



Non-contact cutting edge measurement during production process

Cutting discs for the metal working industry are amongst the most common wear parts. In modern production, turned parts are manufactured to sub-micrometer precision. In order to ensure the accuracy of the machine tool requested, precise positioning of the tool is necessary, including the cutting discs.

Carbide cutting tool specialist Ceratizit relies on a measurement system that uses the optoCONTROL 2500 sensor during production control of the cutting discs. The measurement set up was designed and developed by Benzing Feinwerktechnik GmbH. The vertically mounted optoCONTROL 2500 sensor traverses along the measurement object supported by a pneumatic processing unit. Operating on the shadow principle, the measurement system detects the width of highly sensitive cutting edges in order to offer reliable measurement results with respect to the distance and height of the cutting edge lines. The design of the measurement system is both simple and cost effective. Furthermore, the system can be used as a mobile unit. Since the wear-free system works without touching the cutting disc, it has a minimal measurement time. The measurement data detected is transferred to a

PC for further evaluation. The target object is assessed very quickly as the latitude is displayed graphically.

Benefits for the customer:

- Simple, mobile and economically designed construction
- Fast, non-contact object assessment
- Measurement adapter for various cutting widths
- Semi-automatic functionality

Requirements for the measuring system:

- Measurement ranges 8-14mm
- Resolution $\pm 1\mu\text{m}$