

Universal Presetting, Measuring,  
and Shrinking Machine

**ZOLLER**  
expect great measures®

redomatic



# Automated Heat Shrinking of Tools to 10 $\mu\text{m}$

Multi-spindle machines and automated series production depend on precisely adjusted tools. Without precisely set tools, it wouldn't be possible to change tools without needing further data transfer. Precisely set tools therefore speed set-up processes and reduce machine downtimes.

ZOLLER stands for highest precision when shrinking tools to length. We guarantee an accuracy of less than 10  $\mu\text{m}$  - independent of the operator. This minimum tolerance can only be achieved with devices whose technology is mature and whose components are perfectly matched to each other.

ZOLLER's solutions shrink quickly and reliably to the highest possible level. Due to the optimal interaction with the software »pilot«, the procedure is operator-independent and can also be automated - with constant accuracy.



Bild: SW

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# In the End, Only One Thing Counts – Outstanding Quality

With a »redomatic 400« or »redomatic 600« from ZOLLER you will produce more effectively with your multi-spindle machines and in your automated series production. With »redomatic« you can be sure that tool lengths are always set correctly. The shrink sequence developed by ZOLLER with the »masterPieCe« adjustment adapter is both quick and easy. The perfect interplay between mechanics, pneumatics, electronics and software as well as the continuous parameter monitoring and automatic measuring sequences guarantee you the highest process reliability.



»redomatic 400«



»redomatic 600«

## Technical Data: »redomatic«

	Maximum tool length Z	Measuring range X-axis	Maximum shrinkable shaft diameter	Maximum tool diameter D
»redomatic 400«	600 mm	210 / 310 mm	32 mm	420 / 620 mm
»redomatic 600«	600 / 800 / 1,000 mm	270 mm	32 / 50 mm	540 mm

# The Entry into Professional Heat Shrinking – »redomatic 400«

»redomatic 400« is the optimal system for shrinking and measuring standard tools. The complete system is the combination of a ZOLLER presetting and measuring machine, an induction coil, a carrier system for the shrink accessories, and the measuring device software »pilot«.

**Induction coil** – with manual diameter adjustment up to a shaft diameter of max. 32 mm for optimum heating performance. The heating process is continuously monitored.



**»asza«** – the automatic length stop system in the Z-axis for height adjustment of the tools.

**High precision spindle »pcs«** – for mounting attachment holders for the tool adaptation.



**Flue gas extraction** – reliably removes flue gases from the operator's working area.

**Industrial Panel PC with software »pilot«** – 24" TFT colour display for all machining tasks for presetting, measuring and shrinking.

**Cooling bodies in different sizes** – for direct cooling of the tools. The heat is quickly dissipated and the shrinking process accelerated.

**Carrier system** – to accommodate the shrink electronics, cooling bells, mounting rings, adjusting rods and the ZOLLER »masterPiece« adjustment adapter.



The configuration in the figure may include accessories and options.

## Perfection for Shrinking Processes – »redomatic 600«

»redomatic 600« is the high-end solution for automated measuring, adjustment and shrinking. Additional equipment features allow a large variability of the tool spectrum. Due to the CNC-controlled axes and the automatically adjustable coil, the process can be completely automated. This further increases process reliability.

**One-hand control handle »eQ« (ergonomic & quick)** – with one hand, the optics carrier can be quickly moved to the correct position. Further functions can be stored in the release button.

**»asza«** – the automatic length stop system in the Z-axis for shrinking to less than 10 µm accuracy.

**Shrink length monitoring** – for safe and controlled shrinking of tools with monitoring of the minimum shrink length.

**Universal spindle »ace«** – for universal mounting of tool holders.



**Flue gas extraction** – reliably removes flue gases from the operator's working area.



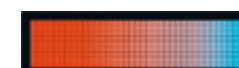
**Induction coil** – with automatic diameter adjustment for optimum heating performance. As an option, a swivelling double coil can also be used to process an even wider range of tools.

**Retractable spool axis** – for good accessibility when presetting and measuring tools with large diameters.

**Carrier system** – to accommodate the shrink electronics, cooling bodies, mounting rings, adjusting rods and the ZOLLER »masterPiece« adjustment adapter in various sizes.



**The shrink guide system »sls« – »pilot«** guides the operator safely and quickly through the shrinking process with the aid of precisely specified work steps and illuminated LEDs on the carrier system.



A safety note in »pilot« indicates the temperature curve during cooling.

**Industrial Panel PC with software »pilot«** – 24" TFT colour display for all machining tasks for presetting, measuring and shrinking.

**Energy manager software** – for the cooling unit: The cooling unit is only switched on automatically when required.



# Perfectionist with Many Talents

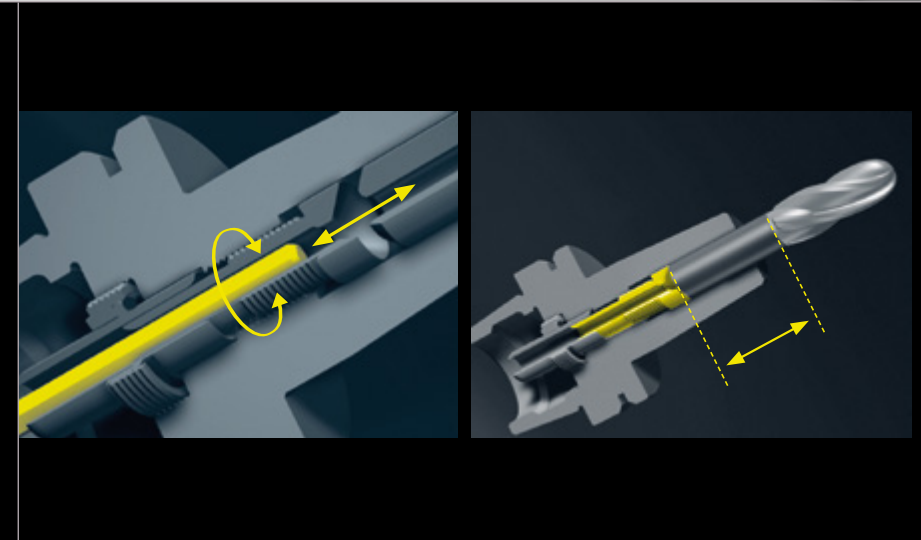
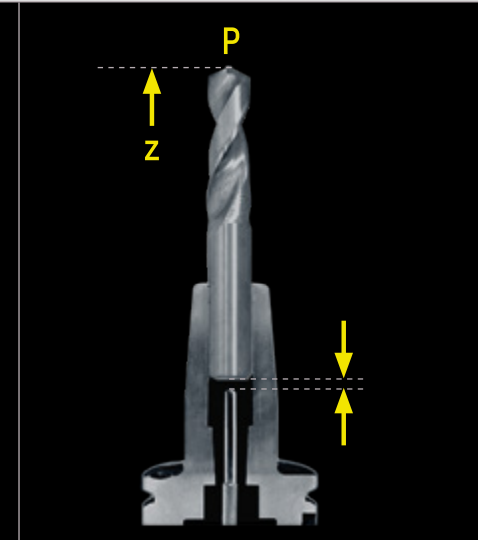
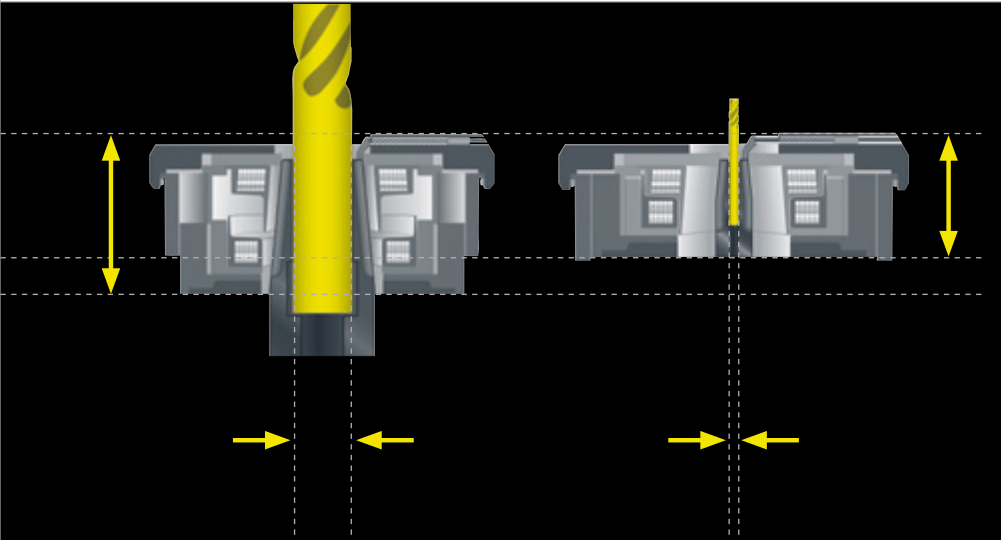
Even the standard equipment is exceptional: The manually or automatically adjustable induction coil heats the shrink chuck quickly and evenly – adapted to the respective tool diameter. The swing-in double coil, the »swomp« software program and the special solutions for shrinking tools with minimum quantity lubrication (MQL) further increase the process reliability and the application range of the »redomatic«.

**Induction Coil:**  
Always Evenly Heated

**Double Coil: For a Wider**  
Range of Shaft Diameters

**»swomp«:**  
Picks Up Speed

**MQL Technology:**  
Shrink-Fit



Whether automated or manually adjusted to the right size: The induction coil heats the tool holder quickly and according to the type. The continuous and comprehensive monitoring of the shrink parameters makes the process safe and protects both the shrink chuck and the tool.

A swivelling double coil is optionally available for the »redomatic 600«. This allows not only tools with a shank diameter of up to 32 mm but also those with a diameter of up to 50 mm to be shrunk reliably.

With »swomp« (shrinking without »masterPiece«) you save two steps, since you do not need the »masterPiece« setting adapter. This procedure is the ideal solution when speed counts.

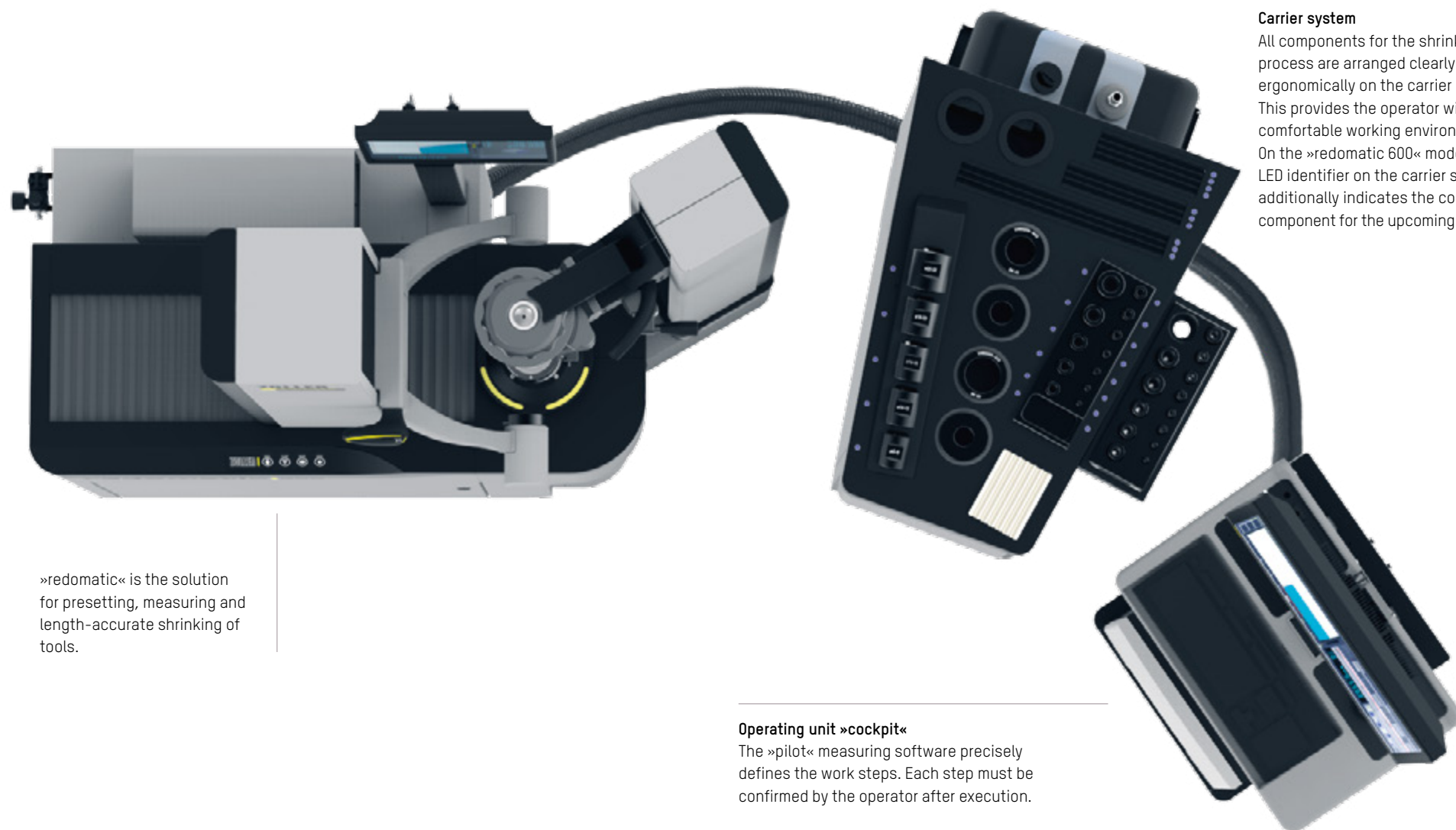
With tools for minimum quantity lubrication (MQL), the coolant transfer piece must be positively connected to the shank end of the tool. Only then will you have full functionality and process reliability when manufacturing with MQL tools. ZOLLER technology guarantees a safe and positive connection to the coolant supply – completely automatically.

# Safe and Fast Through the Shrinking Process

With ZOLLER shrink tools are quickly ready for use. The measuring device software »pilot«, the carrier system and the permanent monitoring of the work steps facilitate fast and reliable work.

The »redomatic« shrink wrapping process takes less than 60 seconds. This short process time is achieved even by inexperienced operators after only a short training period.

All components have a fixed place on the carrier system. The »pilot« measuring instrument software guides the operator through all work steps and controls many processes fully automatically. For each work step, the software names the component that is required and displays on the screen where the component is located on the carrier system.



**Carrier system**  
All components for the shrinking process are arranged clearly and ergonomically on the carrier system. This provides the operator with a comfortable working environment. On the »redomatic 600« model, an LED identifier on the carrier system additionally indicates the correct component for the upcoming work step.

»redomatic« is the solution for presetting, measuring and length-accurate shrinking of tools.

**Operating unit »cockpit«**  
The »pilot« measuring software precisely defines the work steps. Each step must be confirmed by the operator after execution.

»redomatic 600«

## Shrinkage process during shrinkage with »redomatic 400« and »redomatic 600«



00:00

00:08

00:18

00:24

00:32

00:48

00:56

Insert shrink chuck

Insert »masterPiece« adjustment adapter and tool

Automatic tool height adjustment and measurement

Remove »masterPiece«

Induction coil moves to position, heating process starts.

Insert tool

Cooling

Control measurement



## Perfect Interaction Between Software and Hardware

The »sls« shrink control system on the »redomatic 600« model is a prime example of the perfect interplay between software and hardware.

The measuring sequences are completely automated. If operator intervention is necessary, the »pilot« measuring instrument software displays the exact working instructions on the monitor. If components are required, they are displayed on the monitor as well as on the carrier system by illuminated LEDs.

It is so easy for an operator to achieve perfect results.

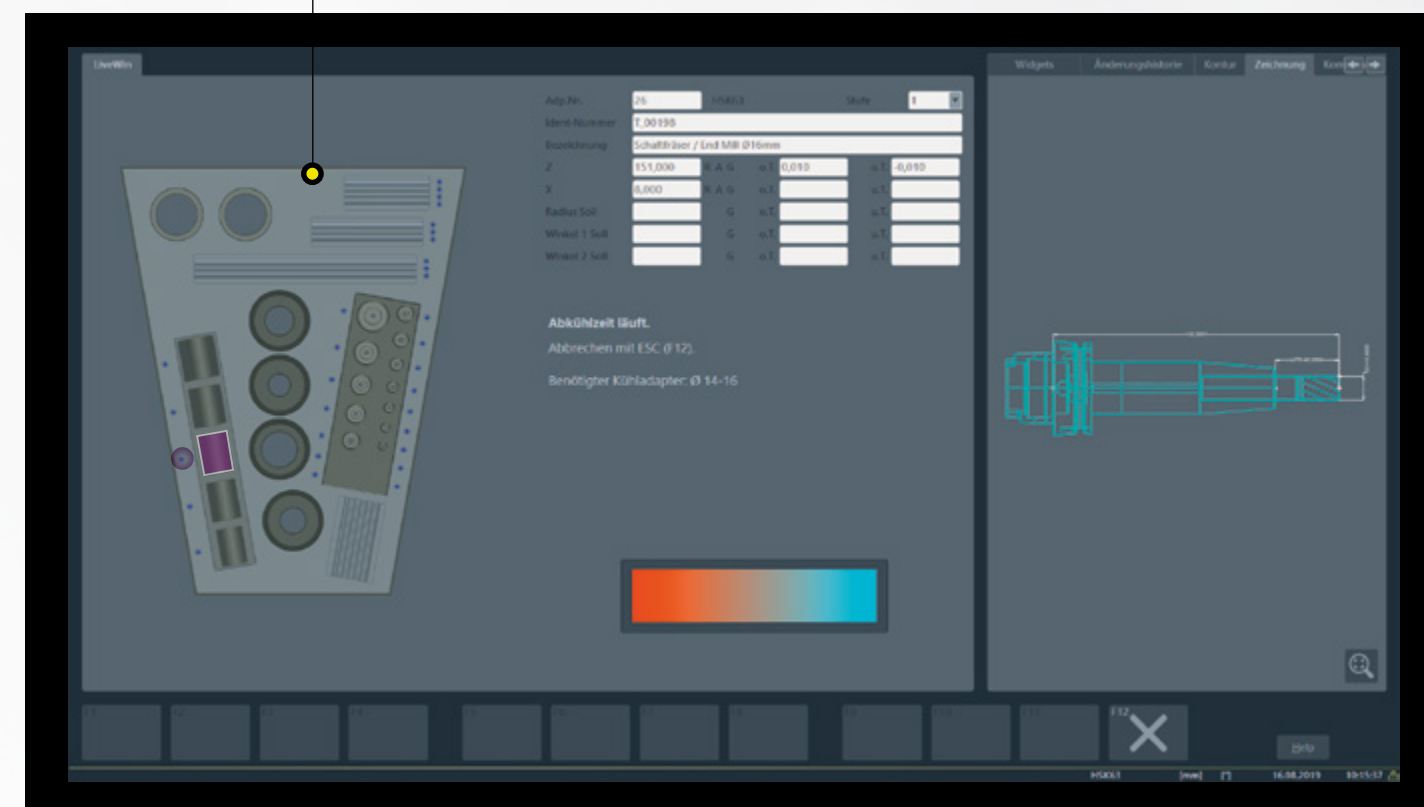


### Example

#### Work step: Select and insert suitable cooling body

The »pilot« software shows which cooling body is to be used.

An LED signal on the carrier system supports this information so that the operator can immediately see which component to use for the next step.





# Fully Automatic and 24/7 – the Robot-Controlled System »roboBox«

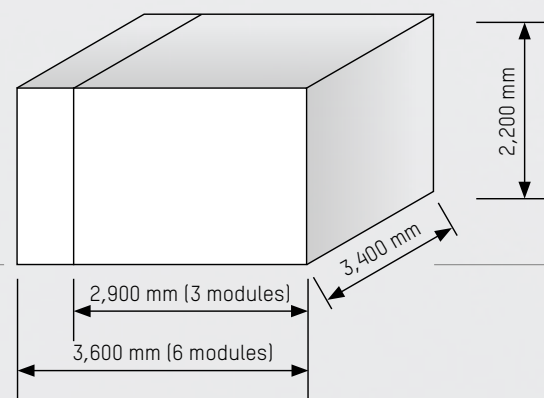
If you use many shrink tools every day, you will immediately benefit from »roboBox«. With up to six modules, you can individually expand »roboBox« into a robot-controlled, fully automatic system for cleaning, assembling, measuring and cooling tools. Your advantages: High throughput, high precision, high tool availability.

Already with the combination of the three modules measuring, shrinking and cooling, »roboBox« handles all shrinking processes independently. Manufacture heat shrunk and precisely measured tools to a length of 10 µm fully automatically in series. Quickly shrink tools that have reached their service life limit or are defective. ZOLLER »roboBox« can be easily integrated into any production process and quickly put into operation.

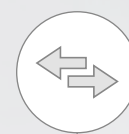


ZOLLER robot unit »roboBox«

Footprint of the »roboBox« with 6 modules and 3 modules



## »roboBox« – Interfaces



### Input and Output

No matter how you feed and handle removal transportation for your tools, the gate system can always be adapted to your logistics process: whether manually, via a tool cart, or a transport system.



### Identification

Tools can be identified via DataMatrix code or using another tool identification system via RFID Chip.



### Cleaning

Taper and cutting edge cleaning are both required for perfect measuring results. Automatic taper cleaning removes dirt, oil and grease from tool holders. Cutting edges are cleaned with highly pressurized air. This prevents lint or dirt from affecting measuring results.

## »roboBox« – Assembly Processes



### Collet Chuck

With the right adapters, clamping nuts can be automatically set to a defined torque with collet chucks. The operator can also switch between clamping adapters automatically. Adapters for nuts in cylindrical, hexagonal or clamping slot designs are available.



### Weldon and Hydraulic Holder

Screws are clamped automatically for horizontally arranged set screws, such as those used in straight shank tools with Weldon areas or hydraulic tool collet chucks.



### Heat Shrinking

The induction coil automatically lowers onto the tool holder and heats it. The shank tool is inserted in the correct position and then quickly cooled with the aid of a cooling bodies. This accelerates the cycle time.



### powRgrip® Pressing

The tool with suitable collet holder and REGO-FIX powRgrip® collet chuck is fed and automatically pressed.

## »roboBox« – Measurement Processes



### Tool Unbalance

The balancing module is insulated with the high-precision measuring unit and integrated into the »roboBox« vibration-neutral. After the measuring process, the balancing quality can be transferred to the CNC machine control as a measuring parameter.



### Tool Geometry

After the automatic assembly process, tool geometries such as diameter, length, cutting edge radius, cutting edge angle as well as radial and axial runout can be measured in automated measuring sequences. In addition to the automatic mode, manual measurements can also be carried out in the module, whereby the automatic mode is not interrupted within the »roboBox«.

## Manual Shrinking in a Few Seconds – »powerShrink«

Impressive working speed: Depending on the tool diameter, »powerShrink« shrinks tools in a maximum of 10 seconds. The cooling time is around 40 seconds and shrinking and cooling take place simultaneously thanks to the turntable. For maximum process reliability, »powerShrink« can transfer all tool data directly from any ZOLLER presetting and measuring machine.

**Induction coil** – optionally with exchangeable stop washers or as manually adjustable variant in 7 steps.



**Flue gas extraction\*** – reliably removes flue gases from the operator's working area.



**ZOLLER »toolSet«** – takes up the necessary utensils for correct manual length adjustment and provides order at the workplace.



**System trolley** – for a clear workplace.





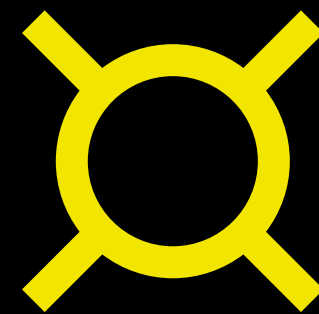
# ZOLLER Service

Your goal is maximum efficiency for your production. Our goal is to support you with well-designed system solutions. We also offer comprehensive service. Whether through personal consultation on site or by developing perfectly tailored solutions for individual requirements – if you choose ZOLLER, you will not only receive excellent products, but also unique production know-how on your side. And of course, competent contact partners to answer questions at any time – over the entire life cycle of the ZOLLER products. Make use of the ZOLLER know-how to optimize your production processes.



Alexander Zoller | Christoph Zoller

# ZOLLER Solutions



With us, you get more than excellent products. You get individual system solutions connected with your tools. We combine hardware, software and services for you. Everything from a single source. Everything for your success. We call it: ZOLLER Solutions.

# At Home in Germany – around the World for You

- Parent company
- Headquarters
- Branch office
- Representative

ZOLLER quality is “made in Germany” – and there for you, anywhere in the world.

Our company has its own locations and branches at 58 sites, guaranteeing we are close to customers and can provide first-class, personal customer advising in local markets.

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# ZOLLER solutions

More speed, higher quality, reliable processes –  
with ZOLLER you get more out of your production process.  
We combine hardware, software and service  
to create optimum system solutions for presetting,  
measuring, inspecting and managing tools.

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Presetting & Measuring

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Tool Management

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Inspection & Measuring

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Automation

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Everything from a single source.  
Everything for your success.  
Everything with ZOLLER Solutions.

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