



Public Summary:

Design and Construction of a Measurement Setup for a Product in Aerospace Manufacturing: Meeting Tolerance Requirements Across Multiple Production Stages

In the aerospace industry, where precision is paramount, manufacturing processes must consistently meet exacting standards. This thesis tackles an aspect of aerospace manufacturing: the measurement setup that ensures precision and consistency. The project began with an in-depth analysis of current manufacturing challenges, focusing on the need for a system that can adjust to different product dimensions while maintaining strict tolerances essential for aerospace components.

The core of this thesis involved designing and constructing a versatile measurement setup. A significant portion of the research was dedicated to developing a clamping and measuring system that is not only accurate but also flexible enough to handle a range of product sizes and shapes. This adaptability is important for optimizing the manufacturing process, enabling quicker adjustments, and reducing the likelihood of errors.

In addition to the design, the thesis also delves into the practical aspects of integrating this new system into existing production workflows. This includes considerations of how to implement the system with minimal disruption and how it can improve overall manufacturing efficiency. The setup was tested and refined through several iterations, ensuring its reliability and effectiveness.

The thesis discusses the broader implications of this development in aerospace manufacturing. By enhancing precision and adaptability, the new measurement setup has the potential to significantly improve production speed and quality. This advancement is not just a technical achievement; it represents a step forward in maintaining the high standards of safety and reliability that are the hallmarks of the aerospace industry.

Overall, this thesis presents a comprehensive approach to improving aerospace manufacturing processes, emphasizing the importance of precision, efficiency, and adaptability. The outcomes of this project have implications for the future of aerospace production, potentially leading to more reliable and efficient manufacturing methods.

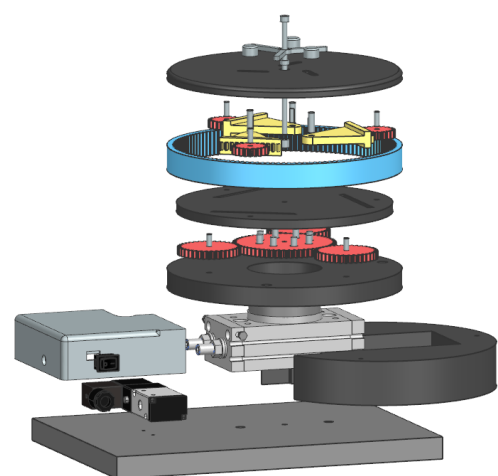


Figure 1: Exploded view of the designed measurement setup.