



The result of intelligent evolution

KERN Evo



High productivity in ultra-precision machining



KERN Evo

Cutting-edge technology for maximum precision

As the name suggests, the Kern Evo is the result of many years of consistent development. This constant improvement process has enabled us to achieve maximum precision and productivity in the milling process whether you're making 1 part or 100,000 parts.

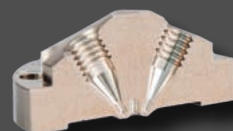
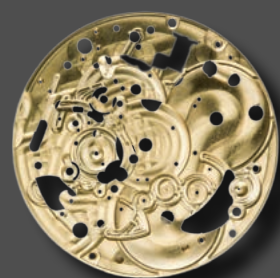
The machine's design allows maximum running stability and excellent surface quality, even with high acceleration values and travel speeds. The short distances between the components and drives help to minimise angular errors, while our high-resolution, direct position-measuring systems guarantee maximum repeatability. As an option, the Kern Evo can be equipped with a 4th and 5th axis without sacrificing the stability and precision of the basic machine.

With its high-quality components and a compact machine design, the Kern Evo has established itself in a wide range of industries.

The Kern Evo is the first choice when the application demands high productivity and series-tested precision on the workpiece. Its variability and excellent performance make the Kern Evo the price/performance benchmark in the field of high-precision machining centres.

AT A GLANCE

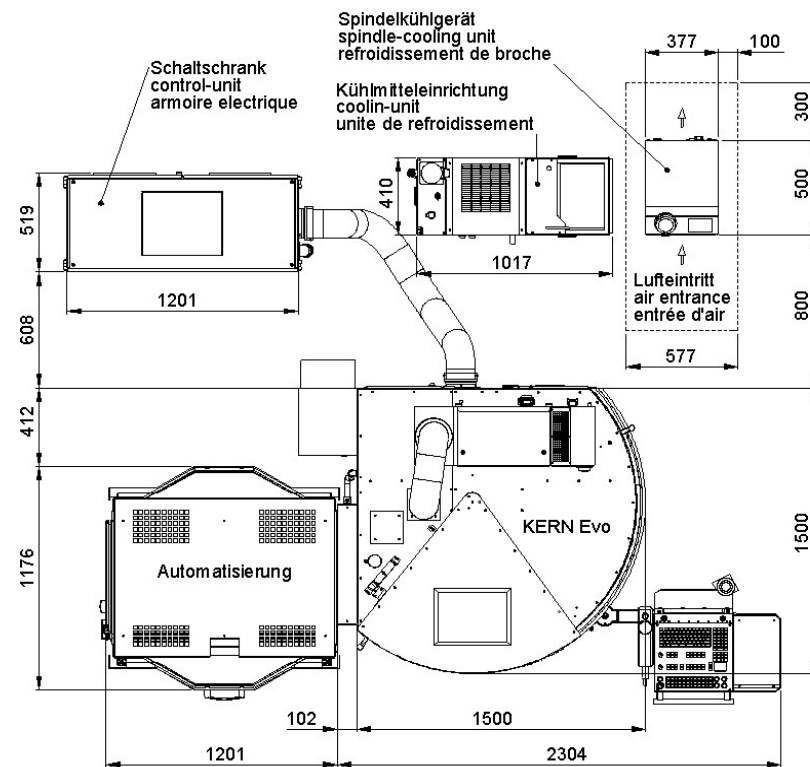
- Compact design and minimum space requirement
- Outstanding precision and surface quality on the workpiece
- Optimal ergonomics
- High flexibility (3- or 5-axis)
- Process optimized automation opportunities



The **KERN** Evo - made for micromachining

All options and fully automated

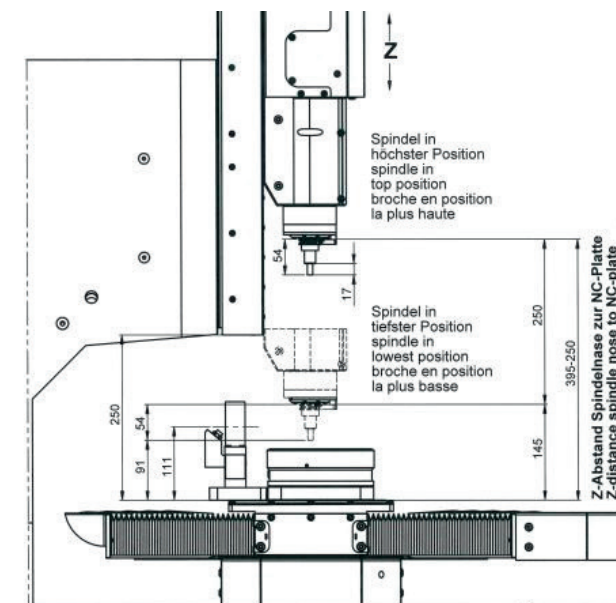
With a great choice of options, the Kern Evo can be adapted to any application. The machine allows a seamless integration of automatic workpiece changer systems to optimize your process. After the first installation we remain a reliable partner to set up new processes together with you and provide the best support to turn your new projects into a great success.



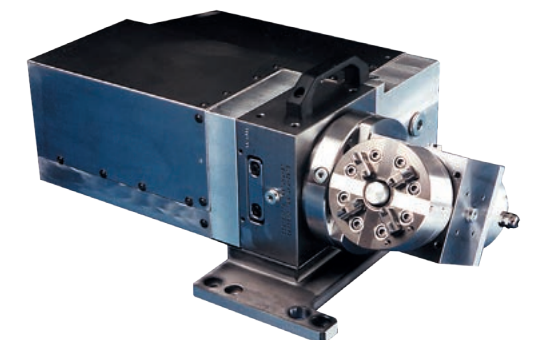
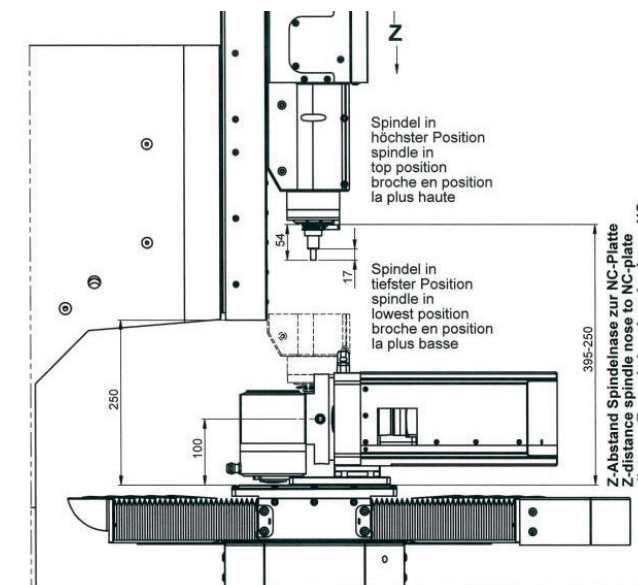
Working area

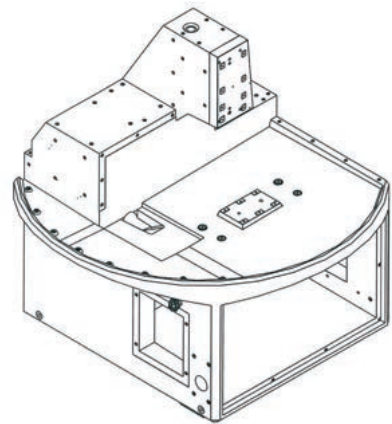
With the removable 4th/5th axes it is possible to meet different requirements of the production process. The reconfiguration is fast and easy. Different clamping systems are available.

Kern Evo 3-axis



Kern Evo 5-axis



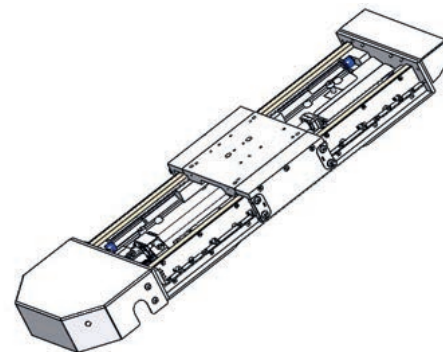


CASTING

With the unique polymer-bound mineral casting the Kern Evo provides an extreme stiffness, dampening and thermal stability. Together with the high quality of all other machine components they are the basis for highest precision and best surface quality.

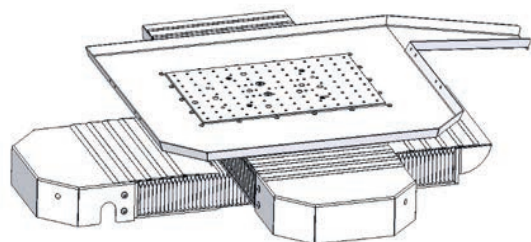
AXES

The remarkable precision relies on the design of the axes. Combining highly precise prismatic guides with preloaded linear needle bearings allows for highly dependable positioning accuracy. When equipped, the central lubrication unit ensures the axes are free of wear and low on maintenance.



EXPERTISE

The masterpiece of this machine are the components for the axes, which are designed and developed in house. The axes systems are mounted and optically measured only under the highest quality standards. These mechanical key components guarantee accuracy, smoothness and repeatability.



SMART DESIGN

Whether in manual or fully automated mode, the well-arranged machine design always allows for easy access to the machine cabin and the workpiece.

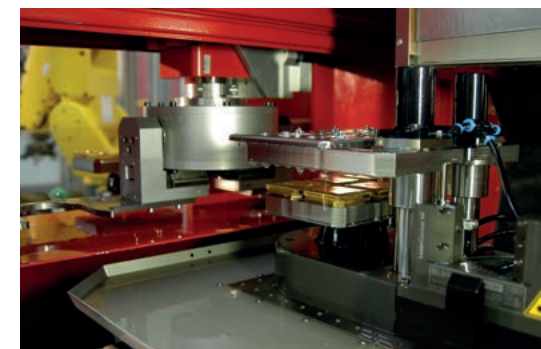
PRODUCTIVITY

The Kern Evo can easily be adjusted to meet any individual need. A seamless integration of external workpiece changers from different manufacturers is always possible. The Kern Evo provides the key to productivity – an efficient solution for fully automated processes.



FLEXIBLE AND VARIABLE

No matter what type of processing is required, the Kern Evo is compatible with a wide range of adaptations and customizations. This ensures the best possible performance for your specific application.



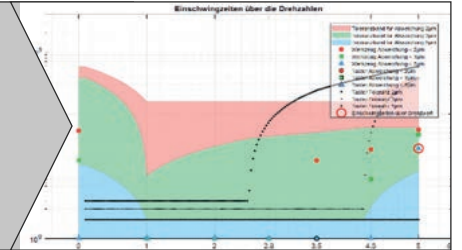


BAND FILTER

External belt filter system with low pressure.
Tank capacity: 300 l.

PRODUCTIVITY PACKAGE 2

Individual compensation of all heat-introducing components of the machine for highest accuracy and productivity without additional warm-up times.



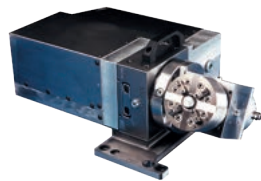
WORKPIECE CHANGER

The integration in external automated processes is effortless. The Kern Evo can easily be attached and perfectly adapted to most work piece changer systems.



SPINDLE OPTIONS

With different spindle options Kern can provide the best possible configuration for each application. High-frequency spindles for roughing and superior finishes, as well as ultra-precise air-bearing spindles for optical quality surface finishing are available.



4th/5th AXES

1- or 2-axes turntable. Swivel range: -10° / $+100^{\circ}$.
Max workpiece radius: 100 mm.
Different chuck systems available.

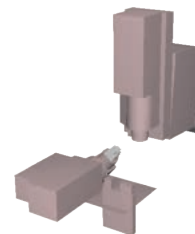
CHANGER

Integrated HSK 25 tool changer with up to 95 tool change positions available. Double gripper system ensures quick tool changes.



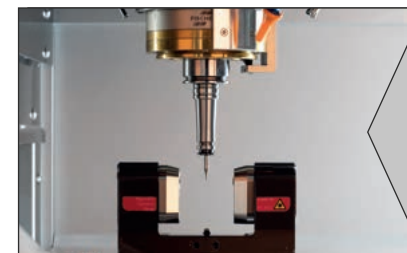
DYNAMIC COLLISION MONITORING (DCM)

Software for real-time collision monitoring of the machine components (rotary and swivel table, laser, clamping device, spindle and tool holder) in manual and automatic operation.



LASER

For tool presetting as well as breakage and wear control. Also suitable for smallest tool diameters. Including calibration mandrel with tool holder.



TELESERVICE AND SMART SERVICE

Online access allows fast and convenient remote diagnostics for the Kern service department, as well as a portal for process optimization of the Kern Evo. Real-time analysis via the "Kern Smart Service" app – available for Kern Service by tablet or smartphone.



TOUCHPROBE SYSTEM

Measurement of the work piece. Machine control receives data from an infrared touch probe which measures the height and position of the work piece.



Linear axes

Travel X/Y/Z: 300/280/250 mm
 Max. clamping surface: 350 x 230 mm
 Max. workpiece weight: 35 kg/77 lbs
 Feed rate: 16 m/min
 Acceleration: 8 m/s²

Rotary and swivel axes

Rotary axis: 360° infinite
 Swivel axis: -10° up to + 100°

Spindle options

HSK 25-E: 50.000 min⁻¹ 6 kW (S1) Roller bearing
 HSK 25-E: 80.000 min⁻¹ 5,5 kW (S1) Air bearing

Accuracies (VDI/DGQ 3441)

Positioning accuracy P: < 2 µm

Accuracies (ISO 230-4)

Circular deviation Gyx: < 5 µm
 Circular deviation Gxy: < 5 µm

Tool changer

HSK 25: 32-, 63- and 95 pockets
 Max. tool diameter: 50 mm
 Max. tool length: 105 mm

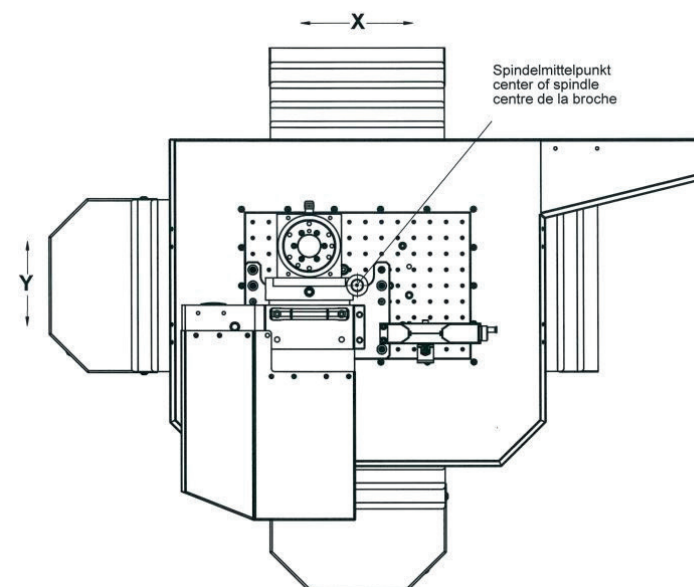
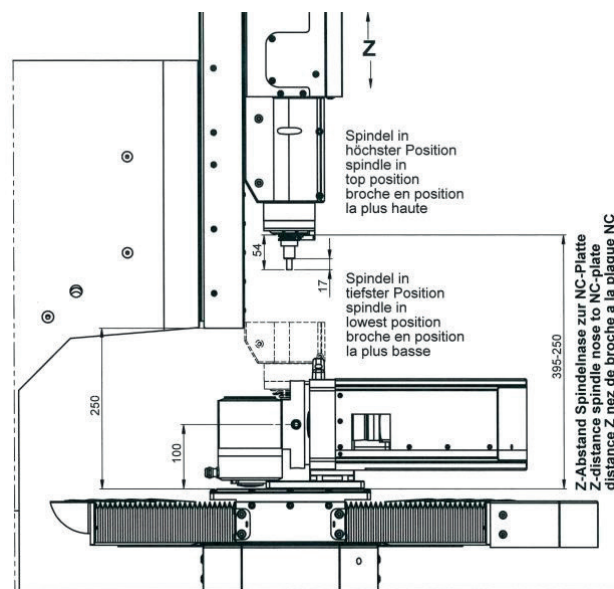
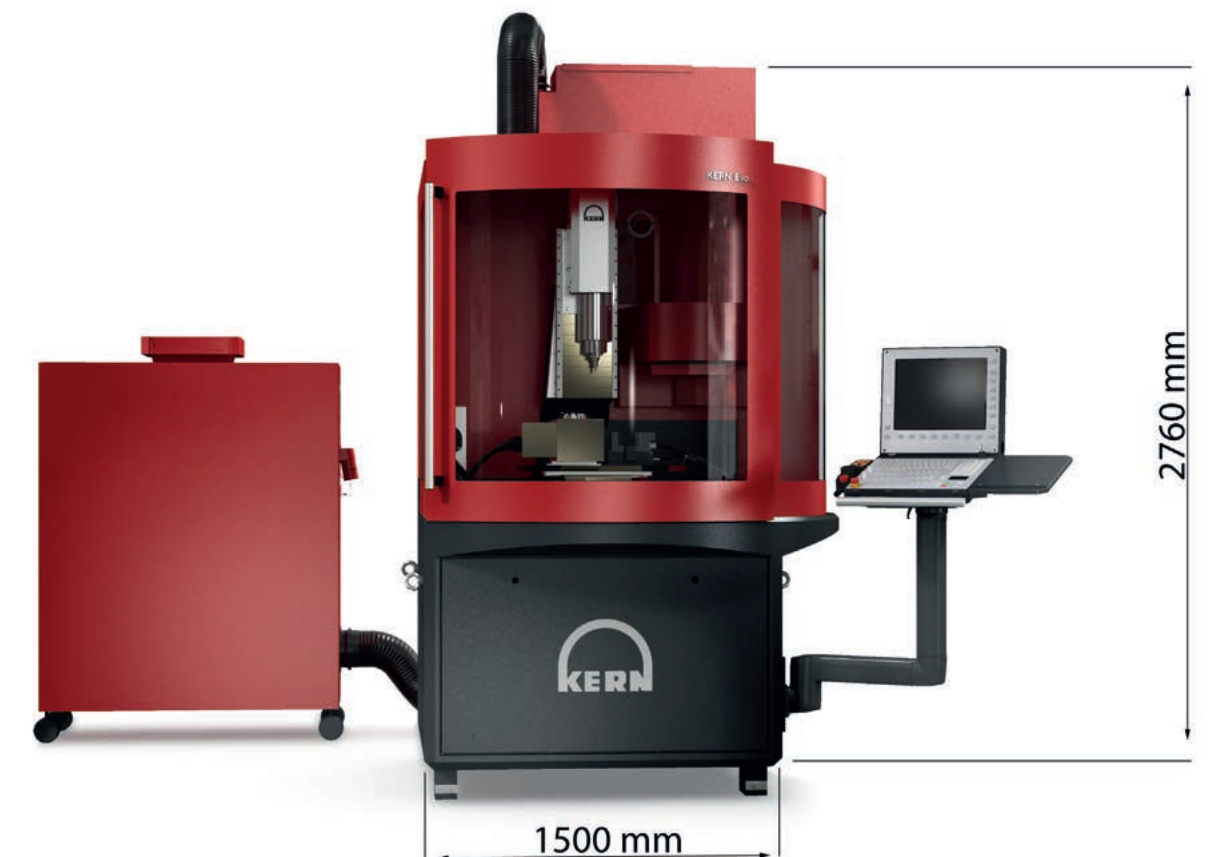
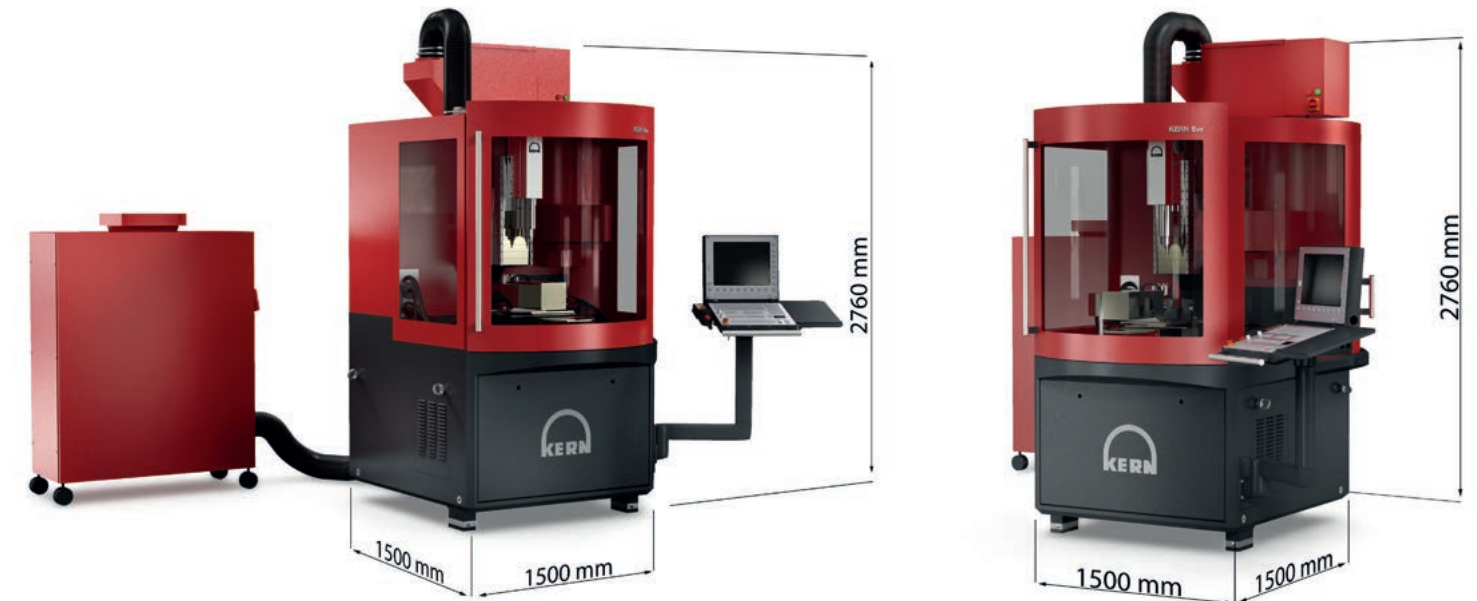
Technology

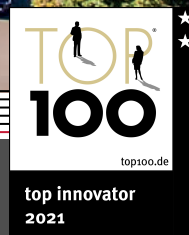
Polymer-bound mineral casting with monoblock construction
 Optional CNC precision dividing head (4th/5th axis)
 Heidenhain control iTNC 530

Dimension and Weight

Weight: ca. 3.000 kg/6.614 lbs
 Min. space required W/D/H:
 1,50 x 1,50 x 2,20 m (without suction unit)

Published 01/2021
 Technical details may change





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