

**IMPROVING PRODUCTIVITY OF DOOR SUB-ASSEMBLY IN A GERMAN
CAR MANUFACTURING COMPANY**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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This research is based on a case study at the sub-assembly area in PT. Mercedes-Benz Indonesia, specifically door sub-assembly area. The door sub-assembly area is responsible for assembling doors to be supplied to the specific station in assembly line that will assemble the finished doors to the car. The area had a problem in supplying the doors to the main assembly line on time. This means, the cycle time of door sub-assembly is higher than that of the assembly line. After observation, the factor that greatly contributes to the high cycle time can be identified, which is motion waste. Therefore, two approaches are offered to overcome the situation, with both involve re-designing the work area. The first approach is to change the working concept from bay concept to assembly line concept with the help of line balancing heuristic methods. The second approach is to implement new working system by adopting lean tool water spider to significantly reduce motion waste. In the end, the initial and after condition will be contrasted to see the improvement made by this research.

Keywords: Sub-Assembly, Bay Assembling Layout, Assembly Line, Line Balancing, Lean Water Spider, Supermarket Concept, Shopping Cart



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DEDICATION

I dedicate this thesis to God, my future-self, and my family



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