

AUTOMATIC SURFACE PREPARATION FOR OPTICAL COMPONENT MEASUREMENT



Master thesis

The STIWA Group is a leading specialist in the field of product and high-performance automation. Its three strategic business fields are Automation, Manufacturing and Software. The family-owned company based in Attnang-Puchheim employs around 2,500 people in four countries and achieved a turnover of around 340 million euros in the 2022/2023 financial year.

Motivation

STIWA Austria produces around 50 million milling and turning parts, ranging from individual components/small series to large-scale and mass production. Among others, optical inspection technologies are used for quality assurance and documentation. In these optical processes, the surface of the components is scanned using stripe light projection. The reflections of the projection generate a volume model that can be compared with the 3-D model. It is therefore necessary to measure and compare components always with the same surface properties which are surface pre-treated. This pre-treatment is currently carried out manually. The aim is to achieve an automated, consistent pre-treatment process.

Tasks

- Evaluate necessary component cleaning concepts for KSM, oil, chipping etc.
- Conception of an automated surface preparation for optical geometry measurement
- Creation of an automation concept for automatic parts loading and further transport including positioning in the measuring machine
- Ensure component marking and data processing
- Research and compilation of safety-related instructions/standards/regulations
- Concept development for different components with batch size 1

Objectives

- Concept of an automated, component-independent surface preparation process
- Automated transfer of the components to the measuring machine



PLEASE CONTACT US

Send your complete application documents to:

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