This paper focuses on the design of Lean kitting assembly system against Line Side assembly process for the factors like operator distance travelled, floor space required, work in process inventory and operator walking time for a component kitting problem in an automotive assembly process. Here, a mathematical model is developed to quantify the above factors. Also a numerical example is performed to demonstrate the mathematical model. The result shows that Lean kitting consumes less for all the above factors. A Multi Criteria Decision Making model namely Analytical Hierarchy Process (AHP) is done for weighting above said factors among Line Side, Lean Kitting and Kanban Assembly System. The result of AHP shows that Lean Kitting is the best suitable method.

Keywords: Lean Manufacturing, Lean-Kitting, Line Side, Analytical Hierarchy Process, Kanban