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Overall Equipment Effectiveness (OEE) Analysis: A Case Study of Automotive Components Manufacturing Industry

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Abstract

For any manufacturing system, Overall Equipment Effectiveness (OEE) is widely used to measure the effectiveness. Any company willing to improve productivity must have to improve the Overall Equipment Effectiveness. The company will be considered as World Class Manufacturing if it reaches more than 85% value, with near perfect value for availability, performance and quality factor. With the present global competition and economic conditions, organisations are more concerned about performance management in all aspects including production capacity, costs and competitiveness. It becomes necessary in present conditions to consider tested methods of Lean Manufacturing to improve competitiveness without much additional investments. OEE is one such tool of lean manufacturing. The present study is conducted on a metal working industry, to analyse the OEE including the Availability, Performance and Quality. The equipment under present study is often down, indicating there's always under production. The main objective is to analyse the process by OEE. A Stamping machine was taken, which manufactures stampings every second. Based on the analysis, the availability rate of 87.81%, a performance rate of 88.43 and a quality rate of 97.51% was obtained. Similarly, another power press was taken for study with availability of 83.3%, performance of 92% and quality of 95% was recorded. The OEE in Case 1 is 75.54% and OEE in case 2 is 72.8%, which is far below the world

class of 85%. It can be concluded that in both the cases the Overall Equipment Effectiveness (OEE), has not been effective and needs regular maintenance to reduce the down times and continuous improvement.

Keywords
OEE, Performance, Availability, Quality, Six big losses