

i...T|E|N|D|O²

Tooling with sensitive awareness

iTENDO² – the intelligent way
to the optimal process

Hand in hand for tomorrow



We provide tomorrow's standard, today!

Speeds of up to
30.000 RPM

make a wide range of applications possible

3 customized product packages

offer suitable solutions for any task or complexity level



Intelligent
real-time
sensor system

for easy process monitoring and maximum tool service life



Available
interfaces

HSK-A63 Ø20x90
HSK-A63 Ø32x125
HSK-A63 Slim 4ax
HSK-A100 Ø32x115
BT30 Ø20x90
BT40 Ø20x110
SK40 Ø20x110
SK50 Ø32x103.2
CAT40 Ø3/4x4"
CAPTO C6 Ø32x110
Adapter Ø20
Special designs
on request

Technical data



Battery life
10 h



Acceleration
sensor
100 G



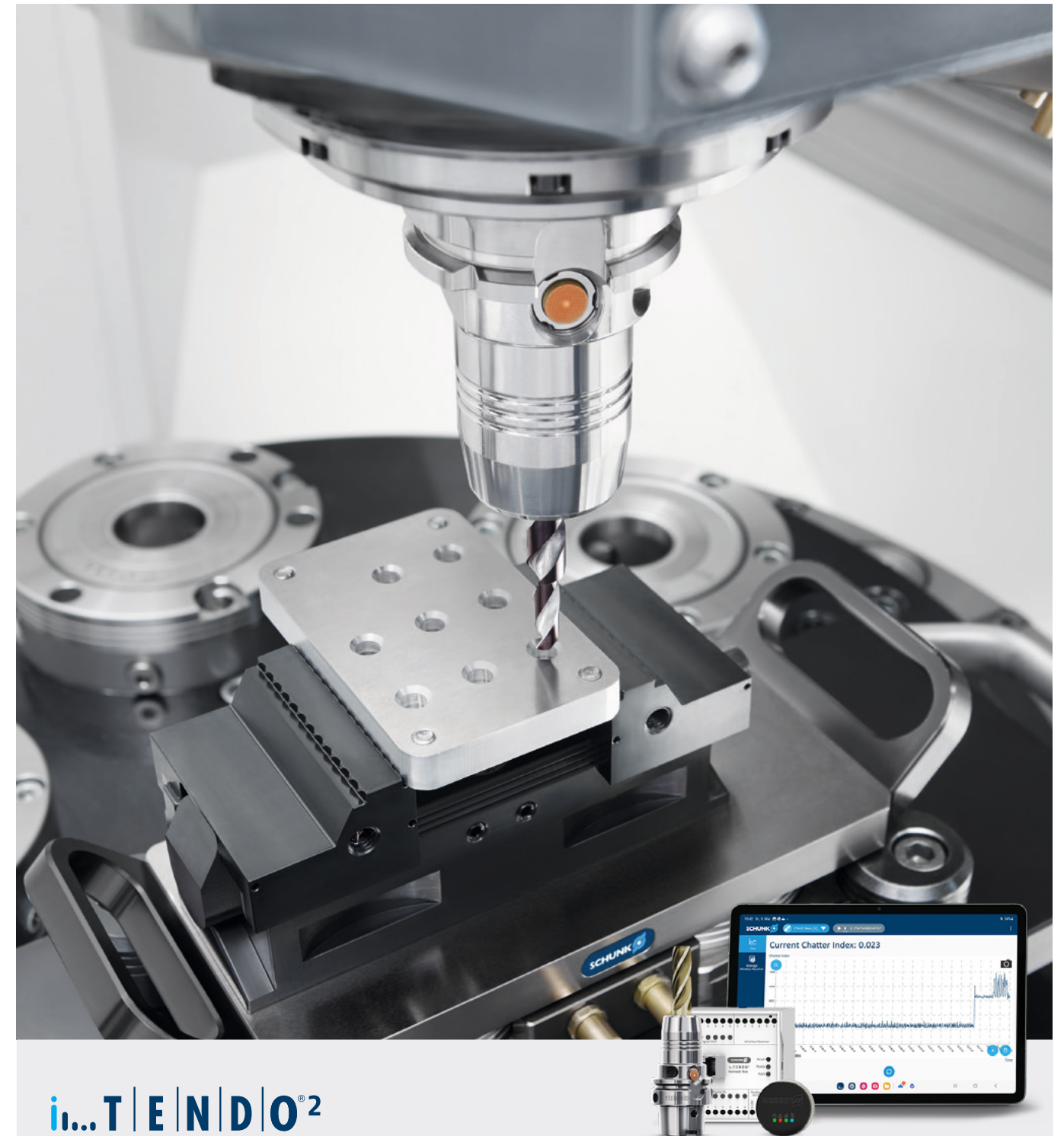
Speeds of rota-
tion up to
30000 RPM



Balancing
grade G2.5 at
25000 RPM



Internal cooling
up to 80 bar



i...T|E|N|D|O²

With the iTENDO², we have taken the idea of the intelligent toolholder to the next level. It is available in three different packages. As a tool to increase your process transparency, the basic iTENDO² pad version of the toolholder sends the captured data wirelessly to the tablet PC supplied. With the iTENDO² easy connect version, we integrate the intelligent toolholder technology into the machine and offer the option of transferring the measured values to a higher-level process monitoring system via an analog interface. With the iTENDO² easy monitor version as a software expansion and third stage of extension, we now offer the option of simple process monitoring with machine integration.

Three iTENDO² packages – comprehensive options

Using three different systems, we offer a wide range of application options and added value for optimizing and monitoring your processes.

iTENDO² pad

The direct connection to the sensory toolholder

Sends captured data wirelessly to a tablet (included), thereby serving as a tool for increasing process transparency and simple process optimization.



Your added value:

- + **Process transparency**
Vibrations and vibration peaks in the process are made visible
- + **Optimization of**
Set-ups, cutting data, tool service life, surface quality, cycle time
- + **Condition monitoring**
Monitoring of machine states such as the vibration level of the spindle



More about the iTENDO² pad

iTENDO² system comparison

Chatter index	iTENDO ² pad	iTENDO ² easy connect	iTENDO ² easy monitor
Frequency	10 Hz (tablet)	100 Hz (analog)	100 Hz (analog)
Manual recording	●	-	●
Automatic recording	● (threshold values)	-	● (digital input)
Comparison of recordings	●	-	●
Trend analysis	●	-	●
Export	●	-	●
Signal output			
Live alarm	● (tablet)	-	● (Tablet + Connect Box)
Trend alarms	● (tablet)	-	● (Tablet + Connect Box)
Additional functions			
Machine integration	-	●	●
Automatic connection setup	-	● (digital input)	● (digital input)

iTENDO² easy connect

The simple connection to a process monitoring system

Integrates iTENDO² technology into the machine and transmits measured values to a higher-level process monitoring system via an analog interface.

Your added value:

- + **Connection to existing process monitoring system**
Simple integration via analog interface and high data quality
- + **Connection to the machine**
Provision of the analog signal to the machine control
- + **Connection to customer's own database**
Provision of data for customized evaluations



More about iTENDO² easy connect

iTENDO² easy monitor

Simple process monitoring

The function expansion iTENDO² easy monitor enables machine operators to get easily started into process monitoring.



Your added value:

- + **Tool monitoring**
Detection of wear based on trend limits and breakage detection via a live alarm function
- + **Workpiece monitoring**
Enables monitoring of surface quality, chatter marks and vibration peaks
- + **Condition monitoring**
Enables straightforward cyclical condition monitoring of the spindle



More about iTENDO² easy monitor

Learn more!

For more information or in case of questions, please don't hesitate to contact us. Simply contact our specialist consultant for toolholder technology.

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E-Mail: cms@de.schunk.com

iTENDO² seismo

Flexibility with intelligent real-time sensor system

The iTENDO² seismo makes testing and process optimization even easier. The magnetic holder can be attached to static components in the machine room magnetically or with screws, very quickly and without time-consuming clarification.

NEW

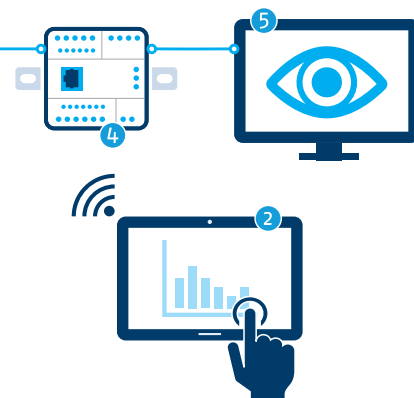
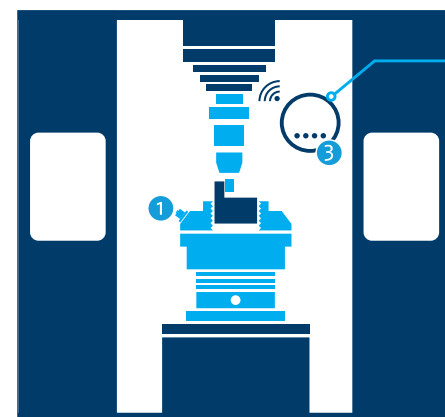


Your added value:

- + iTENDO² technology
Easy to use for tests and process optimization
- + High level of flexibility
To be fastened magnetically or with screws to static parts in the workspace
- + 100% compatibility
Can be used with all iTENDO² packages



More about
iTENDO² seismo



- 1 iTENDO² seismo
- 2 iTENDO² pad
- 3 Wireless receiver
- 4 Connect Box
- 5 Connection to existing process monitoring system

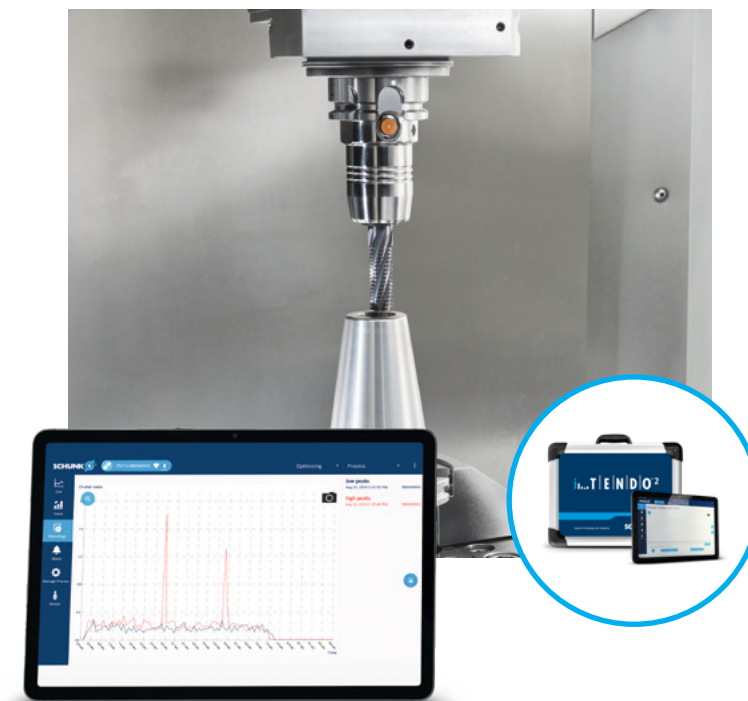
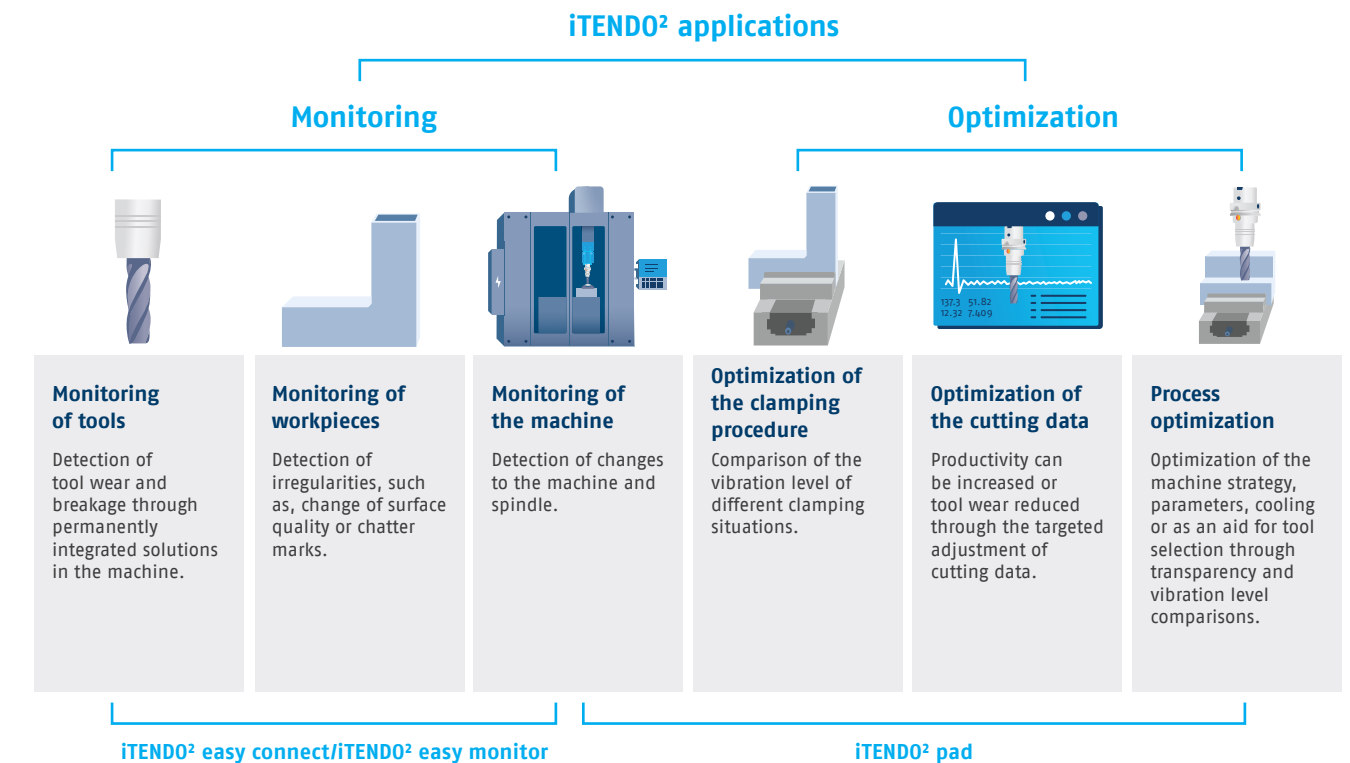
100%
compatibility

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



Where the iTENDO² makes the difference

iTENDO² fields of application



Process transparency and optimization

With iTENDO², processes can be easily optimized even with small batch sizes by specifically optimizing when vibration peaks are detected.

Your added value:

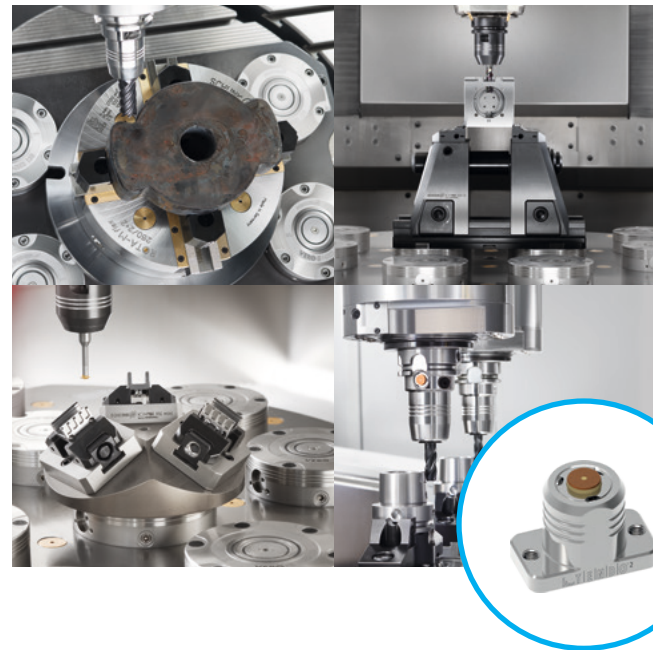
- + Reduced tool wear and breakage
To avoid damage and unplanned downtimes
- + Optimization of unmanned night shifts
Due to extended service life and an optimally coordinated process



More about process
optimization with
the iTENDO²

Data collection with real added value

No complex reprogramming



Clamping device comparison

The new iTENDO² seismo in particular is ideal for comparing clamping devices. Due to its high flexibility and the ability to position the magnetic holder freely in the machine room and on clamping fixtures, the magnetic holder offers an exceptionally wide range of applications for testing or process optimization.

Your added value:

- + **Selection of optimal component clamping**
Improved surface quality due to reduced vibrations in the process
- + **Selection of the optimal tool clamping**
Increase machining accuracy and extend tool service life



More about
iTENDO² seismo

Monitoring quality

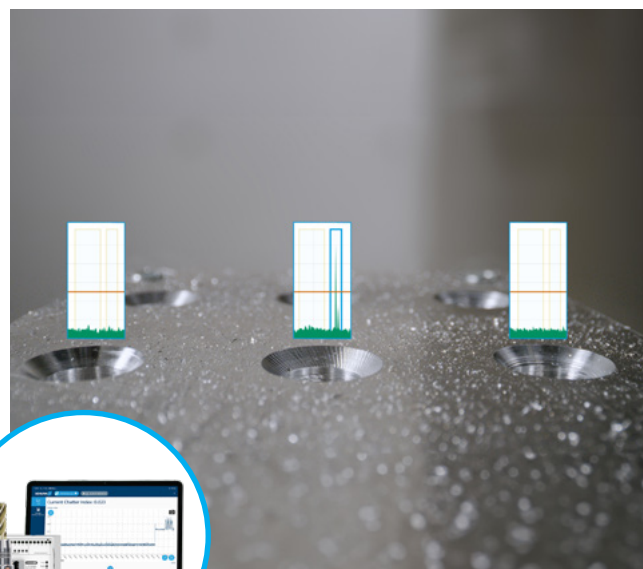
When countersinking, the iTENDO² monitors compliance with the surface quality. In this application, monitoring of the countersinking process is used for quality and process control as well as for the documentation of features that are critical to functionality.

Your advantage:

- + **Minimization of rejects**
Through detection of irregularities
- + **Documentation of manufacturing processes**
For seamless verification

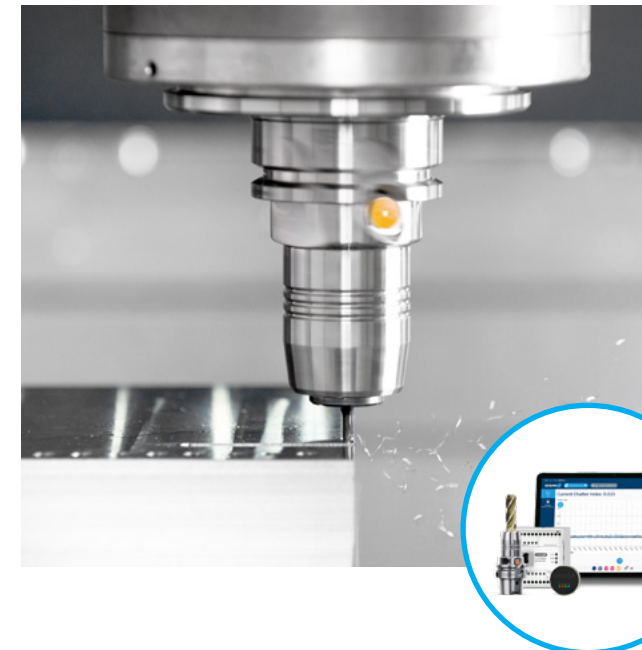


Monitoring quality
with iTENDO²



Three systems – many possibilities

iTENDO² fields of application in focus



Tool monitoring

With the iTENDO², minimal vibrations can be detected even in processes involving small tools, which can indicate tool breakage due to wear or an excessive feed rate. This helps to avoid or minimize machine downtimes.

Your advantage:

- + **Tool change before a breakage occurs**
To avoid damage and unplanned downtimes
- + **Increased tool service life**
As process coordination can be ideally optimized



Monitoring tools
with iTENDO²

Optimization of cutting data

With iTENDO², optimal cutting data can be found depending on the individual machine situation. This allows new processes to be introduced much more quickly.

Your added value:

- + **Shorter cycle times**
Due to optimized cutting data
- + **Optimized tool service life**
Resulting in cost savings



Optimized cutting data
with the iTENDO²



Automation that moves you forward – with Machine Tending and iTENDO²

Efficiency is good – **reliable efficiency is better**. When it comes to automated machine loading and unloading, success depends not only on speed – it mainly depends on **process stability and monitoring**. **SCHUNK Machine Tending** offers solutions tailored to your production – from lean automation to flexible pallet and workpiece handling. True autonomy, however, requires processes that run safely and reliably 24/7. This is where iTENDO² comes in: cutting data and clamping conditions can be optimized – because stable processes are essential for automation. The intelligent toolholder monitors your machining process in real time, detects deviations immediately, and ensures maximum stability. The result: unplanned downtimes are avoided, scrap is reduced, and tool life is extended.

Your advantages:

- + Increased productivity through reliable, unmanned shifts
- + Higher quality, even with varying batch sizes
- + Lower costs & downtimes thanks to early error detection
- + Maximum flexibility for changing requirements
- + Long-term competitive edge thanks to stable and transparent processes



Learn more about automated machine loading



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