

ACADEMY FACTS  
TULIP FOR EDUCATION  
TRAINING MACHINES  
TRAINING, TEACHWARE  
WORLDSKILLS  
MACHINE SPECIALIST  
CELOS X FACTORY  
ADDITIVE INTELLIGENCE

DMG MORI ACADEMY

## World's largest CNC Academy!



GLOBAL  
EDUCATION

MADE  
IN GERMANY

## ACADEMY FACTS

TULIP FOR EDUCATION

TRAINING MACHINES

TRAINING, TEACHWARE

WORLDSKILLS

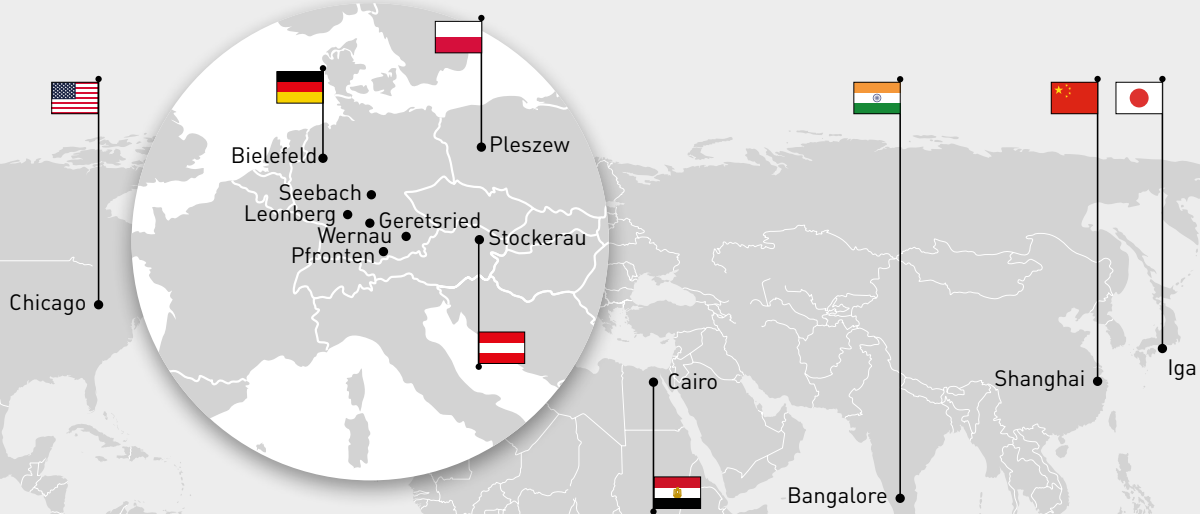
MACHINE SPECIALIST

CELOS X FACTORY

ADDITIVE INTELLIGENCE

### DMG MORI ACADEMY

# World's largest CNC Academy with over 20,000 training participants a year



## ACADEMY FACTS

- + 13 locations worldwide
- + > 85 modern training machines
- + > 150 certified trainers
- + > 20,000 training participants a year
- + Modular training program with > 200 courses
- + Global Industry Partner of WorldSkills International
- + Sponsor of WorldSkills Competitions



Practice-oriented application and service training at the DMG MORI Academy in Pfronten [Germany] on the latest training machines.



Practical training at the DMG MORI Academy in Bielefeld [Germany] with modern CNC lathes.

DMG MORI ACADEMY

# Portfolio

The DMG MORI Academy provides innovative training and consulting services worldwide as well as high-tech equipment for practice-oriented basic and advanced training.



Training machines, Teachware and TULIP



CNC training and service training



Support for young talent



Additive Intelligence

DMG MORI ACADEMY

# TULIP FOR EDUCATION

How can you train digitisation? With TULIP, a completely new software and hardware platform that is ideal for training purposes. Traditional user manuals and operating instructions can be replaced quickly and simply with interactive apps. It enables human-machine communication and training sequences become more independent, safer and more efficient.



Digital  
and perfect  
for training!

## HIGHLIGHTS

- + **Digital training:** App-based manufacturing and assembly instructions
- + **Improved learning effect:** Interactive training process with machine feedback
- + **No-Code:** Easy creation of fully functional apps with no prior programming knowledge
- + **Human-centric:** User-friendly apps to increase productivity
- + **App templates:** Create new apps or use easily modifiable templates
- + **Reports:** Available in real time

*TULIP is the ideal platform for teaching training content in the digital learning factory. Our students can perfectly apply their theoretical knowledge in our industry-oriented smart factory and are optimally qualified for their tasks in the Industry 4.0.*

**Dipl.-Ing., StD Sven Kleinemas**

Carl-Severing-Berufskolleg für Metall- und Elektrotechnik der Stadt Bielefeld

DMG MORI ACADEMY

## TULIP – Products

**SPECIAL  
PRICES  
FOR  
EDUCATION**



### TULIP EDUCATION BUNDLE

- + TULIP license for 24 months with 10 or 25 stations
- + Access to the learning platform for 3 teachers
- + 2 days on-site setup, 3 days custom app creation (online)
- + App library



### TULIP WORKSTATION

- + Immediately available assembly station
- + High quality aluminum case
- + I/O devices included
- + Tablet (optional)



### MEASURING KIT

- + Digital caliper
- + Digital indicator
- + Transmitter with mini USB connector
- + 8 channel receiver

Other  
devices on  
request

DMG MORI ACADEMY

# Full-liner for education – Industry 4.0 education packages

**SPECIAL  
PRICES**  
FOR SCHOOLS  
& TRAINING  
WORKSHOPS

Benefit from our exclusive complete packages at an attractive special price for training workshops in industrial companies, educational institutions, and schools! You can connect all machines in a digital learning environment. Data can be visualized and interactive training in the classroom becomes real.

## INDUSTRY 4.0

### EDUCATION PACKAGE CTX 350 AND DMU 40

**Universal lathe CTX 350**  
and//for **5-axis milling machine DMU 40**  
with extensive equipment, CELOS for  
industry 4.0 applications, training,  
programming and training software,  
DMG MORI TrainingBox with training  
materials, packaging, commissioning, etc.



### EDUCATION PACKAGE NLX 2000 AND NTX 500

The advancing digitization of production systems places new demands on the training of future skilled workers in modern manufacturing. DMG MORI supports you in meeting these challenges in times of a shortage of skilled workers.

Invest in the future now and take advantage of our special prices for the **NLX 2000 universal lathe** and the **NTX 500 turning-milling center** with the latest MAPPs control.



# Full-liner for education – Conventional machines

With the manual machines FP 4 M Special Edition and the NEF 360 LZ you are optimally prepared for a wide range of manufacturing requirements, for example in your maintenance and repair workshop. In addition, these machines are ideal for basic training.

## BASIC TRAINING

### FP 4 M SPECIAL EDITION

- + **Tried-and-tested concept**  
with over 10,000 installations
- + Maximum **precision** and **stability**
- + **Customized** for training purposes
- + **Small footprint** – minimum space requirement  
thanks to integrated switch cabinet
- + Perfect **accessibility** to the work area
- + **Ergonomic positioning of the handwheels**  
for maximum operating comfort
- + **Long life cycle**



07

### NEF 360 LZ

- + **Powerful center lathe** in **toolmaker accuracy**  
in accordance with DIN 8605
- + **Easy-to-use equipment** that can be operated  
**universally** in every workshop
- + Infinitely variable speed and feed entry  
via **DMG MORI position display**
- + **Intuitive operation**
- + **Main spindle bearing with belt pull relief**  
for highest precision
- + **Extensive safety features**
- + **High-quality apron**
- + **Made in Germany**



DMG MORI ACADEMY

# Practical training on a completely new level!

With our revolutionary remote HoloLens training, we bring conventional face-to-face practical training into a new dimension.

By using the Microsoft HoloLens, DMG MORI training content and live communication with our trainer are **projected as a hologram** into your production facility, right next to your machine!

We train your employees in the setup, operation, maintenance and repair of machine tools – in almost any place in the world.



NEXT  
LEVEL  
TRAINING





# DMG MORI Teachware

We work together with you to develop a concept tailored to your needs that will enable practical training based on the latest industry level!



## DMG MORI TRAINING CONSOLE

- + **Workshop-oriented and practical** training in the classroom
- + **Know-how** imparted at an industrial level
- + **Optimal training** for future CNC specialists
- + Available as a **single place or classroom version**
- + **Control-identical console** available for both SIEMENS and HEIDENHAIN



## DMG MORI PROGRAMMING / TRAINING SOFTWARE

- + **1:1-Programming** with control-identical software
- + **Location-independent** training and programming
- + **Practice-oriented** learning and increase in expertise
- + **Export created programs** to your DMG MORI machines
- + **Reduction of errors** through test runs on the PC



## DIGITAL TWIN FOR EDUCATION

- + **Digital CNC training** for beginners and advanced users, even without machines
- + **1:1 operation and simulation** thanks to full integration
- + **All cycles and M functions** are available
- + Safety through **collision monitoring**
- + Practice-oriented **workspace check**
- + **Attractive educational package with** virtual machinery

DMG MORI ACADEMY

# WorldSkills International – Global Industry Partner

Promotion of young talent on a world-class level: DMG MORI is a Global Industry Partner of WorldSkills International and has therefore part of a group of leading industry partners who promote the training of young talent worldwide.

## WORLDSKILLS LYON 2024

### EVENT FACTS

- + 47<sup>th</sup> WorldSkills Competition
- + 10.-15. September 2024 in Lyon
- + 1,500 competitors
- + 85 participating countries and regions
- + 60 disciplines (skills)
- + 1,500 experts
- + 2,500 supervisors and volunteers

### SCOPE OF DELIVERY

- + 34 DMG MORI machines



  
worldskills  
Lyon2024

DMG MORI ACADEMY

# WorldSkills and DMG MORI – the success story

DMG MORI has been involved in the WorldSkills as a sponsor since the year 2007. This role includes the provision of high-tech machines for the competitions, technical support and training courses as preparation for the participants.



## INTERNATIONAL WORLDSKILLS COMPETITIONS

- + Shizuoka, Japan, 2007
- + Calgary, Canada, 2009
- + London, United Kingdom, 2011
- + Leipzig, Germany, 2013
- + Abu Dhabi, United Arab Emirates, 2017
- + Leonberg, Germany, 2022



## EUROSKILLS COMPETITIONS

- + Lisbon, Portugal, 2010
- + Göteborg, Sweden, 2016
- + Budapest, Hungary, 2018
- + Graz, Austria, 2021
- + Danzig, Poland, 2023

## NATIONAL CNC COMPETITIONS

- + Stuttgart, Germany, 2008/2010/2012/2014/2016/2018
- + Bielefeld, Germany, 2021
- + Hanover, Germany, 2023
- + Salzburg, Austria, 2014/2016/2018
- + Den Haag, the Netherlands, 2016
- + Coventry, UK, 2021



DMG MORI ACADEMY

## Personnel services – The right specialist for the machine

You need well-trained CNC specialists (m/f) to increase your machining capacities, while keeping your personnel deployment flexible at the same time? On a temporary or direct personnel placement basis, DMG MORI and Randstad can provide you with CNC specialists, who are trained specifically for your DMG MORI machines by the DMG MORI Academy. This means you can commence production faster and your personnel deployment remains flexible. And you can do so at no risk.





## HIGHLIGHTS

- + **Allround and competent consultancy** by two strong partners: DMG MORI and Randstad
- + **Qualified specialists directly from the manufacturer** trained specifically for the customer's machines
- + **No employee risk** thanks to the flexible deployment of personnel
- + No personnel costs during downtimes
- + **Permanent employment of the worker possible**
- + No recruiting costs



## OUR SERVICE – 5 STEPS TO WELL-TRAINED SPECIALISTS

1. You define the **job specification**
2. **Candidate proposal** by our cooperation partner Randstad
3. **Job interviews** and **candidate selection** on your premises
4. **CNC qualification** by the DMG MORI Academy
5. **Personnel recruitment or deployment** of the new specialists on a temporary basis

DMG MORI ACADEMY

## CELOS X Factory – “BRING YOUR OWN IDEA”

Today, manufacturing companies are faced with the challenges of efficient and sustainable production. DMG MORI supports its customers **with Machining Transformation (MX)**. The concept includes: **Process Integration, Automation, Digital Transformation and Green Transformation.**

The CELOS X Factory is a production area in Bielefeld that combines additive and conventional manufacturing technologies and is more than just an experience center or demo factory. We produce series components for use in DMG MORI machines, from simple turned and milled parts to highly complex components in metal 3D printing. The DMG MORI machine tools and automation solutions are the heart of the CELOS X Factory. They are supplemented by machines and equipment from partners. This allows us to illustrate various production processes holistically.

The digital process world in the CELOS X Factory reflects **real company processes** and goes far beyond the current status. Examples include order processing with traceability at the individual part level, a CAD-CAM process chain that extends into quality management or energy monitoring for individual process steps. Digital Transformation promotes the Green Transformation – through increased productivity, reduced energy consumption and careful use of resources.

All machines in the CELOS X Factory are connected to the production control system. Information about orders can be displayed directly on the machines via the operator workbook. For machine and factory data collection, all machines are connected to CELOS Xchange and transfer their data to the data hub, the central data hub for all applications.

According to the motto **“bring your own idea”** we offer you the opportunity to bring in your own practical tasks. Together we develop initial solution concepts and test them using the realistic production environment of the CELOS X Factory.

### Feel free to contact us.

We support your transformation into efficient and sustainable manufacturing for the production of tomorrow!



Component: Robo2Go  
head with laser marking



## DIGITIZATION WORKSHOP

- + 2-days "bring your own idea" workshop
- + You can bring your own real-life cases
- + Together we develop initial solution concepts
- + Use of our modern CELOS X Factory infrastructure
- + Key to transformation into efficient and sustainable manufacturing

**BRING  
YOUR OWN  
IDEA!**

Workshop  
2 Days

15

## STATIONS AND PROCESS STEPS

ENGINEERING	PRODUCTION	POST PROCESSING	QUALITY ASSURANCE
<ul style="list-style-type: none"> <li>+ <b>SIEMENS NX</b> Hybrid CAD/CAM for product development, design and manufacturing</li> <li>+ <b>AM-Studio</b> Intuitively operable high-end additive manufacturing solution</li> <li>+ <b>Materialize Magics</b> Simplifies data and build preparation with one easy-to-use solution</li> </ul>	<ul style="list-style-type: none"> <li>+ <b>CTX beta 1250 TC</b> Turn &amp; Mill complete machining</li> <li>+ <b>DMU 50 &amp; DMU 40</b> 5-axis milling machines</li> <li>+ <b>LASERTEC 30 DUAL SLM</b> Additive Manufacturing</li> <li>+ <b>AUTOMATION</b> Robo2Go for loading and unloading lathes and milling machines</li> </ul>	<ul style="list-style-type: none"> <li>+ <b>FOBA Laser</b> Laser marking for component labeling and clear identification</li> <li>+ <b>Fanuc ROBOCUT</b> Wire EDM machine for precise cuts</li> <li>+ <b>Solukon</b> Depowder removal systems for cleaning SLM components</li> </ul>	<ul style="list-style-type: none"> <li>+ <b>CREAFORM HandySCAN</b> 3D scanner for free-form surfaces and complex geometries</li> <li>+ <b>Mitutoyo MiSTAR</b> Coordinate measuring machine for use in the production environment</li> </ul>



**DIGITIZATION WITH TULIP & CELOS X**



DMG MORI ACADEMY

# ADDITIVE INTELLIGENCE – Start now and use the full potential of additive manufacturing

The DMG MORI Academy supports companies with the introduction and use of Additive Manufacturing with a new comprehensive portfolio.

ADDITIVE  
MINDSET

CONSULTING

DESIGN

PRODUCTION

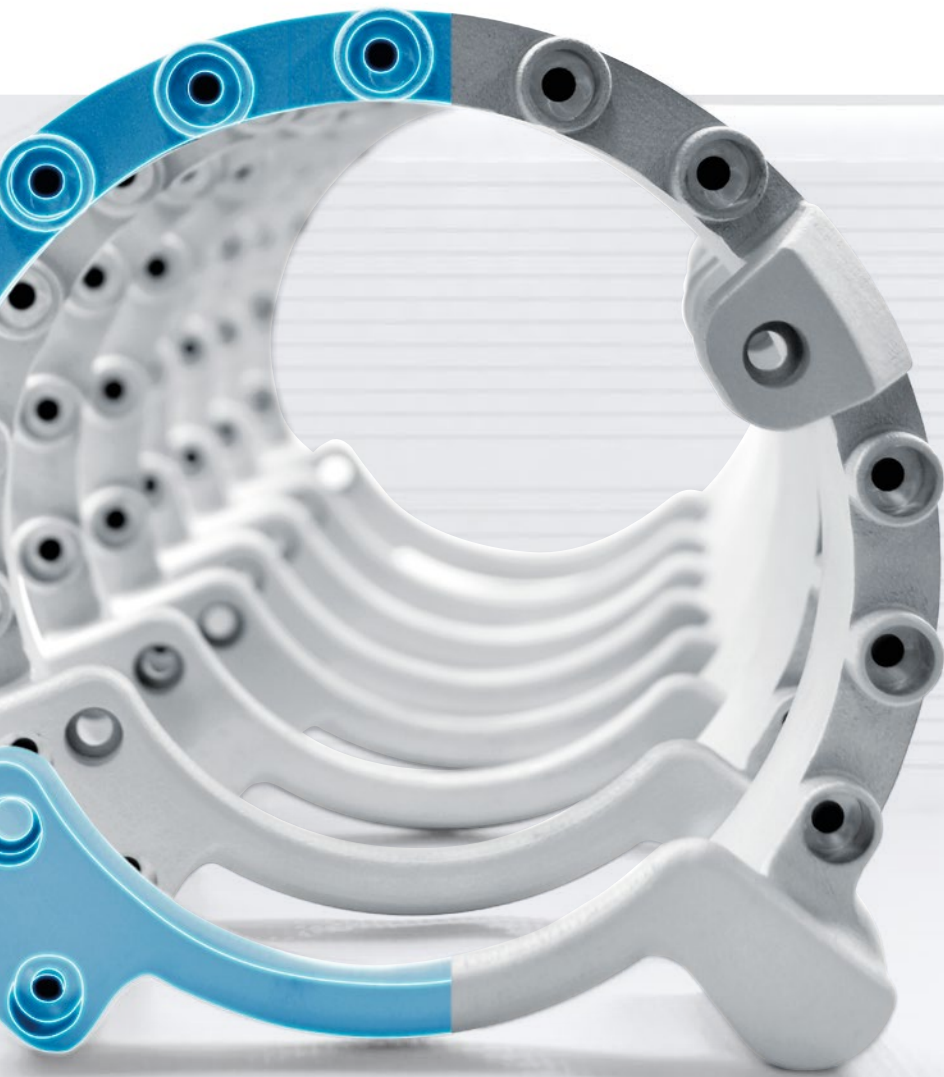
TRAINING

## OUR SERVICES

- + Additive Manufacturing Quick Check for the identification of your specific Additive Manufacturing components
- + Redesign of your components for Additive Manufacturing
- + Engineering and design of new components and groups
- + Simulation and topology optimization
- + Production of prototypes and small series of your components
- + Courses and training for management, design and manufacturing departments
- + Consulting from the strategy through to design optimisation of your Additive Manufacturing production

INDIVIDUAL  
CONSULTING  
ON SITE





## YOUR BENEFITS

- + Faster to market
- + Better products
- + Everything from a single source
- + Reduced obstacles to investment
- + Build-up of knowledge during entry in the technology

## BEST PRACTICE COOLANT RING

27 %  
LIGHTER

34 %  
FASTER  
PRINT

33 %  
CHEAPER

**Sector:** Mechanical engineering

**Material:** Aluminium

**Quantities:** 20 p. a.

### **Challenges**

- + Application of coolant
- + Interfering contours due to ULTRASONIC holder
- + Compact design

### **Added value**

- + Targeted supply of coolant
- + Cooling efficiency significantly improved
- + Optimised chip removal



**Serial component**  
**ULTRASONIC 80 eVo**



# Quick check as the perfect start for your design

## 2-DAY ON-SITE WORKSHOP AT THE CUSTOMER’S LOCATION

Aim: Development of basic knowledge and identification of components with Additive Manufacturing potential.

### Basics

- + Technology overview
- + Materials
- + Opportunities and challenges
- + Process chain from design to finishing

### Component selection

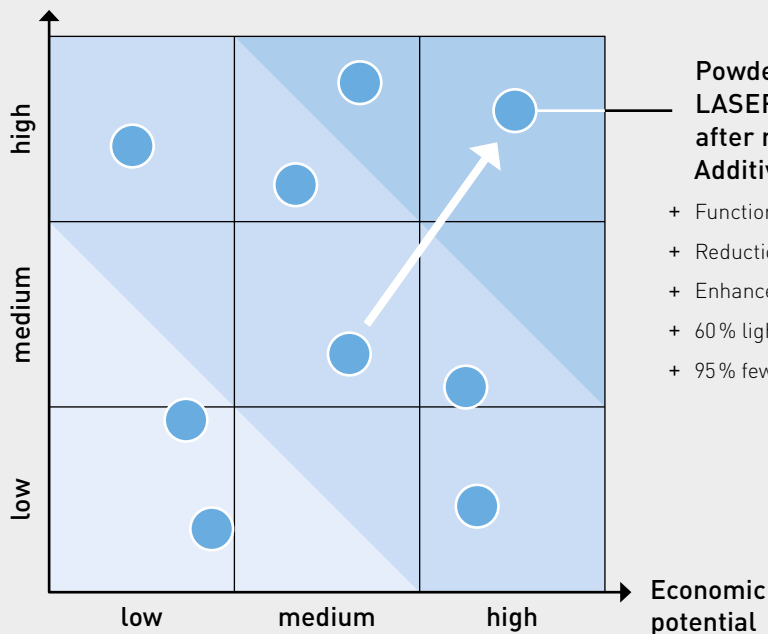
- + Best practices from the industry
- + Methods for identification of components with AM potential
- + Sighting of first component ideas from your company

### Component analysis

- + Analysis of the components
- + Rating according to technical and economic viability
- + Portfolio creation
- + Concepts for redesign
- + Roadmap development

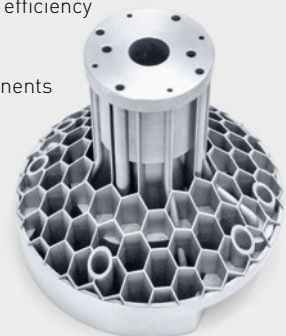
**Target group:** The ADDITIVE MANUFACTURING Quick Check is intended for developers and design engineers. Number of participants: 4 – 10 people

### Technical potential



**Powder nozzle holder  
 LASERTEC 65 3D  
 after redesign for  
 Additive Manufacturing**

- + Functional integration
- + Reduction of production costs
- + Enhanced cooling efficiency
- + 60% lighter
- + 95% fewer components





*Additive Manufacturing  
requires a new mindset.  
Together, we refine your  
additive parts and develop  
the full potential.*

**27%**  
LIGHTER

**65%**  
BETTER  
MIXING

## BEST PRACTICE MIX TUBE

**Client:** IAB – Institut für angewandte  
Bauforschung gGmbH

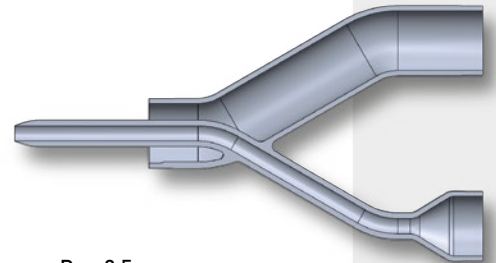
**Material:** Stainless Steel

### Challenges

- + Optimized Mixing
- + Cleanability
- + Minimum Adhesions

### Added value

- + Pipe-in-pipe concept
- + Optimized mixing geometry
- + Perfect cleanability



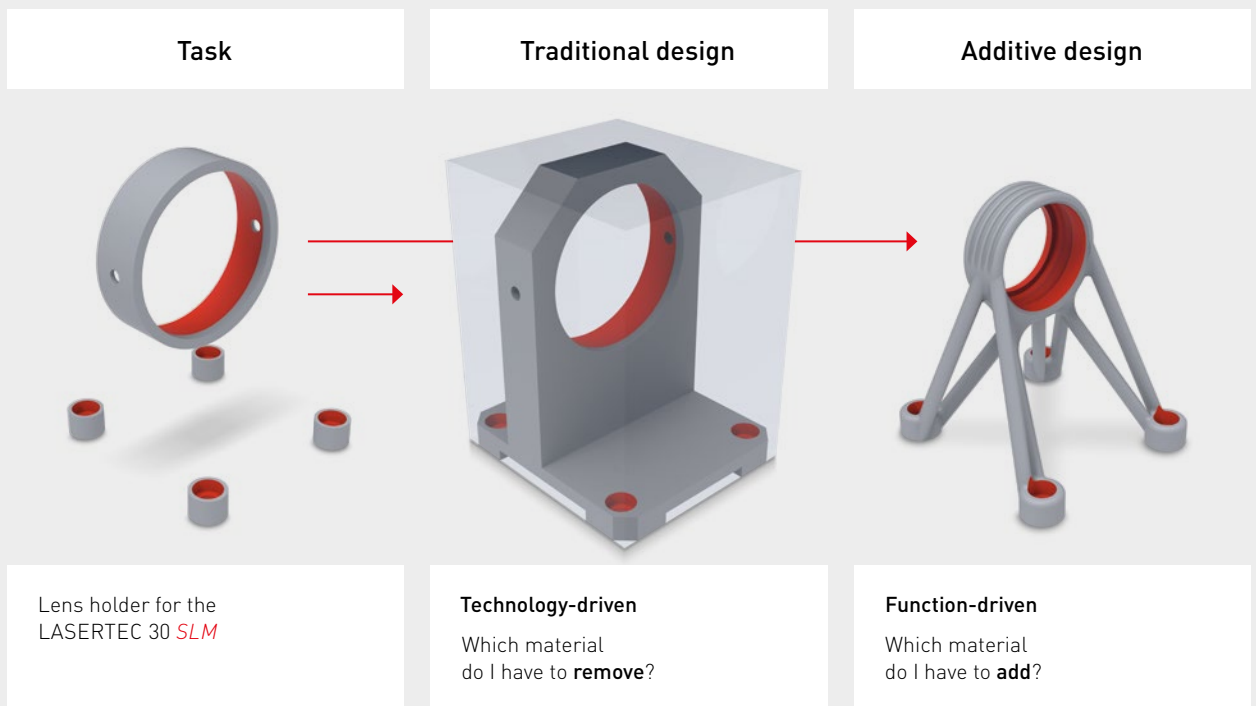
**Ra = 0.5 µm:**  
Possible thanks to  
high-precision  
selective laser beam  
melting and additional  
flow grinding



DMG MORI ACADEMY – ADDITIVE INTELLIGENCE

# Design for Additive Manufacturing

Additive Manufacturing requires innovative thinking in design.  
 We help your development team to the next level!



## DESIGN TRAINING COURSES

1. Design for Additive Manufacturing **Basic**  
 knowledge: CAD Basics
2. Design for Additive Manufacturing **Advanced**  
 prior knowledge: Basic training
  - **Duration:** 4.5 days each
  - **Number of participants:** Max. 8 people
  - **Target group:** Specialists and managers in the field of development and design
  - **Course starting times:** Ongoing, several times a year

**We help you with the introduction of the technology!**





## Your contact person

**Dr. Rinje Brandis**

Head of Consulting  
Additive Manufacturing

DMG MORI  
Academy GmbH  
Gildemeisterstr. 60  
DE-33689 Bielefeld

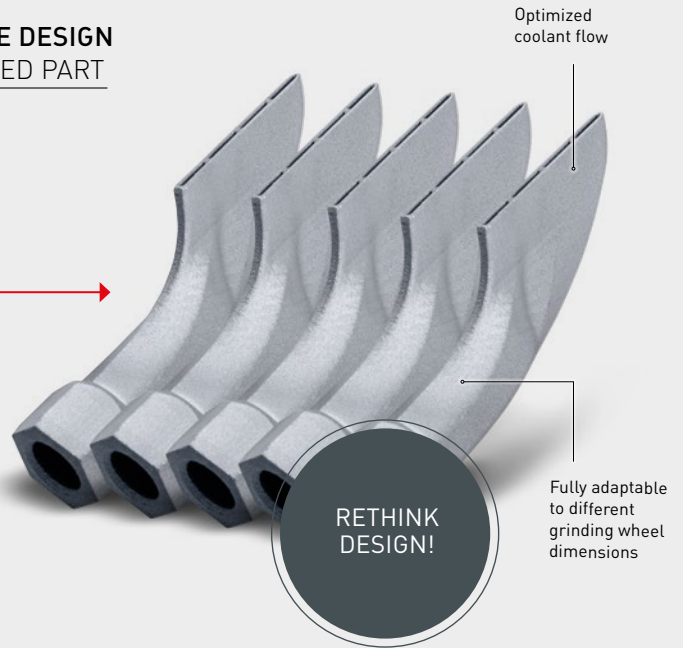
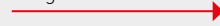
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### TRADITIONAL DESIGN 12 SEPARATE PARTS

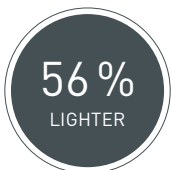


### ADDITIVE DESIGN 1 FINISHED PART

Functional  
integration



## BEST PRACTICE GRINDING NOZZLE



**Sector:** Mechanical engineering

**Material:** Aluminium

**Quantities:** 120 p. a.



### **Challenges**

- + Guidance of coolant
- + Compact design



### **Added value**

- + Supply of coolant over a large area
- + Optimised flow conditions



**Serial component**  
**DMU 80 P duoBLOCK**



# QUICK FACTS



## DMG MORI

### WHY TRAINING AT THE DMG MORI ACADEMY?

- + **Excellent equipment:** 13 high-tech training centers worldwide with 400 programming stations in more than 62 classrooms
- + **Latest machine park:** Over 85 modern DMG MORI training machines
- + **Flexibility:** Training also on your premises
- + **Practical experience:** More than 150 highly qualified trainers
- + **Up-to-date expertise:** Training at a globally successful machine tool manufacturer
- + **Future-oriented:** Requirements in the field of digital production taken into account with CELOS, TULIP and Industry 4.0 training courses
- + **Maximum customer satisfaction:** Training of over 20,000 course participants a year