



Pace Maker  
for High-End  
Precision  
Parts

+ CROSS DIMENSIONAL MANUFACTURING

We set the pace to keep you a  
step ahead of the competition.

**toolcraft**

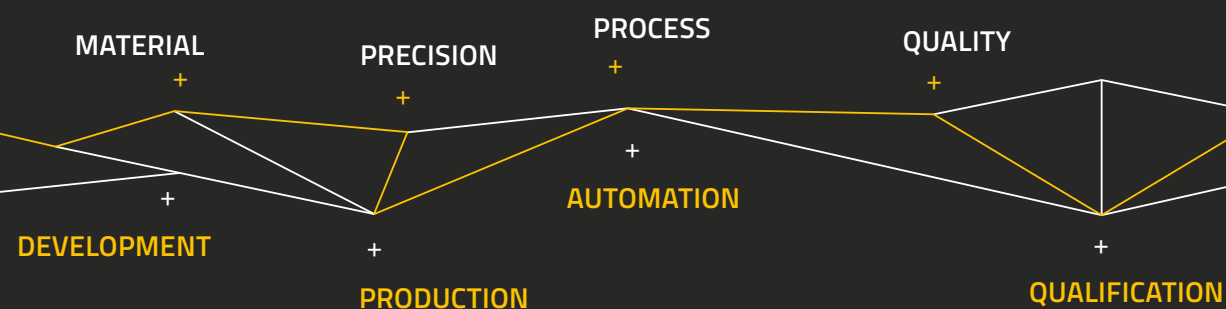
## + CROSS DIMENSIONAL MANUFACTURING

# WHAT IS CONCEIVABLE WILL BE FEASIBLE.

Our optimally designed and manufactured components give you a leading edge in the market. As an innovative manufacturing partner, we help you unlock your potential for growth and set the pace to keep you a step ahead of the competition. Unleash the power of innovation with toolcraft and the production of high-end precision parts.

We combine the wide array of opportunities opened up by manufacturing technology with the depth of possibilities offered by the manufacturing process into a unique consulting and manufacturing standard.

When we start a project, we prepare to play the role of pace maker, ready to go all out to manufacture the best possible high-end precision parts. Why? To help our clients in industries at the forefront of technology to gain a leading edge in the market. On this basis, we have developed a consulting and manufacturing standard which is unique in our sector: **cross-dimensional manufacturing**.



A dedicated point of contact for your enquiry.

AS YOUR TECHNOLOGY PARTNER, WE OPEN UP NEW MARKET OPPORTUNITIES. SPRINT TO THE FINISH LINE WITH OUR CONSULTING SERVICE!



Learn more

[www.toolcraft.de/en/sprint-to-the-finish-line](http://www.toolcraft.de/en/sprint-to-the-finish-line)

## 1989

YEAR OF  
FOUNDATION

## 2

FACILITIES

Georgensgmünd  
and Spalt

## > 460

EMPLOYEES  
thereof about  
60 trainees

## 4

TECHNOLOGIES

Additive  
Manufacturing  
Robotics  
Machining  
Injection Moulding +  
Mould Making

## 8

CERTIFICATES

DIN EN ISO 9001, DIN EN ISO 14001,  
EN 9100, DIN EN ISO 13485,  
NADCAP WLD (AM), NADCAP NDT (FPI),  
DIN EN ISO 3834-2, DGRL 2014/68/EU

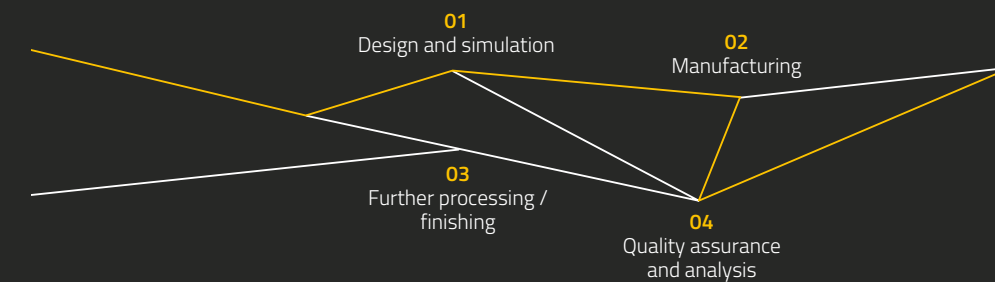




# + ADDITIVE MANUFACTURING

## + PROCESS CHAIN

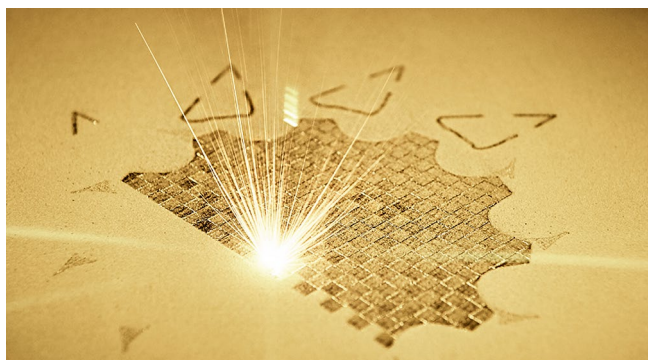
The success of additive manufacturing relies much more heavily on practical experience in the various stages of the process than any other manufacturing method. toolcraft covers the complete process chain under one roof, rounding it off on the digital side with an end-to-end software solution – Siemens NX.



From the most complex of geometries to toolless manufacturing and topology optimisation – additive manufacturing opens up a whole world of new opportunities.



How imagination and metal powder create groundbreaking solutions. Structures which were previously impossible. Efficient temperature control of entire geometries in confined spaces. These are just two examples of how additive manufacturing opens up completely new dimensions of thinking and working.



## TECHNOLOGY

In laser powder bed fusion (L-PBF), lasers are used to melt down high-performance metal powders layer by layer, before shaping them into the desired form. In laser metal deposition (LMD), on the other hand, a powder nozzle and lasers are used to deposit the material precisely on to the tool. We then use machining processes to refine the unmachined parts, turning them into complete functional components.

## APPLICATION

Additive manufacturing enables the production of highly complex geometries without the need for any tools – much more quickly and with fewer resources than traditional production methods. We can even fulfil the stringent requirements of aerospace, motor sports or medical technology. Using the powder nozzle, we can repair defective components, apply coatings and wear protection, and produce hybrid structures.

## BENEFITS

- + Components manufactured within a short space of time
- + High-quality products made from a wide range of materials
- + Production of complex three-dimensional geometries (structural designs, undercuts, cooling systems)
- + Manufacture of parts which cannot be produced conventionally
- + Processing of materials which are difficult to machine
- + Weight reduction by means of FEM calculations and topology optimisation

## MATERIALS

- + Aluminium alloys, such as AlSi10Mg
- + Titanium alloys, such as Ti6Al4V
- + Nickel-based alloys, such as Inconel® 718, Inconel® 625, Haynes® 282®
- + Stainless steel (1.4404)
- + Copper alloys, such as CuCr1Zr
- + Hastelloy® C22

## YOUR PACE MAKERS FOR ADDITIVE MANUFACTURING

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Learn more  
[www.toolcraft.de/en/additive-manufacturing](http://www.toolcraft.de/en/additive-manufacturing)





# + ROBOTICS

Accelerate and make your production processes more flexible completely automatically – with a fully programmed integration solution from toolcraft.

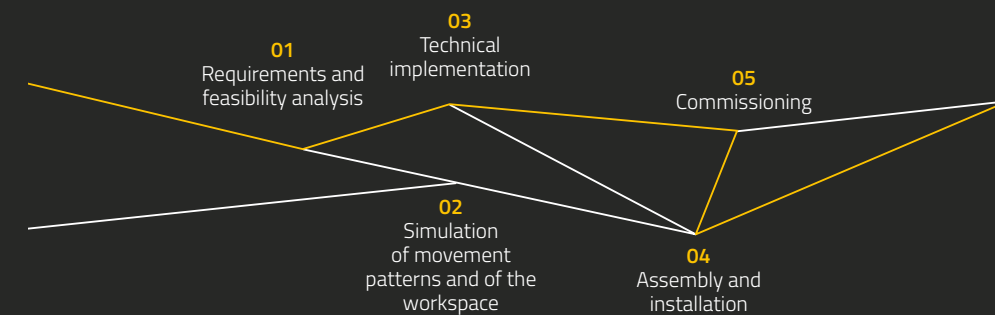


Robots are used wherever speed and flexibility are required during the production process. There is a trend here towards increasing performance and building intelligent systems. With our fully programmed integration solution, you can achieve uniform quality and precise repeatability virtually non-stop.



## + PROCESS CHAIN

toolcraft is your full-service partner for the development and manufacturing process – from the initial idea and planning to the integration of your automated solutions. We save you immense time, as with us there is no need to coordinate between design, R&D and procurement.



## TECHNOLOGY

When operating in a workspace tailored to your requirements, robots can be used for a wide variety of tasks, from pick-and-place solutions to the complex machining of numerous materials. Following the conceptual design phase and feasibility analysis, you can choose a standard solution or ask us to create an automation package tailored precisely to your requirements.

## BENEFITS

- + Everything from one source
- + Offline programming
- + Individual solutions
- + Flexible production
- + For a wide range of industries and areas of application

## APPLICATION

Robot cells can be used to precisely process a wide array of materials by gripping, picking up, holding, sorting, milling, polishing and deburring objects. Our production solutions are used in virtually all industrial sectors.

## SERVICES

- + Milling
- + Grinding and polishing
- + Machining, finishing of metals, plastics, wood and ceramic materials
- + Automation
- + Separation system
- + Laser metal deposition

## YOUR PACE MAKERS FOR ROBOTICS

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Learn more  
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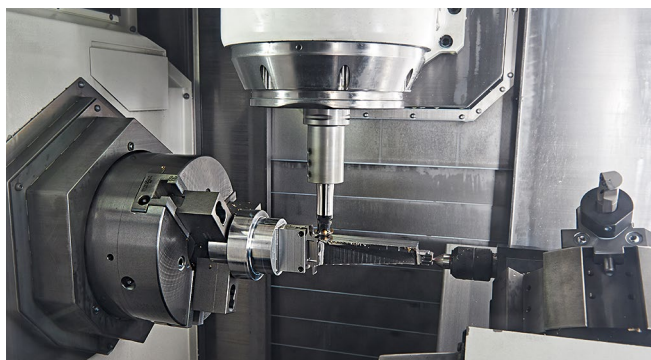


# + MACHINING

Benefit from ultimate precision and adaptability, thanks to our longstanding experience with a wide selection of materials and processes.

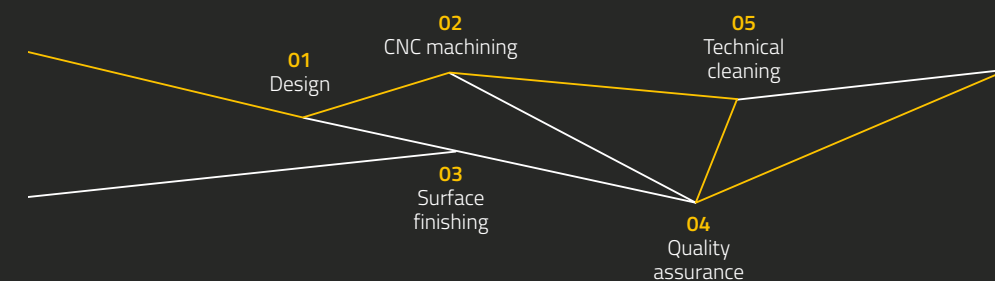


toolcraft is also at the cutting edge of technology in this traditional sector. Our range of machinery from leading manufacturers features the latest automation systems and guarantees precision and consistent high quality. From design optimisation, including programming, to heat treatment and technical precision cleaning, we cover all stages in the process.



## + PROCESS CHAIN

We offer complete solutions for virtually any machining challenge. You can also order any of our services individually.



## TECHNOLOGY

All the equipment we use for the complete machining of individual parts or assemblies is kept completely up to date and is state of the art. Our multi-axis technology and angle heads are just two examples of our innovative strength. We are capable of processing virtually any material. We have an in-house vacuum furnace for heat treatment. For example, in the area of high-temperature applications, we process Inconel® 625 – a material known for its high tensile and thermal-fatigue strength and corrosion resistance.

## APPLICATION

toolcraft focuses on high-end components, which demand a high degree of precision. The fact that we are so proficient at processing such a diverse range of materials makes us ideally placed for manufacturing parts for use in the semiconductor industry, energy technology or in the aerospace and motorsport industries.

## SERVICES

- + Milling, turning, and rotary milling
- + Wire cutting and die sinking (EDM)
- + Flat/cylindrical grinding
- + Thermal and surface treatment
- + Laser marking
- + Assembly of components
- + Technical cleaning and packaging (compliant with cleanroom standards)
- + Consistent quality assurance
- + Non-destructive surface testing
- + Finishing techniques (e.g. polishing, sand blasting)
- + Vacuum furnace

## MATERIALS

- + Nickel-based alloys, such as Inconel® (e.g. Inconel® 625), Waspaloy®, Hastelloy®
- + Titanium and aluminium alloys
- + Tool steel and non-corroding heat resistant steel as well as aviation steel
- + Mono-crystalline materials
- + Tungsten and magnesium

## YOUR PACE MAKER FOR MACHINING

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Learn more  
[www.toolcraft.de/en/machining](http://www.toolcraft.de/en/machining)



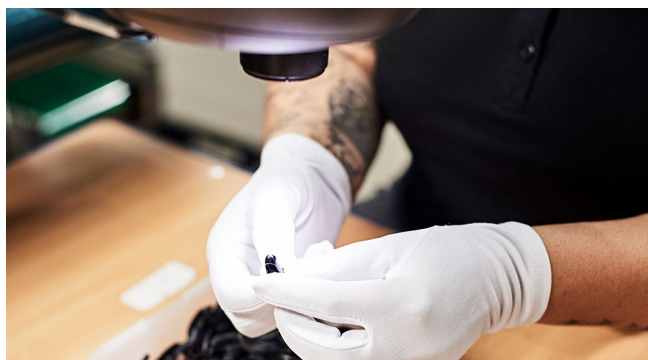


# + INJECTION MOULDING AND MOULD MAKING

From micro parts and multi-component injection moulding to customised tools, we cover all steps in the value chain.

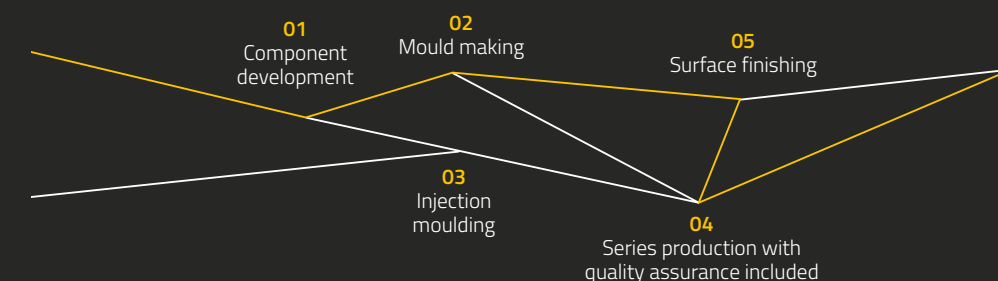


Whether you are looking for micro injection-moulded parts produced with absolute repeatability or complex moulded parts featuring uncompromisingly tight dimensional tolerances, our system solutions precisely and reliably meet your requirements across all steps in the process.



## + PROCESS CHAIN

toolcraft covers the entire process chain during the production of injection-moulded parts. You can also order any of the steps in the process individually.



## TECHNOLOGY

Our expertise ranges from commodity thermoplastic resins to high-temperature materials. From insert to multi-material moulding. This is complemented by versatile surface techniques – such as printing, painting or laser marking. From the manufacturing and measuring of electrodes to wire cutting and die sinking to the complete machining of inserts and mould bases our mould making services are available exclusively too.

## APPLICATION

Our full range of solutions includes small and micro moulded and injection-moulded parts used in areas including medicine and surgery. Our comprehensive portfolio of products and services also features clean room solutions.

## MATERIALS

- + All standard commodity and engineering thermoplastics
- + High-temperature resins, such as PEEK, PPSU, PPS, etc.
- + Thermoplastic elastomers (TPE)
- + Liquid crystal polymers (LCP)
- + Liquid silicone materials

In the field of mould making we process:

- + Tool steel
- + Stainless and acid resistant steel
- + Titanium and aluminium alloys
- + Hard metal
- + Nickel-based alloys, such as Inconel® (e.g. Inconel® 625), Waspaloy®, Hastelloy®
- + Tungsten copper
- + Copper and brass

## SERVICES

- + Tool design
- + Tool making
- + Complex insert applications
- + Delicate small and micro parts with high-quality finishing
- + Clean room solutions
- + Multi-component injection moulding
- + From design to production – we take care of it all
- + LSR injection moulding (liquid silicone)

## YOUR PACE MAKERS FOR INJECTION MOULDING AND MOULD MAKING

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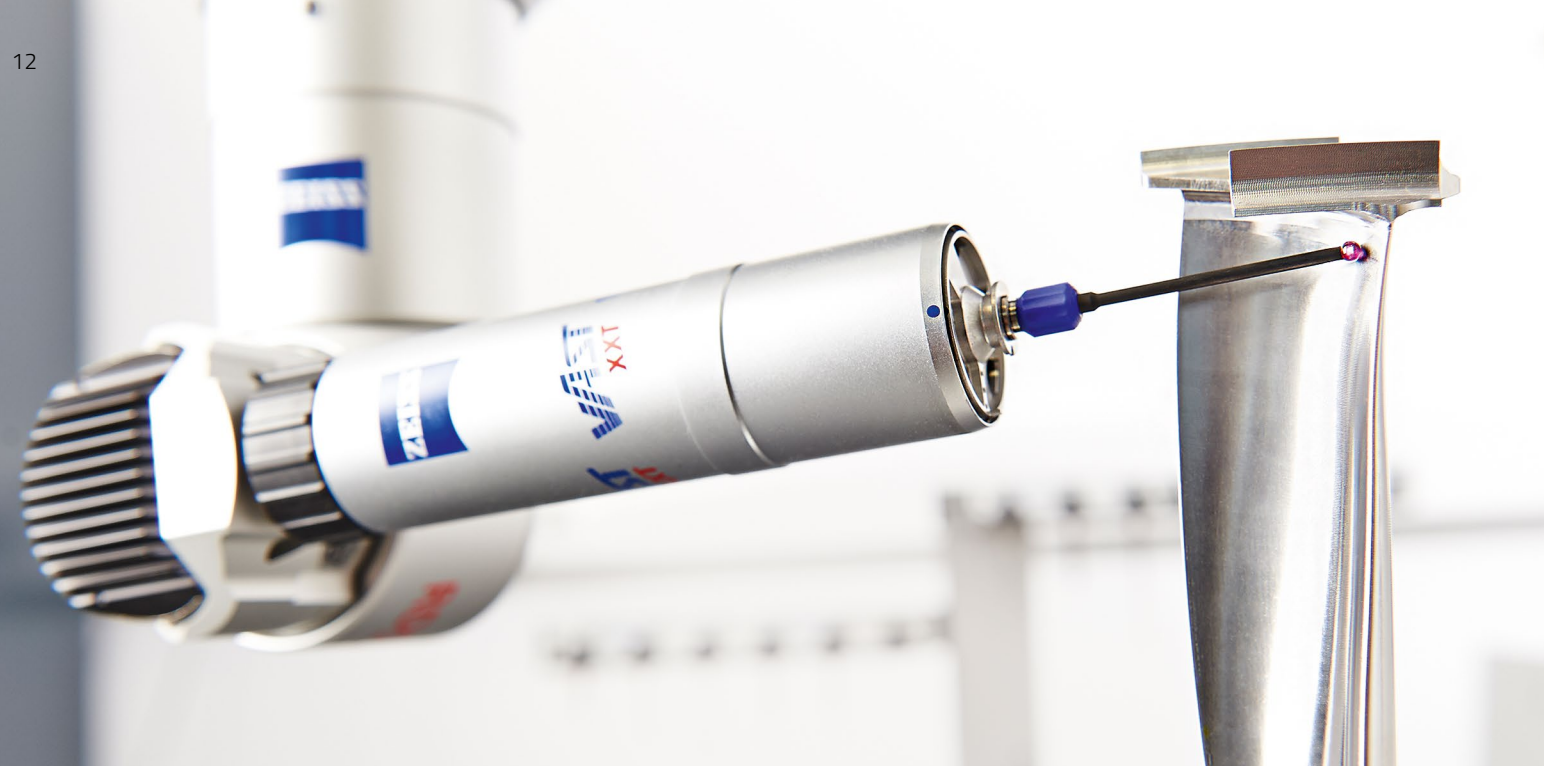
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Learn more

[www.toolcraft.de/en/injectionmoulding-and-mouldmaking](http://www.toolcraft.de/en/injectionmoulding-and-mouldmaking)







# + MEASURING AND TESTING

As a pioneer in innovative technologies, such as additive manufacturing and robotics, we are also scientific and technical leaders in ensuring that your components are fully functional, safe and comply with the required standards.

toolcraft – setting standards with measuring and testing technology.



## AM-SPECIFIC TESTING

In the area of additive manufacturing, we not only test the powder used, but also inspect the properties of additively manufactured test pieces, as these are representative of the subsequently produced components. We evaluate the dynamic strength of various metals using fatigue testing.



## NON-DESTRUCTIVE TESTING

Even microscopically small cracks are revealed in the evaluation cabin under UVA light; these are cracks which can have a decisive effect in aerospace applications.



## OPTICAL MEASURING

Our GOM equipment for non-contact optical measurements allows us to optimise and assess the quality of your components quickly and precisely. We also use this equipment for our reverse engineering activities.



## TACTILE MEASURING

The latest generation of 3D coordinate-measuring machines and customised devices manufactured on our own production lines ensure precise testing. We feel the shape of your components by using machines to test their dimensions, angles, symmetry and parallelism to reliably rule out any discrepancies.

YOUR PACE MAKER  
FOR MEASURING AND  
TESTING

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Learn more  
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