Implementation of Single Minutes of Exchange Die (SMED) in Malaysia Metal Stamping Industry: A Case Study

M.A. Mansor[a*] , A.R Ismail[b], M.R.M Yasin[a] and A.Halim[c]
[a]Faculty of Engineering Technology, University Malaysia Pahang,
Lebuhraya Tun Razak, Gambang, Pahang, Malaysia.
[b]Faculty of Technology Creative and Heritage, University Malaysia Kelantan,
Bachok, Kelantan, Malaysia.
[c]Institute of Postgraduates Studies, University Malaysia Pahang,
Lebuhraya Tun Razak, Gambang, Pahang, Malaysia.
*Corresponding Author: ariffin@ump.edu.my

ABSTRACT

Downtime loss due to long set-up time will lead to shorter actual production time. This situation will result in a loss to the company because they could not produce their products as planned. Therefore, set-up time needs to be reduced to maximize the resources invested by the company. The most popular approach to is an approach to improve setup time is Single Minutes of Exchange Die (SMED), developed by Shigeo Shingo in early 1960s. Setup operations were divided by into fundamental types; Internal setup and External setup. By Converting Internal setup to External setup, the company can reduced the setup time and thus, lead to longer actual production time. This paper presents an afford of a Malaysia's metal stamping company in implementing SMED in their company. The company is a supplier of passenger car's components to Malaysia's major car makers. The implementation was carried out by separating Internal and External Setup, converting Internal to External Setup and finally streamlining all aspects of the setup operation. After implemented SMED approach, the company managed to reduce their set-up time from 32 minutes to 12 minutes. However, the company still working hard to achieve the objective of SMED, which is to complete all changeovers are in a single number of minutes or less than 10 minutes.

Keyword: Single Minutes of Exchange Die, Metal Stamping, Set-up Time

1. Introduction

Due to complex design of the product and high competition among manufacturers, manufacturing in today's world rely more on the usage of the machine. Machine need to be set-up and maintained. Time used for machine set-up will affect actual future production. If we spend more time in setting up the machine, it will cause the time used for the production will be shorter. This factor also applies to the exchange of die