Quality Improvement in Centerless Grinding Process using DMAIC Approach

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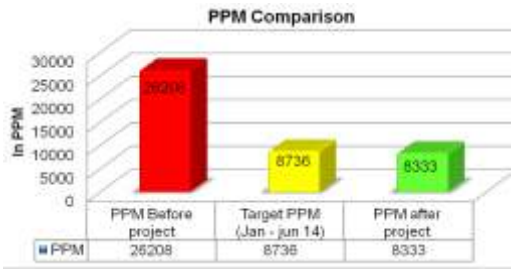
Abstract:

Quality is an approach to understanding precisely what customers need and consistently delivering accurate solutions within budget on time and with the minimum lose to the company. In recent times quality is just about meeting the expectation of customer, no matter what is the cost. Thus all companies are striving hard to increase the quality of the products and create customer delight. A variety of methodologies are available for quality improvement, These includes Six Sigma, Lean Management, Lean, Six Sigma, Agile Management, Re-engineering, Total Quality Management, Just-In-Time, Kaizen, Poka-Yoka, etc. All these methods tend to achieve a similar goal. In this project DMAIC method is used, where DMAIC stand for D- Define, M- Measure, A- Analysis, I- Improvement, C- Control.

The objective of the project was to "Quality Improvement in Centerless Grinding Process using DMAIC Approach". Centerless grinding of spiders was identified as the cell making maximum number of rejections. The problem was defined and analyzed using basic quality tools, such as Why Why analysis, Cause and Effect diagram. Brain storming sessions was conducted with operators and immediate engineers associated with the process. Possible causes were listed out and addressed using techniques like trial and error, reinforcing basic machine manufacturer's recommendations. The improvements were further analyzed and documented. The standard operating practices were created and trainings were imparted to operators

As a result the PPM of rejected component reduced from 26208 to 8333 i.e. a 68% of benefit was obtained. Standard operating practices and control methods like control charts, FTQ monitoring, permanent fixes for special causes was derived and implemented for better control and sustenance of the improvements implemented.

Spider component



Different facilities introduced