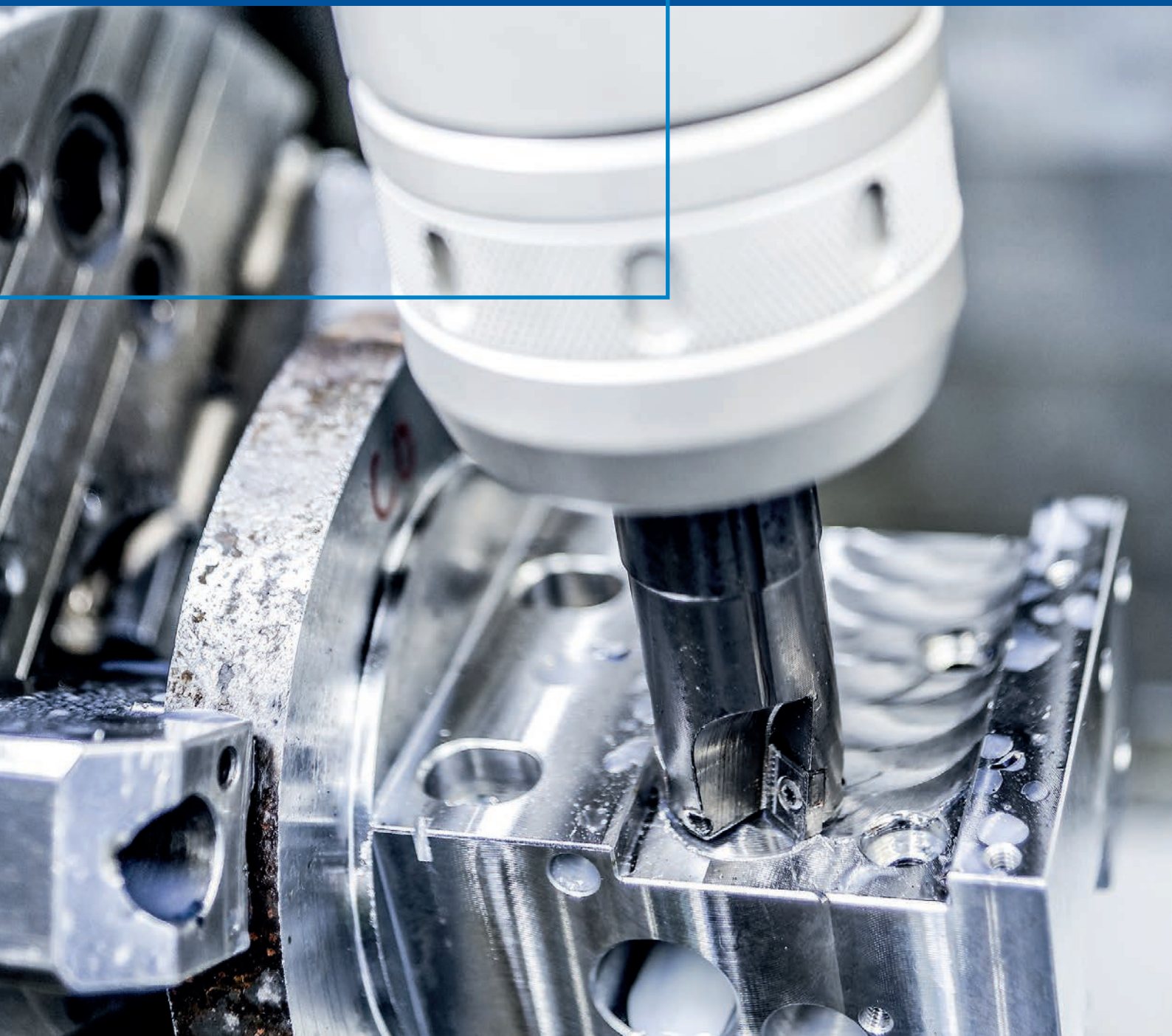


Clamping technology  
For precision tools

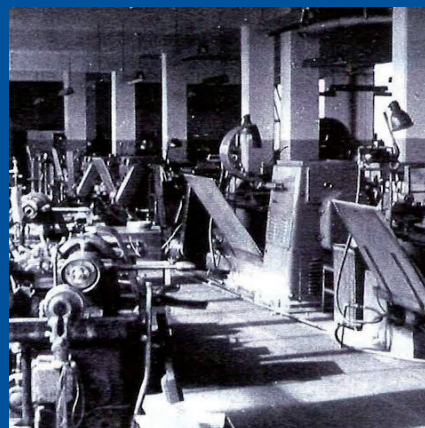


# Welcome to Bilz.

Today, around 450 employees worldwide develop and produce advanced high-quality solutions for tool clamping.

In cooperation with our sister companies in the Leitz Group we are part of a stable ownership structure. Our unique product portfolio offers solutions for standard applications and special tools including the specific challenges of our customers in the automotive and aerospace industry, general metalworking and the machine building industry.

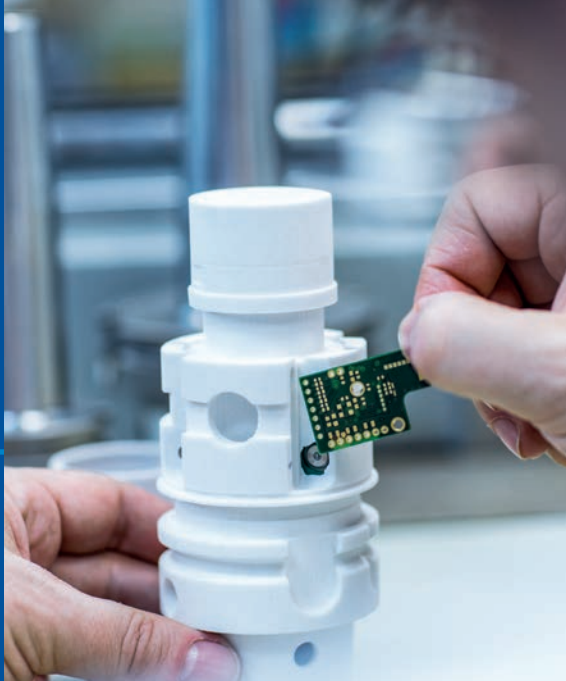
In the focus of our work stand our core values quality, customer orientation and solution finding competence. This has been our principle since 1919 and will continue to be so in the future.





BILZ

8

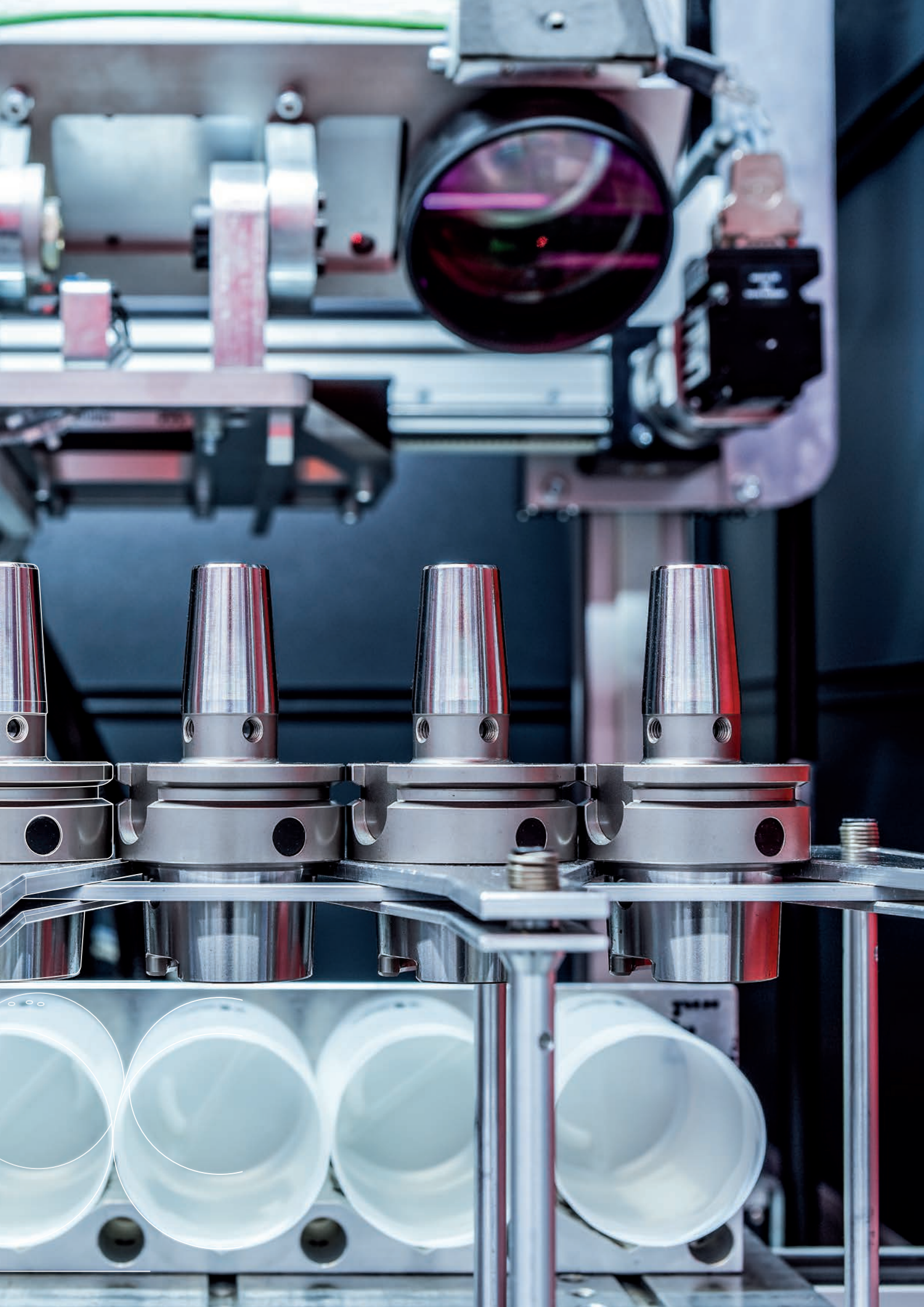


## A Firm Hold on Innovation.

With eyes and ears constantly on the market: the complete innovation chain from the initial draft right through to the final operational prototype is carried out by Bilz.

Close cooperation with research and science makes it possible for us to find and apply suitable solutions for what seem to be the most extreme demands of our customers. The combination of our experience in classical engineering and electronics coupled with a network of creative partners gives us a wide basis for technical innovation.

In cooperation with our customers, mechatronics is actively promoted at Bilz. Bilz is an innovative partner for all kinds of tool clamping.





## Manufacturing quality at the highest level.

In order to master complexity and top-level requirements for our customers advantage, processes have been improved and simplified through knowledge and expertise. Our combination of highly automated production machines and the manual skill of our specialists is unique.

Knowledge gained by our employees over many years together with the right manufacturing facilities and the will to move in new directions mean that every day, Bilz is able to attain manufacturing quality on the highest level.





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ROBODRIVE

ROBODRIVE

ROBODRIVE

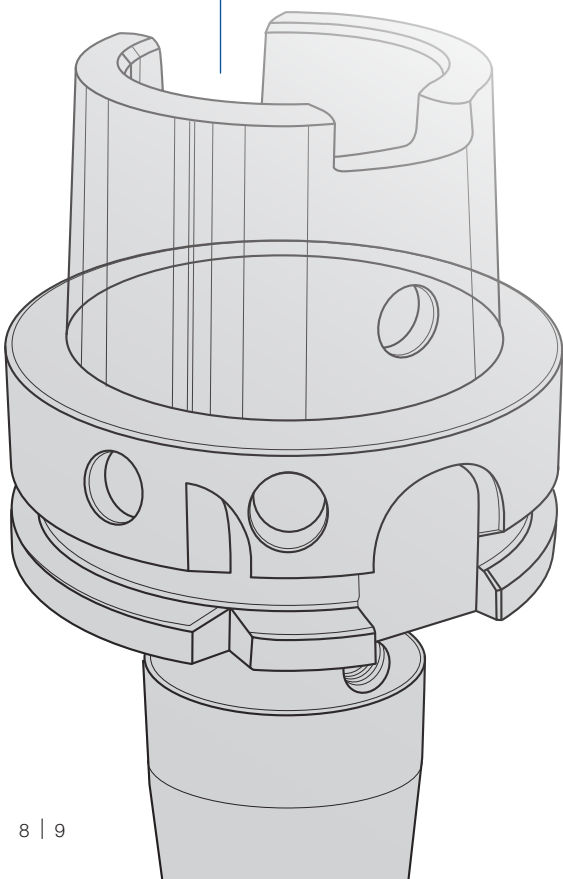
ROBODRIVE



AWARDED WITH THE PRIZE TOP-INNOVATOR 2018

## Clamping technology for precision tools

HIGH-TECHNOLOGY



“The specialists at Bilz Werkzeugfabrik GmbH & Co. KG make sure that their customers’ machines in 34 countries around the world do not stand still. As the world-wide leading manufacturer of clamping tools for tapping and high performance tools, the triple Top-Innovator with its 150 employees supplies to the automotive and tool machine industry, the aerospace industry and to customers in medical engineering.”

Source: Top 100



## QUICK CHANGE SYSTEM - AOCS



The quick change system can be engaged and disengaged whatever the rotational position of the spindle. After arriving at the magazine an axial movement in the direction of the quick change adaptor is all that is required. An axial movement in the opposite direction disengages the quick change adaptor.

### APPLICATION

- The Automatic Orientating Clamping System „AOCS“ makes the fully automatic change of tools during machining with industrial robots possible.



### BENEFITS

- Increased productivity due to reduced tool change times
- One clamping chuck for different quick change adaptors, specific to the application
- Can be used in combination with less complex spindles

## SYNCHRO APPLICATION STA



The new STA – Synchronised Tapping Adaptor was especially developed for collet holders and makes tapping and threading on machines with synchronised spindles possible.

### APPLICATION:

- Synchronised tapping and threading
- Suitable for use on multi-spindle boring heads
- For driven tools



### BENEFITS

- Compensation of synchronisation errors
- Avoids high axial forces
- Minimum strain of the thread flanks
- Better thread quality
- Also suitable for applications with narrow spindle space
- Low maintenance

## RENEWAL VIDAT



VIDAT stands for Vibrations Damping Technology by Bilz. Often in the process of cutting optimisation for your specific applications, vibration can develop. In this case and for unwanted vibrations, VIDAT offers the ideal solution to move the machining envelope to another dimension, thus eliminating the incurred vibration. Applications with long reach extensions can produce vibrations at the point they are least acceptable, finishing for example. In this case the VIDAT shrink extension offers the ability to dampen the process. Technically speaking this means the achievement of a dampening effect of 4 dB.



### BENEFITS

- Reduction of vibration on your specific application
- Improvement of the surface finish quality of the work piece
- Maintenance of required tolerances for longer
- Extended tool life



#### TAPGRIP

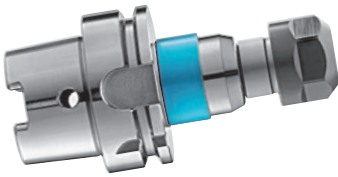
## LEADER IN CLAMPING TECHNOLOGY.

**From the invention of the world's first quick-change chuck onwards, Bilz is still setting the benchmark for tapping today.**

The product range covers a unique range of tapping chucks and adaptors for all applications, machine types, shanks and sizes and of course the newest developments for synchronized tapping or minimum quantity lubrication are in our program.

Bilz products have always been the worldwide standard for threading products.

## SYNCHRO CHUCK SCK



The latest generation SCK-Synchro Chucks has been optimised and adapted to the current market requirements. Tap presetting can be achieved from the machine side or the tap side of the synchro chuck. Due to the optimisation of the lubricant feed, a free from leakage transfer to the tap can be guaranteed.

### APPLICATION

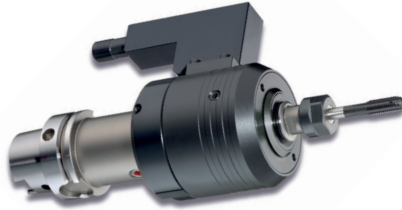
- Tapping (both cutting and form threading) on spindles with synchronised feed rates. This is also known in industry as rigid tapping.



### BENEFITS

- Reduction of the pressure on the thread flanks when tapping in and especially tapping out
- Increased tap life
- Stronger threads with improved surface finish for longer as a result
- Compensation of synchronisation errors – reduced risk of breakage

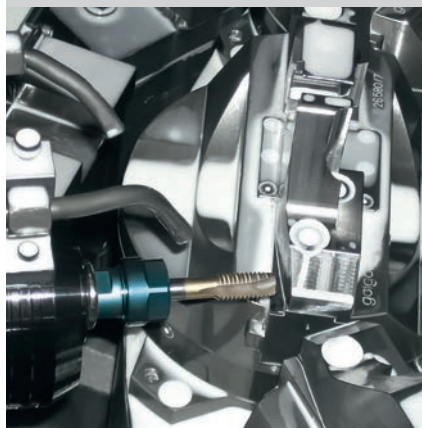
## TAPPING ATTACHMENT GNCK



High performance tapping attachment with integrated reverse gear. Bilz tapping attachments are of a modular design and can therefore be adapted to the machine. They can be used on machining centres with automatic tool change as well as special purpose machines.

### APPLICATION

- Tapping, threading without the need to reverse the spindle to exit the tap.



### BENEFITS

- No reversing of the machine spindle necessary reducing cycle times by a minimum of 25%
- High concentricity
- Reduces early spindle wear – less maintenance
- Exact disengaging position – exact thread depths, high repeat accuracy

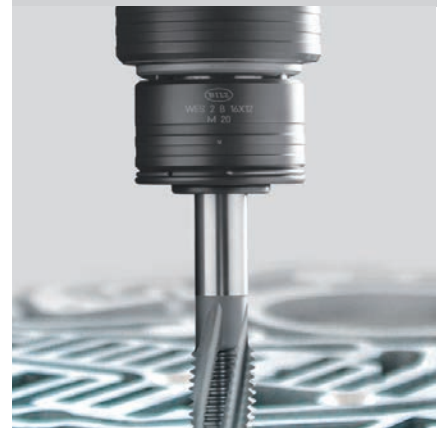
## QUICK-CHANGE CHUCK – WFLC



For decades chucks/adaptors from Bilz with a perfected design are tried and tested in global operations and are considered as a worldwide standard. Special features such as length adjustment on tension/compression, quick change, radial floating qualities which function in combination with the chuck's axial movement, internal or external coolant feed can be realised in various chuck combinations.

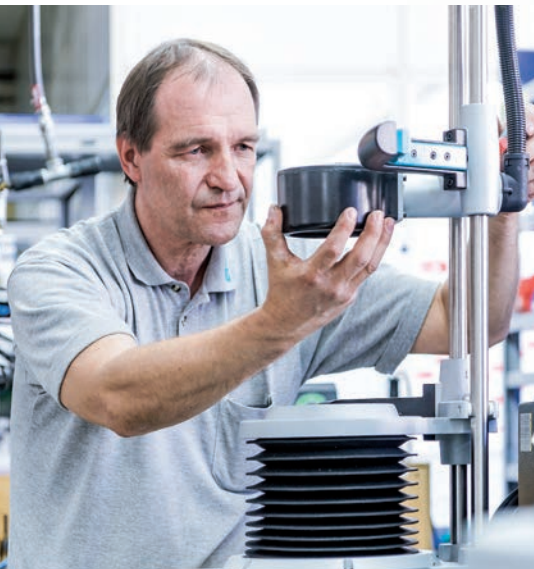
### APPLICATION

- Tapping, threading for all types of machines with all common interfaces on the machine side.



### BENEFITS

- Tension/compression compensation
- Safety clutches
- Initial cut pressure intensifier
- Quick change system



# Our Thermogrip® ISG Shrink Units



## SHRINK UNITS

# Tool Clamping in perfection.

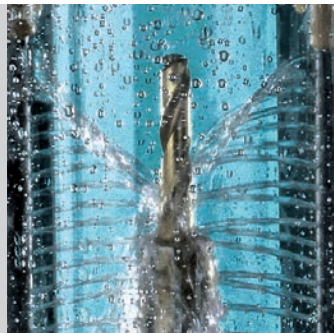
**Bilz machine technology with patented ferrite disc system and the unique, highly efficient “Cool Down” technique.**

The shrink unit series ISG3400 was awarded with the “Red Dot Award 2012” for product design. Experts in a high ranking jury particularly praised the focus on individual customer requirements shown by the modular concept and the economic technology. This prestigious award proves once again that our modular and modern unit concepts meet most individual customer requirements, because the most successful solutions at Bilz are always achieved through close cooperation with our customers.



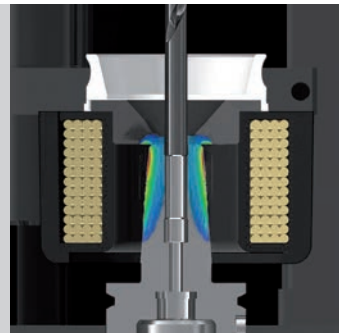
### 1 – COOL DOWN COOLING SYSTEM

The ThermoGrip® series is ten times more effective than contact cooling systems, available as Allrounder or Professional versions.



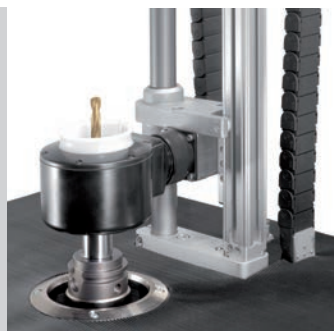
### 2 – ADVANTAGE INDUCTION TECHNOLOGY

Modular shrink system with perfect combination between holder and shrink unit.



### 3 – MORE SAFETY

Heating and cooling in one position, therefore no moving of hot shrink holders necessary.



### 4 – OPERATION IS LANGUAGE INDEPENDENT

This guarantees a safe and accurate operation, also when using protective gloves.



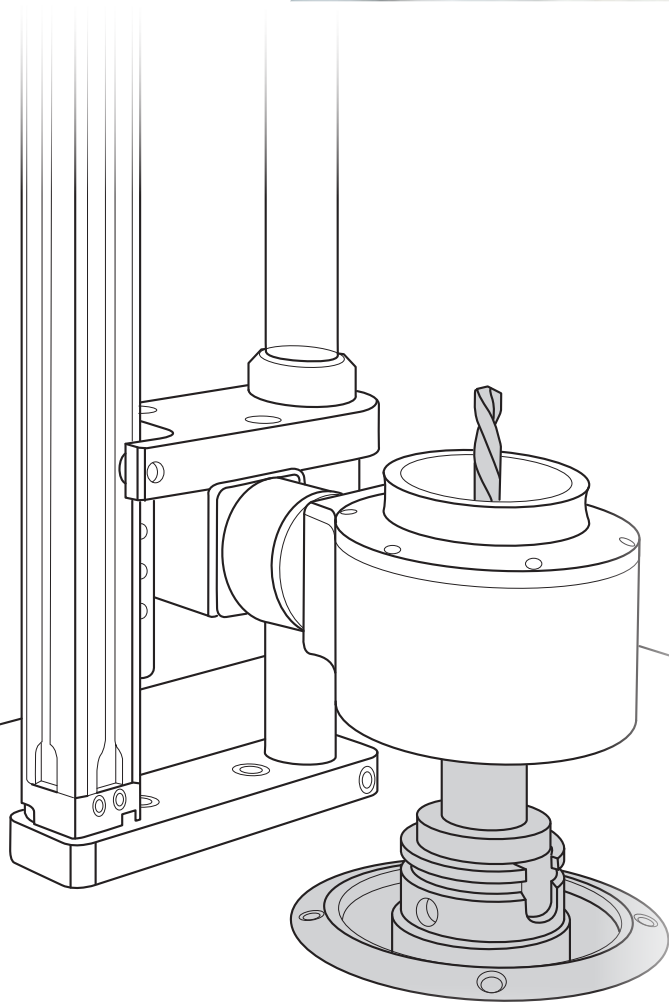


#### SHRINK CLAMPING TECHNOLOGY

## Tailored suit for the tool.

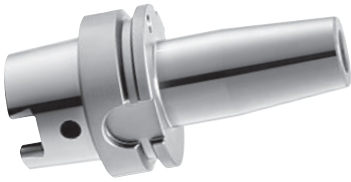
**Choosing the right clamping device offers enormous savings potential for the production, in order to meet the constantly rising quality requirements of the customer and the market and as well as the increasing production costs.**

The efficiency in terms of productivity, time savings and reject rate is optimal and amortizes the low initial investment in the shortest possible time. One of the main reasons: the patented cylindrical counterbore. It is the exclusive trademark of all ThermoGrip® shrink chucks and serves for the automatic centering of the tool. In addition, thanks to the patented counterbore, the ThermoGrip® shrink chuck uses around 15-20% less energy when heating the chucks. This is not only energy-efficient, it also protects the material.



#### OPERATIONAL SECURITY

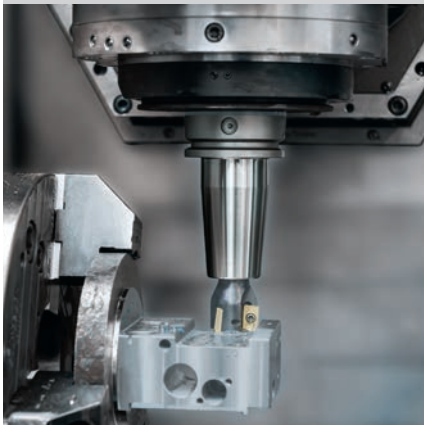
## SHRINK CHUCKS



Our ThermoGrip® shrink system stands for process secure tool change by perfect synergy between shrink unit and holder. It offers best surface quality, long tool life, higher feed rate and rotational speed – due to  $\mu$ -precise concentricity, high rigidity and extremely high retention forces.

### APPLICATION

- All industrial applications catered for.



### BENEFITS

- Highest process security
- Cutter insertion into the cold chuck thus offering a hands free shrink process
- Integrated counterbore for centring the tools
- All geometric designs available
- Industrial standard design

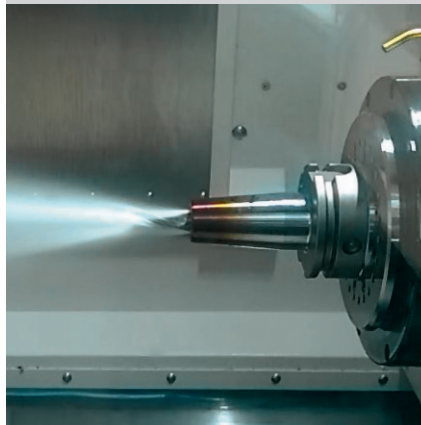
## CORONA JET



ThermoGrip® CoronaJet is an ideal coolant supply feature bringing best swarf evacuation to all cutting applications. Allows optimised cooling control to the cutting edge with minimum centrifugal coolant displacement away from the cutting edge compared to conventional coolant supply systems.

### APPLICATION

- General engineering application to high-tech aerospace and mold and die, especially suited to deep cavities.



### BENEFITS

- Targeted and consistent coolant supply
- Longer tool life due to the constant cutting temperatures
- Better product quality

## SHRINK ADAPTOR TER



With the TER, the forces exerted due to an unbalance of the tool are nearly eliminated when compared to conventional ER collets. The tool is precisely clamped in the centre of the clamping bore and therefore runs smoothly and builds a compact and stable unit with the TER collet when shrunk in.

### APPLICATION

- Standard ER Collet chucks
- Driven tool holders



### BENEFITS

- Very high transmittable torque values, best concentricity and highest stability
- Improved surface quality and excellent precision
- Maximum retention forces and rigidity
- Low-wear monoblock qualities

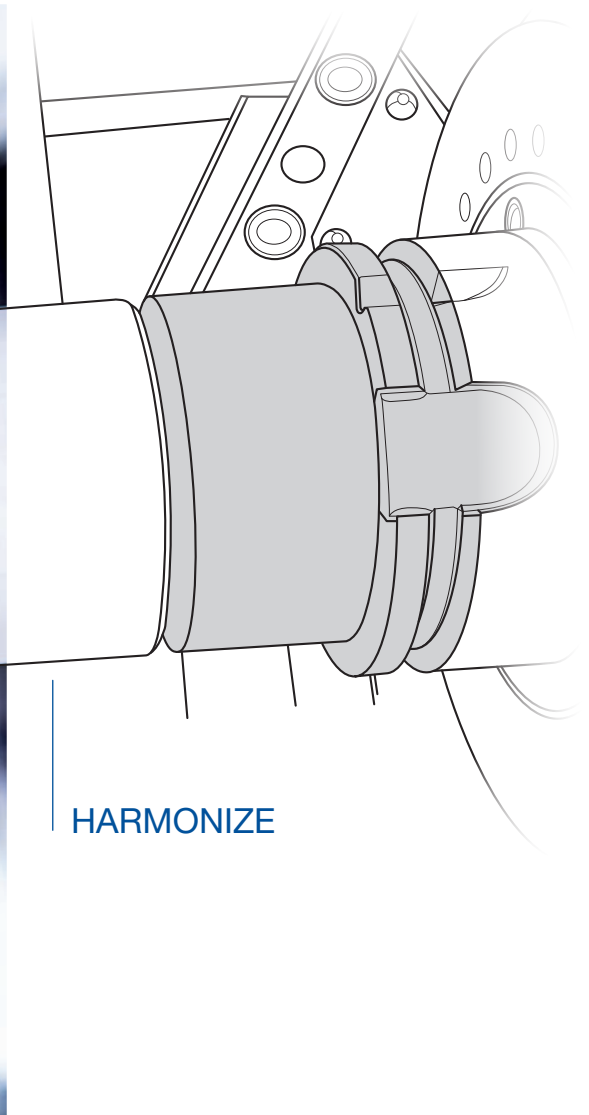
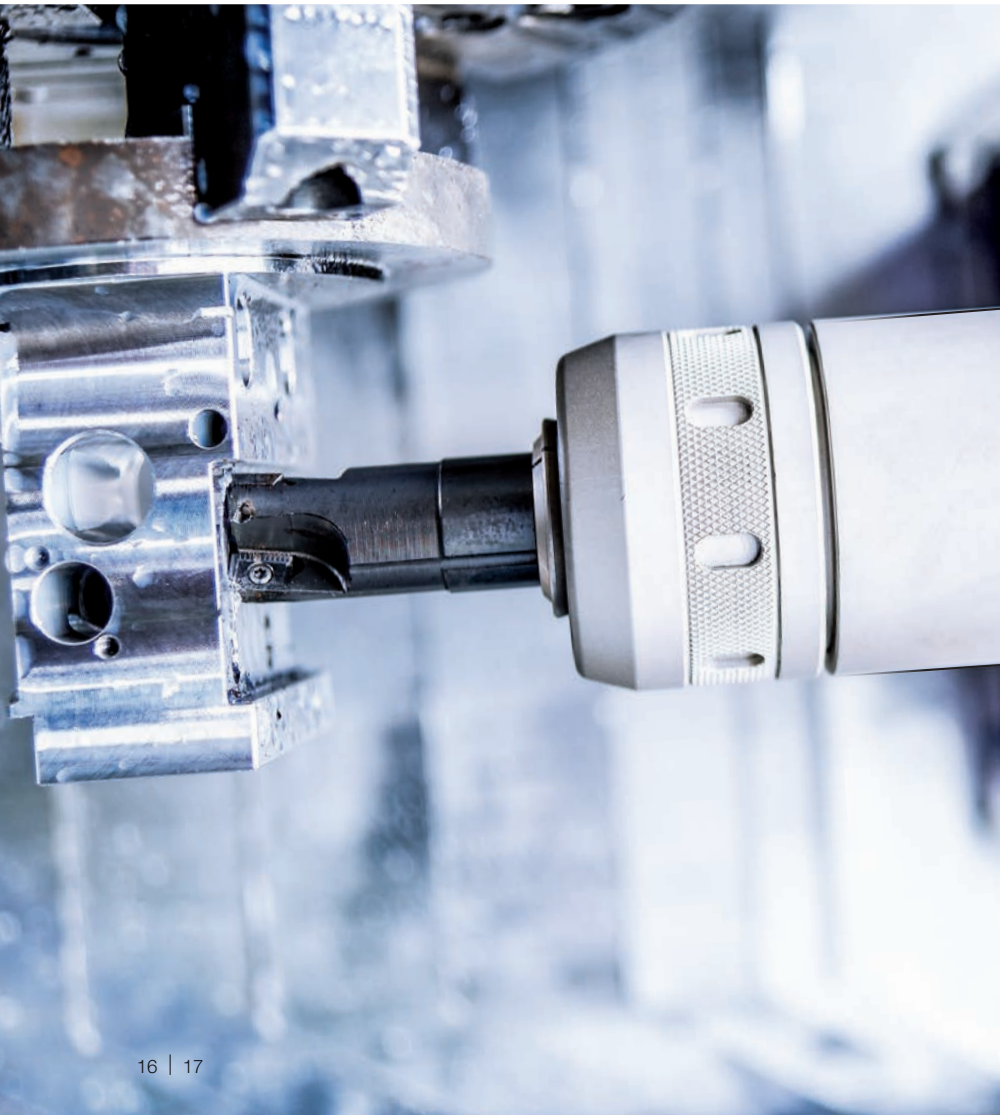


## TOOLHOLDERS

# For perfect connections

**A commonly acknowledged statement in the machining branch is that “the money is earned at the cutting edge”. However, while the productivity of the cutter considerably influences the total costs of the machining process, it makes up only about 4–6% of these costs.**

Bilz tool holders are the key factor in utilizing the performance capability of the cutters, optimizing their tool life. Our years of experience help us to develop products which you can trust.



HARMONIZE



## CNC



With our wide product range of CNC holders, we are looking back on many years of successful market presence. Whether Weldon, High-Power milling chucks, end mill holder, Whistle-Notch, shell mill holder, Super collet chucks, hydraulic chucks or boring bar blanks, we have them all / Bilz has them all.

### APPLICATION

- For every processing when it comes to cost reduction.



### BENEFITS

- High stock availability
- Wide product range
- Competitive pricing
- High standard percentage

## HIGH POWER MILLING CHUCK



- Double clamping with a wide clamping range
- Reduced friction due to construction with roller bearing
- High runout accuracy, 5 at 3D
- Protected with an anti-corrosion coating
- Special mechanism to prevent contamination through fine chips and cooling liquid

### APPLICATION

- Drilling and milling



### BENEFITS

- Excellent surface quality due to reduced vibrations
- Increased productivity and longer tool life because of a very high clamping force

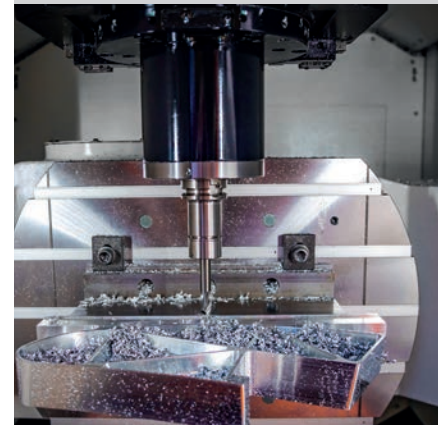
## SUPER COLLET CLAMPING CHUCK



Our new Super-collet chucks are perfect for high speed machining and for milling. Because of the optimized collet geometry we are able to design our collet chucks very slim and with a higher retention force.

### APPLICATION

- For high speed spindles and for general milling processes.



### BENEFITS

- Excellent runout accuracy, up to 5 $\mu$  at 4D
- Clamping force is twice as high as ER collet chucks
- Compact design
- Dynamically balanced G2.5 @25 000 U/min

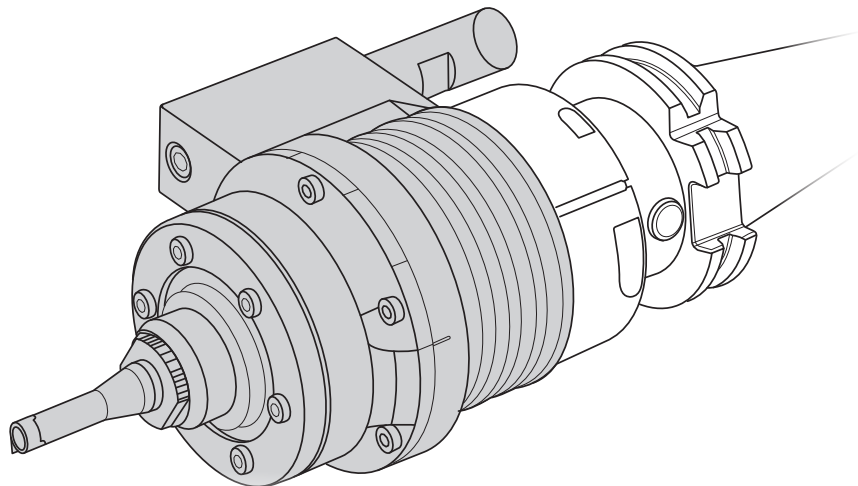


#### SPECIAL SOLUTIONS

## Able to meet every challenge.

**Bilz has an individual solution for almost every challenge, especially when axial or radial balance in rotationally symmetrical processes is required.**

The unique Bilz product portfolio ranges from engraving or stamping tools for the identification of the workpiece during production, Formbore system tools for different profiles or floating holders for precise boring to stud driving chucks in automatic assembly machines.



UNIQUE

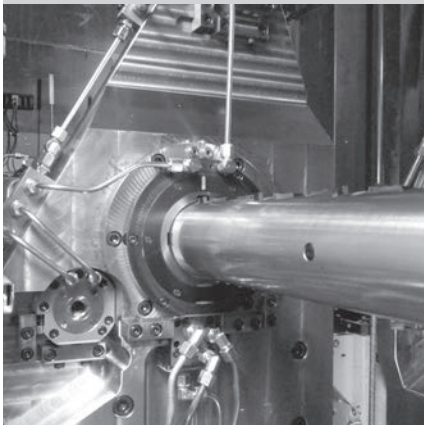
## FLOATING HOLDER



The highest precision in the market for non-aligned holes between transfer line spindle boring applications especially suited to problem free reaming applications.

### APPLICATION

- All boring processes
- Problem solving for transfer lines



### BENEFITS

- Floating access in 360° applications
- Maintenance free
- Adjustable centre positioning if required
- Especially suited for reaming applications
- High coolant pressure for optimised swarf evacuation

## FORMBORE



Formbore system tools reduce the processing time when compared to conventional machining processes. In addition they offer advantages such as blind holes without residual chips or avoiding permanent dimensional inaccuracy due to wear at the cutting edge. Typically replaces broaching applications turning an axial direction of forming to a radial direction of cutting.

### APPLICATION

- Replacement of reaming, broaching, eroding or milling
- Fast changes during processing



### BENEFITS

- Permanent dimensional accuracy due to improved control over the cutting edge compared to conventional broaching processes
- Nearly wear and maintenance-free working
- Reduction of the processing time
- Designed for different types of profiles and sizes

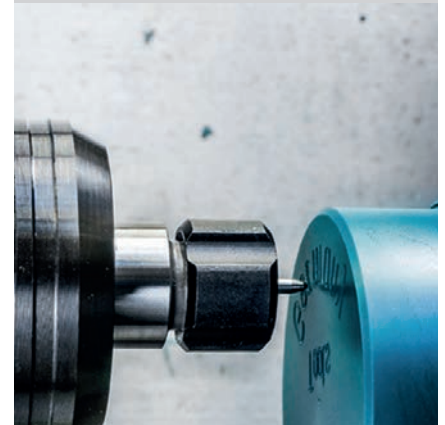
## MARKING

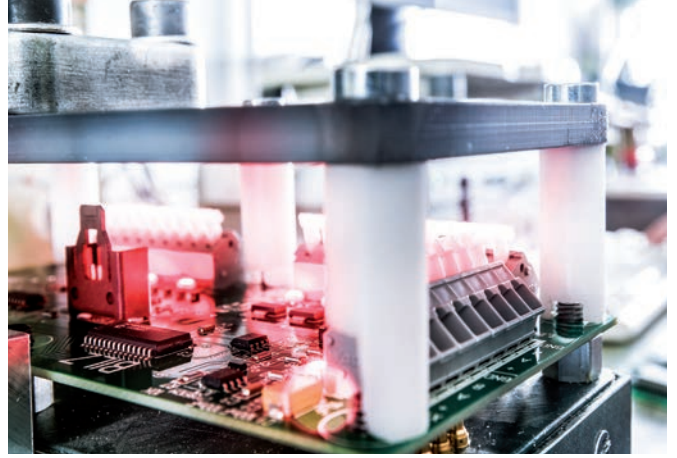
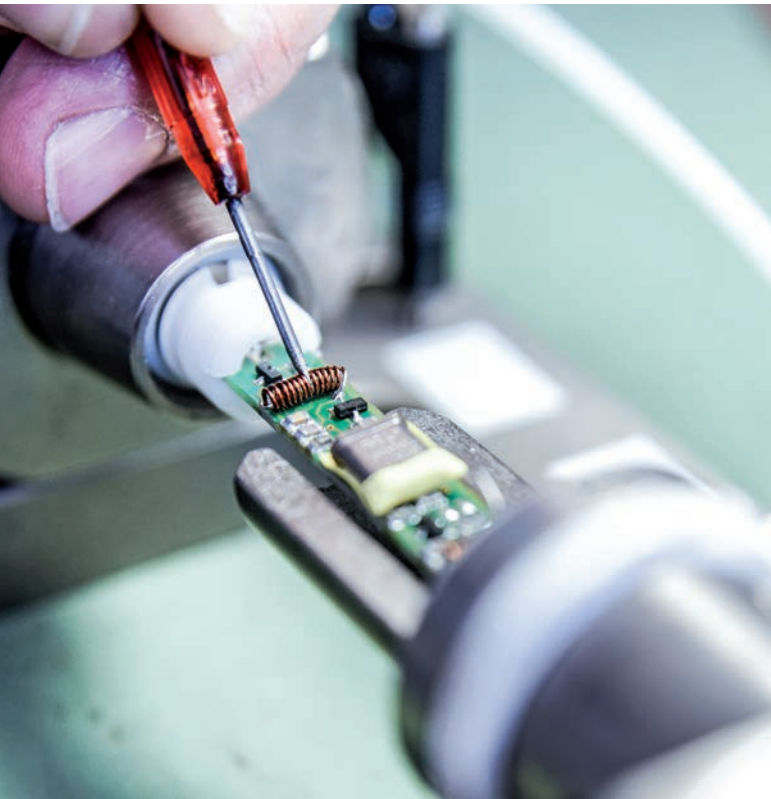


Critical parts such as ABS brake parts for cars must be clearly identified for reasons of product liability and traceability. As these parts are usually produced on a machining centre most of the time, the marking is done during the production process. The Bilz special tool ET1 is located in the machine spindle similar to conventional processing tools. The machine spindle provided with a ball pen refill has an axial travel of 10 mm and is pre-clamped with a pressure suited to the application.

### APPLICATION

- For marking of work pieces in the work process





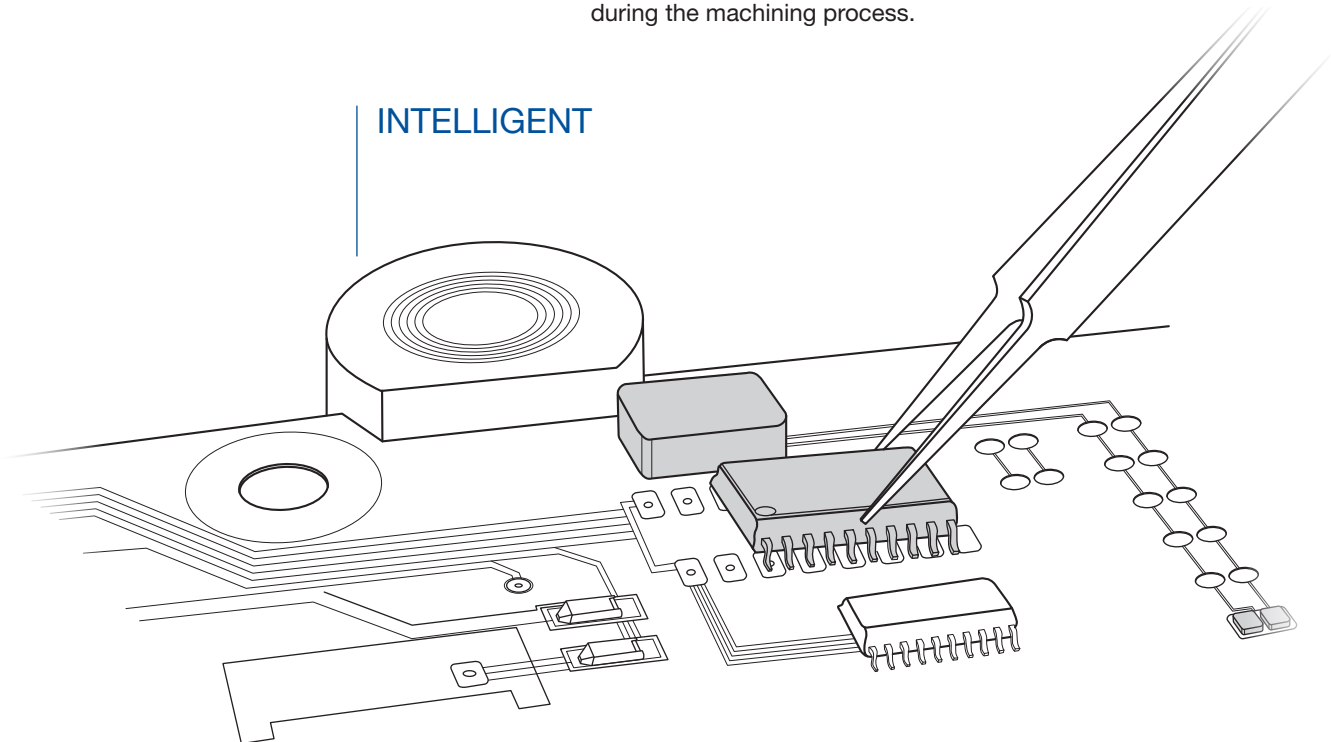
SMARTTEC

# INTELLIGENT NETWORKING.

**The unique combination of mechanical precision engineering and electronic laboratory work makes it possible for Bilz to deal intensively with subjects such as actuator and sensor technology in the machining process.**

Mechatronic components are already a tradition at Bilz and today, with developments such as Industry 4.0 and similar, their importance for analysis and control of the machining process is increasingly in our focus.

Intelligent tools from Bilz recognize errors or are able to document cutting data or values for different cutters directly during the machining process.



## SHRINK CHUCK IDENTIFICATION



Automatic process security, optimised handling and complete control of product data at your fingertips.

### APPLICATION

- Optimised logistical control in process engineering combined with one scan pre-setting of shrink data for shrink machines



### BENEFITS

- Automatic chuck identification
- Automatic shrink machine parameter setting
- Operator error eliminated
- Easy handling
- Maximum security

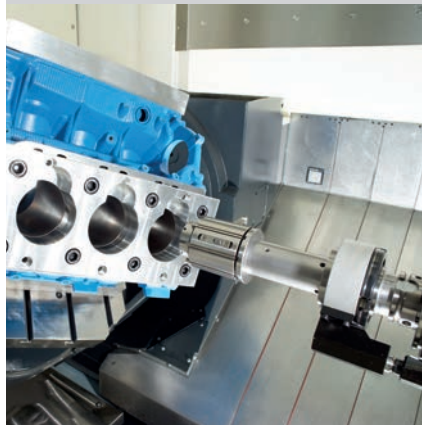
## MEASUREMENT SYSTEM BPMS



The Bilz measurement system makes a process control possible in honing tools with integrated air pressure measuring. The measured air is transmitted through the spindle interface via a self-sealing torque arm.

### APPLICATION

- Integrated air pressure measurement in honing tools
- Use as a gauge for single measuring
- Bilz measuring computer for in-process measurement



### BENEFITS

- Eliminates the time-consuming control of the measurement processes outside the machine
- Allows unmanned shifts
- Unaffected by environmental effects
- Ensures excellent accuracy and reproducibility of the measurement results

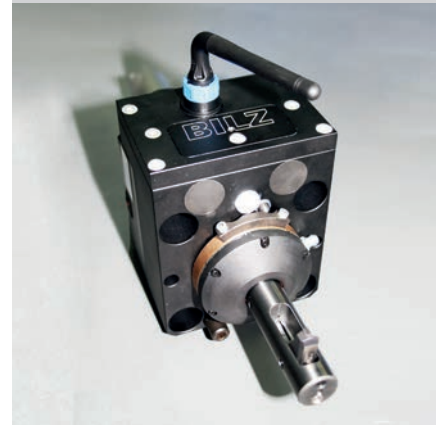
## MEASUREMENT SYSTEM BIMS



The intelligent modular measurement system for process control:

### APPLICATION

- Process control of the cutting process for turning, NC and special machines



### BENEFITS

- Measurement system from Bilz makes process control possible
- System can be adjusted to the requirements of the cutting process

# Worldwide Presence.

“Think global – act local” ...this was reality for Bilz even before the saying was created. For example close contacts to the USA from 1957 ensured that the company remained at the forefront of technological developments.

Today Bilz is a global player, internationally connected and present in all important markets and industries. Only this customer orientation and our solution finding ability lead to the legendary quality of our products – made by Bilz.



PRODUCTION AND SALES LOCATIONS OF THE LEITZ GROUP

- Bilz
- Boehlerit
- Leitz





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GmbH & Co. KG**

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sense of technical progress remain  
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