Reduction in Lead Time of Machined Hot Forged Rails to Bosch through Supplier Development

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Abstract:
Robert Bosch GmbH holds 71.8% stake in M/s Bosch Ltd., India. M/s Bosch India Ltd., is a market leader in manufacturing of automobile components. Most recent in the stable, is the Common Rail Direct Injection system for diesel engines. Rail is the new product in the Common Rail system to India. We were earlier importing this product from one of the plants in Germany and delivering it to meet the demands of the Indian car makers. As a part of the localisation program in India, the supplier M/s Karnataka Turned Components, was selected, capacities installed and supplies started. But the supplier was not able to meet the demand, hence the project was assigned to the Automotive Supplier Development team, through the project team which was handling the localisation of the forging machining in India. This was when, we had to pitch in to identify the reasons for failure and eliminate them systematically.

The scope of the project was to reduce the lead time of machining hot forged rails and hence improve the delivery performance to Bosch Ltd., from a machining supplier. The challenge was to identify the main causes for high lead time and delivery failure and eliminate them. The major issues, identified as losses during the project, were performance, availability of the bottleneck process for production as well as certain quality issues. The project also dealt with the improvement of internal rejections as well.

Shop floor management cycle is a tool developed by M/s Bosch Ltd. to improve the OEE in the bottleneck process and hence the productivity. The identification of the bottleneck was done through Takt chart and then hourly monitoring was used to identify the losses. Further this data was analysed by the use of tools like Pareto and other quality tools and real root causes are listed down. Later, these causes were validated and appropriate actions was taken to reduce / eliminate them.

<table>
<thead>
<tr>
<th>Heading</th>
<th>INR /Pc</th>
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<tbody>
<tr>
<td>Production</td>
<td>7.80</td>
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<tr>
<td>Logistics (Inventory)</td>
<td>0.87</td>
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<tr>
<td>Quality</td>
<td>18.30</td>
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</tbody>
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Cost benefits from the present project

OEE improvement

Internal PPM reduction

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