

First Pass Yield Improvement in Press Shop using Quality Management Approach



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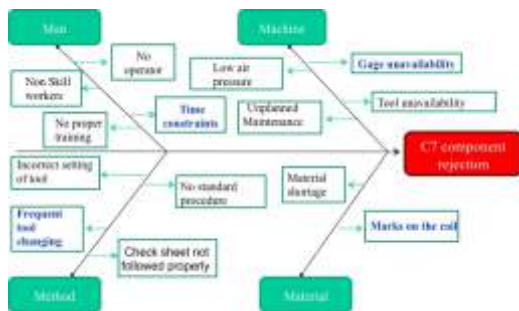
Keywords: First Pass Yield, Pareto Analysis, Why-Why Analysis, Fish Bone Diagram, Poka-yoke

Abstract:

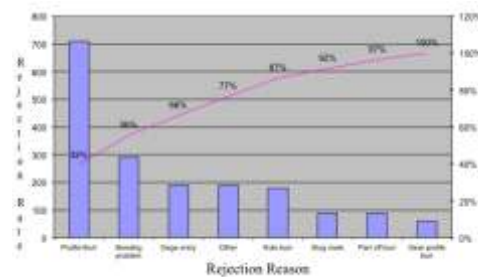
First pass yield (FPY) is a good gauge to examine productivity and effectiveness of a process as it takes into account the cost of rework and eliminates non-value added activities from the process. The main aim of this project is to improve FPY in press shop using various quality management approaches.

Collection of data has been carried out for various progressive press tools for the months of January, February and March. By analyzing the collected data, found that rejection cost and rejection quantity was more for C7 base unit progressive tool. After identifying the progressive tool, C7 base unit was considered for improving the FPY. Detailed Gemba study was carried out for C7 base unit component. Using various quality management approaches like quality circle, Pareto chart, fish bone diagram and Why-Why analysis, major critical problems resulting in rejection of component due to profile burr, gage entry problem and hole burr were identified. Wire cutting was found to be major root cause for the frequent occurrence of profile burr. Corrective action implemented to minimize the problem was by fabricating a 41mm thick ground block to support the clamp and a threaded clamp with adjustable support. For gage entry problem, spring back in sheet metal was found to be major root cause after analysis. The corrective action for this problem was addressed by providing over bending angle of 1.80. Hole burr problem was due to lack of communication between the shifts and was corrected by introducing employee monitoring sheet and daily work sheet.

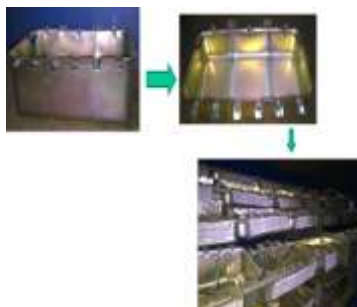
After implementing all the corrective actions and solutions, FPY for the month of June on C7 base unit progressive tool was studied. The FPY for the month of June increased by 19.2% when compared to FPY of January that is from 80% to 95.36%. The rate of rework reduced 2180 to 800 quantities. The rate of rework reduced by 63.3%, rejection cost reduced by 87.5% reduction in rejection of C7 base unit component by 78.78%. Implemented 5S, Poka-yoke, 8D benchmarking and spare management to effectively increase FPY for C7 base unit component.



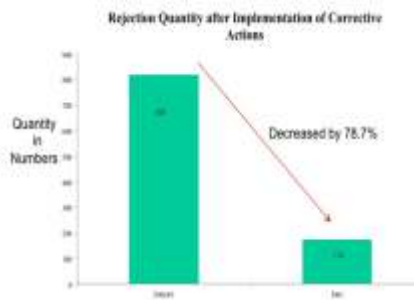
Fishbone diagram for component rejection



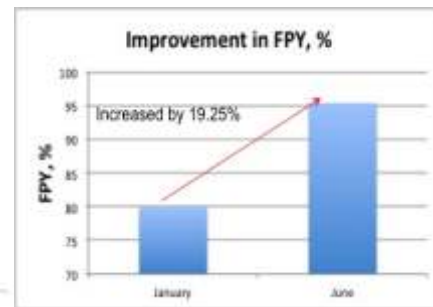
Pareto chart for C7 component rejection



Spare management



Rejection quantity after corrective actions



Improvement in FPY after implementation