OPTIMIZATION ANALYSIS OF PNEUMATIC SYSTEM IN AUTOMATIC FILLING MACHINE

By

Sylvia Hadiani Wijayanti
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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.

Sylvia Hadiani Wijayanti

Student _____ Date _____

Approved by:

Edi Sofyan, B. Eng., M.Eng., Ph.D.

Thesis Advisor _____ Date _____

Dr. Ir. Hanny Berchmans, M.Sc.

Thesis Co-Advisor _____ Date _____

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

Dean _____ Date _____

ABSTRACT

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Sylvia Hadiani Wijayanti
Edi Sofyan, B. Eng., M.Eng., Ph.D.
Dr. Ir. Hanny Berchmans, M.Sc.

SWISS GERMAN UNIVERSITY

Automatic filling machine is a prototype of industrial filling machine that imitate filling process with automatic system. Filling process be held with fill a tin can with buckshot. This Automatic Filling Machine is planned to be a learning tool for students at Akademi Tehnik Mesin Industri (ATMI) Cikarang as an example of machine used in industrial world. This machine uses PLC control with actuators like motors and pneumatic cylinders. Like any machine in general, this machine has some drawbacks. During the experimental process with this machine, it was found that the synchronization of the pneumatic cylinders was quite bad resulting in the failure of the product. As an automatic machine, it should be the product failure is pressed to the lowest as possible. Therefore, the analysis to optimize the parameters on the pneumatic cylinder is carried out by bringing hope if the analysis is successful then the Automatic Filling Machine will function at best. The analysis will be done by drawing the pneumatic part of the most problematic by using Solidworks software, then this drawing is exported to MatLab Simulink and added PID controller to obtain the best simulation for the most optimal pneumatic cylinder suitability.

Keywords: Automatic Filling Machine, Pneumatic Cylinder, Solidworks, Matlab Simulink

DEDICATION

Jesus Christ,

for all the blessings given to me.

Daddy and Mommy,

BIG Brother,

and my friends,

who always give support to the work of this thesis

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