APPLICATION OF QUALITY ASSURANCE TECHNIQUES IN MANUFACTURING INDUSTRY

By

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CERTIFICATE

This is to certify that the report entitled, "Application of Quality Assurance techniques in Manufacturing Industry", Submitted by Mr. Yashank Kumar (2011MEE3235) to the Department of Mechanical Engineering, Indian Institute of Technology, Delhi (IIT Delhi), in partial fulfillment for the award of the degree of Master of Technology in industrial engineering, is a record of original work carried out by him. He has worked under my supervision and guidance and has fulfilled the requirements for the submission of this report, which to my knowledge has reached the requisite standard.

The work has not been submitted, in part or full to any other University or institute for the award of any degree or diploma.

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ABSTRACT

Quality has become the key determinant of success in all aspect of modern industry, services as well as manufacturing. Quality revolves around the concept of meeting or exceeding customer expectation applied to the product and service. It is very important for any industry to fulfill his customer requirement. Many companies approach customer satisfaction in a narrow way by confining quality considerations to the product alone. Whereas, service connected with the product are frequently overlooked.

This thesis reviews the contribution of statistical analysis and method to modern quality control and improvement. For this purpose an Industry named AG Derco Belting (India) Private Limited, Ghaziabad (U.P.) has been chosen. Analysis of manufacturing process was first carried out for the critical quality characteristics and statistical process control tools are used for quality check. Using control tools such as: cause and effect diagram, scatter diagram, check sheet, flow chart, Pareto chart, histogram and control chart. Product quality can be maintained and improved. These tool can be used for process control (online quality control) and product control (offline quality control). The primary goal is to bring the process in a stage of statistical control. The objective is attained by detecting and removing special causes, control limits are calculated and control chart are used to monitor and maintain the stability of process. After implementing the control chart as a monitoring tool, the process capability study is used to validate the effect of improvements.

Keywords: Process control, product control, Statistical Process control, Control chart, Process capability
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