



Button Maker

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Abstract

The project is based on the modification of existing button making design that is being used in the Hozhoni Foundation. The team made changes to the design for purposes of making it better. The end product will be more effective through accommodating more users, allowing for effectiveness in production of quality buttons as well as improve Hozhoni's abilities to satisfy its consumer. Some of the changes made include the minimum force which workers have to apply to cut the paper, size of cut, number of cuts in one press, the shear stress of the paper, and suitable material for different assembly parts. The project was successful in completing the design process and building the end product.

Problem Statement

Team aimed at making changes to the following :

- Size of the system
- Minimum weight of the system
- Ability to cut several designs
- Minimize range of motion of operation

Manufacturing

Hold the cutter:

The design holds the cutter. to cut the paper

Cutting part:

The cutting parts are made in similar design for the six cutters. The designs are sharp on one side in a shape that can cut out circular shape.

Final Design

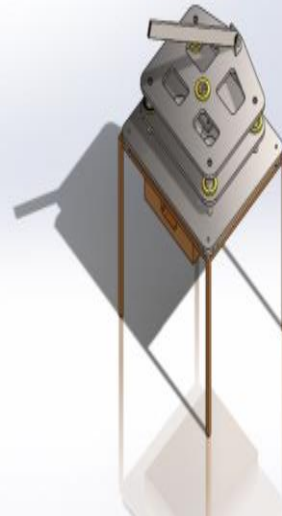


Figure 1: Final Design Image



Figure 2: Final Design Product

Testing

- The force needed to cut the paper was 25 N and the test was accomplished by pull force meter.
- The efficiency off the process of cutting the paper and it was efficient and that was accomplished by testing the design more than 10 times.
- The Plasti dip added to the grip for comfort and safety and it was comfort and safe.

Design modifications

The completed product includes:

- More springs
- Provide extra cutters
- Improve the handle

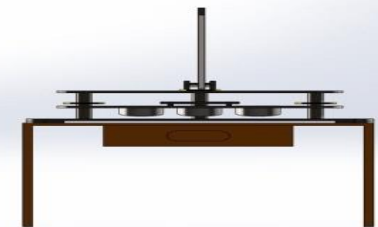


Figure 3: Final Design Side view

References

- [1] Shear modulus of office paper, institute of paper chemistry; [access-online] <http://www.eng-tips.com/viewthread.cfm?qid=63171>
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- [3] Mechanics of material, 7th edition, [Author- Beer and Johnston].

Sponsors

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