

# Eco by name, high-end by nature

German honing specialist Kadia has launched a range of compact high-end machines for prototype and series manufacturers. PES reports.

**M**anufacturing companies that produce highly precise bores in small to medium batch sizes often hesitate to invest in their own precision honing machines as the rate of utilisation can simply be too low.

The alternative is that these manufacturers may turn to simpler machines that cost less but are not sufficiently precise enough for rigorous honing tasks. With its new single-spindle 'eco' honing machine, Kadia says it is now addressing the needs of these kinds of end users.

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, it can meet the demand as the machine concept also offers options for series production.

In view of rising quality requirements every micron matters when honing is used for finishing of precision bores. The limits of what was once technically possible have now become the norm. In this field, high-end machining equipment and highly developed technology are prerequisites to be considered as a supplier.

Kadia says working productively



The E line can be equipped with a fixed table (left) or a rotary table with up to three workstations

and precisely to the last micron is its speciality. The honing machine builder from Nürtingen, Germany has targeted professional users, with a focus on those producing small to medium diameters on their machines.

## Advanced and eco

To put all the technical possibilities into a machine that also carries the 'eco' brand is a new approach from the technology developers at Kadia, nevertheless it says it has achieved this balancing act with the new E line.

"The new single-spindle E line is a cost-effective, productive honing solution for the highest precision parts. With this machine we have completed our series in the smaller range," comments executive director Henning Klein.

The machine is described as ultra-compact, requiring just 2.5m<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 have restricted production space will also be glad to learn that the machine can be installed as close to a wall as possible.

Up until now, Kadia has developed mostly multi-spindle machines for use in large series production, especially by automotive manufacturers and large suppliers.

Mr Klein continues: "The E line is aimed on one hand at these current customers, especially at prototype developers, but we see the second user group as manufacturing companies that want to either produce small volumes especially flexibly or manufacture in series economically, all in the high-precision range."

## An in-house option

Normally such companies have two options: they either handle the honing themselves or they contract out the demanding precision work to external service providers. The latter can work when the company does not view honing as one of its core competencies but still wants to accept orders from customers with highly precise requirements for boring quality as professional honing providers can carry out such tasks quickly and reliably.

However, Kadia says its new E line is the ideal alternative, especially when honing is a central part of the company's manufacturing requirements and highly economical but extremely precise work is important. In these circumstances, the special entry-level features of the E line and the quality of output are not mutually exclusive, since the same components that Kadia uses in its other machines to produce a high-quality workpiece down to the correct

micron also feature in the E line.

Mr Klein affirms: "The E line is on the same level as our larger machines when it comes to quality. It's a highly dynamic, lean high-speed honing spindle with an intuitive high-performance control."

## Smart and dynamic spindles

The experts at Kadia have now developed their second-generation LH spindles with the current type designations LH2 and LH3. The update includes a range of further developments that take current technology into account. The smaller LH2, with a material removal rate of up to 18mm<sup>3</sup>/second, performs its work in the eco machine. Its performance is notable due to its ultra-precise run-out and its highly dynamic nature. Inside the machine, its modern direct drives provide the rotation and strokes which allows honing processes to be achieved to high levels of quality and maximum output. The honing specialist also provides a five-year warranty on the linear drive for the strokes.

A few years ago, Kadia introduced the HMC100, a machine control system of its own development. The company says that at that time there was no comparable solution on the market that was specifically tailored to honing. The control system features the newest technologies and measuring techniques and visually presents all



The HMC100 control system

processes on a large 19" panel. The design engineers in Nürtingen now integrate the HMC100 into all of their honing machines.

The statistical analysis is

a particularly convenient feature. Both components also work with the E line and make it an eco-honing solution for the highest standards.

"The two key components,



Henning Klein, Kadia executive director

the honing spindle and the honing control system, are important parts of Kadia's Smart Dynamic honing technology. This is a concept that connects with smart manufacturing and follows our motto 'Less complexity, more efficiency,' Mr Klein explains.

Like all Kadia honing machines, the E line is also available in a variety of configurations. In its basic format the machine contains a fixed table, which for prototype parts and small batches should usually be sufficient. The option of installing a rotary table with multiple stations, usually honing, measuring and loading stations, is also possible.

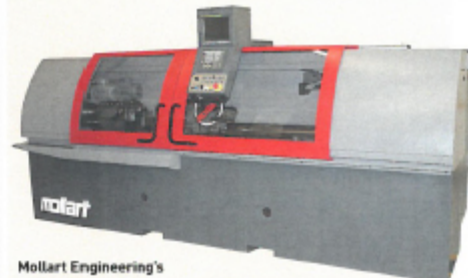
"Users have the option of integrating a handling system for automatic placement," explains Mr Klein. "This provides a productive honing solution for medium to large batches."

Depending on the number of units being produced, the provision of coolant may also be required. As a compact solution, an integrated coolant and extraction system is available to E line operators. This will usually be sufficient for prototype or small batch production. For larger production volumes and fully automatic operation, an external coolant system may be advisable.

Kadia first started producing honing machines in 1969 with its first deburring machine following in 1981. Today the company has plants in Nürtingen and Hamburg, Germany and Brighton, Michigan USA. The company has 190 staff and clients nationally and internationally from the automotive industry and its suppliers worldwide.

■ Kadia  
<http://www.kadia.de/en/>

# Success on a global scale



Mollart Engineering's deep hole drilling expertise has captured international orders worth over £5 million which has set the company well into its machine tool build programme for 2018-19.

These main orders taken in April are from existing North American and Chinese customers and have all been won against strong European and US competitors largely based on existing track records of previous applications and proven installations.

Says managing director Ian Pettit: "We were judged against most major competitors in our sector. However, what became a major factor in each of the orders won was the proven overall machine reliability of Mollart's installations and utilisation that has been maintained over extended periods of time. Our reputation for application development and levels of productivity aided by our German specialist tooling partner Botek were also important factors."

An order from one of the largest independent automotive manufacturers in North America worth some £2.5 million will see Mollart supply four special purpose four- and six-spindle gun drilling centres for producing oil galleries in transmission shafts used in the latest generation of fuel efficient nine- and 10-speed gearboxes.

"We have now installed 31 gun drilling machines with this company with some being repeat orders and others involving specialist application engineering," Mr

Mollart Engineering's Drillsprint LD2-750 is China bound to drill holes between 7mm and 10mm by 600mm deep in forged alloy steel diesel fuel injection rails

Pettit explains. Mollart's first order from the customer, worth almost £10 million, was placed in 2014 at the IMTS exhibition in Chicago.

A further US order taken by Mollart is for a Prismabore PRB 25 6-axis combination gun drilling and machining centre. The machine is to be used for the deep hole drilling of cooling holes in steel moulds at a US mould specialist.

The machine has a 'single-cycle' capability to perform conventional drilling, counterboring, milling, tapping and thread milling processes. Significant in the specification of the hybrid-type machine design is the use of a heavy-duty CAT-50 spindle and the added flexibility provided by its 90-tool magazine.

Bringing the success of its gun drilling installations in the fuel injection sector in China to 60, Mollart has orders for a further two-spindle Drillsprint LD2-750 machine to drill holes between 7mm and 10mm diameter by 600mm deep in forged alloy steel diesel fuel rails.

The Drillsprint series of machines have proven to be central in several customer world programmes for producing fuel injection equipment across Europe and Asia.

■ Mollart  
[www.mollart.com](http://www.mollart.com)

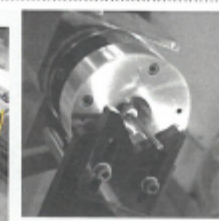


The E line is a compact honing machine that takes up just 2.5m<sup>2</sup> of space

**UNISIG**  
DEEP HOLE DRILLING SYSTEMS  
machines + tools + automation

UNISIG  
in  
Hall 9, C13  
18.-22.06.2018  
Messe Stuttgart

36 June 2018 Production Engineering Solutions



Gundrilling  
BTA drilling  
Trepanning  
Counter boring  
Skiving + Burnishing  
Bottle boring  
Bottom Forming  
Reaming  
Rifling

[www.unisig.de](http://www.unisig.de)

[www.pesmedia.com](http://www.pesmedia.com)



Typical parts made by the E line: injection pumps, gear wheels, hydraulic components, turbochargers, small precision parts and aviation components

**PRODUCTION ENGINEERING SOLUTIONS** Essential Reading for Professional Manufacturers

**SEARCH ENGINE DIRECTORY**  
Advertise & promote your business to more than 25,000 Production Professionals every month

**ONE PRICE buys you:**  
**PRINT • ONLINE • NEWSLETTERS**

Create brand identity by appearing with a full colour advertisement in every edition of PES Magazine, 12 months' coverage on the PES website and regular monthly presence via a website on the Editor's newsletter

To advertise your company call Jenny Armfield on 01474 854462 or email [jarmfield@pesmag.co.uk](mailto:jarmfield@pesmag.co.uk)

From only **£800** for 12 months

**Wire Mesh Fabrications**  
Established in 1964, we have over 50 years of experience

**MADE IN BRITAIN**

• CUSTOM WIREWORK  
• BESPOKE FABRICATION  
• MANUFACTURED IN THE UK  
• CONSULTATIVE SALES PROCESS  
• DESIGN & PROTOTYPING SERVICE

CONTACT US TODAY  
01942 496002 [info@wiremeshfab.co.uk](mailto:info@wiremeshfab.co.uk)

38 June 2018 Production Engineering Solutions