

## Quality Improvement in Hour Counter Assembly Line using Quality Tools and Shainin Approach



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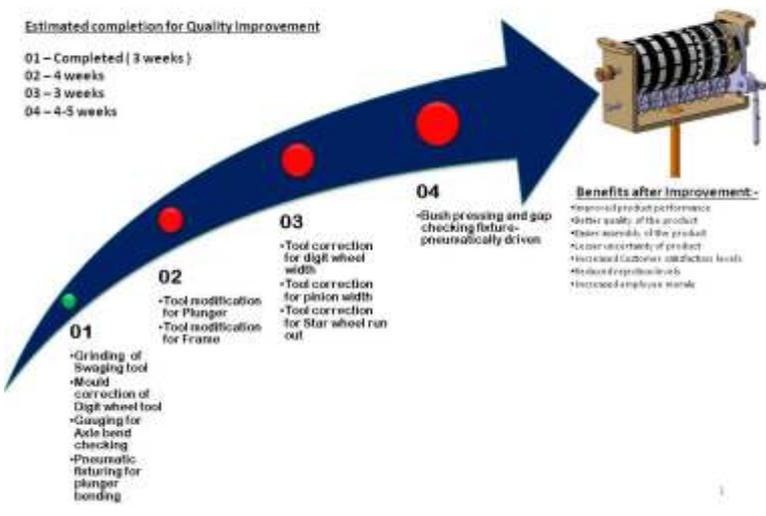
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**Abstract:**  
In current scenario, manufacturing companies world-wide are aiming to achieve zero defects by adopting different problem solving techniques to improve profitability and satisfy the customers. In today's world, the cost of quality must be as minimum as possible in order to be competitive in the market. The idea behind this project is to reduce parts per million reject using problem solving techniques.

The main objective of carrying out this project is to reduce rejections levels in Hour Counter sub assembly in tractor line.. In this project a systematic study is done by analyzing the product using Paired Comparison test in Shainin methodology. And further, to Shainin's Paired comparison study, SPC study were also been conducted to find out variations in child products which are used in assembly of Hour Counter based on failure factors of Paired Comparison test. Based on the study methods a few child parts deviating from the specifications were identified. Root Causes for the failure of were found out by using the Why-Why analysis. Based on Why-Why analysis an Action plan were framed for rectifying the highlighted issues. Corrective actions have been taken based on action plan to improve quality to next level and thereby eliminating the failure of these child products.

Once the improvements were made, it was observed that rejection levels were reduced considerably from 32,843 PPM to 27,873 PPM. The action taken were mainly on the aspects of improving quality of child parts by providing better control mechanisms in the form of work instruction and history cards where ever necessary. Two pilot trails were conducted for 100 nos each. It was found that the variation in child parts hampers the quality of sub-assemblies thereby each of the variation have to be plugged to get a better quality product and which enhance the functioning of the product. The main observation was the child products varies from time to time while manufacturing. Payback period for each of the suggested Actions for the future are mentioned. A Roadmap for future improvements is illustrated with its timeline in order to get superior quality product. Hence these initiatives taken will help the company to reduce re-working / rejection of Hour Counter.

### FRAME WORK FOR PRODUCT QUALITY IMPROVEMENT



**Frame work for product quality improvement**