Reduction in Consumption and Manufacturing Cost of Pneumatic Gauges through Reengineering Approach

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Abstract:
Indian industries are passing through difficult phase due to global downturn of the economy. Factors like rise in inflation, declining demand and currency depreciation have forced the organizations to choose cost reduction strategy in order to survive in the market. Reducing the cost of consumables will significantly reduce the input cost of the final product. In line with the management objective of cost reduction, this project has been taken up to reduce the consumable cost incurred for pneumatic gauges. Aim of the project was to reduce consumption of the pneumatic gauges and to reduce manufacturing cost of the same.

Data collection and analysis was done to find the root causes for shorter life of pneumatic gauges. Material selected for manufacturing of the gauges was critically analysed and superior material was suggested. Further, the surface hardening employed for the gauges were also analyzed and modified nitriding process was recommended. Improved heat treatment process and resultant achievement of target values were validated through pilot batch production. Complete business and manufacturing processes were mapped and non value added activities were identified using VSDiA tool. Cost analysis was done using ABC method and cost structure was redesigned. Pilot batch was given for field trials and validation data were captured for comparative study.

Validation study revealed that the pilot batch has surpassed the expected useful life. Projected reduction in annual consumption by 40% was estimated through increased gauge life. Design of new order process using VSDiA has reduced the total lead time by 50%. Reduction in manufacturing cost by 52% was achieved due to design and process improvements and through restructured cost. Customer value has been enhanced through superior quality product at reduced price.

Comparison of projected and current consumption of pneumatic gauges

40% reduction in annual consumption