For productivity improvement, continuous efforts are required. Productivity improvement may require changing old process or it may require applying same process with some changes in it. Following are some benefits of production improvement. Thus production improvement has much advantage. Hence for any industry, it is important to keep on improving productivity so as to take its advantages.

PROBLEM STATEMENT

Currently in Karad company produces 1500 mufflers assemblies, 300 motor covers, and 800 bowls. The requirement of customer for muffler assembly is 10000 parts per week to meet the requirement, company forces workers to do overtime. This situation makes workers unhappy and they have lost self-motivation. But it observed that by improving procedures and by applying management principles, such situation can be avoided.

SCOPE FOR IMPROVEMENT

1. SHIFTING OF ASSEMBLY AND INSPECTION SECTION

Company's assembly and Inspection section is situated about 50 m aside from the machining shop. It is situated at the 1st floor on another building because company says that there is no enough space in main plant. At assembly place, any elevator cannot be used because of narrow place of stairs. So there is much more handling of parts of muffler assembly and they are manually carried to assembly and Inspection department. Company requires 4 people for this material handling between machine shop and assembly section. To avoid this time delay due to moving of material, suggested them to move their assembly section and Inspection section to machine shop. There is enough space for these sections as shown in pictures below. In company over mechanical presses, a small floor is made by company to store extra stock. By increasing the floor there, company can reduce so much handling parts. Company has framed structure so addition of floor is easy task. Assembly presses are light weight so problem of over weight on floor does not occur. As inspection shop is air conditioned, problem of ventilation and temperature rise due to roof cannot occur. By providing proper ventilation in assembly unit, place will be made comfortable for workers. There is an elevator already situated near floor, helps in easy and safe material handling.

2. HANDLING

In assembly department products are handled many times by workers due to sifting from machining shop to assembly and from assembly section to brazing section. Products are handled with bare hands. Such handling leads to moisture and dirt accumulation on jobs. This causes rusting of component earlier though oil is applied while packaging. To avoid this problem, It is suggested the use of gloves in assembly and inspection section. Another solution on rust is the use of Silica Gel packets while packaging. The silica gel soaks moisture content and prevents early rusting because moisture is required for rusting phenomena. If moisture contact is avoided, then rusting is prevented. Rejected parts due to rust takes lot of time for rework. This causes loss of production.

3. BLANKING NEAR STOCK ROOM

It find that , in company blanking is done on machine far from shearing machine which is near the stock room though machine near shearing machine is capable of doing same job of blanking. This is because of avoidance by worker to change the dies of machines. This leads to large material handling in company two persons engaged in shifting this material leads to loss of production. To enhance the productivity, blanking should be done near to the stock room.



Fig.1. Blanking Operation

4. USE OF DIGITAL COUNTER METERS

On few machines, digital count units are provided. It counts no. of parts machined on that machine. It can suggest them to set digital count unit on each machine and use that count as a competition in workers. Give them prices for that. It motivates workers.

CONCLUSION

The aim of this paper is to reduce the waste that affected the productivity. Also shows that it is necessary to reduce wastage in raw material, wastage of time in case of men and machinery, wastage of production space etc. to improve productivity. Several techniques like work study method, statistical quality control process, inventory control, operation research, value analysis etc. are used to minimise wastage of resources and productivity.

REFERENCE

1. M.V.Kavade, Anant Awasare "A Review of Assembly Line Changes for Lean Manufacturing" IOSR Journal of Mechanical and Civil Engineering, (IOSR-JMCE) ISSN: 2278-1684, PP: 01-05
2. M.V.Kavade, Anant Awasare "Compressor Assembly Line Changes for Integration with Application of Lean Manufacturing Tool", International Journal of Advanced Engineering Research and Studies, Vol. IV/ Issue II/April-June, 2013/E-ISSN 0976-3945
3. Anant Awasare "Reduction of Waste by Applying Lean Manufacturing Tool for Assembly Line", International Journal of Engineering Technology, Management and

Applied Sciences, February 2016, Volume 4, Issue 2, ISSN 2349-4476,PP: 84-89.
4. Anant Awasare, P.S.Jadhav, D.S.Chinchkar "Lean Design of Assembly Line for Promote Continuous Improvement", International Advanced Research Journal in Science, Engineering and Technology, Vol. 4, Special Issue 1, January 2017, ISSN (Online) 2393-8021, DOI 10.17148/IARJSET,PP: 12-15.
5. Anant Awasare, D.S.Chinchkar, R.N.Panchal, P.R.Pawar "Waste Reduction for Assembly Line Layout with Integration of Lean Tool: Kanban", International Advanced Research Journal in Science, Engineering and Technology, Vol. 4, Special Issue 1, January 2017, ISSN (Online) 2393-8021, DOI 10.17148/IARJSET/ NCDMETE. 2017.22, PP: 89-92.
6. Anant Awasare, R.N.Panchal, A.M.Zende, H.M.Kumbhar "Development of Assembly Line Layout for Measurement of Work", International Advanced Research Journal in Science, Engineering and Technology, Vol. 4, Special Issue 1, January 2017, ISSN (Online) 2393-8021, DOI 10.17148/IARJSET/NCDMETE.2017.40, PP: 180-183.
7. Anant Awasare, J.R.Panchl, R.N.Panchal, A.M.Zende, H.M.Kumbhar "Application of operation research techniques for solving assembly line balancing problem" International Advanced Research Journal in Science, Engineering and Technology, Vol. 4, Special Issue 1, January 2017, ISSN (Online) 2393-8021.