

Interview with Stefan Mahr, Sales Manager WENZEL ScanTec Division **Fast and Automated Measurement of Turbine Blades**

We see the CORE measuring turbine blades really often. Would you please tell us the advantages of the Optical High Speed Scanning System CORE D regarding the measurement of turbine blades?

Clamp the turbine blade on to the machine push a button and the measurement starts! Our CORE is a compact and robust measurement system with fast dynamics developed for the measurement of turbine blades directly in the production environment. The system provides an optical sensor which ensures a high-quality measurement even on shiny and highly reflective surfaces.

What are typical applications for your CORE machine?

Besides the measurement of turbine blades there are a lot of different applications. We have an increasing amount of requests from the field of medical engineering, e.g. we can measure the shiny surfaces of artificial knee joints. Especially these highly reflective surfaces are difficult for other systems.

You mentioned that the CORE is highly suitable in shop floor environments. What are the reasons?

The CORE has a very stable structure. Large and stable linear bearings ensure long durability and stable operation even in production environment. Furthermore, the CORE D has a small footprint and does not need air supply and is therefore relatively mobile.



Stefan Mahr,
Sales Manager WENZEL ScanTec

A current and relevant topic also regarding measurement machines in general is the fully automated loading/unloading and automated measurement. Do requests for integration of measurement machines into automated production cells generally increase?

The project requests regarding automation continually increase, also for all other WENZEL products, especially regarding coordinate measurement machines. The measurement technologies and corresponding software become more and more important for integration processes. The automated loading and unloading of parts and automated measurement are already quite common. Now also data extracted from the measurement is being exchanged and processed on other machines.

Could you please elaborate some details of one of your automation projects? ?

We integrated two CORE D machines into an FMS (Flexible Manufacturing System) at Starrag AG, located at Rorschacherberg, Switzerland. This system consists of four milling machines with a special clamping concept, which machine the blades, as well as two washing systems and two CORE measuring machines. The individual stations are loaded by robot. The CORE measuring machines are controlled via the cell controller. The Decision for our Core was based on a strict selection process. An important reason that favored our measuring solution was that we could meet the demanding cycle times.

The new CORE D generation has an integrated light protection cover. Are there any changes regarding automation projects?

The integrated light protection cover provides a major advantage for measurements of very shiny parts. It ensures precise measurement even when facing suboptimal lighting conditions that are typical for a production environment. The new protection cover features a large opening and inherent great accessibility from three directions. Therefore the new CORE is perfectly suited for automated loading and unloading.

What further advantages does the new CORE D generation have?

The hardware and sensor technology have been continuously improved. The new camera of the Double-Eye White-Light Sensor has a better resolution, larger light yield and is more robust. The machine has a new design that matches with the design of other WENZEL machines like tactile CMMs or Gear Measuring Machines.

Is it possible to use other optical sensors besides the Double-Eye White-Light point Sensor on a CORE D?

Yes, you can also use the WENZEL PHOENIX sensor which uses the phase shift method and structured light projection. Focus of this solution is the capturing of surfaces and a quick comparison to CAD data for quality control. This can be done via comparison of individual features or pseudo color representation of deviations from the nominal data. The combination of CORE and PHOENIX is also deployable into production lines. Furthermore, the combination CORE and PHOENIX is perfectly suited for reverse engineering. It enables users to capture STL data which can be further processed in the usual CAD programs.



Measurement of a turbine blade



Production cell at Starrag AG

WENZEL Präzision GmbH - Werner-Wenzel-Straße - D-97859 Wiesthal
T: +49 6020 201-0 - info@wenzel-group.com - www.wenzel-group.com