

FOR A PERFECT FINISH

SWISS FINISHING SPECIALIST USES CUSTOMIZED NUMTURN 420 LATHE AS FLEXIBLE, ROBUST BASE MACHINE.



As a specialist for process-reliable finishing and surface technologies the techno-finish Industries GmbH finds solutions for complex finishing and grinding tasks. Using the Numturn 420 as a base machine and in close cooperation with KNUTH, the Swiss company has already produced four versatile high-precision finishing machines for a customer in the automotive industry.

Accuracy within one-thousandth of a millimeter

The optimum finishing of components is increasingly important. "For high-quality products, this method offers a final finish for a competitive edge," says Clemens Dudler, CEO of techno-finish. The company specializes in finishing medium-sized and small components, like piston and push rods or gears. The perfect finish of a component might consist of a certain roughness and corrugation to ensure reduced wear. This is especially interesting for suppliers and manufacturers in the automotive industry or hydraulic, pneumatic and vacuum technology sectors. They profit from years of experience and research by the Swiss company,

who also offers contract work. In its own technology center, the Swiss company develops and produces compact belt and stone finishing machines that are customized for specific tasks. Additionally, techno-finish provides comprehensive consultation services on suitable abrasives. Customers from the EU, USA and Canada often need precise results within one-thousandth of a millimeter and belt fin-

ishing is to 90 percent the preferred technique to achieve these goals. The used polyester films feature different types of corundum, such as aluminum oxide, silicon carbide or diamond, with specific performance. There are also differences between comparable products from different film manufacturers. "We offer one-stop-solutions and guarantee our customers absolute process reliability. We produce each component according to the customer's needs, be it rough or fine finishes," Dudler emphasizes.



Numturn 420 SI
CNC Lathe with Cycle Control

Powerful and flexible in a variety of equipment levels

- » Workpiece length 29 inches
- » Turning diameter over bed 16 inches
- » Spindle bores up to 2 inches

Complete information on the Numturn series are available on www.knuth-usa.com

Premium Siemens drives and control

In 2013, the supplier of a major German automotive manufacturer presented highly specific requirements with regards to the final finishing and the use of the machines. "A belt or stone finishing machine based on a robust CNC lathe with premium drives and controls from Siemens was requested as a base machine for a sand or stone finisher," said Dudler. Furthermore the machine should accommodate workpieces with diameters of up to 10 inches and feature a rigid support with enough space to install the finishing machine. There were only a few months left before production started. KNUTH offered techno-finish an ideal solution with an excellent price/performance ratio. The Numturn 420 lathe has met all size-related requirements and was modified to the customer's needs.

"Since we produce in cooperation with our Chinese sister company DIMA, we are not only a dealer but also a manufacturer and can equip machines with various additional components, like drives and controls," explains Hannes Andresen, Sales Manager for Switzerland and Austria at KNUTH. Additionally, the open architecture of the Siemens control allowed integration into an automated production line.



Set up of the CNC lathes' Siemens 828D control with an integrated belt finishing machine



High flexibility and simultaneous machining

While techno-finish develops customized machines, the combination of the finishing machine and a full functioning CNC lathe allows for several applications. "With these drives, we can move the belt and stone finishing machines directly to various positions for use with different workpieces," says Andresen. Because of its size, the Numturn 420 can be used to simultaneously machine a workpiece with several belt grinders. This helps the customer to save even more time. The finishing machines are attached to the lathe at KNUTH'S headquarters in Wasbek near Hamburg where KNUTH engineers customize the PLC's programming to ensure quick and precise machining operations for belt or stone finishers. During the cooperation the machine tool manufacturer also impressed with fast results. "Within six months we were able to deliver two different custom machines to our customer... both featuring high quality at low cost," said Dudler.



Control of reliable workpiece clamping, visual inspection of the workpiece surfaces



Customized adjustments

The Swiss and his customer were equally satisfied. In 2017, the automotive supplier ordered two more machines for use in finishing gears. The components were turned, ground and finished in cellular manufacturing. "This enables a better monitoring and controlling of the individual processing steps," says Dudler. "Errors are quickly detected and cost-effectively corrected." In order to ensure excellent finishing results at all times, the finishing machines were equipped with an integrated continuous monitoring feature. Besides that, the Numturn 420s were equipped with monitoring interfaces to ensure permanently precise evaluations. If the machine is to be integrated into an automated production line, necessary interfaces can be easily installed. "Since both engineers and service technicians at KNUTH are highly experienced, customized modifications and special solutions upon request are absolutely no problem," says Dudler who was very satisfied with the cooperation.

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