

# HEIDENHAIN



**VT 122**  
The new measuring camera

## Tool Measurement and Inspection

Effectively monitor and optimize machining operations

[www.heidenhain.com](http://www.heidenhain.com)



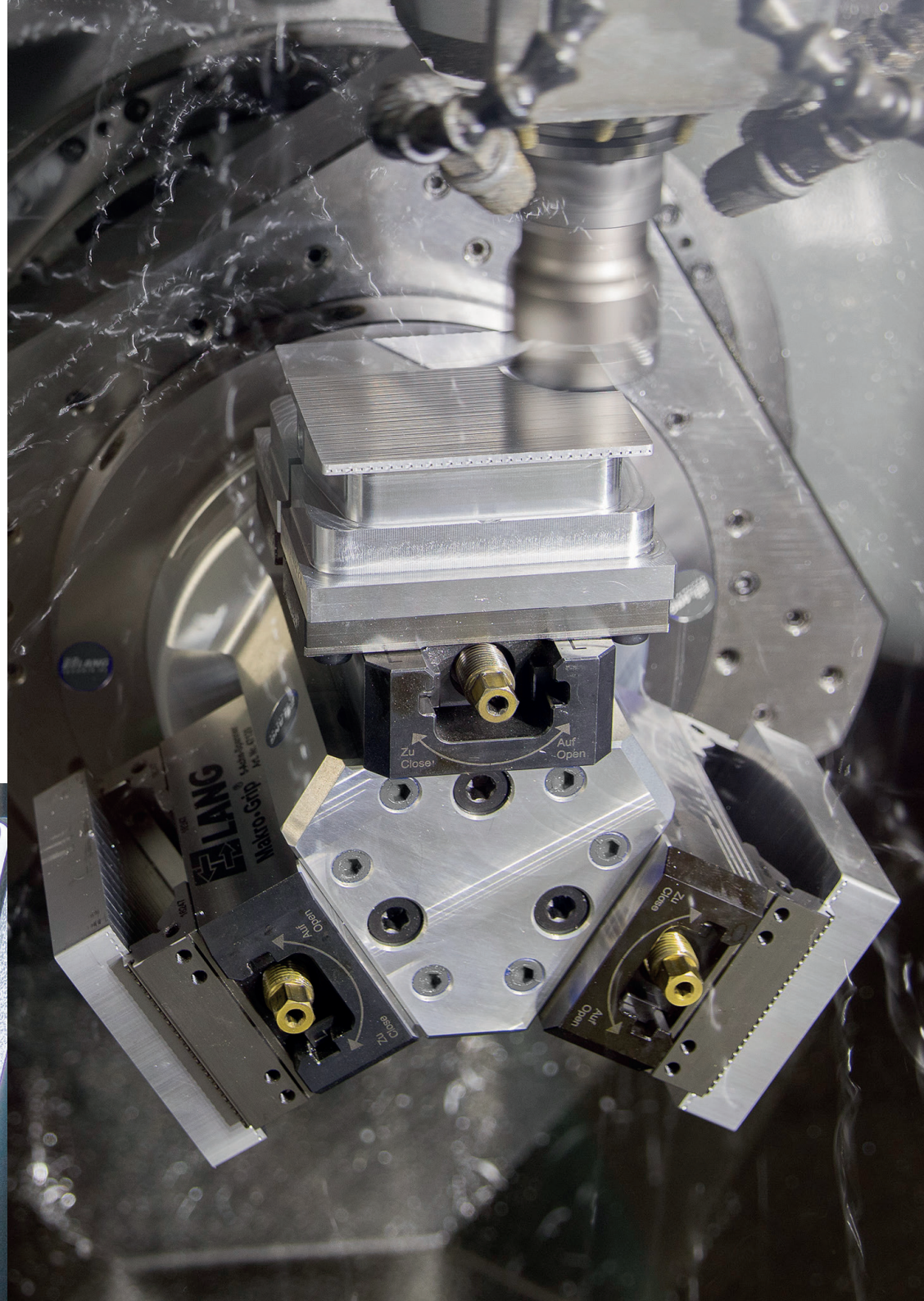
## Tools as performance factors

Production quality and process reliability are decisive factors that are significantly influenced by the tools involved in the machining operations. That is why the precise measurement of tool dimensions combined with cyclic inspection for wear and breakage is so important. A temperature-compensated tool axis is essential for long-term process stability.

HEIDENHAIN offers various solutions for tool measurement and inspection:

- Vision systems for inspection of cutting edges, for tool measurement, and for temperature compensation
- Touch probes for measurement of milling and drilling tools
- Breakage detector in order to detect broken tools

These systems are designed for permanent installation in a machine's work envelope. That way you seamlessly integrate tool measurement and status inspection in the production process.





## Three tasks, one vision system: the VT 122

The new VT 122 measuring camera with the VTC software from HEIDENHAIN combines three roles in a single system, providing an all-in-one tool presetter, tool microscope and visual inspector. Worn or damaged tools are therefore detected in a very quick and reliable manner that can even be automated. There is no need to send them to a metrology lab.

### Applications:

- Tool presetting and measurement
- Visual tool inspection before critical machining steps
- Documentation of tool status and wear values
- Contact-free breakage detection
- Panoramic images for inspecting the lateral cutting edges
- Inspection of flake faces and rake faces

### Your benefits:

- Increased productivity and reduced TCO
- Reproducible documentation of the tool condition
- Highly rugged design
- Compressed air efficiently cleans the workpiece and camera
- Automatic calibration and setup of the camera:  
Separate TNC probing cycle for calibration

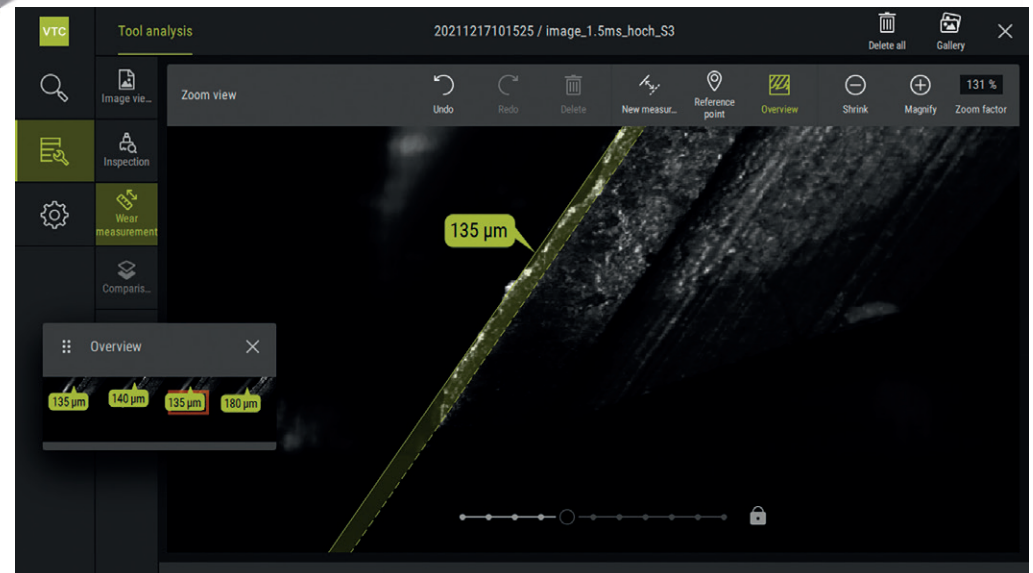


## VTC computer software

The camera takes close-up images of each tooth as well as detailed panoramic images of the entire tool circumference. During inspection with the VTC computer software, the lighting angle can be varied for these panoramic images, enabling optimal illumination of all cutting edges. This is ideal for measuring tool-flank wear. Tools can also be imaged while looking head-on at the tip. VTC can run automatically during unattended shifts (with cycles for the TNC7 and TNC 640). Via an interface to the TNC's tool table, the PC software can even lock tools as needed.



- Definition of the views in the imaging cycle
- Intuitive measurement of the wear
- Measured values exported in a file





## TT 160 and TT 460 touch probes

The tactile TT touch probes let you measure your milling and drilling tools efficiently and reliably. Due to their rugged design and high degree of protection, these tool touch probes can be installed directly within the machine tool's work envelope. Tool measurement is possible at any time: before machining, between machining steps, or after machining is done.

### Applications:

- Cycle-controlled tool inspection
- Tool presetting
- Inspection of individual cutting edges

### Your benefits:

- Fully automatable tool breakage inspection
- In-process tool inspection
- Simple installation and start-up
- Variable mounting with a wireless TT 460
- Automatic calibration after mounting and maintenance
- Rated break point protects the touch probe and spindle
- Sturdy and designed for a long life (over 50 million cycles)



- Wear detection
- Tool measurement
- Tactile inspection
- Repeatability: <math>< 1 \mu\text{m}</math>



## TD 110 tool breakage detector

The inductively operating TD 110 tool breakage detector inspects tools as they pass by, saving much time when looking for broken tools. Rotating tools moving at rapid traverse can be measured. The TD 110 can be placed anywhere in a machine's work envelope. Tool inspection can therefore take place at an ideal location, for example by integrating it in the tool exchange sequence. Thanks to the sensitive scanning technology, even very small tools made of HSS steel or carbide can be inspected (starting with a diameter of at least 0.4 mm).

### Applications:

- Contact-free tool breakage inspection
- Inspection routine upon tool change

### Your benefits:

- Particularly efficient breakage inspection
- Inspection at rapid traverse
- Sturdy design for installation in the work envelope
- Compatible with all controls with a touch probe interface
- Cycles can be installed on the TNC remotely



- Tool breakage detection
- Inductive inspection
- Contact-free inspection
- Detection of complete breakage







# HEIDENHAIN

**DR. JOHANNES HEIDENHAIN GmbH**

Dr.-Johannes-Heidenhain-Straße 5

**83301 Traunreut, Germany**

☎ +49 8669 31-0

FAX +49 8669 32-5061

info@heidenhain.de

[www.heidenhain.com](http://www.heidenhain.com)



**HEIDENHAIN**  
worldwide