

## Introduction

The world is full of products. Products made by man to make life easier. The world of mechanical engineering plays a huge role in how these products come to life. This aspect is explained through an analysis in this report.

The goal of this report is to gain competence in three out of the eight competencies from the national 'Competenceprofile Bachelor of Engineering': Analyzing, professionalising and designing. This is executed through 'reverse engineering'.

The product chosen for this analysis, is a water sprayer with a built-in fan propelled by a small elektro-motor powered by batteries.

First off, the components and its functions are described by an exploded view. Next up, the issue regarding this product is defined and from that, a clearer inspection of the stakeholders, the needs, customer satisfaction, functions and requirements is worked through. Finally, the product will be drawn (by hand) and the corresponding materials and production techniques will be mentioned.

## Conclusion

There are several conclusions to distinguish when analyzing a mechanical engineering product. For instance, the reason why materials are chosen can be named. Also the reason for choosing the production techniques can be mentioned.

Mostly the materials are chosen on the basis of cost and safety/usability. The end product ought to be made with as less costs as possible. For this matter, material is chosen which is suitable for mass-production. Also material is chosen by its properties of recyclability and low-cost wholesale.

For safety reasons, tough material has been chosen. The housing for instance, has to be resistant to beats and punches. It must not break easily under such forces. This is of interest because of there is a presence of both electricity and water inside of the structure.

Moreover, the main issue regarding this product is solved with the design criteria. The end product is a fan with an additional function: the possibility to spray a water mist. Conventional fans only displace air. This innovative product not only displaces air, but offers the possibility to squirt a water mist, due to which cooling is much more efficient compared to the conventional products.

## Summary

This paper is regarding the so called “Verkoelende waterspuit”. Or roughly translated: cooling water sprayer. The fundametal issue leading to the production of this item is found in the way it cools. A rotor in a conventional ventilator only moves air of current ambient temperature. Due tot his, in most cases, the cooling will not be sufficient.

For this assignment, the product is disassembled via ‘reverse engineering’ and then analyzed. Through the chapters in this report, which are divided over five weeks, a well defined representation of the product is obtained.