State-of-the-art solution for precise series production

KERN MicroPRO

Simon Eickholt, Sales Manager (left) and Bernhard Uhr, Project Manager for the Kern Micro Pro

> ***Our customers often say that their Kern machines are among their most productive and profitable investments. However, maximum precision right at the limits is not always necessary — instead, productivity and reliability are sometimes the focus. With the Kern Micro Pro, we now offer a machining center specially designed for precision series production, which impresses thanks to its compact design and unique price-performance ratio.***

Simon Eickholt
Head of Sales and Marketing

KERN MicroPRO

Even more compact, even more efficient

Since its launch on the market, the Kern Micro has stood out from the competition by combining extreme precision with unrivaled flexibility and performance. Based on a mature machine platform, the Kern Micro Pro is a solution focused on the industrial environment and precision series production.

In many applications the focus is not on achieving a sub-2µm precision on the workpiece, but rather on the machine's series stability, integration capability and cost-effectiveness. The sleek Kern Micro Pro is designed to perfectly meet these requirements. In addition to high productivity and availability, the Kern Micro Pro is characterized by an extremely compact design and excellent maintainability.

Due to the consistent focus on series production, KERN has created a machine that combines productivity, efficiency and reliability like no other. The system is based on proven, high-quality KERN technology and guarantees reliability and stability over a long machine life.

At a glance:

- Minimal space requirement of less than 4 m^2
- Uninterrupted control and maintenance during operation
- Attractive purchase conditions and maintenance costs
- High dynamics and productivity thanks to proven components and processes
- Unmanned multi-shift operation thanks to an integrated changer for up to 210 tools and 30 workpieces
- Certified interfaces for external units and automation systems

The **KERN** MicroPRO is a highly process-stable solution for the efficient series production of precision parts.

The ideal solution for getting started in micromachining.

SMALL, YET POWERFUL

Compact and efficient thanks to the one-box design. All units are integrated in the machine with a footprint of less than 4 m², an optimized height of only 2.50 m and a narrow width of 1.59 m. The system weight is just under 5.2 metric tonnes

SOLID FOUNDATION

Innovative machine stand made from UHPC (Ultra High Performance Concrete). No disruptive interfaces; thermo-symmetrically constructed, made from a single casting and designed with unique material properties

UNPARALLELED IN THE 5TH DIMENSION

Powerful and highly dynamic rotary/swivel axis with torque motors for simultaneous 5-axis machining; market-tested and continuously optimized. Maximum utilization of the workspace enables machining of the largest possible workpieces thanks to intelligent design and optimum arrangement of the 5 axes

PRODUCTIVE CONTROL

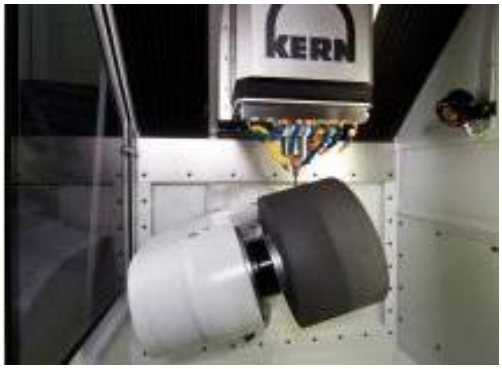
The clear and fully accessible maintenance area on the side of the machine allows inspection and filling of lubricants without machine downtime. In addition, any necessary maintenance work can be identified at a glance

PERFECTLY INTEGRATED

Additional units such as dust extraction or emulsion mist extraction systems can be integrated into the machine without requiring additional space. Furthermore, the connection for the optional belt filter system and the scraper belt conveyor has been optimized to save space

FULL AUTOMATION

An effective automation solution is often the key to high efficiency. The integrated tool cabinet for up to 210 tools and 30 workpieces allow unmanned operation with no additional space requirements. Whether with an external or internal workpiece changer, the Kern Micro Pro comes perfectly prepared



MASTER OF PRODUCTION

Perfect sealing of the working area prevents chips, dusts and liquids from escaping to the outside — a must for a modern and safe working environment

FLEXIBLE AND VARIABLE

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

- INTERNAL COOLANT SUPPLY (ICS)
  Rotary feedthrough for use of internally cooled tools with emulsion or oil

- BELT FILTER AND CHIP CONVEYOR
  Integrated chip conveyor with ejection to the rear. Connected to the external belt filter system, optionally with high pressure for ICS. Tank capacity: 490 l

- EXTERNAL WORKPIECE CHANGER
  Electrical, pneumatic and mechanical interfaces for the connection of all common automation systems

- OPTIMIZED SWIVEL AREA
  Extended swivel range of the B axis. Swivel range: -170° / +110° (standard ±110°). This enables (among other things) optimized cleaning of the workpieces, especially in automated operation

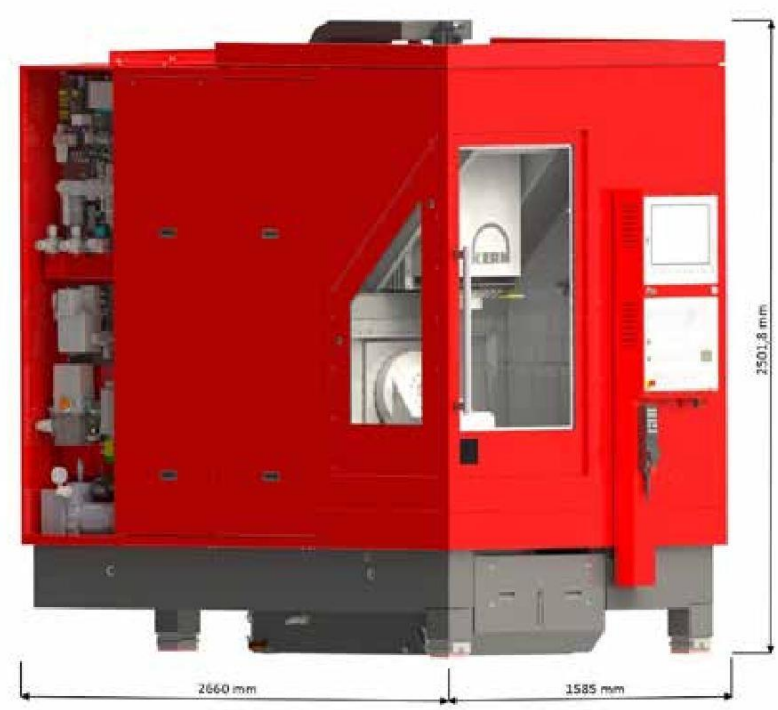
- DYNAMIC WORKSPACE MONITORING (DCM)
  Software for permanent collision monitoring of the workspace components (dividing attachment, laser, chuck, spindle and tool holder) in both manual and automatic operation

- TELESERVICE
  Online remote diagnostic access for fast analysis and process optimization of the Kern Micro Pro

- ENERGY SAVING PACKAGE
  To reduce the machine’s total energy consumption and increase its productivity

- BDE INTERFACE
  To enable querying of individual machine data (Industry 4.0)

- SPECIAL VARIANTS
  Models for processing graphite and other dust-generating materials are also available at launch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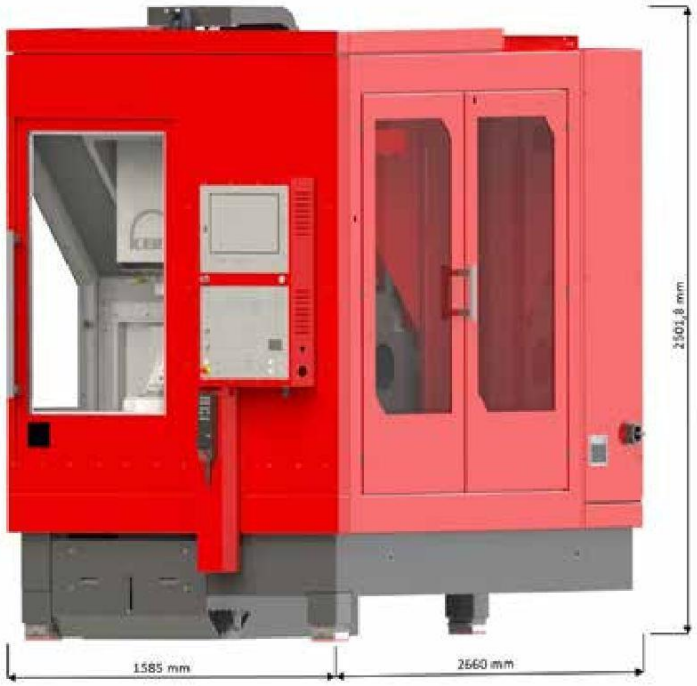
2660 mm
1585 mm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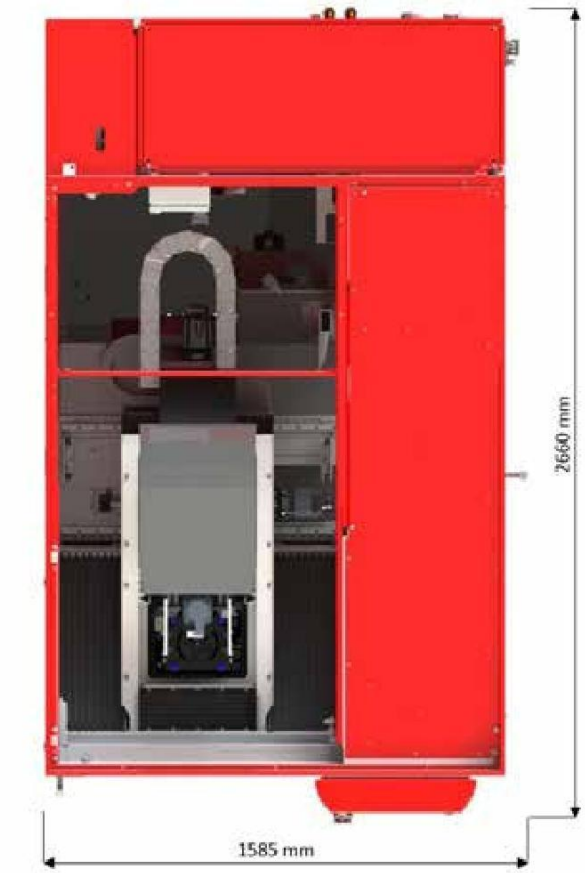
2660 mm
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Technical Specifications

KERN MicroPRO

Linear axes

Traverse paths X/Y/Z: 350/220/250 mm
Max. clamping surface: Ø 350 mm
Max. workpiece weight: 50 kg
Traverse speed: 30 m/min
Acceleration: 10 m/s²

Rotary and swivel axes

Rotary axis: 360° continuous / 200 rpm
Swivel axis: 220° (opt. 280°) / 100 rpm
Clamping swivel axis: 300 Nm

Spindle options

HSK 40-E: 42,000 rpm 15 kW (S1)

Workpiece size

Height up to 200 mm
Diameter up to 350 mm

Tool changer

HSK 40: 18, 102 or 210 capacity
Max. tool diameter: 70 mm
Max. tool length: 155 mm
Optional: Expansion with combined tool and workpiece changer

Technical concept

Central cooling management with 0.2 K control accuracy
One-box machine design
5-axis simultaneous machining
Heidenhain TNC 640 controller

Repeat accuracy:
Circularity measurement:

Dimensions and weight

Weight: 5,200 kg
Min. space requirement W/D/H: 1.59 x 2.66 x 2.50 m

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Subject to technical modifications

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