APPLICATION OF A NON-CONTACT LASER IN PROFILE MEASUREMENT

By

Edy Sujiwo
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SWISS GERMAN UNIVERSITY
The Prominence Tower
Jalan Jalur Sutera Barat No. 15, Alam Sutera
Tangerang, Banten 15143 - Indonesia

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

Edy Sujiwo
Student

Date

Revision after Thesis Defense on August 2, 2018

Approved by:

Dr. Widi Setiawan
Thesis Advisor

Date

Dr. Edi Sofyan, B.Eng., M.Eng., Ph.D.
Thesis Co-Advisor

Date

Dr. Irvan Setiadi Kartawiria, S.T., M.Sc.
Dean

Date

ABSTRACT

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By

Edy Sujiwo
Dr. Widi Setiawan, Advisor
Dr. Edi Sofyan, B.Eng., M. Eng., Ph.D., Co-Advisor

SWISS GERMAN UNIVERSITY

In the tire manufacturing process especially for the tread production process, one of the important things in making tread is parameter like length, width and height. The width of this tread is very influential on the quality of the tread made; the more accurate the dimensions of the tread made then the quality of the product will be better. The current measurement is done by manual method that is by using a simple steel roll meter. The possibility of measuring error in viewing the number on the tools, that the measurement results do not match the actual tread size. This research is the application of a non-contact laser in profile measurement on the extruder machine, so it can facilitate the work of employees in controlling the width of the tread. This design uses Linear Motion Lead Screw Slide Stage (stroke actuator, stepper motor and driver), laser distance sensor and Arduino Mega 2560. In this prototype the signal from distance sensor is processed in microcontroller and sends to computer to create curve graph in the computer display. The actual final result of the object profile measurement was provided.

Keywords: Tread, Linear Motion Lead Screw Slide Stage, Laser Distance sensor, Profile Measurement.

DEDICATION

I dedicate this works for the future of the country I loved: Indonesia
My family who always support me, my thesis advisor and all of my friends whose has been my inspiration and support me to finish this research.

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