World Academy of Science, Engineering and Technology
International Journal of Mechanical and Industrial Engineering
Vol:12, No:02, 2018

Time and Cost Efficiency Analysis of Quick Die Change System on Metal Stamping Industry

Authors : Rudi Kurniawan Arief

Abstract : Manufacturing cost and setup time are the hot topics to improve in Metal Stamping industry because material and components price are always rising up while costumer requires to cut down the component price year by year. The Single Minute Exchange of Die (SMED) is one of many methods to reduce waste in stamping industry. The Japanese Quick Die Change (QDC) dies system is one of SMED systems that could reduce both of setup time and manufacturing cost. However, this system is rarely used in stamping industries. This paper will analyze how deep the QDC dies system could reduce setup time and the manufacturing cost. The research is conducted by direct observation, simulating and comparing of QDC dies system with conventional dies system. In this research, we found that the QDC dies system could save up to 35% of manufacturing cost and reduce 70% of setup times. This simulation proved that the QDC die system is effective for cost reduction but must be applied in several parallel production processes.

Keywords : press die, metal stamping, QDC system, single minute exchange die, manufacturing cost saving, SMED
Conference Title : ICMEIM 2018 : International Conference on Mechanical Engineering and Industrial Manufacturing
Conference Location : Kuala Lumpur, Malaysia
Conference Dates : February 12-13, 2018