DESIGN OF VULCANIZER FOR SPIN CASTING TECHNOLOGY

THESIS

This is Submitted to Fulfill Prerequirement of Industrial Engineer of International S-1 Program

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"Every human has four endowments- self awareness, conscience, independent will and creative imagination. These give us the ultimate human freedom... The power to choose, to respond, to change."

~ Stephen R. Covey .

This Thesis is dedicated for

Mom, Dad and My Sister

And also for My Girl

FOREWORD

This final report is one of the prerequisite to finish the undergraduate study program in Industrial Engineering Department, Industrial Technology Faculty, Atmajaya Yogyakarta University.

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

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ABSTRACT

The spin casting technology basically need a vulcanized mold to be placed into spin casting machine and also the silicone rubber as the material of the mold. The spin casting machine has been constructed in UAJY in 2007, but it did not use the cured silicon rubber already. It was applied to RTV silicone rubber. The experimental works showed that using uncured silicone rubber in spin casting tend to produce inappropriate shape of products because of its elasticity. Hence it brings to the need of constructing vulcanizer for spin casting technology, by selecting the appropriate type of silicone rubber to be vulcanized.

The design of vulcanizer machine is conducted using Rational Method and tree diagram. The tree diagram is used to identify the objectives needed in vulcanizer itself, and then the rational method is used to set the technical requirement of good vulcanizer and also to choose the best material alternatives based on the objectives.

By the end of the research, a vulcanizer machine is obtained 4000 watt of power supply and dimension of 500 mm x 445 mm x 811 mm. It also can produce maximum heat 400℃ and produce maximum pressure around 2500 pounds. While the machine cost per hour is IDR 7,000.00