Improvement in Customer Order Fulfillment in Spark Plug Assembly

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Abstract:

This project was carried out to improve customer order fulfillment of spark plug assembly. In Indian automobile industry, specifically two wheeler markets are improving at the rate of double digit growth. Customer order fulfillment level is 87% as against the demand of over and above 90%. There was a lot of scope for improving the system and process to meet the customer demand. This project was taken on priority. Advanced manufacturing techniques were used to increase the productivity, reduce manufacturing cost and improve the quality of the product.

The methodologies used in this project were SMED, 5S, SW1H analysis, Ishikawa diagram. VSM and VSD were used to achieve the target by improving the customer order fulfillment. Bottlenecks were analysed with the help of Pareto analysis and causes were identified. The main focus areas were glaze mandrel and locating holder changing time, electrode feeding fixture design change. Corrective and preventive actions were implemented to reduce the set up time.

This project was focused on improving OEE from 62 % to 72% in spark plug sub assembly area by design modifications, which resulted in set up time reduction from 650 minutes to 330 minutes. Super market was introduced for keeping incoming parts one day safety stock to eliminate machine idle time. Non Value Added time was reduced from 2 days to 1.4 days by combining off-line operation to on-line operation. This has resulted in improving customer order fulfillment from 87% to 92%.

Results of OEE

Customer order fulfillment improvement