DEVELOPMENT OF MASTER MODEL MACHINE FOR SPIN CASTING TECNOLOGY

THESIS

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STATEMENT OF WORK'S ORIGINALITY

I honestly declare that this thesis which I wrote does not contain the works or parts of the works of other people, except those cited in the quotations and bibliography, as a scientific paper should

Yogyakarta, August, 2010

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This Thesis is dedicated for

Mom, Dad and My Sisters

And also for My Girl

FOREWORD

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I realize that this final report has not perfect but I hope that this final report can be useful and can be developed in a further research.

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ABSTRACT

A master model is required before a product is actually processed in a machine. A present research build a prototype of master model machine in spin casting technology which is not reliable for production process.

The present master model machine was evaluated and redesigned focused on the need of larger mold frame and eliminate prop usage to enhance the reliability of producing good quality of master product souvenirs made from tin. The evaluation was started by constructing Functional Decomposition Diagram. Later, the decomposed part list was classified to its critical function based on Function Analysis. Failure Modes Effects Analysis (FMEA) was performed to evaluate failures of current machine. Those failures were become input for redesign process. Mechanical Design Procedure, Grid Analysis, and Tree Diagram were performed during redesign process. Some defects were found during experimental works of Adaro business card holder using the new master model machine. The Cause and Effect Diagram was performed to find best solution to solve related problems.

By the end of the research, master model machine with dimension 530mm x 440mm x 710mm; operating speed at 460 rpm; maximum silicone rubber dimension 204mm x 178mm x 36mm ; electricity power 373 W and Adaro business card holder product were obtained. The production time is 11, 15 minutes and the production cost per unit is IDR 10,500.00.