

Knife Blade Blanks made in Solingen, Germany

TRADITIONAL CRAFTSMANSHIP THRIVES ON MODERN TECHNOLOGY



C. & E. Rauh uses state-of-the-art laser technology from KNUTH Machine Tools for its production of knife blade blanks.

Made in Solingen stands for a long tradition of extraordinary blade quality. “The Solingen trademark may only be used on a product, if all major manufacturing steps took place within the Solingen Industrial Region,” explained William Walz from C. & E. Rauh.

The family operated business specializes in the production of knife blanks and has supplied cutlery manufacturers since 1890. William Walz entered the business in 1981 and is now the fifth-generation leader, after taking over from his mother in 2016. His most important decision for the future was converting production from a conventional die-cut operation to the state-of-the-art laser technology from KNUTH.



High-Speed via Laser

"We make blade blanks ranging in sizes from a few inches to large sword dimensions, including all metal parts for knives, like grip halves and springs," explained Walz. Walz and his employees machine 300,000 to 400,000 parts annually for about 30 customers in Solingen and surrounding areas. Previously all these parts were manufactured by die-cutting, whereby dies and stamps had to be made and retooled for every new product. "This is only profitable in large series productions," said Walz. "Today, customers request increasingly smaller batches from 100 to

200 parts, since they want special designs or, for example, a knife handle made of mammoth teeth. Knives with such exotic designs can cost up to 300 Euro per piece. For optimized marketing, the blade length can be adapted based on the packaging dimensions.



Full Power in a Small Package

Whether a stylish collector's item or functional knife – the quality always must be the best, and customers have become increasingly discerning. The grinding operations that source their blanks from C. & E. Rauh also use modern CNC machines for production that tolerate only minimal component deviations. The parts must be exact to within 100 micrometers, so they can be further processed. At the age of 56, William Walz had to make a tough decision: Should he continue as is and slowly let the business come to an end, or should he invest in laser technology, even though he was not sure if his children would be interested in taking over the business in the future. He researched the option and requested quotes from several suppliers. "Due to our limited space, we could only fit in a small machine, but performance and price would have to be just right," explained Walz. Additionally, the laser system had to be user-friendly and easy to handle. "We had a great connection with KNUTH right from the start," said Walz. "Laser technology was a totally new area for us, but Tobias Hamann answered all our questions and also visited us on site several times. Having him as a contact also assured us that we would get good support, should we need it in the future." Walz felt that he could completely rely on the extensive and competent advice, especially in regards to the performance.

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The conversion from a conventional die-cutting operation to laser technology has paid off: Now, Rauh can go from drawing to finished workpiece on the same day.



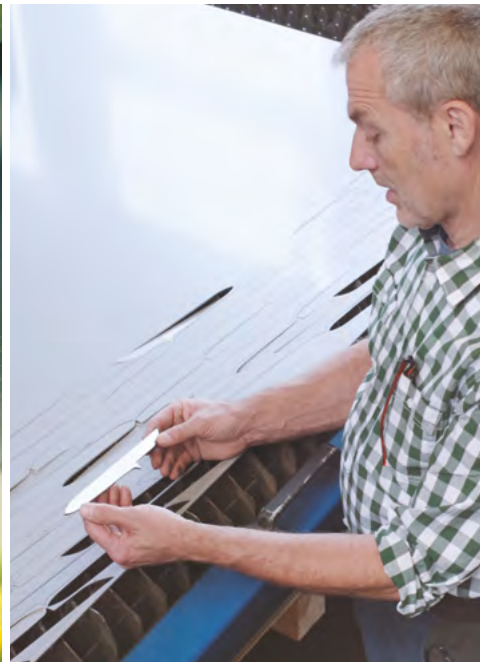
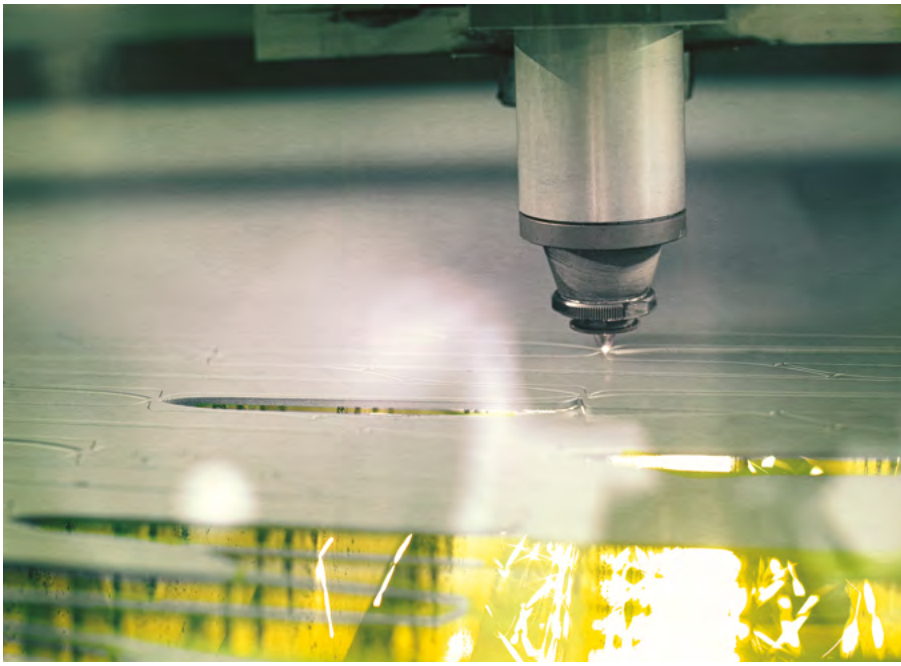
Reworking edges is now a thing of the past, and many customers now let Rauh handle their laser and hardening jobs.

Fiber vs. CO2 Laser

“We recommended the 2000 Watt laser model to Mr. Walz, since it would allow him to cut carbon steel and stainless steel with ease,” explained Tobias Hamann, Regional Sales Manager for KNUTH. Plus, the small footprint and low machine weight of the Laser-Jet 2512 make it the perfect choice for the limited space at C. & E and only minimum setup site preparations were required. For the laser itself, the company also decided to go with the newest technology. They selected a fiber laser, whereby the laser beam is guided through a very thin and flexible fiberoptic cable between laser source and cutter head. Compared to the conventional CO2 laser, the fiber laser features higher efficiency, requires less maintenance and its lenses have a much longer life

A Matter of Adjustment: The Perfect Cut

After the machine was set up, the customer was trained in the use of this new technology in general and attended an intensive training course specifically for the Laser-Jet 2512. Walz remembered, “Initially, we worried, if we would be able to implement everything as envisioned. But once we stood at the machine, it all fell into place quite quickly.” The most important factor for a perfect cutting result is the correct adjustment of cutting speed and oxygen/nitrogen ratio. The KNUTH technician provided intensive support to help Walz find the right parameters for their specific applications and materials. Together, they found the right solutions. “Some customers insist on our use of their own material-compositions, and each material responds differently to the laser,” explained Walz. “Now we know exactly, which settings will have to be adjusted.”



KNUTH Technology with a Wow Factor

Today, C. & E. Rauh uses the Laser-Jet 2512 for over half of its production volume. In their single-shift operation, the machine is fully utilized for ten hours daily. Plus, now rework is required, since, unlike the die-cut parts, the laser-machined parts have no scratches that would require rework. Walz says with conviction: "We definitely made the right choice with this investment." Customers that used to go to another provider for their laser machining needs, now can bring both their laser and hardening jobs to Walz. Additionally, he continuously is gaining new customers, including designers, because now he can easily laser single parts and prototypes in a very short time. "Our new speed is still a wow factor for many of our customers", said Walz with pride. "With the new Laser-Jet, we can go from drawing to finished workpiece on the same day."

For his investment in laser technology, William Walz, owner of C. & E. Rauh, relied on the detailed and competent advice from KNUTH Sales Associate, Tobias Hamann

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