

A computer monitor is shown in a dark environment, illuminated from the right. The screen displays a bright yellow waveform graph, similar to an ECG or oscilloscope trace, against a black background. The monitor is slightly angled towards the viewer.

REPEAT, REPEAT, REPEAT.

With a comprehensive assistance system for production machining, we are the first – and so far the only – tool manufacturer with a credible and coherent approach to Industry 4.0. The basis of our high-tech strategy is increasing computerisation and analysing big data, combined with modular process monitoring. With a large number of applications, KOMET® BRINKHAUS ToolScope makes it easy to access the machine and process data

collected. It makes it possible to carry out expedient analyses in terms of efficient use of resources, such as machining tools and machining times, and it assists in these evaluations. As an oscilloscope for the machine tool, the unique monitoring system informs the machine operator about any flaws in processes or deviations from the standard process, and documents them at the same time.

Drilling. Reaming. Threading. Milling.

KOMET® BRINKHAUS TOOLSCOPE APPS



Process monitoring

- Self-learning process monitoring with statistical tolerance bands
- Detecting tool breakages, flaws in processes and missing workpieces/tools
- Monitoring compliance with user-defined limit values
- Monitoring series processes and small batch sizes
- Reducing rejects, rework and breakages of follow-on tools



Adaptive feed rate control

- Variation of the feed rate override, taking into account the current torque loading on the spindle in order to:
 - Save on machining time if the spindle is underloaded
 - Protect the tool and the machine if the spindle is overloaded
- Control range can be individually adapted
- Particularly relevant in the case of fluctuations in machining allowance
- Control of chatter vibration, and countermeasures if the machine vibrates



Wear monitoring

- Monitoring the actual tool wear on the basis of characteristic values taken from the process
- Optimum utilisation of the tool life quantities
- Meter for tool application



Quality monitoring/documentation

- Automatic documentation of the process data in the form of a PDF, PNG or Excel file
- Monitoring in accordance with current aviation standards, such as GE-P11TF12
- Automatic creation of calibration protocols
- Conclusive displays are oriented towards the requirements of the certifying agent



Tool changeover log

- Analysing tool changeover times and the reasons for tool changeover
- Analysing tool life
- Identifying where there is potential to make savings



Automatic shift log

- Creating an automatic shift log (machine is at a standstill, machine is producing, machine is faulty as signalled by ToolScope, ToolScope is learning, machine not operating at 100% due to override)



Collision monitoring

- Repair costs are significantly reduced as a result of triggering an emergency stop in the event of a collision
- Reaction time of 2 ms
- Reduces costs and time spent in the event of a collision and reduces machine downtime
- Can be used to reduce the insurance premium for a machine



Condition monitoring

- Monitoring machine-internal sensor values that allow conclusions about the condition of the machine to be drawn
- E.g. feed rate torques of axes in order to be able to make a statement about the friction of bearings (trend values are depicted)
- Monitoring vibrations on the machine
- Monitoring the dynamics of axes
- Recording measurement data using a special NC program which is implemented periodically (e.g. weekly)



Cloud function

- Saving process data by pushing it via the network to the company server or network drive
- Analysis performed at your own workplace
- Process data can be used or analysed from any company workplace around the world



Process optimisation as a service

- KOMET® is an expert in tools, processes and process monitoring, and this makes it one of the few companies to be a single-source provider of these products and services
- KOMET® is optimising its use of tools, its process times and its production method
- Shortening cycle times by developing combi tools, changing NC programs and maintaining the Komet assistance system for machining in order to ensure customers are always provided with optimum configurations and benefits