

# IDENTIFICATION OF PROBLEM OF CHASSIS ASSEMBLY

Deepak yadav ,jaivind Yadav, ashish yadav

**Abstract**— The competition in the current business world is marked by intense agitation and severe contention. This agitated situation has made organizations to revitalize themselves by marching in different routes like Agile, Lean, TPM, TQM etc. to keep them competitive in the market as well to accomplish their objectives positively. Now a day's most of the organizations have taken the established route – Lean to crush the competition. This condition has improved the lean management strategies like, improving the value stream, reduce the changeover times, creating flow in manufacturing, levelling the production based on demand; reducing capital investment etc. This concept has provided the organizations a major source of competitive advantage. The utilization of the source is mainly due to the capability of the organization to change and manage the change.

**Index Terms**— In this study of chassis manufacturing process in KLT has different problems. One of the problem we identified that in process there is tapping issue. In tapping the threads of nuts gets damaged.



## 1 INTRODUCTION

The present manufacturing scenario demands low quantity and high variety parts. This can be achieved only through lean manufacturing. The present production system like Just-in-which in turn mean more setup times (non-productive time). Companies should focus on reducing non-productive time in order to remain competitive. Thus quick change over is a critical element in lean manufacturing. Quick changeover is also known as setup reduction which focuses on eliminating or reducing non value added activities during the setup. This helps companies to efficiently change the tool/mould from one part to another.[5]

- In chassis manufacturing process, weld square nuts are welded on LH&RH of chassis. The chassis are hold on fixture by the help of these nuts

During transfer of chassis for next process, the suspended particles are accumulated on threads of nuts.

During transfer of chassis for next process, the suspended particles are accumulated on threads of nuts.

To clean thread, a another process is added i.e TAPPING.

In Tapping process, tapping tools are used.

Due to inaccurate angles or inappropriate torque, threads of nuts get damage.

## 2 PROCEDURE FOR PAPER SUBMISSION

### 2.1 PLACE OF WORK

KLT Automotive and Tubular Product Ltd is flagship company with in the KLT group. It is located at Palghar in Mumbai, Maharashtra.[1]

### 2.2 PROBLEM DEFINITION

In the above process of chassis manufacturing as we identified different problems. Like Press machine die setup tapping issue. In tapping issue the threads of nuts get damaged.

- To study the existing procedure and manufacturing lead time and collect the data.

- Deepak yadav, jaivind yadav, ashish yadav is currently pursuing masters degree program in mechanical engineering in Thakur college of engineering and technology, Mumbai, Maharashtra, INDIA,. E-mail: yadavdeepak17596@gmail.com

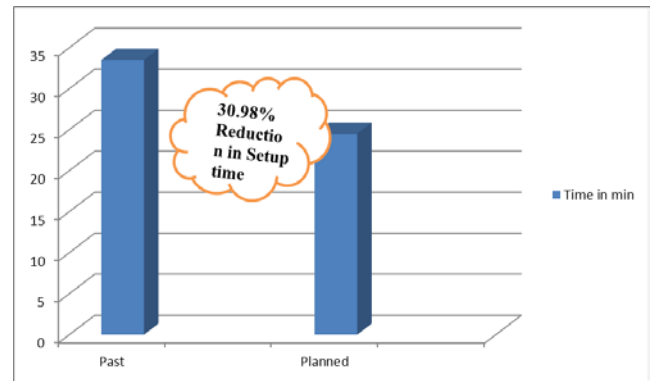
## 2.3 METHODOLOGY

- OUR PROJECT AIM IS TO ELIMINATE CHANCES OF NUTS THREAD DAMAGE.
- THESE CAN BE DONE BY FOLLOWING PROCESS-
  1. CHANGING THE COMPOSITION OF STAINLESS STEEL USED FOR MANUFACTURING OF NUTS.
  2. IMPROVING THE PROCESS OF TAPPING.
  3. BY TEMPORARY COVERING THE THREADS OF

NUTS.

## DATA COLLECTION AND ANALYSIS

The data has been collected from the planning department of the KLT Automotive and tubular products Ltd. The production schedule for the last three months has been analyzed. The analysis showed that machines setting were the bottle neck in the company. Setup process is thoroughly evaluated on the machine. It is found that there are several non value added activities happening during the setup process.



## OBSERVATION

The above data collections shows that maximum time taken in set up is because of not converting internal activities to externals. Also in internal set up maximum time is taken for die setup time.

## PROBLEM SOLVING

The success of any study or a study lies on the proper selection of an appropriate strategy and right methodology. Also it is essential to have a systematic procedure to approach the problem. The right approach towards the problem will increase the confidence level of the organization. Without one, the solutions may be ineffective and may lead to some painful consequences. Study and finding the suitable composite material for capping on threads of nuts which can sustain the temperature of welding chips. Improve the process of tapping by using tapping stands so that the inclination will be at particular angle.

## EXTERNALIZING INTERNAL ACTIVITIES

In this step the activities which needed to be converting to external had been converted. This could save few minutes of setup. The result of this steps remove the tapping process and the result graph is shown in figure below

## IMPROVE EXTERNAL ACTIVITIES

The external activities had been standardized and improved after separated from the internal activities. The separation of internal activities from externals has been done by giving training to the employees. Also improve the activities by implementing 5S.

## CONCLUSION

The ultimate result of the study is to enhance the productivity. To support that some of the sub results also need to be addressed. The sub results are the results after tapping process implementation.

## References

### Websites,

1. <http://www.kltauto.com> last visited on october 05 2017

### Journal Paper,

2. 3D numerical simulation of projection welding of square nut to sheets\_C.V. Nielsen<sup>a</sup>, W. Zhang<sup>b</sup>, P.A.F. Martins<sup>c</sup>, N. Baya<sup>a</sup>  
2012
3. Numerical and experimental analysis of resistance projection welding of square nuts to sheets  
Chris V. Nielsen<sup>a</sup>, Wenqi Zhang<sup>b</sup>, Paulo A. F. Martins<sup>c</sup>, Niels Baya