

Design kit of variant parts via kitting system for mass customization in automotive industry

Abstract

This present paper addresses on designing the kit parts for variant engine model in new kitting area of subassembly line, one of the main processes in final assembly line. To date, a variant model of vehicles leading to parts variety that can deliver inefficiency of production in terms of cost and time. One of the major processes in vehicle assembly that is sub-assembly line aims at producing a large number of finish line products encompasses variety of components that supports other main assembly process such as final assembly. The availability of parts needed at each workstation in the assembly line is critical for the production efficiency. Due to this fact, this paper aim to design a kit for two variants engine models in a reliable feeding system. This situation ensure the required parts available at line with high diversity of components and different physical features (i.e. weight, volume) to name a few in single complete different model. As such, the total operating cost and time consume in assembly production is rely on how efficient the system can response to a prompt target plan without neglecting the quality of the product. A design of kit for parts placing enables reliability of variant parts model in single line that will corresponds to mass customization of the production line. Overall, this paper offers a solution in terms of the availability of parts needed in rapid mass customization production of assembly line at one of the key player manufacturer plant in automotive industry. It is expected that the findings of this on-going study will provide production team with kits design to choose from in evaluating the assembly system performance which would lead to the production efficiency as well as minimize the associated costs.

Keywords; Assembly line; Design for assembly; Kitting; Material handling