



**FACULTY OF MECHANICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
SHAH ALAM**

**FINAL YEAR PROJECT REPORT
DIPLOMA IN MECHANICAL ENGINEERING
(MANUFACTURING)**

**TITLE:
OPTIMIZATION OF BRAKE MASTER PRODUCTION
PROCESS (GRAVITY DIE CASTING)**

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This report is submitted to the Faculty of Mechanical Engineering, Universiti Teknologi Mara in partial fulfillment of the requirement for Diploma in Mechanical Engineering (Manufacturing).

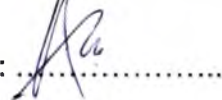
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ABSTRACT

This project had been done for 8 month. It took place at Sanyco Grand Industries sdn bhd. which located at Lot 3 Jln u1/15, Seksyen U1, Hicom Glenmarie Industrial Park, Shah Alam. This project involve with gravity casting process. The materials used for this process is Aluminium Alloy known as LM27 in British Standard and AC2B in Japanese Standard.

The aim of this project is to study the effects of reducing cycle time and heat treatment on the mechanical properties of the cast. . First we try to reduce the cycle time. It involve with moulding process. The standard time for solidification is 90. So we try to reduce it.

The other studies are about the heat treatment. In Sanyco Grand. The T6 conditions are used. Which mean the material or products have to treat in two furnaces T4 and T5, solution heat-treated and artificially used. In this study case we try to reduce the T4 and maintain the T5 temperatures. We going to find whether the product still in the specification requirement in the mechanical properties, such as hardness, tensile and ductility.

At the end, in our study we find that the time we reduce for case study 1, that hardness of the cast is in specification and it can be use for production process. In case study 2, we find that hardness will increase when the temperature increase.

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