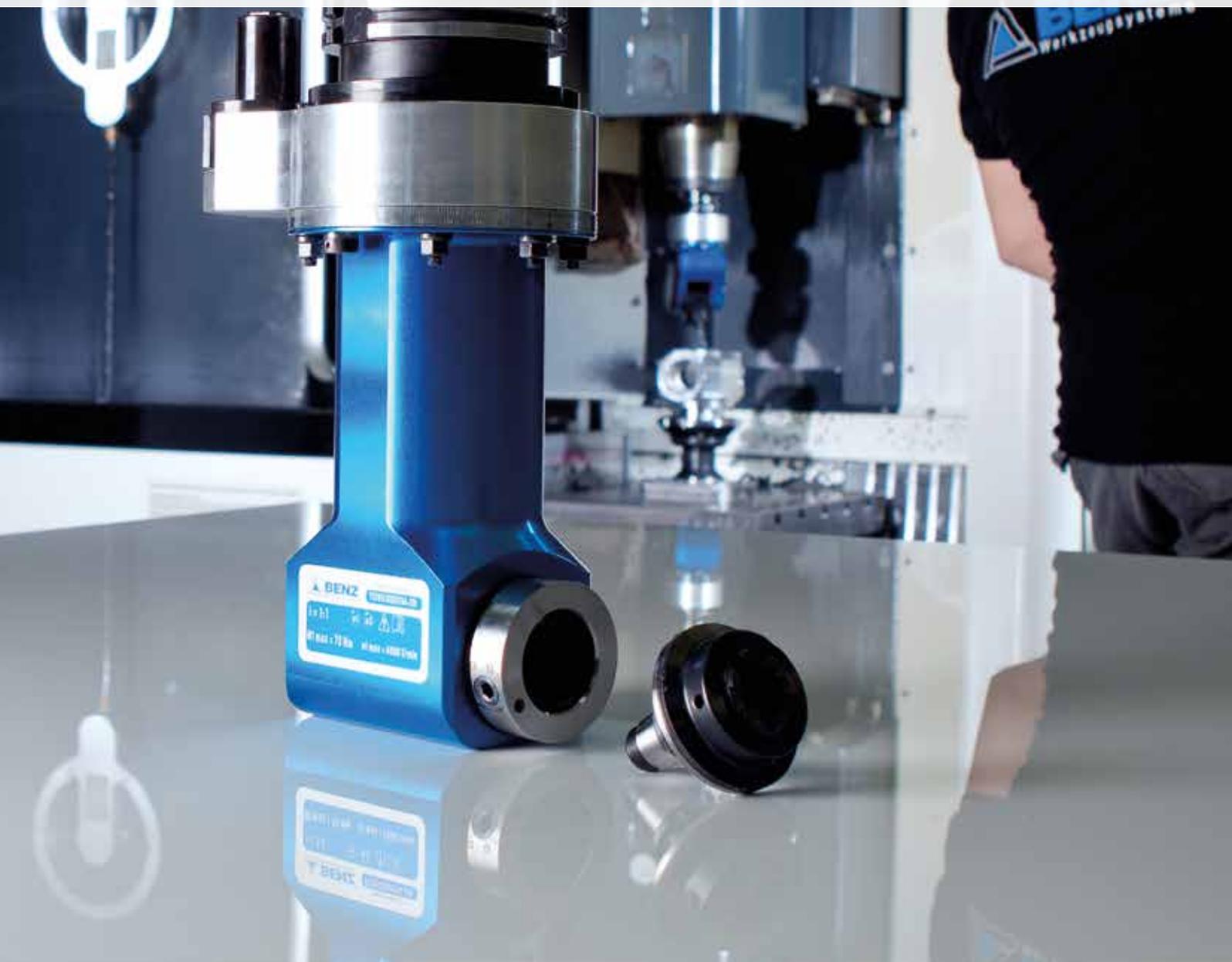


# PRODUCT AND SERVICE PROGRAM

Tool & Machine Tooling Technology

Your powerful system and technology partner



# BENZ GMBH WERKZEUGSYSTEME

At BENZ Werkzeugsysteme, our maxim, „Innovation. Precision. Passion.“ is far more than just a marketing formula. Rather, it describes the core goals of our business while also outlining the reasons why we have been able to compete in the market successfully with tool systems for woodworking, metal machining and composite material processing for more than 30 years.

Innovations are important to us. But we also recognize that they can be successful only if they precisely meet the needs of our customers. This is why we have maintained a strict focus on our customers for many years. We ensure that our developments and innovations simplify your production processes and lower your manufacturing costs - and ultimately improve your competitiveness as a result.

**INNOVATION.** With an eye on what is currently within the bounds of feasibility, we strive to always make use of innovative technologies. Our products embody the principles of Industrie 4.0 and digitization. You can always find smart, detailed solutions in our product range.

**PRECISION.** We ensure our products have the highest level of precision and reliability. This is vital in our industry. Our customers also rely on absolute precision during production - and need to be able to put all their trust in us.

**PASSION.** BENZ precision products are composed of a vast array of different individual parts. They are the result of great care that starts in the design phase and even includes the selection of raw materials. Primarily, however, they are the expression of our employee's experience and passion to do good work.



## CONTENT

- 
- 04 Business sectors
  - 05 Industry 4.0 with BENZ i.com

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### TOOLING TECHNOLOGY

- 08 Driven tools & Static holders
- 10 Exchangeable units - metal
- 12 Exchangeable units - wood & composites

---

### MACHINE TOOLING TECHNOLOGY

- 16 Multi-spindle heads & large drilling heads
- 18 Motor spindles & motors
- 20 System components

---

### SERVICE & ENGINEERING

- 24 BENZ Modular quick change systems
- 26 Individual solutions
- 28 Service

# BUSINESS SECTORS

## MANY BUSINESS SECTORS, ONE SOLUTION

BENZ solutions are applicable to all industry sectors: Whether for engine block machining in the automotive industry or for boring holes in aircraft engines or in furniture production: With cutting solutions for the

woodworking, composites and metalworking industries, BENZ offers you the most advanced technical solutions regardless of your branch of industry!

### BENZ SOLUTIONS FOR ALL BUSINESS SECTORS IN WOOD AND METAL WORKING INDUSTRY



# INDUSTRY 4.0 WITH



BENZ i.com captures the operating hours of your unit. As additional indicators, speed, temperature and vibrations are recorded and evaluated every 15 seconds. The transparent tool monitoring system recommends service intervals in good time and thus makes it possible to significantly increase the service life of your tool and the reliability of your production. The readout of the operating hours and the operating status is conveniently set via smart device. With the BENZ i.com App you can also contact the BENZ Service directly via e-mail and electronically forward the operating status to it.

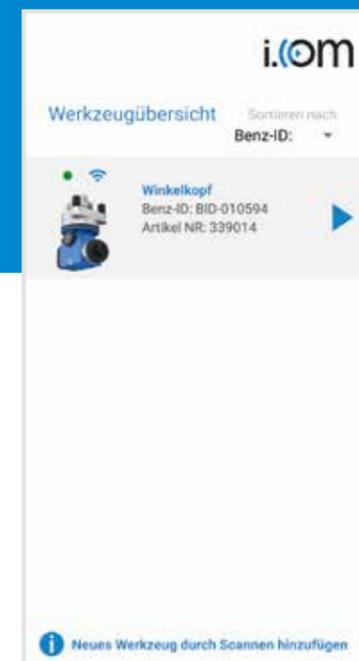
Connections to IIoT platforms are also possible. The app also offers access to the cloud, where you can download all the technical documentation for your tool, such as operating instructions, drawings, protocols, etc.

### BENEFITS

- Transparent service intervals
- Prevention of unwanted production downtime
- Increased reliability of your production
- Convenient access to drawings, operating instructions and other documents
- Integrated communication with the BENZ Service Team
- Units are ready to be used for Industry 4.0



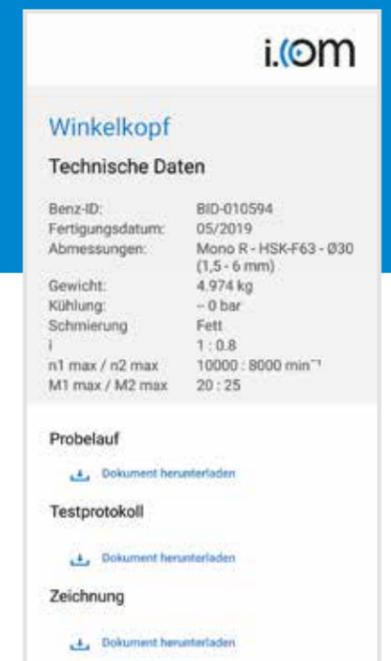
The BENZ i.com smartphone and tablet application processes your tool data and thereby gives you important information about your unit's status.



Product view:  
Tool data with a preview image.



Tool data:  
State display with operating hours counter



Documentation:  
Drawings, manuals, protocols etc. for download



# TOOLING TECHNOLOGY

A summary of our changeable assemblies for wood, composite and metal machining as well as powered tools

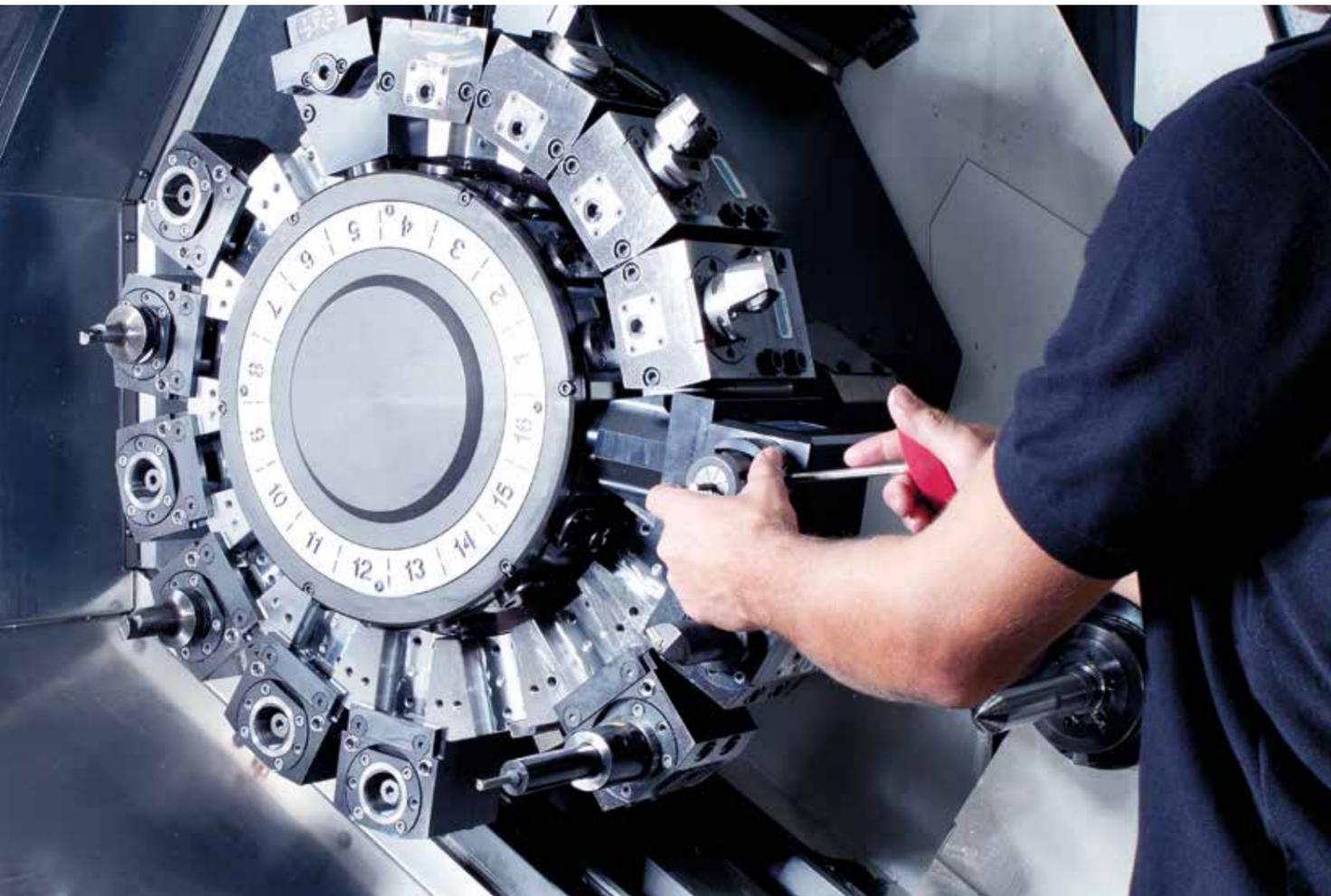
# DRIVEN TOOLS & STATIC HOLDERS

## METAL

The high-performance revolver drives of modern turning centers deliver exceptional machining capabilities. Give your machine new performance with driven precision tools and static holders from BENZ.

Our comprehensive tool concepts for turning centers and milling centers are ideal for nearly every application. Providing a technological advantage is our goal.

Our modular approach enables customized configurations. We develop special customer-specific tools for OEM and end customers on request.



### VERSATILE DESIGNS FOR POWERED TOOLS AND STATIC HOLDERS



AXIAL



AXIAL, OFFSET



ADJUSTABLE



DOUBLE-SPINDLE



RADIAL



INTERNAL DRILL HEAD



BROACHING UNIT LINA



MULTI-SPINDLE HEAD



SIDE MILLING HEAD



ANGLED MILLING HEAD



STATIC HOLDER



SWISS TYPE TOOLING

### DRIVEN TOOLS AND STATIC HOLDERS FOR MANY DIFFERENT TYPES OF MACHINE TOOL MANUFACTURERS



DOOSAN



DMG MORI



EMAG



NAKAMURA



HAAS



DIPLOMATIC REVOLVER



MAZAK



SAUTER REVOLVER



OKUMA



STAR and many others

Here you will find a short summary of our available options. Please ask us about your particular application. The live tools and static holders are used in longitudinal turning and fixed head lathes.

You will find extensive information on the presented products in our detailed product catalogs.

# EXCHANGEABLE UNITS METAL & COMPOSITES

Whether you are milling, drilling, counterboring, threading or reaming metallic materials, BENZ angle heads give you a variety of options. The modular design enables the individualized combination of torque brackets, drive cones and tool holders. Angle heads are essential particularly during the internal machining of otherwise inaccessible areas of the workpiece. Further reduce your set-up times with the BENZ Solidfix® and BENZ CAPTO™ modular quick-change systems: Pre-adjusted tools can be

switched out in less than 20 seconds.

Our industry know-how in metalworking and decades-long development partnership experience make us a suitable international partner for your next project.



## THE RIGHT SOLUTION FOR EVERY APPLICATION



**MONO WSX**

Angle head 90°  
Machining without spatial constraint



**DUO WZX**

Angle head 90°  
Output spindle on both sides for machining in opposite direction



**FORTE WWX**

Angle head 90°  
Reset output spindle for machining for spatial constraint



**SLIM WGX(-S)**

Angle head 90°  
Narrow or extremely narrow design for machining for extreme spatial constraint



**FIX WFX**

Angle head ≠ 90°  
With fixed angle for special machining at fixed angle



**FLEX WDX**

Angle head 0-100°  
With flexible angle / stepless adjustment



## REALIZED SOLUTIONS



**6-spindle head**



**Angle multi-spindle head**



**High-speed spindle**



**Special angle head**

You will find extensive information on the presented products in our detailed product catalogs.

# EXCHANGEABLE UNITS WOOD & COMPOSITES

Cost-effectively process and machine wood, composites and aluminium: We provide series production angle heads for drilling, milling, sawing and grinding in addition to other units for special applications.

BENZ units are available in a variety of performance classes, making them ideal for everything from light machining to high-performance continuous operation. We have the solution for your special applications: Customized Benz units for machining centers. Put us to the test!

## PRECISE FIT

There are many machine manufacturers with numerous types of machines for machining wood and composite materials. Each manufacturer generally builds on its own machine concept – and thus on different components. That has a significant effect on exchangeable units. They have to be adapted to the relevant machine type. We help you to make sure that everything fits together precisely. Just tell us your machine model – and we do the rest.

ANGLE HEADS



ADJUSTABLE ANGLE HEADS



MULTI-SPINDLE HEADS



FLOATING TRIMMING UNITS



SANDING UNITS



POLISHING UNITS



CUTTING UNITS



CHISEL MORTISING UNITS



## BENZ UNITS CAN BE USED FOR VARIOUS TYPES OF MACHINING



Drilling



Milling



Sawing



Planing



Brushing



Sanding



Polishing



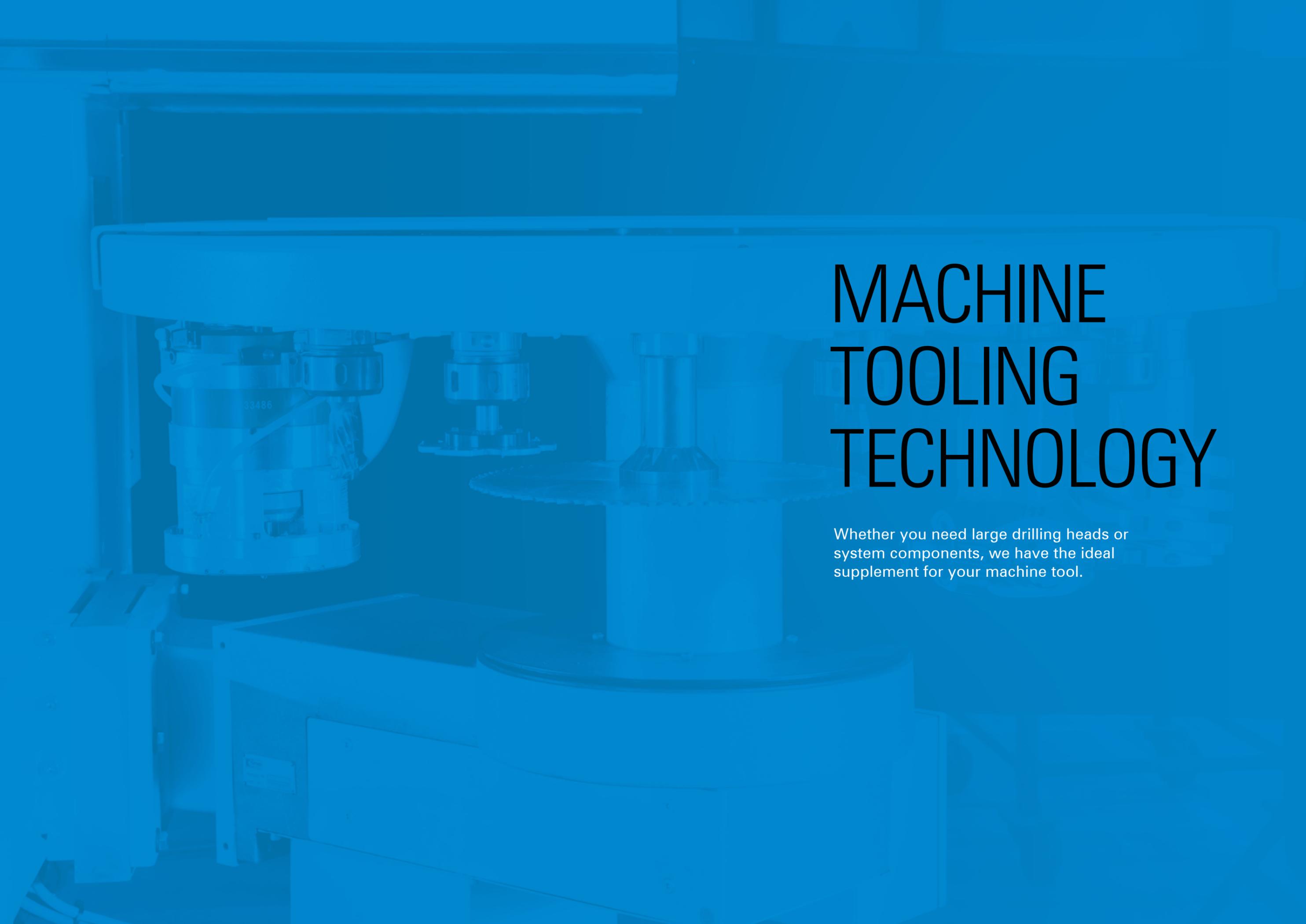
Cutting



Chiseling



You will find extensive information on the presented products in our detailed product catalogs.



# MACHINE TOOLING TECHNOLOGY

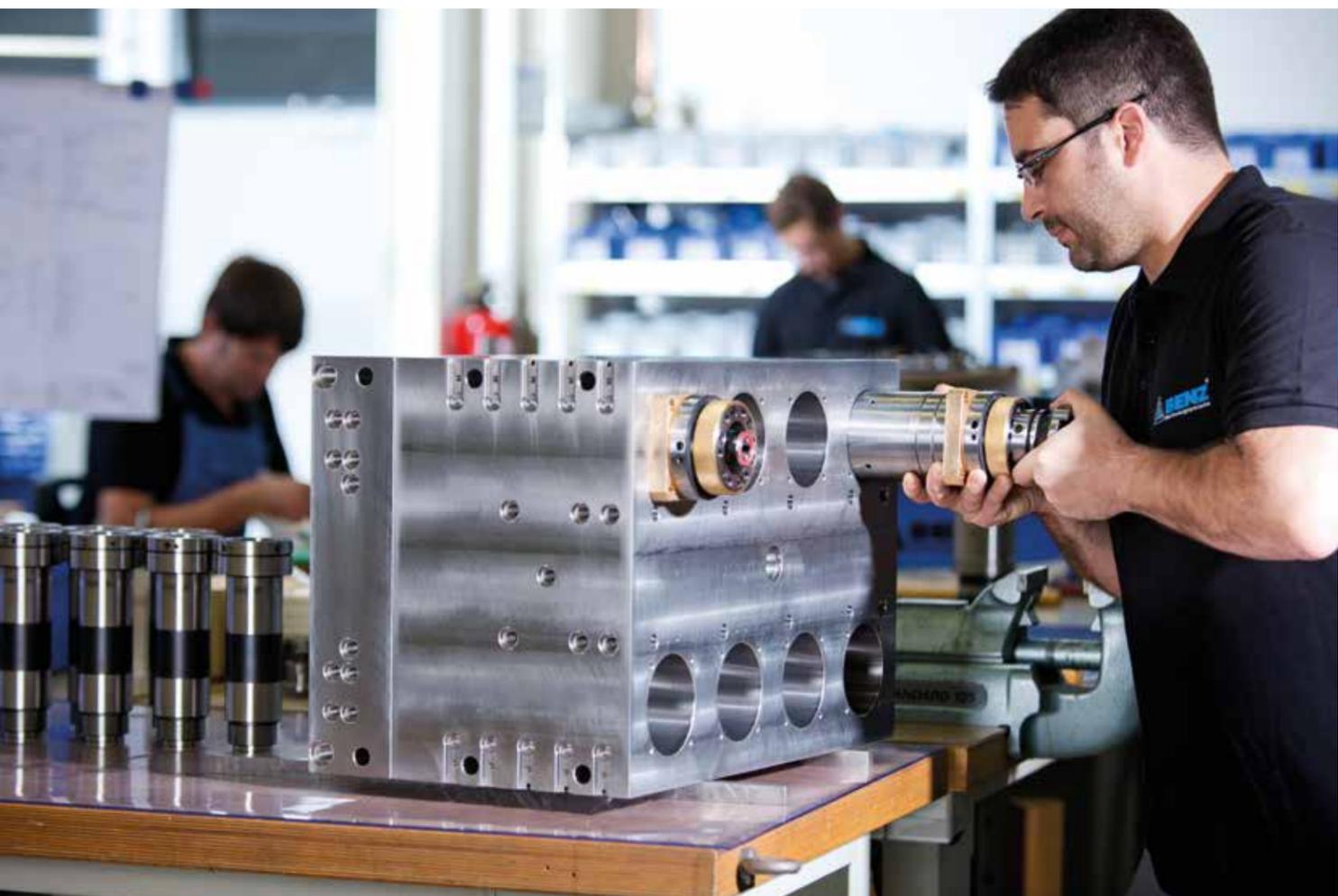
Whether you need large drilling heads or system components, we have the ideal supplement for your machine tool.

# MULTI-SPINDLE HEADS & LARGE DRILL HEADS METAL

## MULTI-SPINDLE HEADS

Bring together uniform or diverse processing operations to reduce operating times (usually involves multi-spindle heads). The potential applications are virtually limitless: Drilling, threading, counterboring, reaming, milling, etc. The variety of products is equally diverse, from small compact heads with two spindles to multi-spindle XXL units. BENZ offers exchangeable and fixed-flange (stationary) multi-spindle heads in a wide range of configurations.

Multi-spindle heads are typically used for mid-size to large-scale series production. We work in close coordination with you, the customer, to find the perfect solution for your application. Using proven standard components as a basis, we create the optimal multi-spindle solution for you. We maintain close contact with leading machine building companies, giving us the necessary expertise to develop the extraordinary. Give us a challenge!



## ADVANTAGES

- Simultaneous multiplex machining
- Reduced operating time
- Increased economy
- Expansion of production capacity
- High accuracy
- From 2 to X spindles
- From lightweights to 5t heavyweights
- For processing a wide variety of materials such as metal, composites or even wood
- Thousands of multi-spindle heads on the market in successful applications
- Close collaboration with leading machine manufacturers
- Competent advice on-site



## LARGE DRILL HEADS



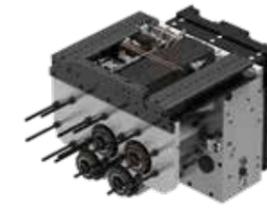
We accompany you from brainstorming to inspection of the final machine, always to your expectations. Our assortment ranges from compact heads to XXL units.

Benz stands for high-end solutions in the fields of machine tooling technology, specialty solutions, custom assemblies and mechanical modules. We manufacture and configure large-angle heads as well as large drill heads. Attachment units complete our range.

## EXCERPT OF REALIZED SOLUTIONS



**144-spindle head**  
With oil mist lubrication for the furniture industry



**Multi-spindle head with tool breakage monitoring**  
For automatically detecting reject parts



**Multi-spindle head**  
With exchangeable drill guide plate



**Axial multi-spindle head (6 spindles)**  
For drilling through-holes (5.5 mm)

You will find extensive information on the presented products in our detailed product catalogs.

# MOTOR SPINDLES & MOTORS METAL, WOOD & COMPOSITES

The motor spindle as the core part of the machine requires competent integration into the machine concept. During the spindle selection process this topic is by far more complex than the measurements and the performance characteristics. We support you in the aspects of power supply, controls and cooling. These aspects are part of an important base that guarantees that your chosen solution provides the performance that you expect.

Our module motor sets allow you to select the components that are right for your particular situation:

from small-output motors to powerful 24 kW units, we cover an extremely wide range of choices. You also have flexibility in the choice of tool-exchange systems - from manual tool exchange with the modular BENZ Solidfix® system through partially automated systems to fully-automatic changes, you have all options open to you.



## BENZ MOTOR SPINDLES IN YOUR ROBOT APPLICATIONS

Motor spindles are the key to outstanding precision and productivity for your machine tools. BENZ motor spindles can be installed not only in machining centers, but also in highly complex robotic applications. We offer a completely internally coordinated product program together with the BENZ exchangeable assemblies to meet your requirements.

## EXAMPLES OF MOTOR SPINDLES

 <b>230 V</b>		 <b>400 V</b>		 <b>400 V</b>		 <b>400 V</b>	
Power: 3,6 kW Speed up to: 24.000 U/min		Power: 7,5 kW Speed up to: 24.000 U/min		Power: 4,5 kW Speed up to: 18.000 U/min		Power: 9 kW Speed up to: 24.000 U/min	
 <b>400 V</b>		 <b>400 V</b>		 <b>400 V</b>		 <b>400 V</b>	
Power: 14,5 kW Speed up to: 24.000 U/min		Power: 14,5 kW Speed up to: 24.000 U/min		Power: 14,5 kW Speed up to: 24.000 U/min		Power: 24 kW Speed up to: 18.000 U/min	

You will find extensive information on the presented products in our detailed product catalogs.

# SYSTEM COMPONENTS

## METAL, WOOD & COMPOSITES

Do you wish to do processing around a workpiece without changing the tool, but you don't have a machine with a C-axis? Or maybe individual machine elements must be provided with compressed air, electricity, or another medium? BENZ has a variety of system components that do this and more and work flawlessly with your existing solution.

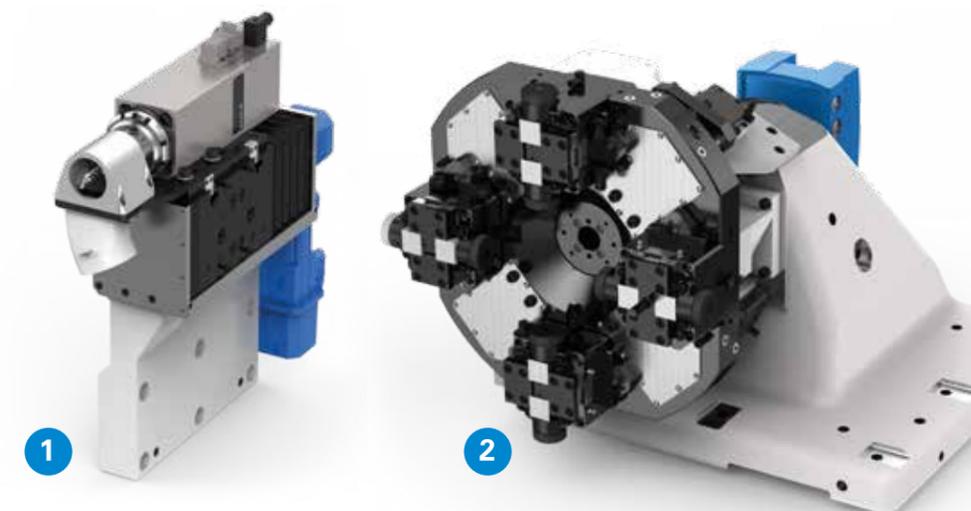
We develop the technology of tomorrow. Your individual requirements for the efficiency of your machine tools and the suitability of the tools in use provide our benchmark for new, innovative solutions.



### CUSTOMER EXAMPLE

System add-ons for even greater performance:

- 1 Motor Spindle with feed axis
- 2 Rotary indexing table with integrated tool clamping



### PRODUCT EXAMPLES THAT UTILIZE MULTI-AXIS TECHNOLOGY

#### C-AXIS

- NC angle positioning of exchangeable units
- Supplies exchangeable units



#### ROTARY DISTRIBUTOR

- Supplies system components
- For hollow shaft Ø77 and up
- Up to 8 lines compressed air / fluid
- Up to 24 kW power transmission
- Transmission of up to 24 signals



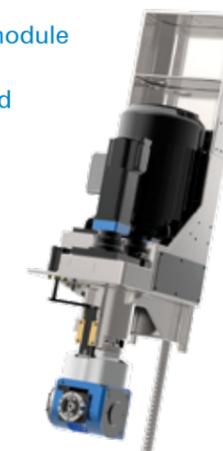
#### PIVOTING AXIS

- Compact NC pivoting drive for system components
- Integrated worm gear for drive power
- High running quality of the turning axis
- Maintenance free
- Contains hollow shaft for optional use of a rotary distributor



#### Z-AXIS

- Complete Z-axis module of a tool machine
- includes C-axis and processing unit



You will find extensive information on the presented products in our detailed product catalogs.



# SERVICE & ENGINEERING

BENZ doesn't just deliver cutting-edge components and systems. Rather, the company is also your partner for all of your service and customized solution needs.

# BENZ MODULAR QUICK CHANGE SYSTEMS

## METAL, WOOD & COMPOSITES

An investment worth making. Beside higher rpms and higher accuracy the reduction of set up and machine down times is the main focus in the manufacturing industry. An important success factor is the integration of a modular tool interface.

The basic principle and the biggest advantage of modular tooling systems is that tools can be pre-set, set up and be ready for use on the machine by the operator, all while he is already in the process of machining other parts. The pre-set adapters then can be changed in a flash in the machine. You as the customer increase the valuable production time of

your machine while at the same time saving costs: Due to the modular design only the adapters are being changed - the base tool holder stays in the machine. This reduces the necessity of buying additional tools to a minimum.

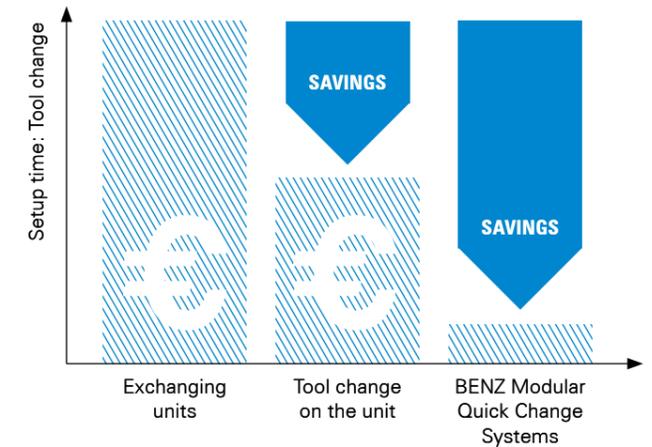
With BENZ Solidfix® and BENZ CAPTO™ you have two of the most advanced and sophisticated modular quick change systems available to you.



### SYSTEM BENEFITS

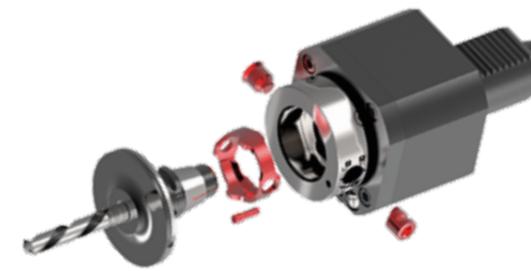
- Modular design via basic tool and exchange unit with various tool holders
- Minimize setup- and nonproductive time via change of the pre-set tool within seconds
- Much lower investment as the basic tool stays on the machine and only the adapters are changed in total fewer basic tools are needed
- Simple handling by one-hand operation, without special tools
- Operator safety: tool cannot fall out

### SAVINGS WITH BENZ MODULAR QUICK CHANGE SYSTEMS



#### BENZ SOLIDFIX®

By combining taper concentricity with no backlash with an extremely large planar surface, combined with high torque, BENZ Solidfix® offers a maximum in stability and rigidity, which is even capable of withstanding the demands of milling. The high torque transmission and the highest possible rpms also stress the effectiveness.



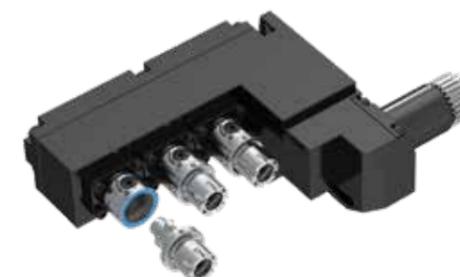
#### BENZ CAPTO™

The modular quick change system BENZ CAPTO™ guarantees an extremely compact design by being integrated into the spindle. Special clamping kinetics for clamping forces are noticeably below the required range of ISO/DIS 26623-2. BENZ CAPTO™ can be used for milling, drilling and turning, with up to 100 bar coolant pressure. The system is especially suited for heavy duty milling and machining.



#### BENZ NANOFIX®

BENZ Nanofix® is our smallest modular exchange interface with an outer diameter of 22mm. Longitudinal turning applications are an ideal application for BENZ Nanofix®. Thanks to its size, it is the perfect product when you have limited space. It is easy and safe to handle, and it offers an optimal solution for stationary and rotating tools.



# INDIVIDUAL SOLUTIONS MADE TO MEASURE

WE LOVE THE CHALLENGE AND THE EXCEPTIONAL!

Do you need a product that does not match any standard parameters? No problem! We develop and produce your product made to measure exactly according to your specifications. Small adaptations to standard products and highly complex new developments are our strength - prompt, affordable and with the usual BENZ quality thanks to our modular kits. Extreme conditions everywhere around the world: our components and systems are proven in practical applications and offer you limitless possibilities.

FROM CUSTOMER REQUIREMENT TO INDIVIDUAL SOLUTION

Based on your requirements we define the best possible solution and work out an appropriate concept together with you.

## SPECIAL UNITS IMPLEMENTED



Engine block machining in the automobile industry



Engine machining in the aerospace industry



Rotor hub machining in the wind power industry

## FROM THE CUSTOMER REQUIREMENT TO THE INDIVIDUAL SOLUTION



We define the best possible solution and develop an appropriate concept based on your requirements.



Your contact partner for construction starts implementation after coordinating the solution proposal.



Your product is a high quality piece of work and is produced and assembled at the BENZ factory by experienced employees



Your product is subjected to various performance tests before it leaves our factory.



PROJECT



# SERVICE CUSTOMIZED, VALUE-RETAINING, COST-EFFECTIVE



### SERVICE HOTLINE

In case of any questions or quick solutions the direct way is often the best: Pick up the phone and call us! The BENZ employee on the other side of the line will be happy to take up your requests and provide you with the best solution.



### SERVICE REPAIRS

Is your product no longer working the way it should? Our experts will analyse the damage quickly and professionally, send you their findings and recommended repairs within 5 working days and perform general overhauls as well - on request.

**BENZ GmbH Werkzeugsysteme**

Hotline: +49 7832 704-8600

E-Mail: [service@benztooling.com](mailto:service@benztooling.com)



### EXPRESS SERVICE

When your production comes to a standstill due to a damaged unit, hours count. To get your machine running and productive again, we offer you the Express Service: the repair of your unit at a fixed price within 48 to 72 hours



### SPARE PARTS MANAGEMENT

Everything is actually running fine – except for one bad part. You’ve found the problem and you know just what to do. We support you in making your own repairs by sending you genuine precision parts. Spare parts express shipment is available for urgent repairs.



### GLOBAL SERVICE CALLS

No matter where in the world you are, we are at your side! Our experienced service technicians are there to support you during the professional commissioning or in case of an emergency caused by a damaged unit. This is how we ensure a high reliability of the used units and therefore a high machine availability.



### INDIVIDUAL CRASH-PACKAGE

Would you like to ensure even before a serious incident occurs that your downtime costs due to a machine standstill will be as low as possible? If so, you should purchase a crash package. It contains all the wear and special parts of your unit. That means you’ll be on the safe side, even with customer-specific solutions.



### PREVENTIVE MAINTENANCE

Reduce downtimes. Increase runtimes: One simple way to reduce unplanned downtimes in your production is by regularly checking the units you use. This is the only way to ensure a product is still being used in flawless condition. As part of preventive maintenance, we replace wear parts. Your unit will thank you for it with longer runtimes.



No matter where in the world you are, we are close by. Our service centers in Europe, the US and China are your contact persons on site.

## OUR EXPERTISE WE OFFER

- Teams of experts with industry experience
- Internationally networked through world-wide locations and partners
- The highest quality for all products and services
- Precise customer-specific solutions
- Constant development of our industry knowledge



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