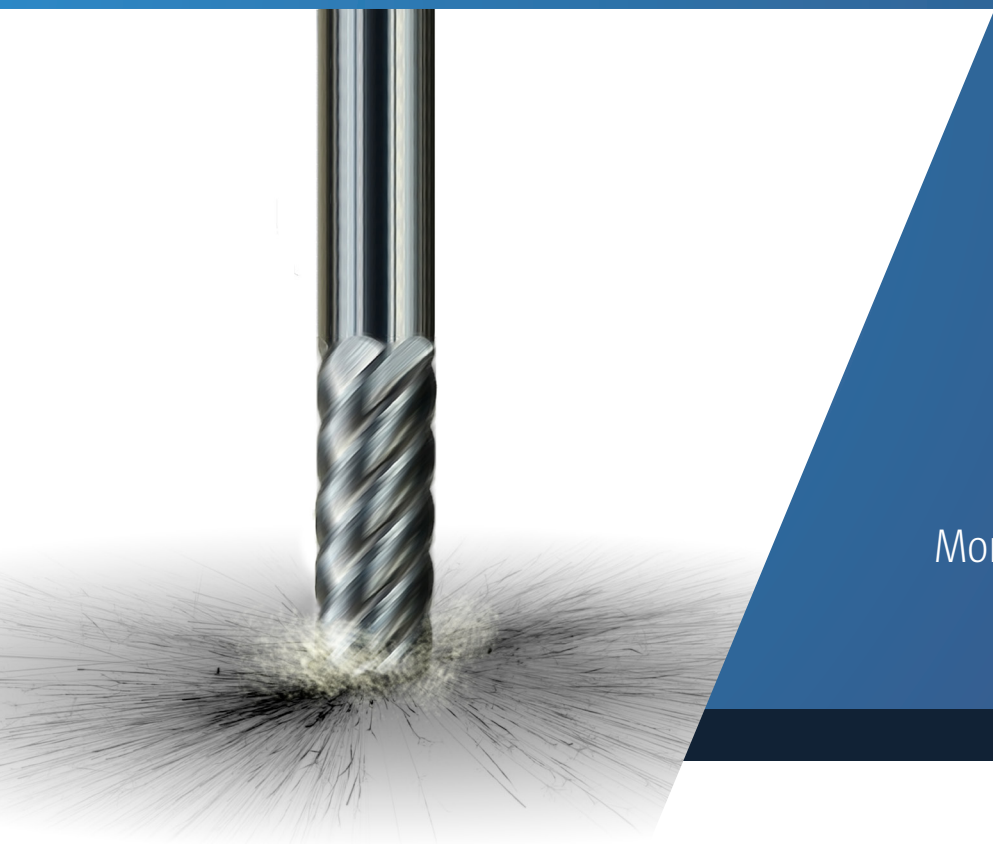




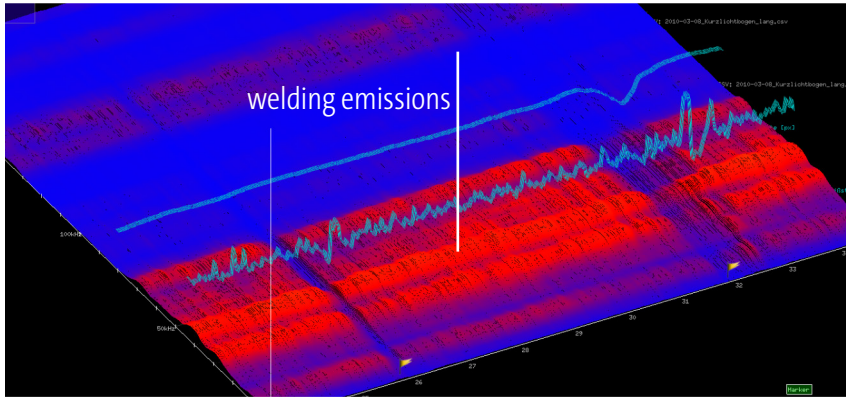
High Speed Process Monitoring



Assembling
Wire drawing
Welding
Machining
Crack detection
Plastic injection molding
Gear grinding
Monitoring of complex processes

20,000 rpm

One cutting edge is damaged
We know which one



Welding

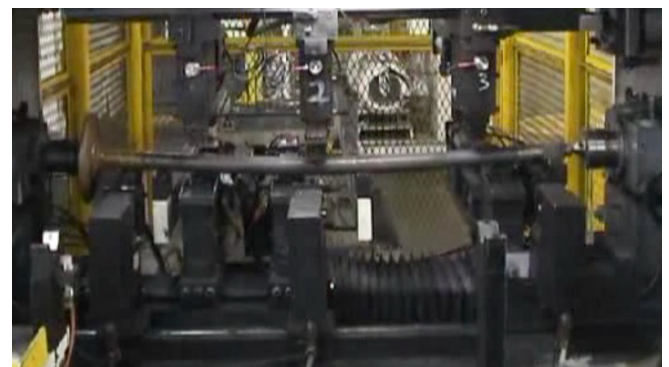
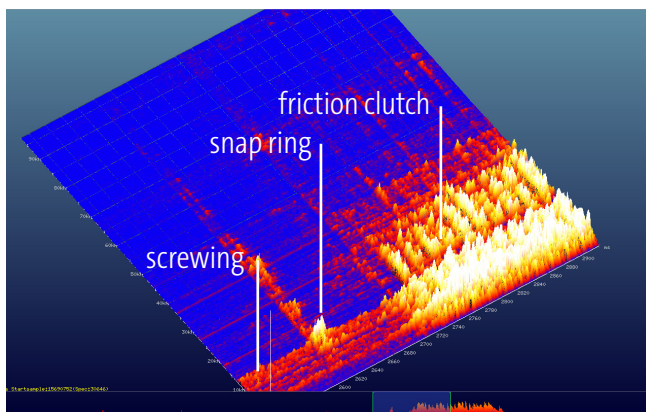
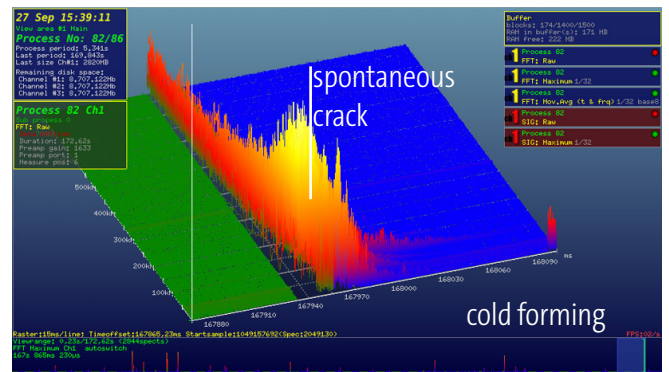
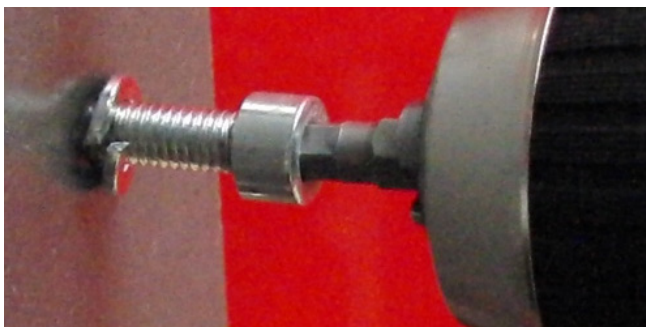
Deviations during a welding process are detectable via high-frequency impulses. This applies for weak spots like cold cracks, tiny welding pores, burn-through and splashes during the welding. Additionally, it's possible to evaluate the amount of energy that goes into the process. Even with laser welding. You receive the quality results during the welding process.

Joining

Is every single part assembled? Is no part of the work-piece missing? Does every part fit correctly? Optimizer4D can tell you if everything is okay or not. The signal image depicts the tightening of a screw, combined with a snap ring. The tiny high-frequency signal which shows up just before the screw is tight originates from the snap ring. So, if this tiny signal is missing, you can be sure that the snap ring is missing, too. Simple, thanks to High Speed Process Monitoring. This example is transferable to other, more complex processes.

Crack detection

During joining, cold forming or bending and straightening or similar production processes, cracks can occur in a work-piece or in the tooling. These cracks produce a significant and unique signal. Even cracks in the inside can be detected. Also, Optimizer4D detects cracks that are invisible at the surface of the work-piece. At the very moment it occurs. Safe and reliable.





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des Deutschen Bundestages

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ISO 9001:2008
ISO 14001:2004

Wire drawing

The closer a production process gets to the limits of material and machine, the higher the chances for failures. This is the same for wire drawing. You always try to draw as fast as possible. Optimizer4D helps you finding the optimized speed. Leaks of chemical paste, rough surfaces or resonating tools and some types of cracks are detected in real time.

Monitoring of complex processes

Optimizer4D is able to monitor production processes which consist of multiple phases and tools. For example, during inductive hardening. After the induction phase, a phase of quenching follows. It is possible to monitor the amount of energy which goes into the process and into the work-piece itself. Also, Optimizer4D can evaluate the quenching phase and it can depict the course of action.

Plastic injection molding

Tools for plastic injection molding are expensive and consist of multiple parts. If parts of the tool get jammed suddenly, the whole tool is in danger. Optimizer4D allows to check if everything went right. It picks up moving and pressing emissions and pulses from the inside of the mold. For example, it is possible to detect whether the ejector is successfully retracted and if the bolts are still running smooth - or not.

