

# Machine for entering high-precision honing

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Manufacturing companies that produce highly precise bores in small to medium batch sizes often hesitate to invest in their own precision honing machine. Such manufacturers might use a simpler machine that is less costly but often does not work precisely enough. However, there are alternatives.

In view of rising quality requirements, every  $\mu$  matters when honing is used for finishing of precision bores. The edge of what is technically possible is becoming the norm. High-end machining equipment and highly developed technology are the prerequisites to even be considered as a supplier. Working productively and precisely to the

last  $\mu$  is Kadia's specialty. With a new single-spindle "Eco Honing Machine", Kadia seeks to meet the needs of precision and cost-effectiveness. The E line, as it is called, is the ideal solution for entry into high-precision honing. And in the event that production quantities rise – no problem, as the machine concept offers options for series production.

To put the technical possibilities into a machine that also carries the "eco" name is quite a new approach by the developers at Kadia, a balancing act that has nevertheless been achieved with the new E line. "The new single-spindle E line is a cost-effective, productive honing solution for highest precision. With this machine, we are rounding off our spectrum in the smaller range," emphasises Executive Director Henning Klein. The machine is also "ultra-compact" and requires just 2.5 m<sup>2</sup> of floor space. The control cabinet is integrated into the side and all the components that require regular maintenance are easily accessible. Potential users who also have the area of their production space in mind will be glad to learn that installation close to the wall is possible.

## An alternative to external honing

Up to now, the company on the Neckar River has developed mostly multi-spindle machines for use in large series production, especially by automotive manufacturers and large suppliers. "The E line is aimed on the one hand at these current customers, especially prototype developers," Klein continues. "We see the second user group as manufacturing companies that want to either produce small volumes especially flexibly or produce in series economically, all in the high-precision range."

Such companies then have two options: They either handle the honing themselves or they hand off the demanding precision work to external service providers. The latter lends itself well when the company does not view honing as one of its own core competences but would still like to accept orders from customers with highly precise requirements for boring quality. Professional honing providers can carry out such tasks quickly and reliably. The new E line is the ideal alternative, especially when honing is a central part of the company's manufacturing competence and highly economical and precise work is important. In this case, the special entry-level features and the quality of output are not mutually exclusive, since the same



The E line is a compact honing machine that takes up just 2.5 m<sup>2</sup> of space.

Source: Kadia

components that Kadia uses in other types of machines ensure that the end quality is correct down to the  $\mu$ : a highly dynamic, lean, high-speed honing spindle and intuitive high-performance control. "Therefore, the E line is on the same level as our larger machines when it comes to quality," Henning Klein reiterates.

## Dynamic honing technology

The experts from Nürtingen just recently presented their second-generation LH spindles with the current type designations LH2 and LH3. The update includes a range of further developments that take into account current technology. The somewhat smaller LH2, with a material removal rate of up to 18 mm<sup>3</sup>/s, performs its work in the eco machine. It stands out due to its "ultra-precise run-out" and its highly dynamic nature. Inside, modern direct drives provide the rotation and strokes.

The two key components, the honing spindle and the honing control system HMC100, are important parts of the "Smart Dynamic honing technology". The executive director says: "This is a concept that connects with Smart Manufacturing and follows the motto 'Less complexity. More efficiency.'"

Like all Kadia honing machines, the E line is also available in a variety of configurations – the "ultra-compact" and "eco" characteristics do not pre-



Typical parts for the E line: injection pumps, gear wheels, hydraulic components, turbochargers, small precision parts, aviation components.

Source: Kadia

clude this option. In its basic configuration, the machine contains a fixed table for prototype parts and small batches, this is often sufficient. The option of installing a rotary table with multiple stations, usually honing, measuring and loading stations, is also available.

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