

Improvement in Overall Equipment Effectiveness of a Machining Cell using Lean Techniques



A. Jeeva

Jeeva.tdm@gmail.com
Ph. No: 0 81231 05498

Student's Name	A. Jeeva	EMM (FT-2012)
Academic Supervisor(s)	S. Vijaya Kumar	
Industrial Supervisor(s)	K. S. Kishan Doss, Searock Precision Products Pvt. Ltd., Bangalore	

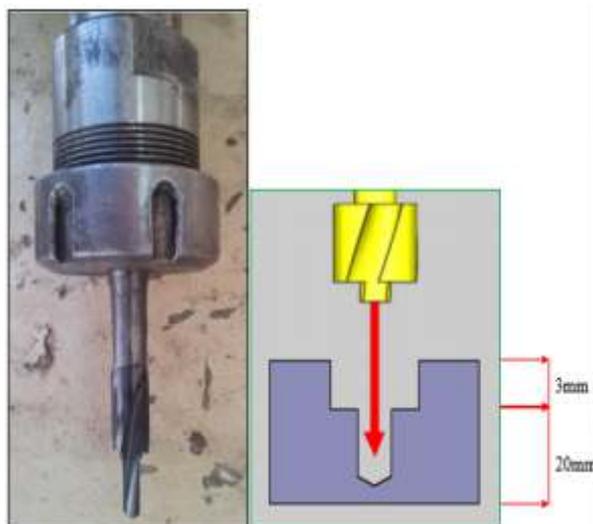
Keywords: OEE, TPM, 5S, Lean, SMED

Abstract:

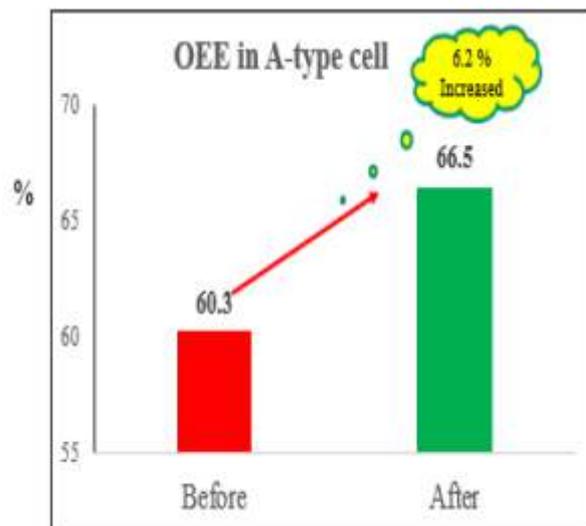
In the invention of agile manufacturing, the machines and its functions are becoming complex. In addition to this the frequent machine breakdowns, low plant availability and increased overtime are a great threat to a manufacturing plant as they increase operating costs of an industry as well as lower productivity. It was found that overall equipment effectiveness (OEE) is one of the best tools for making our industries competitive and effective. OEE of a machine plays an important role in present scenario where delivery and quality are of prime importance to customer. The main aim of this study was to improve Overall Equipment Effectiveness (OEE) in a CNC machine shop through the implementation of TPM techniques.

The project focuses on reducing six losses in a CNC machining set up using TPM and Lean approach to improve overall equipment effectiveness. A methodology for set up time reduction and a unique methodology for cycle time reduction were used to attain the objectives of the project. In addition to this improves availability time in "A" type cell and reduces the losses using lean techniques such as SMED, TPM and 5S.

The implementation of OEE and Lean techniques in A- type machining cell resulted to improvement of OEE from 60.3% to 66.4%. Thereby the availability time is increased 10%, performance time is also increased from 80.3% to 82.6%. In addition to this in the gang drilling machine 2 the implementation of combination tool reduced setup time from 36 min to 24 min and cycle time is reduced from 26 sec to 19 sec. The existing practice has resulted in NVA elimination, cycle time reduction thereby finally enhancing the increased OEE in the machining cell by 6.2%.



Combination tool



OEE in A-type cell