

DCAM GmbH
Friedrich Erodierservice GmbH

The spark must just jump over

Friedrich Erodierservice GmbH develops, plans and manufactures reliably with DCAMCUT

When Boris Müller, Managing Director of Friedrich Erodierservice in Großostheim near Aschaffenburg in Bavaria, was looking for software for EDM and in particular also with multi-axis technology, he discovered DCAMCUT. Müller finds the program to be without alternative: "During my inquiry, I quickly noticed that the DCAM employees really have a clue about it and are always ready to respond precisely to customer requests." Since then, DCAMCUT has been part of the production process at Friedrich Erodierservice: "With DCAM, I don't just have a software, but a solution," says Müller.



"I have always eroded," says Müller. The 36-year-old came into contact with the process in his childhood through his father, who worked as an application engineer at Sodick. After training as an industrial mechanic and then as a mechanical engineer, Müller took over his father's company, which can be considered a specialist in the field of wire and die-sinking EDM. In addition to the secretary and Müller himself, three other EDM operators work in the company. Müller lives his profession with enthusiasm: "When I take a finished component in my hand and the cut is good, everything is true to size and when I measure it, it fits on the μ , then there is hardly anything more beautiful. That's what I live for, that's what excites me."

Highest precision through erosive grinding

"Erosive grinding at the highest level is our specialty," says Müller. This form of wire EDM uses a rotary axis in an endless rotation to produce precise components - without the disadvantage of acting lateral forces. "We have a tolerance of between 1 and 2 μm ," Müller elaborates. "Achieving such accuracy with conventional abrasive processes is impossible." One of the smallest

components manufactured at Friedrich Erodierservice is a 1-mm-diameter ball on a 50- μm -diameter core. "By now, we could probably manage 20," Müller is certain. But erosive grinding is not only suitable for workpieces in the micro range: The contour of large components can also be produced more efficiently and precisely by EDM than in other processes. "We cut flat ejector guides into a mold insert for a truck fan wheel that, at 700 x 500 mm, just fit into the machine. Because it weighed around 500 kg, we needed a lift truck," Müller recalls. The longest machine runtime was just under 100 hours for a mold plate with about three hundred apertures. For Müller, such elaborate geometries are not a criterion for ruling out an order, quite the opposite: "I want to try out everything there is to be able to offer my customers everything there is." This requires not only that three of the seven wire EDM machines are equipped with additional axes for special machining, but also that the DCAM software is used to plan and execute the machining processes.

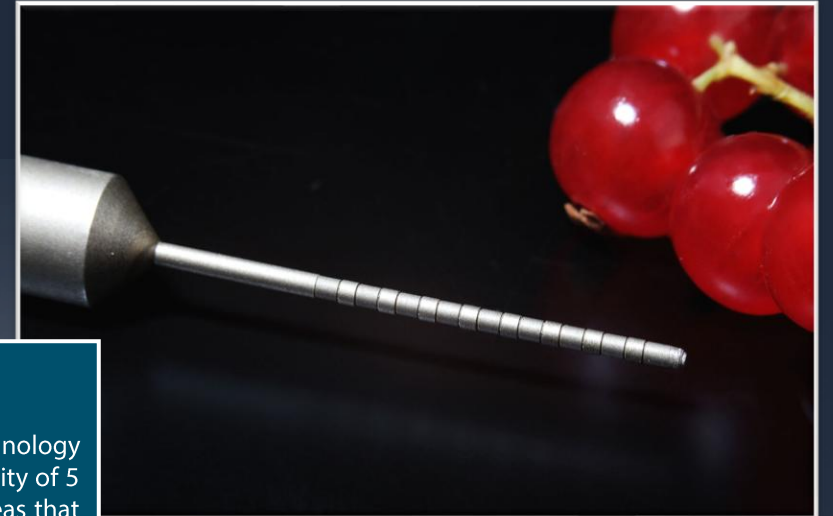
Simplify complex processes

The components manufactured by Friedrich are usually not "Standard

Parts". Before they are sent to the machine, they can be read into DCAMCUT. The software contributes to significantly simplifies complex processes: The program recognizes the erodable contours of a 3D CAD model and can save a lot of time by the efficient programming process – even during the preparation of the offer. "What I use here above all is the function 'Contour definition' to find out the contour length. Conveniently, I'll get all the angles to it," Müller explains – all important factors for the best possible precise determination of the expected effort. The advantage of all process steps, the Easy handling: "We have a new employee who has never had anything to do with CAD before. Nevertheless, he is already working with the program without any problems."

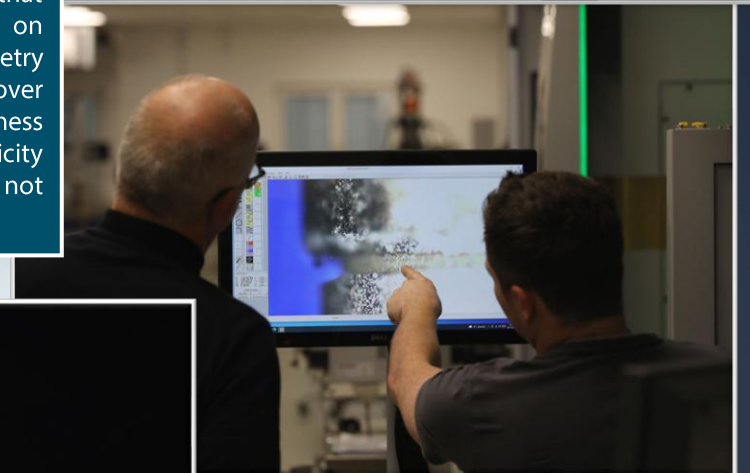
This is possible, among other things, because DCAMCUT includes standard and direct interfaces to all common CAD systems and can therefore access almost any file format. Previously programmed processing steps can be saved in the system. This "template technology" enables uncomplicated reuse even for beginners and saves time-consuming and new programming

and therefore time. "For this reason alone, the investment in our three DCAM workstations paid off very quickly," explains Müller.



A typical component:

Pin for medical technology applications with a concentricity of 5 μm . It is precisely in these areas that there are the highest demands on precision: $\pm 2 \mu\text{m}$ geometry tolerance, an angularity of 5 μm over a height of 60 mm, surface roughness of Ra 0.1 or a required concentricity deviation of maximum 10 μm are not uncommon.



Frequently used at Friedrich Erodierservice is the function "4-axis clearing", so that no drop-out parts remain in the machine's work area. "This is particularly worthwhile for small parts. If you have to get out manually all the small leftover pieces, you go crazy" laughs Müller. "The nice thing about it is that you are completely free: you can determine the path as well as the overlap," he added. For the profitability of the company DCAM is therefore also an important help at this point: "The processing takes longer, but the machine can work longer in one piece or run autonomously overnight."

Service from technicians for technicians

At DCAM, it is important to understand the practice of eroding and therefore the needs of the customers and to keep the software in a continuous optimization process: DCAMCUT is made by technicians for technicians. "And the service is first class," confirms Müller.

"There is always someone available and I can rely on the fact that I will be helped - even with problems that DCAM actually has nothing to do with, such as design questions about SolidWorks, for example ..." At Friedrich Erodierservice, DCAMCUT is fully integrated into the environment of this CAD software environment. Müller particularly emphasizes the speed of response and perseverance of the service team in particular.

This should not come as a surprise, because Flexibility and drive are characteristics that also characterize Friedrich Erodierservice: "Check Feasibility, try it out, finish it and if something exceptionally does not work as planned, we communicate this quickly so that our customers do not experience any production problems due to delays.

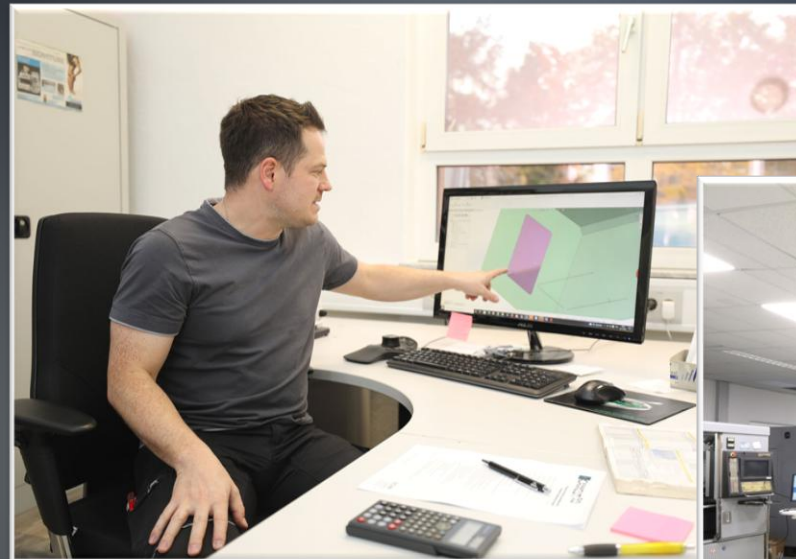
Because: "Customer satisfaction is worth more than anything else." A reliable software partner is therefore all the more important - here, too, the spark must be ignited again and again, Müller says: "The DCAM employees sometimes sit until eight o'clock on a Friday in the evening to work out solutions with me. They know that my machine has to run overnight or over the weekend if necessary and help me to minimize downtimes."

In the future, simultaneous several axes simultaneously

One component that Müller is particularly proud of is a tapered screw conveyor:

"We programmed it manually and with a lot of work directly on the machine. Unfortunately, it wasn't as precise as we would have liked because such an extensive process inevitably has calculation errors creep in somewhere." Therefore Müller has one wish for DCAM - especially for such "twisted" workpieces: "Being able to move several axes simultaneously is a big issue for us.

So if there were software optimizations here, to connect the W and U axes, that would be the icing on the cake." In fact, DCAM is currently already working on corresponding solutions. "So DCAM is not sleeping," says a delighted Müller and is looking forward to the DCAMCUT 9.0 update and the special application for spark erosion dressing of profiled, metal-bonded grinding wheels - DressCAM X.



DCAM is grateful for users like Boris Müller. The feedback from the erosion specialists from Großostheim is important to the software company in order to adapt its applications to the constantly changing requirements.



Friedrich Erodierservice operates seven Sodick wire EDM machines as well as two Sodick systems for spark erosion start hole drilling and an AD35L die-sinking EDM machine.

Friedrich Erodierservice GmbH

Founded:
2004

Customer since:
2014

Applications:
Wire EDM (up to 8 axes simultaneously), thin wire machining, start-hole EDM, erosive grinding, die-sinking EDM and erosive dressing and profiling of metal-bonded grinding wheels

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