

ABSTRACT

In the 21st century, the use of machine energy consumption in the industrial world has increased significantly from each year. In 2000 the use of electrical energy worldwide around 13,000 Twh and in 2015 has reached 22,000. Indonesia's energy use from the industrial sector is also quite large, one of which is the textile industry sector. PT. Buana Intan Gemilang a textile company that produces prayer rugs and curtains with large sales area. PT. Buana Intan Gemilang has problem in making pattern card by using punching machine, energy use in punching machine is big enough because production process on punching machine still done manually. So the solution in reducing energy consumption and increasing production time in producing pattern cards. Pattern cards are used on weaving machines in shaping curtain patterns and prayer rugs. For one type of pattern it takes 600 card numbers and one type of pattern mat needs 2500 pattern card numbers. Green manufacturing is a method that can be used to solve problems associated with waste in the company. The application of green manufacturing method is done in three stages; Identify your color, prepare your brush, and paint it green. The color identification was performed using a questionnaire given to the operator and given an assessment of each question and answer. If the company has not entered into the green category it needs to be improved by using new technology. Object that will be measured in determining the success of green manufacturing implementation is energy and punching machine production time. Automation system is a technology that will be applied to punching machine in this research as a strategy to improve color grade PT. Buana Intan Gemilang into green color category manufacturing. After applying the method of green manufacturing with automation system into technology in strategy of reducing energy consumption and increasing time on punching machine PT. Buana Intan Gemilang the use of punching machine energy is reduced from 33116 Kwh to 8366 Kwh in producing one type of pattern card. Production time also increased in producing one type of pattern from 332 seconds to 83 seconds.

Keywords: Green Manufacturing, Automation, Energy consumption, Production time, Punching machine