

Taguchi Approach for the Optimization of the Stitching Defects of Knitted Garments

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Abstract : For any industry, the production and quality management or wastages reductions have major impingement on overall factory economy. This work discusses the quality improvement of garment industry by applying Pareto analysis, cause and effect diagram and Taguchi experimental design. The main purpose of the work is to reduce the stitching defects, which will also minimize the rejection and reworks rate. Application of Pareto chart, fish bone diagram and Process Sigma Level/and or Performance Level tools helps solving those problems on priority basis. Among all, only sewing, defects are responsible form 69.3% to 97.3 % of total defects. Process Sigma level has been improved from 0.79 to 1.3 and performance rate improved, from F to D level. The results showed that the new set of sewing parameters was superior to the original one. It can be seen that fabric size has the largest effect on the sewing defects and that needle size has the smallest effect on the stitching defects.

Keywords : garment, sewing defects, cost of rework, DMAIC, sigma level, cause and effect diagram, Pareto analysis

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