

# Robust Design and Analysis for Quality Engineering

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## Optimising planer cam mechanism in printing machine for quality improvement using Taguchi method: risk analysis with concurrent engineering approach

M. Nataraj\* and V.P. Arunachalam

Government College of Technology, Coimbatore – 641 013, India  
E-mail: m\_natarajaget@yahoo.com E-mail: vp\_arun@yahoo.com  
\*Corresponding author

K.G. Suresh

M/s. Autoprint Machinery Manufacturers Pvt Ltd, Coimbatore – 641 108, India  
E-mail: suresh.k.g.@autoprint.co.in

**Abstract:** It is critical for an industrial organisation to strike a balance between what is defined and the way to achieve it at the least cost, so as to maintain competitiveness. Also, considerable resources, in terms of time, cost, material, quality, etc., are spent before a valid inference is taken. The Taguchi method is a technique that addresses said industrial needs, enabling the designer to find the optimum combination of control parameters to make the response insensitive to noise factors. This research paper discusses parameter optimisation of the planer cam mechanism via computer-based models, at the start of the design stage, by Taguchi's Orthogonal Array (OA) based Design of Experiments (DOE) to understand how the variation in product specifications affect the system performance.

**Keywords:** ANOVA; cam assembly; confidence interval; orthogonal array; response curves; robust design; SN ratio.

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**Biographical notes:** M. Nataraj obtained a BE (Mech) degree in 1984 from Madurai Kamaraj University, and ME (Engg Design) degree in 1991 from the Bharathiar University in India. He is currently a faculty member in the Department of Mechanical Engineering at Government College of Technology, Coimbatore, India, carrying out a Doctoral Programme in risk analysis with concurrent engineering approach using Robust Design Method. He is a member of the Indian Society of Mechanical Engineers (ISME). He has had a number of papers published or under review. He has presented 12 papers at national conferences and two papers at an international conference.

V.P. Arunachalam obtained his PhD in 1988 from Bharathiar University, Coimbatore, India. He is currently heading the Department of Mechanical Engineering at Government College of Technology, Coimbatore, India and guiding 14 PhD scholars. He is a senior member of the Institution of Engineers (India). His research areas include control systems, CAD/CAM, scheduling, line balancing in shop floor, composite materials, reengineering and quality management. His articles have appeared in the *International Journal of Control Systems, International Journal of Electronics, International Journal of System Science, International Journal of Advanced Manufacturing Technology* and *Indian Journal of Engineering and Material Sciences*.

K.G. Suresh is the Technical Director of Autoprint Machinery Manufacturers Pvt. Ltd, a leading manufacturer of offset printing machines in India, where he is responsible for the design and production of printing machines. He obtained his BE (Mechanical) from PSG College of Technology and his Master's degree from the Indian Institute of Technology (IIT), Madras.

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An extensive use and analysis of orthogonal arrays and Taguchi's parameter design are the major contents of this book. New features are: introduction of Introduction of Quality Engineering; Analysis of Quality Information and Quality Robust Response Surface Design and Analysis; Six Sigma for Management. Publication Cover. Journal. Journal of Quality Technology 0. Altmetric. Book Reviews. Robust Design and Analysis for Quality Engineering. Robust Design and Analysis for Quality Engineering. Sung H. Park. Suat Tanaydin. Design of Experiments in Quality Engineering. J. T. Luftig and V. S. Jordan. Request PDF on ResearchGate Quality Engineering Using Robust Design and Analysis The concept of quality engineering is introduced, and the role of. this book is well-written and properly addresses its audience. I would recommend it as a reference text on Taguchi methods a guide for the use and. Significantly, Robust Design and Analysis for Quality Engineering addresses the following techniques: Taguchi's quality engineering approaches, concepts of. Chapter 9 tells readers the methods for tolerance design. Robust response surface design and analysis, the concept of Six Sigma and its application in quality. Robust design and analysis for manufacturing processes with parameter Quality Engineering Using Robust Design, Prentice-Hall Int'l, Inc (). Taguchi .Book review: Robust Design and Analysis for Quality Engineering, Sung H. Park, Chapman and Hall, Number of pages: Price: ? P. D. T. O'. Quality engineering using robust design / Madhav S. Phadke. p. ca. Includes index. . Data Analysis and Verification Experiments Standardized. Quality Engineering Using Robust Design . Joseph R. Litko, Sensitivity analysis for robust parameter design experiments, Proceedings of the 37th conference. medscopesolutions.com: Robust Design and Analysis for Quality Engineering ( ) by Sung Park and a great selection of similar New, Used and Collectible. Taguchi methods (Japanese: ??????) are statistical methods, or sometimes called robust design methods, developed by Genichi Taguchi to improve the quality . Consequently, he developed a strategy for quality engineering that can be In Fisher's design of experiments and analysis of variance, experiments aim to. Robust design uses the parameter design approach of Genichi Taguchi to optimize designs of . accelerated life testing and worst case analysis in this requirement for exposure of design to known in the quality engineering profession. Creator: Park, Sung H., Edition: 1st ed. Publisher: London ; Chapman & Hall, Format: Books. Physical Description: x, p.:ill. ;25 cm. Identifier. Keywords Robust Design Methodology, Exploratory Data Analysis, quality improvement example of how statistical engineering, instead of statistical science. overall computational burden of a detailed analysis of the design by area, robust design experiments are an important quality engineering tool for developing. History Behind Robust Engineering (Taguchi Methods). The whole idea . REFERENCES. Park, Sung H. Robust Design and Analysis for Quality Engineering. The research group Reliable and Robust Design at KU Leuven Campus De Nayer in the numerical analysis in order to assess the reliability of the design the assessment of the design quality in real-life conditions including all possible.

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