

**Redesign and Constructing of Automatic Height Sink Washer
for Elementary School Children Usage**

By

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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

REDESIGN AND CONSTRUCTING OF AUTOMATIC HEIGHT SINK WASHER FOR ELEMENTARY SCHOOL CHILDREN USAGE

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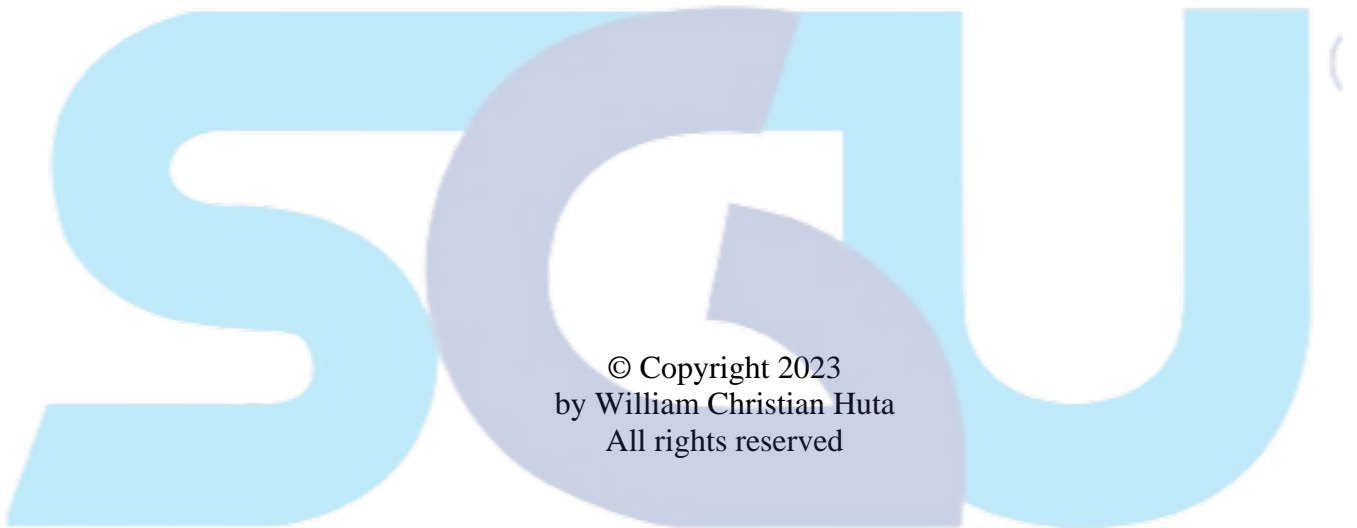
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It is essential to educate primary school children about hygiene knowledge, including the proper way of washing hands with soap. However, a challenge arises when the height of the sink is fixed, causing discomfort for children with different heights than others, who need to adjust themselves. To address this issue, an automatic height sink washer can be developed where the height of the sink can be adjusted automatically to facilitate comfortable handwashing for all children. In this newer version model from the last iteration, an automatic hand washing cycle is also applied to improve its usage and create more attraction for young children. The working principle of the model involves measuring the user's height using an ultrasonic sensor to determine the required sink height from a calculated data, then the system will move the sink automatically into the user's hand height, therefore the users can wash their hands comfortably. The implementation of this working system utilizes a lead screw mechanism to move the sink upward and downward with linear guide as support. Anthropometric data is used in this work to support the calculation for the required height. To maximize the efficiency usage and safety aspect of the model, improvements on the mechanical, electrical, and programming are applied. In conclusion, for this work

the automatic height sink with the newer components is safer and easier to use for children, increasing the hygiene level for the younger generation.

Keywords: Automatic hand washer, Sink, Ultrasonic, Lead screw, Linear guide, Washing hand, Anthropometric, Children





DEDICATION

I dedicate this work for God, my family, my advisors,
And lastly for the future of the country that I loved, Indonesia.



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TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR	2
ABSTRACT	3
DEDICATION	6
ACKNOWLEDGEMENTS	7
TABLE OF CONTENTS	8
LIST OF FIGURES	11
LIST OF TABLES	13
CHAPTER 1 – INTRODUCTION	14
1.1 Background	14
1.2 Research Problems	15
1.3 Research Objectives	15
1.4 Significance of Study	15
1.5 Research Questions	15
1.6 Hypothesis.....	15
CHAPTER 2 - LITERATURE REVIEW	17
2.1 Theoretical Perspectives	17
2.1.1 Lead Screw vs Ball screw	17
2.1.2 Linear Guide	18
2.1.3 Application of Linear guide and ball screw methods in Adjustable height sink	18
2.1.4 Anthropometric Analysis	19
2.2 Previous Studies.....	21
2.2.1 Optimization of Automatic Hand Washer for Elementary School Children with Adjustable Sink.....	21

2.2.2 Improvement of Automatic Hand Washer for Elementary School Children with Adjustable Sink.....	21
CHAPTER 3 – RESEARCH METHODS	23
3.1 Design Justification.....	23
3.1.1 Mechanical Design Improvement	23
3.1.2 Electrical Design	27
3.2 Components Model.....	28
3.2.1 Mechanical Components.....	28
3.2.2 Electrical Components	31
3.2.3 Fabricated Components	35
3.3 Flowchart System.....	39
3.4 Work Breakdown Structure	40
3.5 Program Algorithm	41
3.6 Motor Design	43
3.6.1 Motor Calculation	43
3.6.2 Motor Selection.....	44
CHAPTER 4 – RESULTS AND DISCUSSIONS.....	45
4.1 Measurement of Children’s Height and Elbow Height Results.....	45
4.2 Sensor Accuracy Testing Results.....	47
4.3 Motor Testing Results.....	49
4.4 Motor Analysis.....	51
4.5 Experimental Procedures	51
4.6 Overall System Testing Results	52
CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS	54
5.1 Conclusions.....	54
5.2 Recommendations.....	54
REFERENCES	56

APPENDICES	58
APPENDIX 1: Photos of automatic height sink washer.....	58
APPENDIX 2: Photos of construction & testing progress	63
APPENDIX 3: Arduino Code	67
APPENDIX 4: Bill of Material.....	70
CURRICULUM VITAE.....	71



LIST OF FIGURES

	Page
Figure 1. Lead Screw vs Ball Screw	17
Figure 2. Linear Guideways.....	18
Figure 3. Linear guides and ball screws usage for wood CNC.....	19
Figure 4. Indonesian Anthropometric Data recap.....	20
Figure 5. Previous Design.....	23
Figure 6. Design Improvement of the Automatic Height Sink Washer.....	24
Figure 7. Added Framework on the Sink Holder.....	24
Figure 8. 1st Ultrasonic Sensor for User Height Measurement.....	25
Figure 9. 2nd Ultrasonic Sensor for Sink Height.....	25
Figure 10. 1st Infrared Sensor for User Presence Detection.....	26
Figure 11. 2nd Infrared Sensor for Automatic Hand Wash Cycle Switch.....	27
Figure 12. Fritzing Design of the Full System.....	27
Figure 13. 30x30 Aluminum Profile.....	28
Figure 14. Aluminum Plate.....	28
Figure 15. Bevel Gear.....	29
Figure 16. Ball Screw with Nut SFU2005.....	29
Figure 17. HGH20CA Linear Bearing Guide.....	30
Figure 18. Acrylic Sheet.....	30
Figure 19. Arduino Mega 2560.....	31
Figure 20. DC Step Down Buck Converter Module.....	31
Figure 21. Relay Module 5V Dual Channel.....	32
Figure 22. HY-SRF05 Ultrasonic Sensor.....	32
Figure 23. Dunkermotoren GR63X25 with SG80K Gearbox Attachment.....	33
Figure 24. Terminal Block.....	33
Figure 25. Motor Driver IBT-2.....	34
Figure 26. Nagasaki Water Pump 12V.....	34
Figure 27. Aluminum Frame Bracket on Lead Screw.....	35

Figure 28. 3D Bracket for the Faucet.....	36
Figure 29. Acrylic Sink Holder.....	36
Figure 30. Electrical Wiring Cover.....	37
Figure 31. 3D Bracket for Height Ultrasonic Sensor.....	37
Figure 32. 3D Bracket for User Presence Sensor Detection	38
Figure 33. Flowchart Diagram	39
Figure 34. Work Breakdown Structure of the system.....	40
Figure 35. Coding Script 1	41
Figure 36. Coding Script 2.....	41
Figure 37. Coding Script 3.....	41
Figure 38. Coding Script 4.....	42
Figure 39. Sensor 1 Accuracy at 100 cm for 10 seconds.....	48
Figure 40. Sensor 2 Accuracy at 100 cm for 10 seconds.....	49
Figure 41. Load vs Ampere input of the motor	50

LIST OF TABLES

	Page
Table 1. Anthropometric Data	45
Table 2. Actual Body Measurement	46
Table 3. Both Sensors Accuracy Data	47
Table 4. Sensors Measurement Value at 100 cm in 10 seconds	48
Table 5. Motor Load Test	49
Table 6. Running Time of the Sink Movement	50
Table 7. Data Overall Result for Adults	52
Table 8. Mannequin Testing Results.....	52

