Superior Clamping and Gripping

SCHUNK®

Tooling with sensitive Awareness

i...T|E|N|D|O®2 – The intelligent way to an optimized process

i...TENDO®²

We provide tomorrow's standard, today!

With our new iTENDO² we have taken the idea of intelligent toolholders to the next level. Speeds of rotation up to 30,000 RPM and an interfering contour that corresponds 1:1 to that of a SCHUNK standard toolholder make it predestined for use in a wide range of tasks without any of the time-consuming adjustment work. This also makes it a straightforward option for monitoring machining processes in real time.

Three service packages offer an intelligent solution for any challenge. From process optimization using a tablet, to playing out data for process monitoring and also completely integrating the system into existing machine controls.

100%
compatibility

simple 1:1 exchange with SCHUNK standard toolholders without time-consuming reprogramming of your system

Speeds of rotation up to
30,000 RPM
make a wide range of applications possible

Intelligent
real-time
sensor system
for easy process monitoring and maximizing tool service life

3 customized product packages
offer a suitable solution for any task or complexity level

Technical data

Battery life 10 h	Acceleration sensor 100 G	Speeds of rotation up to 30,000 RPM	Balancing grade G2.5 at 25,000 RPM	External cooling / internal cooling up to 80 bar

Three iTENDO² packages – Comprehensive options.

The intelligent iTENDO² toolholder is available in three different packages to make switching to this technology even easier. One common element in all of them is the new iTENDO² toolholder, which, due to its closest-to-the-part acceleration sensor, provides precise stability values that can be used to optimize the machining processes.

As a tool to increase your process transparency, the basic version of the toolholder can send the captured data directly to the tablet PC supplied. With the "easy connect" version, the measured values can be transferred to other systems via an analog interface. In the "pro" version, which will be available in the future, it will also be possible to send the data directly to the machine control system.

All versions are upward compatible, i.e. you can use the tablet variant to start testing the technology. After you are convinced of the benefits of an intelligent toolholder, it is easy to switch to the more comprehensive packages for monitoring and optimizing your processes automatically.

1. Tablet PC
2. Control cabinet module (analog)
3. Wireless receiver
4. Cloud
5. Edge device

Aluminum case for optimal protection and flexible use

The package of the iTENDO² pad is delivered in a practical aluminum case. This means that all components can be protected during storage and it offers flexible transportation to the machine in the event of temporary process monitoring.

iTENDO² pad

The new iTENDO² with its own tablet PC

- Direct connection to the tablet PC without machine connection
- Display chatter index (10 Hz data)
- Alarm and trend evaluation on the tablet

Your advantages:

- High process transparency
- Sustainable process optimization
- Sound process comparisons

Comparison of Package Services

	iTENDO² pad	iTENDO² easy connect	iTENDO² pro
Process transparency	●	●	●
Process optimization	●	●	●
Simple data interface	–	●	●
Wireless receiver	–	●	●
Process monitoring	–	–	●
Quality monitoring	–	–	●
Cloud functions	–	–	●
Adaptive control	–	–	●

iTENDO² easy connect

The new iTENDO² with simple data interface

- Establish to connection to the wireless receiver
- Configuration via the tablet PC
- Analog output of data with 100 Hz

Your advantage:

- Stability values can be used from the machine or process monitoring provided by the customer

iTENDO² pro

IN DEVELOPMENT

The new iTENDO² with full machine integration

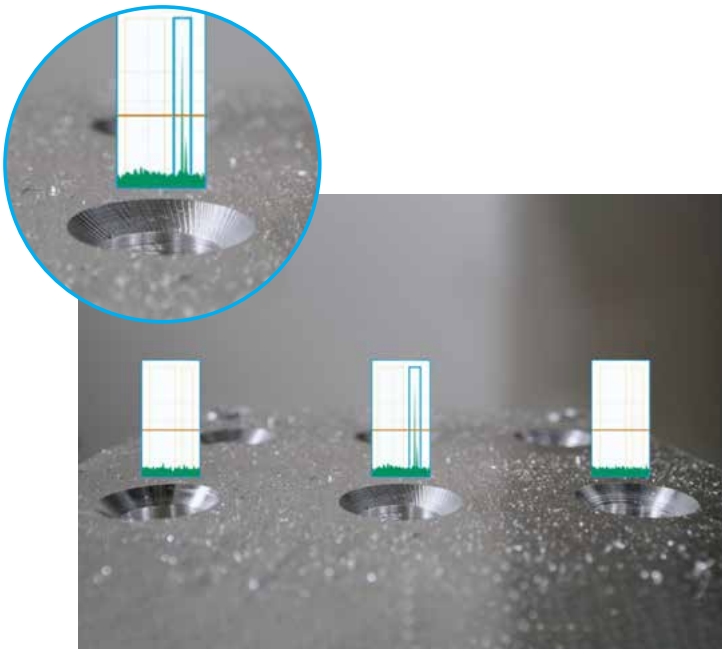
- Edge device SCHUNK software solution with extensive functions
- Determination of different stability values
- APPs for specific processes

Your advantages:

- Process, quality and wear monitoring
- Adaptive control

This is where the iTENDO² makes the difference.

Precise acquisition of vibration data directly on the tool, and therefore close to the workpiece can make a significant difference in many applications, making machining more accurate, efficient and less prone to error.



Monitoring Quality

When countersinking, the iTENDO² monitors compliance with the surface quality. In this application, monitoring of the countersinking process is used for quality and process control as well as for documenting features that are critical to functionality.

Your added value:

Documentation of the manufacturing processes
for subsequent quality and process optimization

Minimization of rejects
through a fast conrol reaction during the process

Workpiece Deburring

The edges on a workpiece surface are deburred with the help of a brush. As the brush wears, the infeed must be readjusted. The iTENDO² enables automatic infeed.

Your added value:

Optimization of tool service life
through optimized infeed

Wear monitoring when deburring
through identifying changing vibration patterns

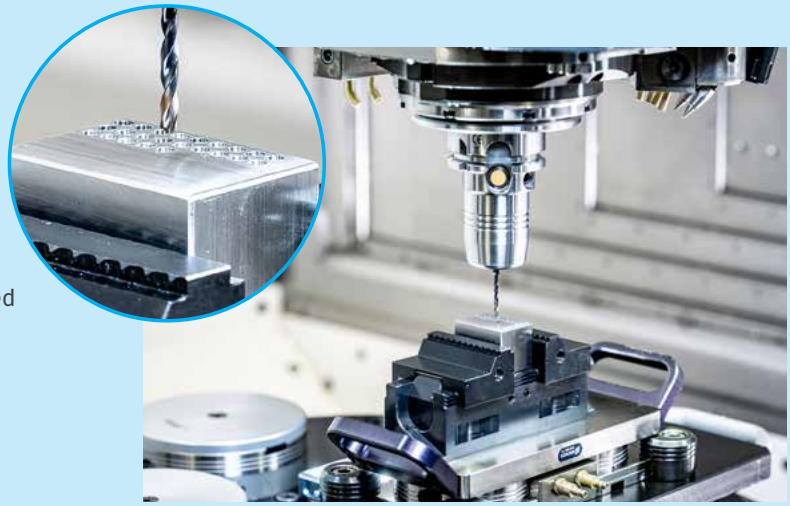
Tool Monitoring

With the iTENDO², minimal vibrations can be detected in tools as small as 3 mm in diameter, which can indicate tool breakage due to wear or a feed rate that is too high. This helps to avoid or minimize machine downtimes.

Your advantage:

Tool change before possible breakage
to avoid damage and unplanned downtimes

Extension of tool service life
as process coordination can be ideally optimized



Optimizing Processes

The optimal process settings can be determined by comparing the recorded vibration data. This allows the parameters to be set in the best possible way and the cutting process to be made even more precise and efficient, as can be seen in the example of thread milling.

Your advantage:

Reduced cycle times
due to a well coordinated feed rate

Increased tool service life
of the threading tool due to low-vibration process design

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