ABSTRACT

Manufacturing environment has grown very rapidly in this era. Every current company is competing to establish an efficient and effective production process. Scheduling is one of the factor requires for decision making in order to create an efficient and effective production process. CV. XYZ is a manufacturing company that also builds an effective and efficient production process. In CV.XYZ there are several workcenter one of which is a frais machine workcenter which has 9 parallel machines that have the same performance and characteristics. At the work center, there are a number of jobs being tardy which can result in decreased customer satisfaction and the company's financial loss due to paying penalties. The total tardiness at the frais machine work center on the existing schedule is 2096 hours with 46 late jobs. This is due to the lack of optimal scheduling carried out by the company. Therefore, this research was conducted to make a schedule of proposed to reduce the amount of tardiness in the frais machine work center so that the company does not have to lose customer trust or pay a fine. The scheduling method used in this study is the Genetic Algorithm method with the Earliest Due Date dispatching rule as the initial solution for the proposed scheduling. The results of scheduling using the genetic algorithm method obtained tardiness of 253.53 hours and can reduce tardiness up to 87.9%.

***Keywords* :** *Scheduling, Identical Parallel Machine, Tardiness, Genetic Algorithm, Earliest Due Date*