

# **Setup Time Reduction Using SMED in a Manufacturing Industry: A Case Study**

**Rajdeep Singh<sup>1</sup>, Upender Dhull<sup>2</sup>**

<sup>1</sup>Professor and Head, Department of Mechanical Engineering, CGC College of Engineering  
Landran, Mohali, Punjab (India)

<sup>2</sup>Assistant Professor, Mechanical Engineering, National Institute of Technology, Kurukshetra,  
Haryana (India)

Email: [callmerajdeep@gmail.com](mailto:callmerajdeep@gmail.com) , [upenderdhull@gmail.com](mailto:upenderdhull@gmail.com)

## **Abstract**

There is tremendous increase in market request for customized products with reduced product life cycle because of never ending technological innovations. So stocked goods become obsolete very quickly which increases inventory costs and make stocks expensive. For lot size reduction and flexibility, making quick changeovers from one product type to another product is must for manufacturers. This was a big challenge until Shigeo Shingo devised the methodology of Single Minute Exchange of Dies (SMED) at Mazda in 1950. SMED is the only proven methodology with documented cases having reduction from hours to less than ten minutes (single digit). The paper dwells on a case study, which aims at analyzing the results of SMED implementation in a typical Indian piston-manufacturing unit in northern India. Study consists of developing and implementing a computerized management information system for production loss monitoring on bottleneck machines and applying various phases of set up time reduction using SMED methodology. Results show changeover time reduction of as much as 30% and annual savings of approximately Rs. 1.3 crores.

## **Keywords**

SMED, Setup Time, EOQ, Machine under Setting (MUS), SQC