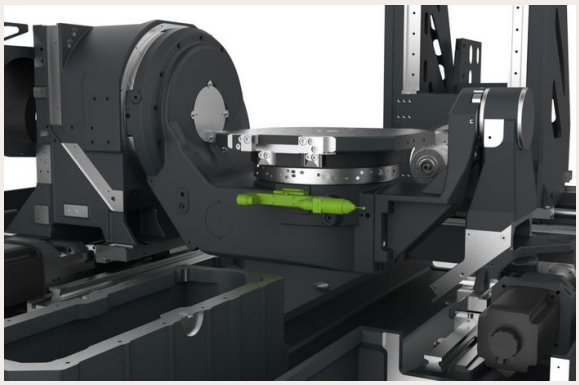
Tool measurement

Productivity | Process Optimisation, Precision, Operation



Series

HF

Control

SINUMERIK ONE | SIEMENS Solutionline

The measuring system for tool measurement is available in two variants. Variant 1 uses a precision laser (BLUM or RENISHAW) attached to the rotary table for fully automatic, contactless measurement of rotating tools – ideal for recording tool length and diameter and for tool and wear monitoring. Variant 2 combines the precision laser with a tactile measuring probe (BLUM):.Rotating tools are measured without contact, while stationary tools are measured tactilely. Tactile measurement enables precise, automatic recording of tool length and reliably detects tool wear. Both variants enable efficient and precise tool control directly in the work spindle.

Characteristics

- Variant 1 is based on a precision laser that enables optical measurement of length and radius. This system is particularly suitable for rotating tools such as drills, milling cutters, or taps. The tool rotates at nominal speed so that all cutting edges can be detected. The laser beam is interrupted by the cutting edges and released again when the tool is retracted in the measuring feed. The different laser shadowing of each cutting edge enables precise measurement of all cutting edges. The process is supported by intelligent evaluation functions that increase the measurement quality. Logging, statistical evaluation, and automatic concentricity control are also integrated.
- Variant 2 combines the precision laser with a tactile probe that is integrated into the measuring bridge of the precision laser. This variant offers a wide range of BLUM measuring cycles that are graphically supported and integrated directly into the machine control system. Mounting the measuring bridge on the rear of the swivel rotary table ensures optimum protection against chip flyback.

Benefits

- Automatic tool monitoring before or after machining
- Tool and cutting edge breakage controlWear monitoring and correction
- Automatic correction of preset values in tool management
- High accuracy through measurement in the spindle at nominal speed
- Rapid detection of all cutting edges
- Suitable for sensitive cutting materials like PCD and CBN
- Suitable for delicate tools, e.g., with small diameters
- Designed for harsh conditions in the working area of a machine tool

Requirements

- Variant 1: Neither in conjunction with the Mill-Turn / Mill-Turn Enforced option nor with the Interpolation Turning IPT option.
- Variant 2: Only in conjunction with the Mill-Turn option or the Interpolation Turning IPT option