

The Intelligent System for the Fully Automatic
Exchange of Indexable Inserts

ZOLLER
expect great measures

micBox



We Stand for Smart Progress

ECONOMICS

The ZOLLER »micBox«, specially developed for the automated loading and exchange of indexable inserts on milling tools, is designed for a future-oriented process alignment with maximum cost-efficiency. With the »micBox« system solution, ZOLLER takes a decisive step towards fully automated tool assembly with a consistent quality promise.

The »micBox« is the fully automatic ZOLLER system for assembling, rotating, turning, and exchanging indexable inserts on milling tools – operator-free and therefore absolutely process reliable. With this intelligent ZOLLER solution, the automatic exchange process of indexable inserts is guaranteed – used inserts are removed, rotated externally, and precisely mounted. Processes that were previously performed in labor-intensive manual work can now be executed precisely and error-free, making the »micBox« a true game-changer in your manufacturing.



Efficient 24/7 manufacturing

Complete traceability

Maximum process reliability



System Solution in Detail



ZOLLER »micBox«

Innovative technologies in detail that convince!

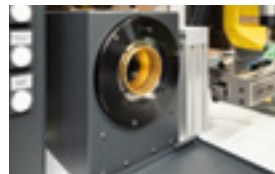
6-axis robot – from Fanuc, precisely exchanges indexable inserts and screws.



Gripper magazine – can store up to six grippers for different indexable inserts.



Universal spindle – allows clamping of tools up to 20 kg and ensures that tools can be positioned precisely in rotation.



Control software – ensures complete operation of the »micBox«. The software can also be displayed on external monitors.



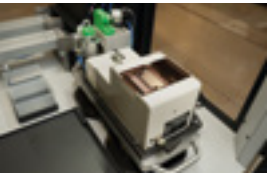
Magazine for indexable inserts – provides sufficient space. The two magazines inside the »micBox« can be stocked differently.



Lubrication unit – for screws, equipped with special grease, guarantees easy loosening of screws via the screw unit.



Turning and rotating unit – is loaded with indexable inserts by the 6-axis robot. This placement of indexable inserts in the turning and rotating unit ensures reorientation of the inserts. The screw magazine simultaneously provides the appropriate screw.



Screw unit – with integrated vacuum gripper mounted on the robot, always ensures precise exchange and tightening of screws with the correct torque.



»micBox«

Process Flow



Tool identification via RFID

01.

Removal of the indexable insert

02.

Blowing out of the insert seat

03.

Turning/rotating of the indexable insert

04.

Mounting of the indexable insert

05.

Automatic condition check

Unusable indexable inserts/screws
are collected in a container.

06.

Replacement of wear parts

New indexable insert taken from a pallet,
new screw taken from the screw magazine.

07.

Lubricating the screw & tightening
the indexable inserts on the milling tool

08.



Scan the QR code and experience
the ZOLLER »micBox« in the video!

Options/Accessories

Vacuum gripper for indexable inserts

With the quick-change interface, the different vacuum grippers can be exchanged reliably and safely within seconds.



Screw unit for Torx bits

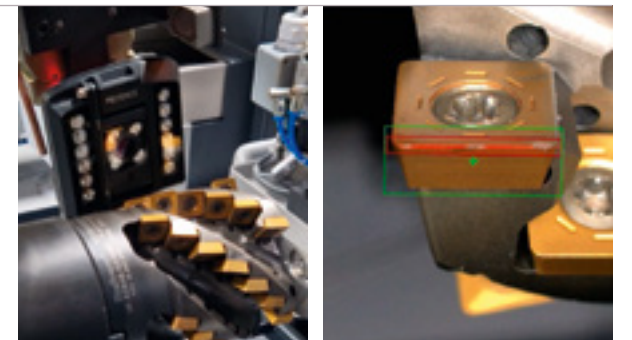
Different Torx sizes are available for loosening screws on the milling tool with the screw unit:

Torx 15/20
Torx Plus 15/20



Wear analysis

With the optional camera system, the wear of the indexable inserts is individually detected and automatically evaluated using the ZOLLER AI measuring function »wearCheck«. Based on the wear analysis, only indexable inserts that are actually worn are turned, rotated, or completely exchanged.



Adapters & accessories

With the ZOLLER extension holder system, a flexible clamping system is available for all tool holder systems (SK, HSK, PSC). Using test equipment, the system accuracy can be verified and calibrated.

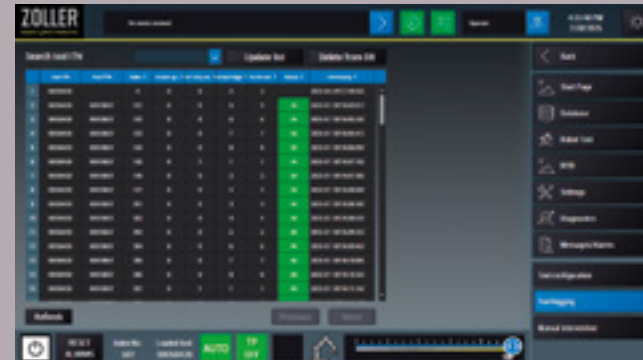


Process Optimization – Automated and Connected

The ZOLLER »micBox« can be directly integrated into your manufacturing – 24 hours a day, 7 days a week, and absolutely process reliable. A true milestone for all working with equipped milling tools. The »micBox« convinces in every manufacturing environment as a “compact unit”: The integrated magazine of the indexable insert changer alone ensures fully automatic magazine supply and guarantees 100% reliability – completely without manpower. In addition, the ZOLLER software guarantees complete documentation of all assembly and exchange processes. The fully automatic and therefore operator-independent processes form the basis for maximum process reliability and pave the way for connected interfaces



»micBox« start menu – from here, the operator can quickly navigate to all other areas within the control software. With just one click, the system can be started.



»micBox« database overview – provides a reliable overview of all relevant information of the currently loaded tool, such as how many indexable inserts have been used and how often an exchange has already taken place.



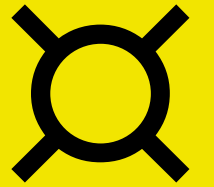
»micBox« user interface – offers a clear overview of all available modules – from robot control to turning and rotating unit to the lubrication station for screws. Each module can be conveniently operated manually, including the robot directly via the software.



»micBox« tool configuration – simple and efficient. new tools can be created quickly and necessary information for the robot entered. Existing tools can also be edited and updated at any time.

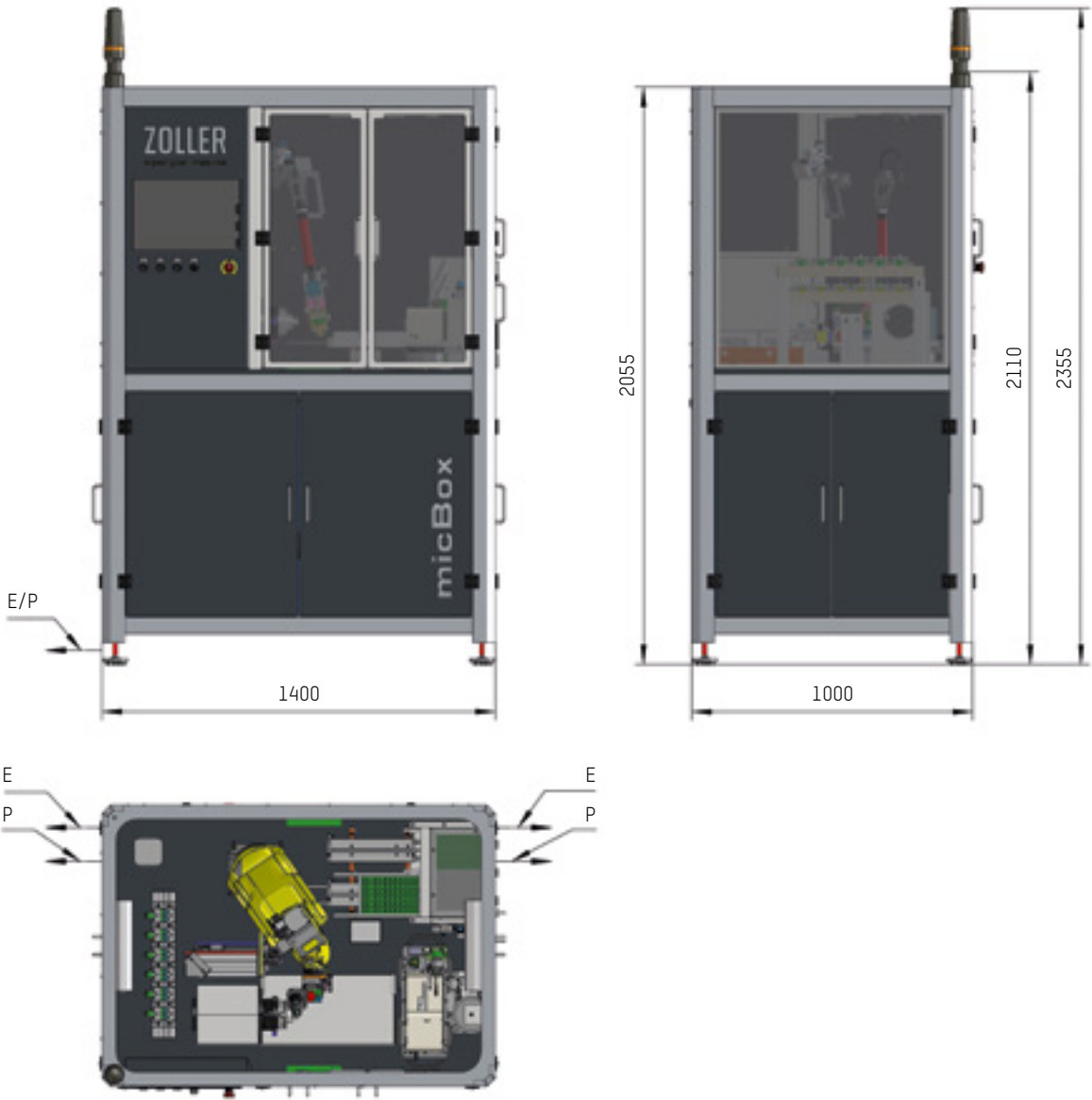
Advantages of ZOLLER »micBox«

- RFID-supported tool identification
- Fully automatic system solution
- Powerful software combined with high-precision functionality



Installation Dimensions and Technical Data

Technical data »micBox«				
Maximum tool length Z	Maximum tool diameter D	Maximum tool weight	Torque	Weight
420 mm	340 mm	20 kg	10 nm	~ 700 kg



Application	
Exchange of indexable inserts	
Insert weight up to 30 g	●
Smooth surface	●
Sensors configuration	
Sensor	
Keyence position sensor for indexable inserts	●
Keyence AI-controlled camera	⊙

Device configuration	
Spindle	
Universal spindle	●
Extension holder HSK 63	●
Extension holder HSK 100/125	⊙
Extension holder C10	⊙
Extension holder SK 40/50	⊙
Screw unit	
ECSF7 1.9–7.5 nm	●
ECSF4 1.0–4.0 nm	⊙
ECSF10 2.5–10 nm	⊙
ECSF16 4.0–16 nm	⊙
Smallest Torx: T15	●
Smallest Torx Plus: T Plus 15	⊙
Grippers	
Standard vacuum gripper	●
Parallel gripper	⊙
Vibration damping	
Leveling elements on machine feet	●
Material	
Light alloy	●
Electrical/Pneumatics	
Performance data	
3x 400 V + N + PE – 16A	●
6 bar – 250 l/min	●

Note: P Air connection, Ø 6 E Electrical connection Installation dimensions in mm

● Base model
⊙ Optional



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ZOLLER Solutions

More speed, higher quality, safe processes – with ZOLLER, you increase the efficiency of your production. ZOLLER offers you outstandingly precise devices for adjusting, measuring and testing cutting tools, software, interfaces, cloud services and solutions for the automation of tool processes. You can combine all of this to create your individual system solution – on your way to the smart factory.

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