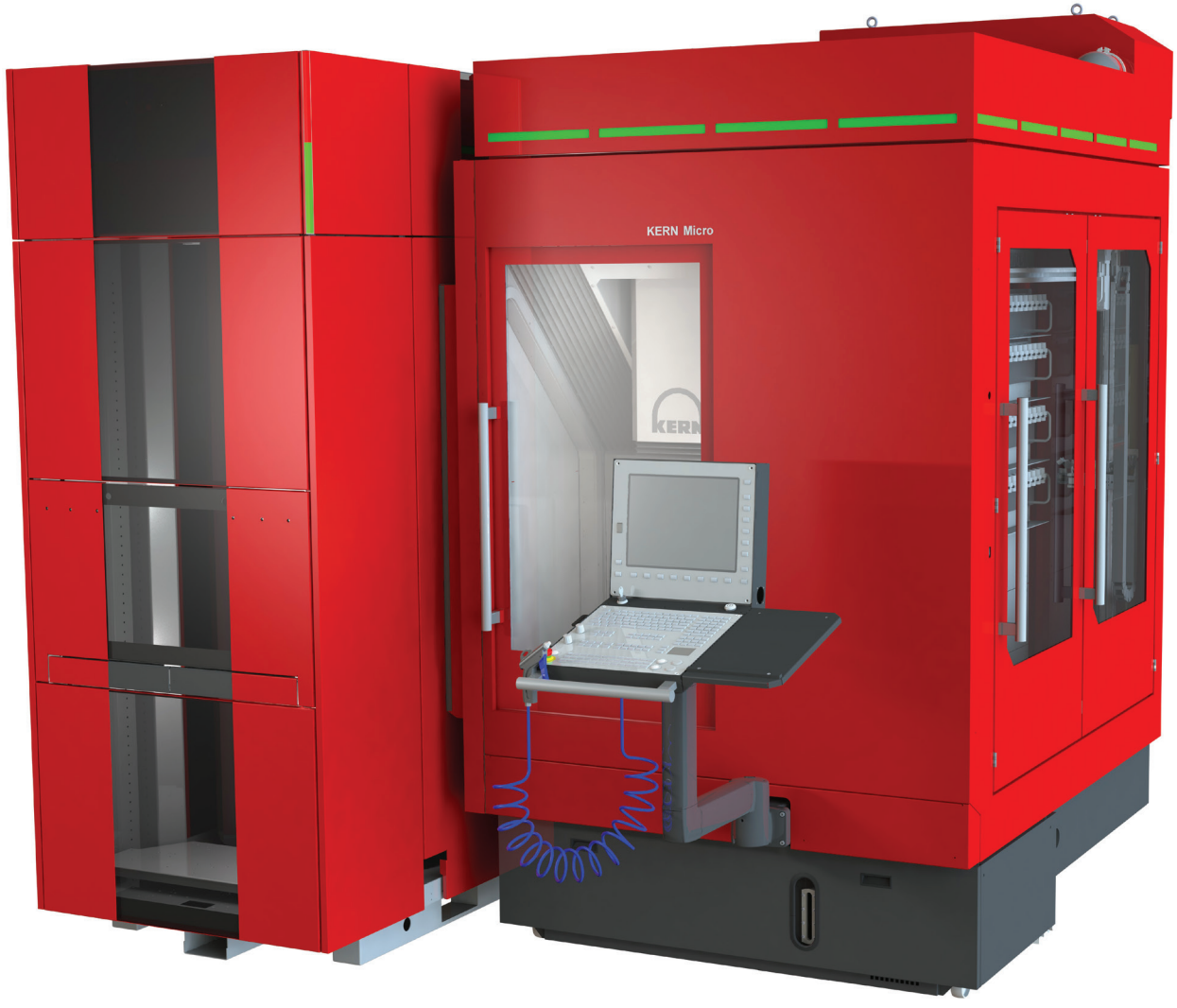
MAXIMUM PRECISION COMBINED WITH **Automation**

KENNAMETAL IMPROVES EFFICIENCY WITH THE KERN MICRO AND EROWA ROBOT COMPACT 80

World-famous tool specialist Kennametal relies on the combination of a KERN Micro and an Erowa Robot Compact 80 to achieve maximum quality and efficiency. The duo provides outstanding precision with unmanned processing of up to 54 workpieces.



▶ *Figure 1: The KERN Micro with the Erowa Robot Compact 80 combines high precision and excellent surface quality with increased efficiency via automatic workpiece changing.* ▶

In 2015, when Kennametal Produktions GmbH & Co KG in Nabburg decided to acquire the KERN Micro with the Erowa Robot Compact 80, the US tool manufacturer already had a history of collaborating with KERN, having previously used several KERN Evo machines in Germany, the US and India for product development. In Nabburg, the tool-making professionals are now using a KERN Micro for series production for the first time.

Since spring 2016, the machine has been used to produce bearers for cutting bodies that are used in a special drilling tool. These cylindrical workpieces have diameters of up to 32 mm and lengths of up to 300 mm, whereby only the end face is processed. The major challenge was to achieve the smallest possible projecting length with automatic workpiece changing.

Michael Forster, process technology specialist at Kennametal, is highly satisfied with the solution co-developed with KERN: “The construction is unique. We can move the carrier tool through the rotary feedthrough of axis 4/5 and clamp it so that only the cutting interface protrudes for the cutting body. This means that almost the entire working space is available, so we can also process the workpiece using very long tools.”

▶ Figure 2: The KERN Micro with the Erowa Robot Compact 80 combines high precision and excellent surface quality with increased efficiency via automatic workpiece changing. ▶

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Additional savings realised

Automation with the Erowa Robot Compact 80 pays off through additional savings: The system makes it possible to produce up to 54 workpieces without the intervention of a machine operator. The KERN Micro has 186 slots in the tool cabinet for this purpose. With a processing time of about 15 minutes per workpiece, that’s enough for approximately 12 hours of unmanned operation. Increases in the machine’s running time are possible because the time required for the (previously manual) workpiece changes is greatly reduced. The non-productive time can thus be shortened by three to four minutes per workpiece.

At 3 µm, the milling program developed by KERN achieves noticeably higher precision than the required 5 µm. Kennametal is thus optimally equipped for production of the successor product, which will have even higher accuracy requirements.

The KERN Micro is able to meet these demanding precision requirements while providing excellent process security, because all heat-transferring components are coordinated and permanently monitored using a sophisticated temperature management system.

KERN Microtechnik GmbH, based in Eschenlohe, Germany, operates successfully in over 30 countries worldwide. It focuses on two commercial fields: The development and manufacture of high precision machining centers and contract production of machined parts in the micro and nano domains. Among others, KERN milling centers are used for in-house serial contract production. Therefore, the company’s mechanical engineers are perfectly equipped not only to produce high precision machines, but also to accompany their users with the necessary process know-how.

Kennametal Inc. is a global manufacturer of innovative cutting materials and tooling solutions for metal cutting in the fields of aerospace, energy technology, general engineering and transportation. In addition, Kennametal also supplies wear-resistant solutions for road construction and mining. The company’s headquarters are located in the US state of Pennsylvania. It employs approximately 12,000 people worldwide and has a turnover of around 2.5 billion US dollars. ●

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