BIRMINGHAM CITY University

Magnesium Alloy Die Casting Process Improvement using the Single Minute Exchange of Dies (SMED) Method and Other Techniques

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Abstract

In the die casting process the optimisation of machine capacity utilisation is a key goal in achieving economic throughput. The die changeover procedure is widely recognised as a possible area for reducing plant downtime. Following a visit to a sister plant, the SMED method has been applied and augmented by rationalisation of procedures. Identification of internal and external activities and moving activities off-line wherever appropriate was investigated, along with the elimination of Non-Value-Added activities wherever possible. There was also a bottleneck in the use of a single crane which may have been otherwise engaged when dies need to be changed. Other operating parameters will need to be investigated, including robotic loading and unloading. There are a number of challenges and opportunities for further downtime reduction, and this study is therefore on-going. The business case needs to be addressed and costs/benefits analysed. To this end, usage and order levels both before and after the Project will need to be monitored, and any new uptake identified. Changeover times at the UK plant have so far been reduced from 24 hours to an average of 6½ hours.

Join Birmingham City University on 20th July for more insights on hidden benefits of Magnesium.