ABSTRACT

PT. XYZ is a company that produces BLDC 5kW. In the production of 5kW BLDC, especially in the rotor assembly section, there are significant time differences between work stations. The problem that is found in the production process of BLDC 5kW is that the path is less balanced which can be interpreted as the production of BLDC 5kW including less efficient because there is a cycle time greater than takt time. The optimal solution in solving this balancing problems can use the Ranked Position Weighted (RPW) method by considering the cycle times of each work station, then validating using ProModel software, because the data is observation time data. By balancing the BLDC 5kW Rotor assembly line using the RPW method, there was a reduction in the number of workstations which were initially 7 work stations to 4 work stations, an increase in line efficiency which initially was 30% to 78.10%, a decrease in balance delay which was initially 70% to 47%, and a decrease in the smoothness index from 1983 to 221. Based on the increase in performance, it can be concluded that the proposal of line balancing carried out is more efficient than the existing line.

Keywords: Line Balancing, Ranked Positioning Weighted, Line Efficiency, Balance Delay, Smoothness Index.