UNIVERSITI TEKNOLOGI MARA

DESIGN, ANALYSIS AND FABRICATION OF SEMI-AUTO CUP RINSER

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ABSTRACT

This report will describe the design, development, and fabrication of a friendly and simple way to wash the cup or other drinking instrument. The concept operation for this project is by using water pressure and scrubbing method to rinse the cups. The main objective to fabricate this project is to develop a simple device that can easily wash many cups, and glass in a short period by implementing two basic concepts washing there it's scrubbing, and rinsing. The user needs to place the cup onto the spryer and after that to the brush. The project's material depends on the availability and demand when wants to fabricate. Plastic and steel are the priority material used to make the cup cleaner. The process involved are the drilling, bending, and drawing processes. The SolidWorks software are used to calculate and predict the value of yield stress and factor of safety on the critical part like the drip plate and body part. To sum up, from designing this project, hopefully it may solve one of the house chores problems.

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Alhamdulilah.

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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

By the mid-19th century, the first idea concept glass rinser is start in Europe, a glass rinser and finger bowls are a necessary addition to the dining table.[1] Besides cutlery and napkins, the use of glass rinser become one of the important instruments during dining time. The function is to clean leftover wine before changing to another alcoholic beverage. The size is a small and simple bowl with lipped or scalloped rims to keep the stem of wine glasses as they have been positioned submerged in the water.

The activity of washing and cleaning the dishes, sometimes will make it boring to do it every day. Unfortunately, in Malaysia, there are no devices that can make it easier and at an affordable price. But only have set dishwashers device, which cannot separate wash plate and glass. For comparison with products that already exist on the market, the price is usually around RM 500 up to RM 2 000.[2] Besides that, the size and its features sometimes do not give a good impact. Other than that, when rinsing the cup, the stain still has not been removed. This situation has created difficulties for people. Because of this problem occur, simple inventions were popped up to solve this problem.

The mechanism to rinse the cup is simple and easy to use. Just need to put the cup on the Drip plate, the water jet will spray inside the cup to clean up the cup, so the consumption of water and soap will be reduced. Therefore, the device will clean the cup without wasting much time, energy, water, and soap. This device will use the main material which is stainless steel for the base and its rinser and will prevent rust because of exposure with the water directly.