Reducing Material Cost in Fabricated Parts for Two Wheelers through Value Analysis Technique

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Abstract:
Global competition made industries to focus on competitive edge for achieving company goal by improving value to customer. Manufacturing high quality products with low cost will facilitate in achieving competitive edge to the organisation. Value Analysis and Value Engineering tools are used in industries for quality improvement, productivity improvement, cost reduction, improvement in product value.

Aim of this project was to reduce the material cost by 15% in two wheeler products. This has been attempted using a job plan approach from Value Analysis technique. Data collection and analysis revealed the potential cost reduction area / subsystem of vehicles. Function analysis and function worth analysis was employed to explore gap between value and worth of the subsystems. The value gap was then considered for generation of various concepts and alternatives. These ideas were scrutinised using solution prioritisation and feasibility ranking. Product 1 was fuel tank in moped and Product 2 was ignition coil mounting brackets in motorcycle.

In fuel tank, silver brazing operation for joining fuel outlet adaptor to tank and in ignition coil, mounting brackets for mounting were found to incur more cost than their worth. Fuel tank adaptor joining was replaced with copper brazing operation; thereby 10% material cost was reduced. Mounting bracket count was reduced from 3 to 1 number, thereby 8% of material cost was reduced. Projects were implemented on pilot lot basis for shop floor validation. Cumulatively, 18% of material cost was reduced with annual savings of around Rs. 50 lakh to the organisation.

FAST diagram of fuel tank

Fuel tank - before and after modification

Ignition coil - before and after modification

Function analysis

Product 1

Product 2

Reduction in material cost

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