

**APPLICATION OF A NON-CONTACT LASER
IN PROFILE MEASUREMENT**

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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.

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ABSTRACT

APPLICATION OF A NON-CONTACT LASER IN PROFILE MEASUREMENT

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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.



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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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TABLE OF CONTENTS

| | Page |
|---|------|
| STATEMENT BY THE AUTHOR..... | 2 |
| ABSTRACT..... | 3 |
| DEDICATION..... | 5 |
| ACKNOWLEDGEMENTS..... | 6 |
| TABLE OF CONTENTS..... | 7 |
| LIST OF FIGURES..... | 9 |
| LIST OF TABLES..... | 11 |
| CHAPTER 1 - INTRODUCTION..... | 12 |
| 1.1 Background..... | 12 |
| 1.2 Research Problem..... | 13 |
| 1.3 Research Objective..... | 13 |
| 1.4 Significance of Study..... | 14 |
| 1.5 Research Questions..... | 14 |
| 1.6 Hypothesis..... | 14 |
| CHAPTER 2 - LITERATURE REVIEW..... | 15 |
| 2.1 Theoretical Perspectives..... | 15 |
| 2.1.1 Tire Tread Extrusion..... | 15 |
| 2.1.2 Principles of Dimensional Measurement System..... | 16 |
| 2.1.3 Stereo Vision Cameras..... | 17 |
| 2.1.4 Time of flight (ToF) Measurement System..... | 18 |
| 2.1.5 Triangulation Measurement System..... | 19 |
| 2.1.6 The Measurement of Process Capability..... | 20 |
| 2.2 Previous Studies..... | 20 |
| CHAPTER 3 - RESEARCH METHODS..... | 21 |
| 3.1 Research Framework..... | 21 |
| 3.2 Materials and Equipment..... | 22 |
| 3.3 Design of Experiment..... | 29 |
| 3.4 Initial Condition..... | 32 |
| 3.4.1 Sensor Height Initialization..... | 32 |

| | |
|--|----|
| 3.4.2 Second experiment with CCD Laser Displacement Sensor | 33 |
| CHAPTER 4 - RESULTS AND DISCUSSIONS | 36 |
| 4.1 Evaluation of Data on the Use Laser Distance Sensors (VL53L0X) | 36 |
| 4.2 Evaluation of Data on the Use CCD Laser Displacement Sensor | 37 |
| 4.2.1 Repeatability check to determines the “thick-side” | 39 |
| 4.2.2 Repeatability check to determines the “thick-center” | 40 |
| 4.2.3 Repeatability check to determines the “thick-shoulders” | 41 |
| 4.2.4 Repeatability check to determines the “wide of the crown” | 42 |
| 4.2.5 Repeatability check to determines the “total-width” | 43 |
| CHAPTER 5 - CONCLUSIONS AND RECOMMENDATIONS | 44 |
| 5.1 Conclusions | 44 |
| 5.2 Recommendations | 44 |
| GLOSSARY | 46 |
| REFERENCES | 47 |
| APPENDICES A.1 – Arduino Mega 2560 | 48 |
| APPENDICES A.2 – DRV8825 Stepper Motor Controller IC | 50 |
| APPENDICES A.3 – VL53L0X Data Sheet | 54 |
| APPENDICES A.4 – Program Code | 59 |
| APPENDICES A.5 – Result of Measurement Data for Graph on Figure 4-1 | 64 |
| APPENDICES A.6 – Result of Measurement Data for Graph on Figure 4-2 | 66 |
| APPENDICES A.7 – Data Result on the Use CCD Laser Displacement Sensor..... | 70 |
| APPENDICES A.8 – LK-081 Sensor Head, Wide Spot..... | 75 |
| APPENDICES A.9 – LK-2101, Controller | 76 |
| APPENDICES A.10 – Head sensor and Controller Wiring Connection..... | 77 |
| CURRICULUM VITAE | 79 |