Reduction of WIP Inventory in Brake Cable Manufacturing by Applying Lean Concepts

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Abstract:

The term productivity means average measure of the efficiency of production. The key inputs for productivity are capital, labour, and materials. In Lean production system JIT forms a linkage between WIP inventory and productivity. This project deals with various methodology of WIP inventory reduction with lean concepts. Many organisations have improved their productivity by reducing their WIP inventory. The inventory reduction in process or station exposes the defects or flaws in the process and this forces the line leaders and managers to eliminate the source of variability. M/s SAPL is one of the largest brake cable manufacturers in the world which has high volume production and it has to deal with huge inventories in and out of the factory. The WIP inventory in the GM line has been taken as pilot for decreasing the WIP inventory and thus enhancing the productivity of the organisation.

Overall value chain of the production facility was studied and VSM was made to understand the waste accumulated in various areas. The key area was selected and was analysed for the various root causes SAPL production, quality, maintenance and planning staff were involved in brainstorming session to understand various root causes of the problem. Fish bone tool was used to check various possible causes by man, machine, method and material. Various ideas were generated by the team and finally they were narrowed down for few feasible solutions.

The overall WIP inventory reduction was projected with various countermeasures. WIP inventory reductions of 59% is achieved by optimising the inventory in the line. About 89% of the inventory could be reduced by adopting SPS system in the GM line. Rejection control system will reduce 14% of the inventory. The Andon system could reduce the WIP inventory by 18%. The layout optimisation will lead to 53% reduction in the inventory. The existing WIP inventory of Rs 6296/- is estimated to be reduced to Rs 4407/- with all countermeasures successfully implemented.