

crazy about

customer projects

MIKRON TOOL TECHNOLOGY CENTER



„It's exciting to develop in detail different projects with different people including the know-how of different disciplines.“

Alberto Gotti



Good reasons to cooperate with Mikron Tool

- We have practical experience in demanding chip removal tasks.
- We find for you the most economical solution.
- We offer smooth project handling with short paths and highly performant machines.
- We support you with the right tools all the way to serial production.
- We speak the same language as your machines.
- We are tool specialists, winners of several awards for innovation.
- We guarantee professional project management and modern reporting.



we love crazy projects

When we are called “crazy” we do not take this as an insult but rather as a compliment. Together with you we tackle apparently unresolvable chip removal tasks.

We find solutions, which will surprise you and realize for you the most economical variant. Because we produce tools which are unique and constantly setting new benchmarks in terms of precision and performance. Because we offer services, tailored to your specific needs. And because we always adhere to a single principle while working on new projects: Nothing is impossible. Our “Crazy Service Products” help you to optimize your machining processes and to manufacture even complex parts economically.

We create for you individual solutions, from the tool selection up to the development of complex machining processes:

1. Tool Evaluation –

To use the right tool at the correct place.

2. Process Definition –

To ensure that your process is correct from the beginning.

3. Tool Life Test –

To have control over cost-per-part.

4. Process Engineering –

To harmonize your entire machining process .

5. Turnkey Solutions & Prototyping –

To achieve complete solutions without self-investment.

On the following pages, we present you these services.

A handwritten signature in blue ink that reads "Gotti A.".

Alberto Gotti (head of development and customer projects, member of the corporate management)



01

TOOL EVALUATION

Are you planning the production of a new work-piece and would like to use the most suitable tools for the already defined process? You have a new material and want to use the right tool for the machining process? You are not sure about the previous selection of your tools and want to test for the first time a Mikron Tool product? Precisely for these tasks we have defined the "Tool Evaluation" service.

Our service

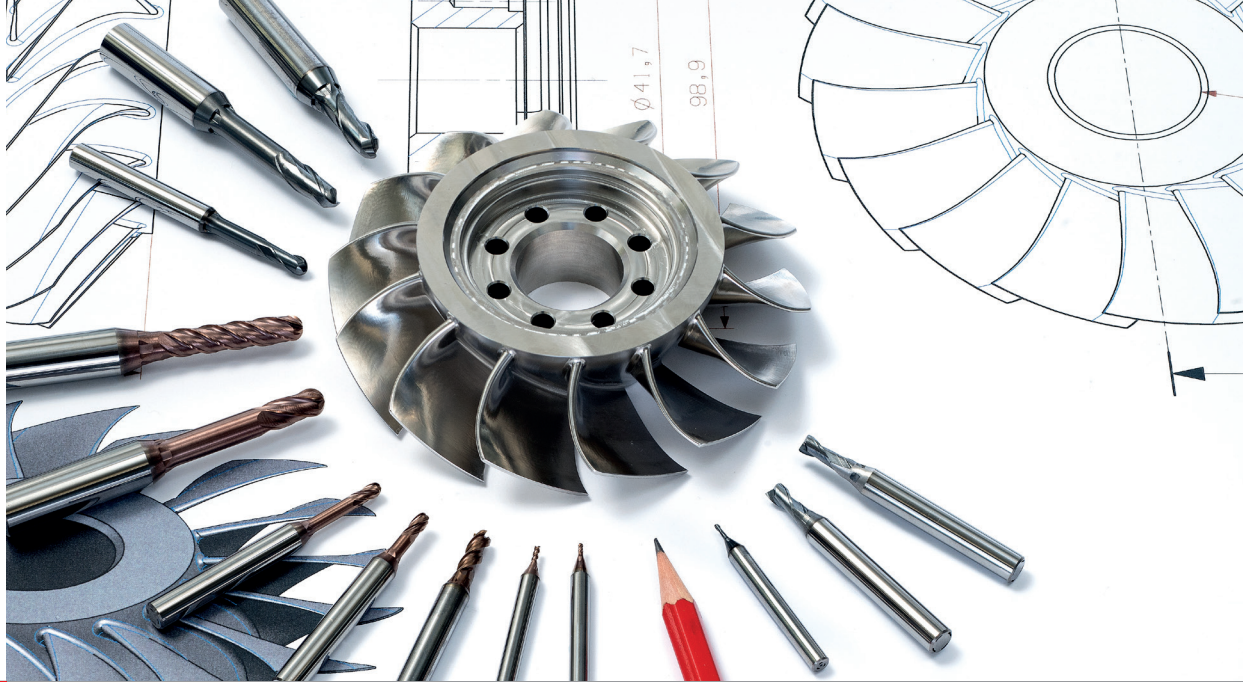
- According to your requirements we define on our machines the best tool for your individual chip removal task.
- We produce a report with tool recommendation and tool evaluation.
- We provide you with cutting data and all relevant information for the proposed tools.
- On request we provide corresponding measurement report.

Your benefits

- Certainty before buying: we document the suitability of our tools for your application with measurement report.
- Resource and machine time savings: by outsourcing this service and documentation, you save valuable productive hours of your staff and avoid unproductive use of your machines for tests.
- Time saving due to the basic know-how: delivery time approx. 2 days.

Request a non-binding quotation for price and delivery at

test.mto@mikron.com



02

PROCESS DEFINITION

Do you want to optimize an existing machining process regarding quality and cycle time?
You would like to define the optimal process for a new machining operation?
For such tasks we created the service "Process Definition".

Our service

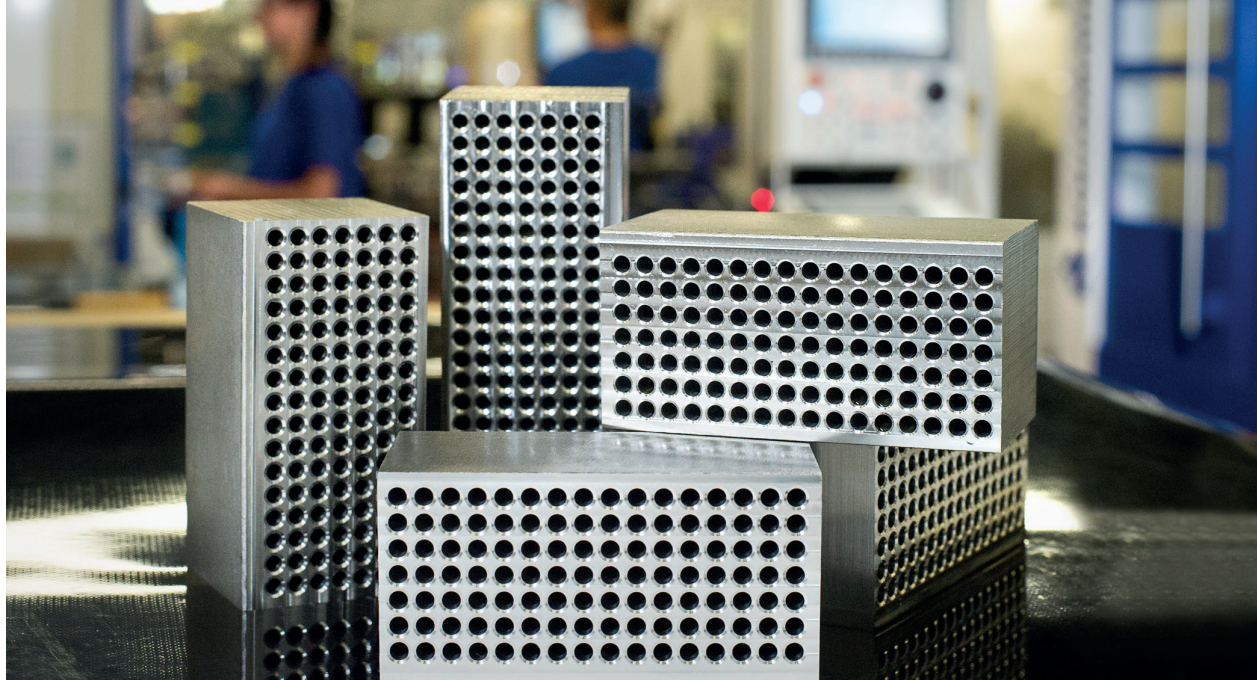
- We optimize an existing or define a new process for a machining operation on your workpiece with standard or existing tools.
- If needed, we redefine parameters in order to reduce cycle times or to improve machining quality.
- We supply you with a report including tool evaluation, tool recommendation, cutting data and developed drilling-/milling strategies to reach the targeted drilling and milling quality.
- You receive data on dimensioning machining-center workpiece clamping, force and torque analysis as well as the machined work-piece.
- Based on your requirements we deliver pertinent measuring protocols.

Your benefits

- Certainty before buying: we define the optimal process for the use of our standard tools.
- No additional costs: to define the cutting conditions and to start the process you don't need any measuring and production equipment.
- Resource and machine savings: by outsourcing, you save valuable productive hours of your staff and avoid the use of your machines for setup.
- Quick results: Depending on scope and complexity of the project, the delivery time for a complete setup is between one and two weeks

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03

TOOL LIFE TEST

Do you want to achieve a more economical chip-removal process? Do you intend to calculate the tool cost per part and take advantage of possible cost savings by finding the most economical tools? This is precisely what our service "Tool Life Test" is for.

Our service

- We define for you on our machines the work-piece machining cost based on the tools used.
- We supply you with a report including tool evaluation, tool recommendation, cutting parameters and relevant measuring data.
- You receive all guidelines for tool usage, including wear analysis and estimated tool life.

Your benefits

- Assistance in tool selection in terms of economic efficiency: we are evaluating the tools used for your application, determining the tool life and subsequently the overall tool cost.
- Identification of potential savings: along test results you receive a verified evaluation with corresponding tool recommendation based on the premise to reduce tool costs per produced work-piece.
- No commitment of your own resources: we take charge of the tests and come up with a tool evaluation used for your specific applications. Therefore, you don't have to provide any resources (staff or machinery).
- Quick service: the lead time for delivering usable results is between five days and one month.

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04

PROCESS ENGINEERING

Do you want to find a new machining process or a way to lower cycle times without jeopardizing tool life? Or do you want to evaluate the possibility of reducing machining and tooling costs, for instance by using combined tools? Our "Process Engineering" service can help you significantly.

Our service

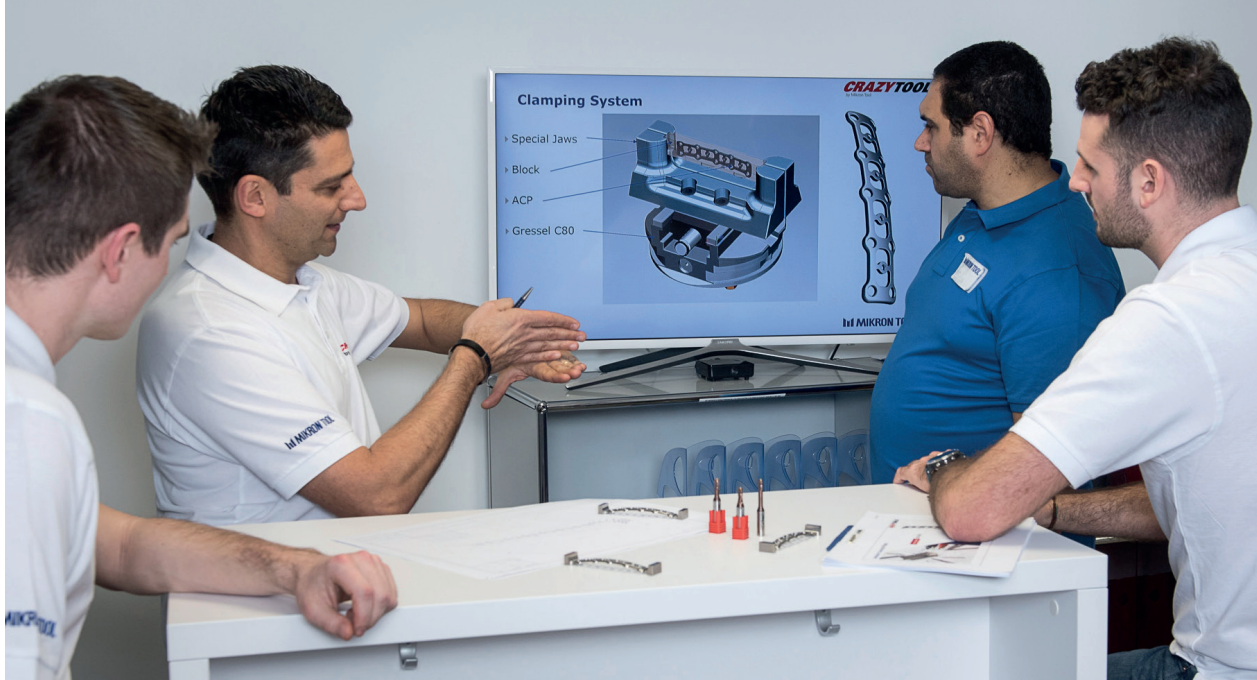
- We develop for you the entire machining process, including processing steps and processing times.
- We supply you with a report including tool evaluation and recommendation, cutting data and guidelines for the tools' use.
- You receive from us an estimate of machining cost per part, related to the tools used and defined parameters.

Your benefits

- Optimal machining processes: considering your available machines, we find for you new chip removal processes with the best suitable tools.
- No commitment of your own resources: you save staff costs and the use of your machines. Besides you do not have to invest in measuring and machining equipment.
- Quick results: depending on scope and complexity of the task, our results will be available within three to five weeks.

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05

TURNKEY SOLUTIONS & PROTOTYPING

Do you have an idea for a new work-piece, but not yet a notion on how to achieve the goal through a chip-removal process? In this case our service "Production Process development & Prototyping" is precisely the right service for you.

Our service

- We develop for you an overall process (including recommendations for machines, coolants, tool holders, work-piece clamping, CAD/CAM programming, quality definition etc.).
- We take over the production of a prototype resp. the pilot series for the determination of product and process validation.
- If desired, we train your staff for the processes defined by us.

Your benefits

- No tying up of your own capacities or know-how: no dispensing necessary of your resources for engineering or production. We handle all that for you. You don't need any expertise in the machining field.
- No investment risk: you avoid cost intensive investments in engineering, tools, machines and specialized staff. On the other hand, you have the benefit of working with a strong partner who has vast experience in chip removal technology.
- Shorter through-put time: take advantage of our highly experienced specialists to reach goals quickly. Depending on task complexity, the project delivery time varies and can take several months.

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Innovative technology for best results

Machinery

We dispose of an efficient machine park composed of machining centers and automatic lathes with 3, 5, 5+1 and 8 axis, plus spindle capacities from 8.500 to 40.000 rpm with through cooling from 40 to 200 bar.

Fixturing and Cooling

Regarding production technology we use precision tool holders, shrink chucks and hydraulic chucks. Workpiece clamping includes zero-point fixtures, centering collets as well as three-jaw chucks. For cooling we use vegetable based cutting oils, synthetic and mineral oils as well as emulsions.

Analyzing and measuring

Measuring devices and systems with 3 axes are part of our equipment. We analyze bores for run-out, cylindricity, diameter, roughness etc. as well as milled features regarding perpendicularity and planarity. Additionally, we have a measuring arm for diameters up to 1.200mm and a precision of 16µm, surface roughness measuring devices, a scanning electron microscope for photomicrographs with 50.000 amplification as well as rotating dynamometers for cutting force measuring (feed and torque) and bending force analysis.

CAD/CAM

With CAD-software-solutions of the latest generation we can model complete surfaces or parts or meshes. Thus, we are capable to import, analyze and potentially optimize projects submitted by our customer. Our modern CAM software allows us performant programming, precise simulation and optimal CNC coding for each machine tool. The capacity of the machines is fully used in synergy with the CrazyTools.

For further information contact us at test.mto@mikron.com

There are many good reasons to cooperate with Mikron Tool. Let's have a look at seven.

1. We have practical experience in demanding chip removal tasks from many industries.

Since our foundation in 1998 we are passionate about helping our customers when it comes to precision machining in the micrometer range. We are familiar through years of practice with the requirements of many industries and continue to learn constantly. Through our concentration on difficult to machine materials such as stainless steels, titanium or super alloys, Mikron Tool is the right partner for all questions about challenging production projects – independent whether you come from the automotive industry, medical and dental field, watch industry, aero-space or a completely different sector.

2. We find for you the most economical solution, even if it's not obvious from the beginning.

Is your workpiece be easiest machined with standard tools or does a customer specific solution achieve better results? What would optimal tools, cutting parameters and processes for an economical solution look like? We find it out for you, since innovation is in our genes. We prove this, amongst others, through the regular launch of new and unique products. You can be sure that we will think outside the box while working on your project.



WE PROGRAM AND TEST –
YOU RUN IT!

3.

We offer smooth projects handling with short distances and powerful machines.

Our Technology Center and our tool manufacturing plant are only a few steps apart. In our Agno site we develop, produce, test and if needed adapt our tools. The machining centers in our Technology Center live up to the latest technological standards.



6.

We are tool specialists, winners of several awards for innovation.

20 years from our foundation, we are a leader in development and production of small, solid carbide tools for difficult to machine materials. In the years after the launch of the first CrazyDrill boring tool many other products followed, equally crazy and patented products for difficult to machine materials, The success is impressive: 2012, 2014 and 2019 we were honored with the Prodex Award, the most prestigious Swiss Price for the manufacturing sector. We work daily on new "crazy" innovations to revolutionize the market.

5.

We speak the same language as your machines.

Each machine has its own characteristics, it's not always possible to copy the results worked out under laboratory conditions into the own production reality. Mikron Tool is a partner with many years of experience in cutting tools AND machines. We have been working successfully for many years with various machine builders.

4.

We support you with the right tools all the way to serial production.

Customer specific solutions have always been our strength. This means that you can order tools directly from Mikron Tool when you go into serial production in order to transfer the gained technology into your production environment. And sure, we also support you on site with the implementation.

7.

We guarantee professional project management and modern reporting.

Complex projects are under control. The use of WBS (Work Break Down Structure) guarantees efficient management of all activities and resources. Thanks to a good time planning and follow-up of the assigned tasks, the progress and maintaining of defined deadlines are continuously monitored and can be corrected swiftly if needed. Each test is documented with a report and if desired can be supported by pictures, videos and analyses.

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