

# Line Balancing by Using Time Study

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## Abstract:

Assembly line is the key function to get the mass production. The research has been done for assembly line balancing with various studies. Assembly is the important process for manufactured goods insight where parts and subassemblies are incorporated together to form the end products. As product variety increases due to the shift from mass production to mass customization, the time factor is an important parameter. In this paper introduce the challenges of design and execution with respect to the time study.

*Keywords: - Product realization, mass customization, disassemble and installation*

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## I. INTRODUCTION

One of the main issues concerning the development of an assembly line is how to arrange the tasks to be performed. This arrangement may be somewhat subjective, but has to be dictated by implied rules set forth by the production sequence. For the manufacturing of any item, there are some sequences of tasks that must be followed. The assembly line balancing problem (ALB) originated with the invention of the assembly line. However, during the initial years of the assembly line's existence, only trial-and-error methods were used to balance the lines. Since then, there have been numerous methods developed to solve the different forms of the ALB. Development of assembly line and then balancing of the assembly line is having importance from the

productivity point of view. As most of the small scale and medium scale industries are does not following the various techniques available for line balancing or even line developing which may cause the loss of the productivity.

## II. STEPS IN ASSEMBLY LINE BALANCING

### *Time study*

Time study is the combination of eight steps of activities which are used for developing the standard time of a projected task. Eight steps of activities are discussed below:

Step 1: Define the task- In this step; a job should be selected for time study according to the requirements.

Step 2: Divide the task into precise elements (parts of a task that often take no more than a few seconds.)

Step 3: Decide how many to measure the task -numbers of job cycle

Step 4: Time and record elemental times and rating of performance-Recording the time can be done by a stopwatch. When observation time will be taken for an operation, simultaneously normal performance rating should be recorded for the related worker

### III. CONCLUSIONS

The decision problem of optimally partitioning (balancing) the assembly work (tasks) by considering work stations with respect to some aim is known as the assembly line balancing problem (ALBP) in industry. Balancing the assembly line the aim is either to reduce the cycle time or to reduce the Workstation if possible by setting the optimum solution using the latest available techniques. These results provides information about the importance the physical flow aspects of manufacturing.

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