The IUP Journal of Mechanical Engineering

Implementation of Zero Defect Concept Through Quality Tools for Process Capability Improvement of Diesel Engine Pin

Article Details

Pub. Date	: Feb, 2021
Product Name	: The IUP Journal of Mechanical Engineering
Product Type	: Article
Product Code	: IJME40221

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Availability	: YES
Subject/Domain	: Engineering
Download Format	: PDF Format
No. of Pages	: 18

Price

For delivery in electronic format: Rs. 50; For delivery through courier (within India): Rs. 50 + Rs. 25 for Shipping & Handling Charges

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Abstract

We live and work in a hyper competitive world. Competing and winning in today's global marketplace require products and services of high quality developed with short lead times with minimum waste and optimum use of resources. This requires very robust processes; for that, zero defect is a quality concept to survive in this market with continuous improvement in process. The paper presents a study of zero defect concepts through application of quality tools to improve process capability and obtain quality product. It takes advantages of Failure Mode Effective Analysis (FMEA), Statistical Process Control (SPC) and Measuring System Analysis (MSA) to adapt innovative technologies integrated with the operational aspects in order to prevent failure in diesel engine pin. The process validation is carried out through SPC to validate the process. The study concludes with the development of process improvement activities with reduction in non-conformities to achieve zero defect concepts.

Introduction

Presently, automobile industry is one of the largest and fastest growing industries in the world. India's vehicle manufacturing industry is the sixth largest in the world. This has given rise to the challenge of creating world-class manufacturing systems. The paper adopts zero defect concept to meet the challenges of the industry.

"Zero Defects is a management tool aimed at the reduction of defects through prevention. It is directed at motivating people to prevent mistakes by developing a constant, conscious desire to do their job right in the first time." Zero defect management is an idea that gained its focus in the 1960s. The philosophy was put together and proposed by Philip Crosby. It is a program to eliminate defects in the industrial production, and was primarily intended for automobile production. Zero

Keywords

Core tools,7QC tools, Zero defect, Failure Mode Effective Analysis (FMEA), Statistical Process Control (SPC), Measuring System Analysis (MSA)