

ABSTRACT

PT XYZ in heavy equipment division produces BLDC 5 kW electric motors. In the BLDC 5 kW electric motor assembly line there are problems occurs that is not achieving production target and increasing demand for BLDC 5 kW electric motors in 2020 by 20%. So its necessary to do research about design of BLDC 5 kW electric motor assembly line with the aim of increasing line efficiency by minimizing the number of work stations using the moodie young method, and to validate the calculation results with those method we used Arena Simulation software. Process of BLDC 5 kW electric motor assembly is done manually so that time is so that time experiences fluctuations and observations are needed.. From the results of comparison between actual assembly line and the proposed assembly line by allocating work elements with time from the observation, it can increases line efficiency to 84.55%, a total work stasoins can be minimized to 4 work stations and based on simulation results to produce 30 unit product takes 7.97 hours. Whereas for the proposed assembly line with an increase in demand of 20%, line efficiency is 79.85%, with a total 8 work stations and based on simulation results to produce 36 units product it took 8.5 hours.

Keywords: Assembly Line Balancing, Moodie Young, Simulation.