Productivity Improvement in ‘R’ Starter Assembly Line through the Implementation of Lean Line Design

Student’s Name | P. D. John Solomon Raj | EMM (PT-2010)
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Academic Supervisor(s) | Ramdas Chandrashekar
Industrial Supervisor(s) | Vinayak Siddhanti, Bosch Ltd., Bengaluru

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Abstract:

There are different types of starters being assembled at Bosch plant at Nagnathapura. ‘R’ starter is one of the different types of starters. Customer demand for R type starters has been steadily increasing. The delivery fulfilment was low at 88%. There was a need to increase the productivity of R starter assembly to meet the customer demand. Lean Line Design was implemented in R starter line to increase the productivity of the line.

Lean Line Design focuses on identification and elimination or reduction of wastes in the manufacturing line. Value stream mapping (VSM) was done to identify the wastes in the system. Through brainstorming, areas of improvement were identified and actions were implemented. Focus areas were reduction of set up time, improvement in line balancing, elimination of unnecessary motion and reduction of fatigue to the operators. Conveyor with work piece carrier was introduced in the line. Stations were modified to eliminate unnecessary motions. Reduction of set up time was achieved by redesigning the fixtures.

Implementation of the actions resulted in an increase in productivity by 17%. Set up change losses were reduced from 8% to 2%. Delivery performance improved from 88% to 96%. Apart from these, the actions also increased the morale of the operators, as some of the actions reduced operator fatigue.

R starter assembly line with conveyor and work piece carrier

Project outcome: Line balancing