FULL PROCESS CONTROL WITH TOOLSCOPE

Digital monitoring for your production

TEAM CUTTING TOOLS

CUTTING SOLUTIONS BY CERATIZIT   KOMET   WNT   KLENK

CERATIZIT is a high-technology engineering group specialised in cutting tools and hard material solutions.

Tooling a Sustainable Future

www.ceratizit.com

Keep a close eye on your processes…

CERATIZIT is paving the way for the digital future of machining. A central element of this is the ToolScope monitoring and control system, which continuously records signals from the machine that are generated during the production process. This data is visualised and used to monitor and adjust the machine.

Process control

- ▲ Process data is captured, visualised and evaluated by ToolScope
- ▲ Deviations are identified in real time
- ▲ ToolScope optimizes your manufacturing processes automatically

Machine protection

- ▲ The machine status is monitored for maintenance purposes
- ▲ If impact collisions occur, an emergency stop is triggered (airbag for the machine)
- ▲ Overloading of the tool and the machine tool can be prevented

Documentation & digitalisation

- ▲ Tool life analysis (data about the use of the tool is captured)
- ▲ Machining time analysis
  (analysis of machine downtimes and the reasons for them)
- ▲ 100% control of the workpiece: critical process parameters are documented
  (ensures the quality level)

Process control

TS-PM: Process monitoring

ToolScope automatically learns the optimum process flow and responds to deviations in the machining operation.

- ▲ Detection of tool breakage
- ▲ Reduces resultant damage to the tool, workpiece and machine
- ▲ Can be quickly and easily adapted to the production processes
- ▲ Enables unmanned production through 100% control of workpiece

TS-WEAR: Wear detection

ToolScope identifies worn tools based on the average process force.
This makes it possible to fully exploit the reserve of the tool.

- ▲ Reduces tool costs / tool breakages
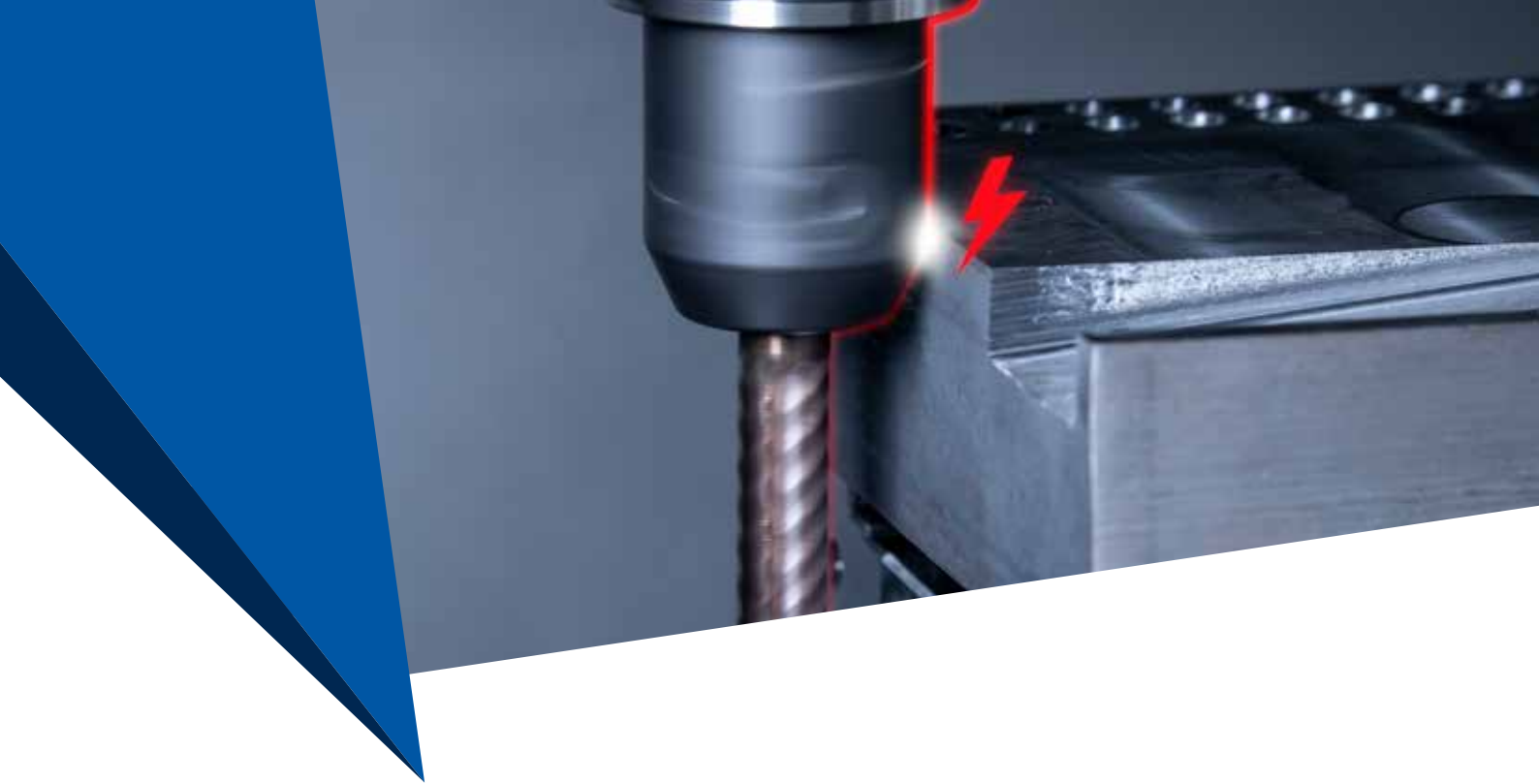- ▲ Increases machine availability
- ▲ Optimises tool usage

TS-AFC: Adaptive feed control

Feed control accelerates the process where it is safe to do so and simultaneously protects the tool by intercepting load peaks.

- ▲ Reduces cycle times and provides overload protection
- ▲ Increases the tool life
- ▲ Increases machine availability

Process optimisation

[Nm]

[s]

Machine protection

CD: Collision detection

Collision detection detects impact collisions during G0 and jog mode through an acceleration sensor. An emergency stop is triggered in less than 1 ms to prevent major damage.

▲ Reduces repair costs
▲ Reduces machine downtime
▲ Documents collisions

TS-CM: Condition monitoring

This captures the „fingerprint" of the machine, allowing machine status trends to be displayed. Observing the trend makes it easier for the maintenance team to implement the required action.

▲ Early identification of bearing damage to axes and spindles
▲ Support in planning maintenance measures and troubleshooting

Documentation & digitalisation

TS-TCLog: Tool change log

Records tool usage based on the number of pieces machined or the tool life counter to reduce administrative workload. Analysing deviations in the tool life allows potential areas for optimisation to be identified.

TS-MDA: Machine data analysis

Records machine production data and saves this data for further analysis.
Production data includes machine downtimes and the reasons for this.
The analysis of this data can enable large productivity increases.

TS-QRep: Quality documentation

Monitoring and real-time documentation as proof of quality for critical processes.
Special monitoring standards „GEP11TF12" and „MTV548-4" for the aerospace industry to assure quality standards are also supported.

TS-Connect: Network functions

When ToolScope is incorporated in a company network, data can be automatically transferred to a server or network drive. This guarantees long-term data storage, an automated back-up function and remote access.

For more information
https://cutting.tools/int/toolscope

Scan here!

ToolScope is the ideal solution to meet your specific needs, as this example from one of our customers shows:

Increase in process security of up to 25%

▲ **Over turning and countersinking the fuel connection …**
… with process monitoring

Reduction in cycle times of up to 15 %

▲ **Finish machining …**
… with adaptive feed control

Increase in tool life of up to 30%

▲ **Diverse drilling, turning and milling operations …**
… with wear monitoring

▲ **Optimum tool life**

▲ **Additional tool usage with ToolScope**
ToolScope´s wear monitoring enables the tool life reserves
to be used without any concerns

Tool usage up to now	+ 30 % with ToolScope

The benefits of our service

▲ ToolScope functions individually
tailored to your requirements
▲ On site support when implementing
new processes and components
▲ Training and software updates
to keep you up to date

UNITED. EXPERIENCED.
METAL CUTTING.

CUTTING SOLUTIONS BY CERATIZIT

**SPECIALIST FOR INDEXABLE INSERT TOOLS
FOR TURNING, MILLING AND GROOVING**

The product brand CERATIZIT stands for high-quality indexable insert tools. The products are characterized by their high quality and contain the DNA of many years of experience in the development and production of carbide tools.

KOMET

**THE QUALITY LABEL FOR
EFFICIENT BORE PRODUCTION**

High-precision drilling, reaming, countersinking and boring is a matter of expertise: efficient tooling solutions for drilling and mechatronic tools are therefore part of the KOMET brand name.

WNT

**EXPERTS FOR ROTATING TOOLS,
TOOL HOLDERS AND CLAMPING SOLUTIONS**

WNT is synonymous with product diversity: solid carbide and HSS rotating tools, tool holders and efficient workholding solutions are all part of this brand.

KLENK

**CUTTING TOOLS
FOR THE AEROSPACE INDUSTRY**

Solid carbide drills specially developed for the aerospace industry bear the product name KLENK. The highly specialized products are specifically designed for machining lightweight materials.

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CERATIZIT
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