

DESIGN AND CONSTRUCTION OF PALM OIL FILLING INTO BOTTLES BASED ON ARDUINO UNO USING STEPPER MOTOR NEMA 17 JK42HS48-1684

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ABSTRACT

Palm oil has good prospects for the future because it is an upstream industry whose products are related to various downstream industries. Palm oil has many advantages compared to other vegetable oil-producing plants. The number of needs for a very large market demand for palm oil causes entrepreneurs who are involved in the palm oil business not only entrepreneurs who have large capital, but entrepreneurs from SMEs and MSMEs who start their businesses in the manufacture of industrial-scale palm oil. household (home industry). Responding to these problems, the authors built a system called the Design of a Tool for Filling Palm Oil Into Bottles Based on Arduino Uno Using a Stepper Motor NEMA 17 JK42HS48-1684 to realize a system of filling palm oil into bottles automatically, especially in the home industry. It takes a pump to drain palm oil from the reservoir into the bottle, infrared sensors are used to detect bottles, a stepper motor is used to rotate the bottles. The number of bottles will be displayed on the Liquid Crystal Display (LCD). Data from the reader from the whole system is processed in an Arduino Uno microcontroller device. In this study, the results of testing tools in filling palm oil into bottles with an average difference in filling volumes of 100 mL, 150 mL, 200 mL, and 250 mL, are 0.24%.

Keywords: *Palm Oil, Pump, Infrared Sensor, Stepper Motor*