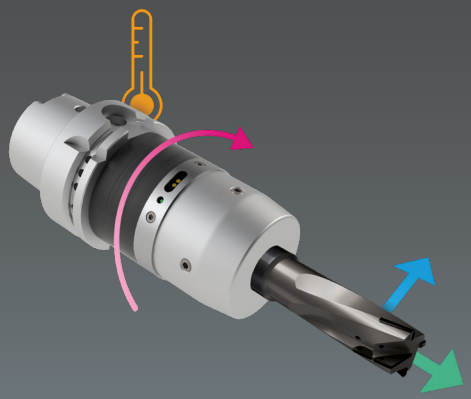
promicron

Part of Sandvik Coromant



spike®

Tool holders or spindles can be equipped with **spike® sensor technology** for absolute force measurement directly at the tool.

SENSORS

FROM DATA ACQUISITION TO KNOWLEDGE.

We bring together data from different sources.
This creates valuable data context for comprehensive documentation, analysis, optimization and monitoring of your processes – even without involving data analysis experts.

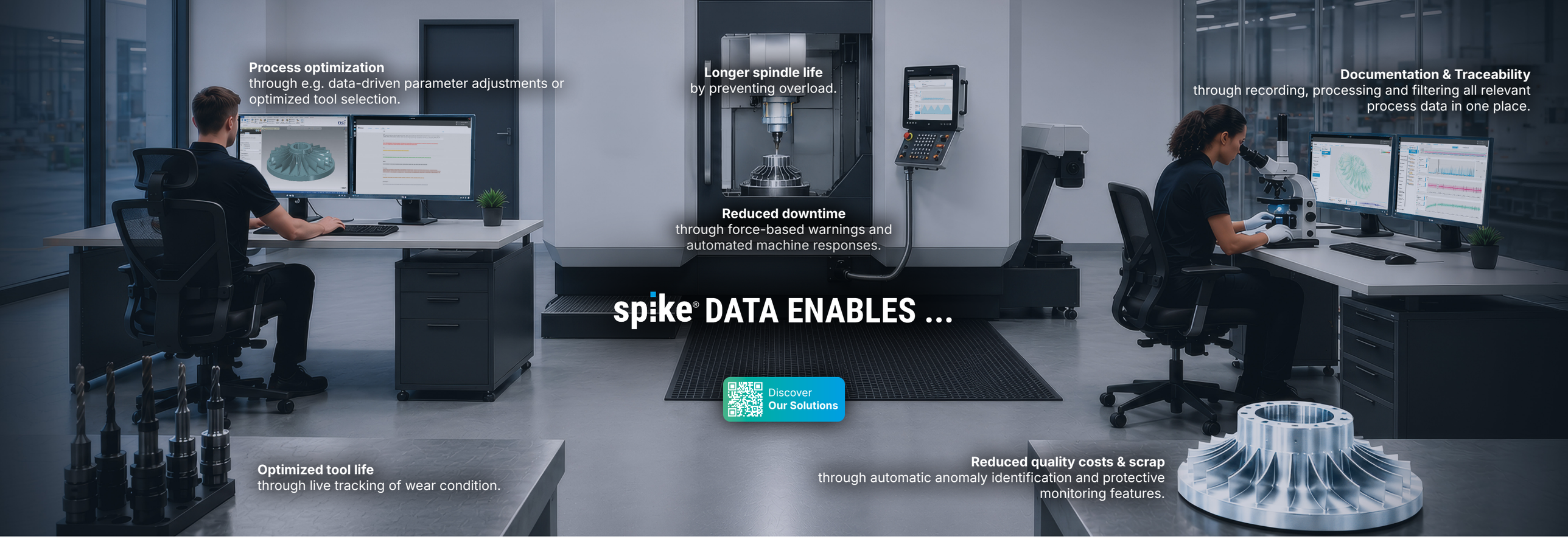
MACHINE DATA

With **fusion**, all relevant **machine data** can be captured and **machine reactions** can be triggered.

DATA PLATFORM

Our software **fusion** combines spike® data with sensor, machine, axis and other process data. Keep an eye on all your machines inside one single platform.

Contact Us.



Process optimization
through e.g. data-driven parameter adjustments or optimized tool selection.

Longer spindle life
by preventing overload.

Documentation & Traceability
through recording, processing and filtering all relevant process data in one place.

Reduced downtime
through force-based warnings and automated machine responses.

spike® DATA ENABLES ...

Discover **Our Solutions**

Optimized tool life
through live tracking of wear condition.

Reduced quality costs & scrap
through automatic anomaly identification and protective monitoring features.

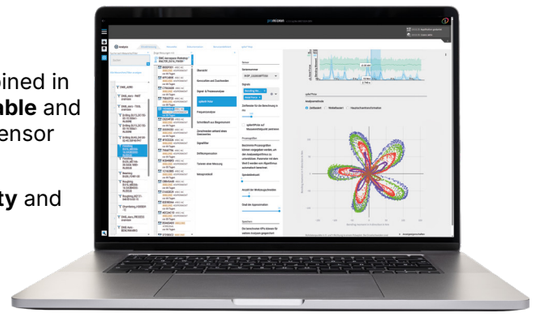
PROCESS INSIGHTS POST PROCESS

Documentation, Know-How & Optimization.

With **PROCESS INSIGHTS**, machine and sensor data are all combined in fusion. This makes manufacturing processes **transparent**, **traceable** and **analyzable** – either as a software-only solution or with suitable sensor technology.

Based on objective data, **process stability**, **tool utilization**, **quality** and **productivity** can be systematically improved.

View **Product Package**



Typical Challenges	Solutions with PROCESS INSIGHTS
Lack of process transparency and traceability	Central process database with all data in one place
Process anomalies with unclear causes	Analysis of individual measurements for fast diagnosis
Time-consuming comparison of tools and process parameters	Comparison of measurement series for benchmarking
Limited visibility of force peaks during the process	spike® Map for precise identification of critical areas
Lack of objective KPIs	KPI calculation for data-driven process evaluation
Limited information on tool condition	Tool Health analysis for assessing tool condition

PROCESS AUTOMATION IN PROCESS

Automation Based on a Unique Data Foundation.

PROCESS AUTOMATION includes all features of PROCESS INSIGHTS.

In addition, **machine** and **sensor data** can be **monitored** in real-time and evaluated automatically.

Anomalies, tool wear and critical process conditions are detected automatically, allowing various predefined **reactions to be triggered**.

View **Product Package**

Typical Challenges	Solutions with PROCESS AUTOMATION
Downtime/scrap due to tool breakage	Automatic cutting-edge breakage detection
Delayed wear detection	Automatic tool change when wear is detected
Reduced quality & tool life due to chatter	Chatter detection using dedicated KPIs
Delayed/no response to deviations	Real-time warnings and trigger functions
Chips in the spindle taper cause quality issues	Chip-in-Spindle Detection*
Spindle damage or shortened service life	Customized Spindle Overload Detection*
Delayed detection of defective components	Automatic flagging of processes with deviations**

**with spike® Inspindle, ** with spike® or spike® Inspindle*

Data Insights — **Data Analysis** — **Monitoring** — **Automation**

SECURE QUALITY & PRODUCTIVITY

Your sensor-based solution for **data tracking**, **documentation**, **monitoring** and **process optimization**.

PROCESS INSIGHTS HIGHLIGHTS POST PROCESS

Feature	Description
Single Measurement	Analysis of individual measurements from the overall process.
Trend Analysis	Analysis of force-data trends throughout the process.
FFT Analysis	For filtering interference and vibrations.
spike® Map	Mapping of force data onto a 3D force map of the component.
spike® Polar	Live visualization of cutting-edge and overall tool condition.

PROCESS AUTOMATION HIGHLIGHTS IN PROCESS

Feature	Description
Threshold	Set data thresholds as a basis for automated responses.
Cutting-Edge Breakage	Notification when a cutting edge breaks.
Chatter	Notification when chatter occurs to protect the component.
Machine Response	Triggered when critical situations occur during the process.
Third-Party Stream	Processing data from other sources in fusion.

APPLICATION EXAMPLES

spike® Map & spike® Polar

With the **PROCESS INSIGHTS** features **spike® Map** and **spike® Polar**, recorded process data can be visualized directly:

spike® Map: Recorded force data is projected onto a 3D force map of the component and color-coded.
spike® Polar: The condition of the tool's cutting edges can be visualized at any point in the NC code.

Machine Reaction

The **PROCESS AUTOMATION** monitoring features make it possible to define rules for automated machine responses, based on the data sources integrated into fusion.

For example, a **bending moment threshold** can be defined.
If this threshold is reached, the machine can react automatically to ensure **the spindle and component** are **protected** from overload and damage.

More **Application Examples**