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TOOLMAKING

ROUNDED EDGES, RELIABLE PROCESSES, LESS WEAR: MASS FINISHING IS A WINNER FOR WUNSCHMANN PRECISION TOOLS



*Drag finishing machine at Wunschmann, OTEC customer
(Image source: KRAAS & LACHMANN Werbeagentur GmbH, Tübingen)*

Germany-based manufacturer Wunschmann is boosting the performance of its precision cutters with OTEC's new drag finishing machine.

"Actually, it goes completely against common sense," laughs Stephan Wunschmann, "first we grind the cutting edges of our milling tools until they're as defined as possible and then we round them off again in the drag finishing machine."

It may sound like nonsense but there's method in the madness: In drag finishing (or mass finishing), parts – in Wunschmann's case milling tools for metal cutting – are pulled through a bulk container. The material abrasion is clearly specified beforehand: deburring/rounding or smooth-

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ing/polishing. This optimises the tool's surface and improves its functional properties. The process on the OTEC DF-3 drag finishing machine takes between 30 and 60 minutes. Wunschmann GmbH has now been using the machine for several months at its Hailfingen site and is impressed with the results.

"A lot of our customers are sceptical about mass finishing at first, but it's definitely won me over. Obviously it's not suitable for every tool. You have to use it for specific purposes and always with accurately defined edge-rounding values. So you need to be prepared to tinker a bit to obtain the optimum rounding value for each cutter," says Wunschmann, a toolmaking specialist and veteran, who invested almost €80,000 in the drag finishing machine.

Bite and wear resistance

For example, preparing the edges in this way has extended the service life of the Wunschmann HPC-Vplus 187 high-performance cutter by around 30 percent when milling chromium-nickel steel (1.4301).



Polished chip flutes for optimum chip removal and high process reliability. HPC trochoidal cutter 175 ER

"The tool still bites despite rounding, and on top of that we've seen an improvement in wear resistance and process reliability," says Wunschmann. "Before treating them, the cutting edges on our 187 were more ragged, which tended to cause erratic wear. Rounded edges wear more

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slowly and evenly.” Moreover, Wunschmann’s toolmaking experts have found that the benefits of mass finishing go beyond edge rounding: it also helps to polish chip flutes on milling tools, which in turn improves cutting performance and chip removal. All in all, Stephan Wunschmann considers the machine a good investment and believes that drag finishing will provide his customers with even higher-performance cutting tools. And not just new ones: edge rounding or chip flute polishing can also boost the performance of resharpened tools.

About Wunschmann GmbH

Wunschmann precision cutting tools have enjoyed a good reputation in metalworking for 40 years. Our customers rely on the quality and performance of our standard and custom tools made of solid carbide (SC) and high-speed steel (HSS). Long-standing users of our products value our technical expertise, experience and personal service.

Visit: <https://www.wunschmann.de/en>

About OTEC Präzisionsfinish GmbH

OTEC GmbH Präzisionsfinish provides precision technology for achieving perfect surfaces. OTEC machines are used for smoothing, precision edge-rounding, polishing and deburring a wide variety of workpieces, with the aim of improving surface quality.

OTEC has a global presence supported by international business partners. OTEC’s comprehensive, market-leading technical expertise in developing the perfect interplay of machine and abrasive benefits a wide range of industries including tooling, medical devices, jewellery, and automotive and aerospace.



OTEC drag finishing machines: quick overview

In drag finishing, the workpieces to be processed are secured in special holders.

These are dragged through a container of grinding or polishing granulate in a circular motion at high speed. The quick motion generates a high pressure between the workpiece and the abrasive. This quickly leads to an optimum processing result in the form of precisely rounded edges, smoothing or a high-gloss finish in hand-polished quality.



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For more information, visit: <https://www.otec.de/en/products/mass-finishing/drag-finishing-machines/>

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