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ZOLLER MAGAZINE



Start With a Solution. Enter a System.

One System for Maximized Value

There's always something new to see at ZOLLER, like our newly launched website. Read about our successes, innovations, and how your manufacturing operations can benefit from them.



Now available 24/7 at zoller.info.

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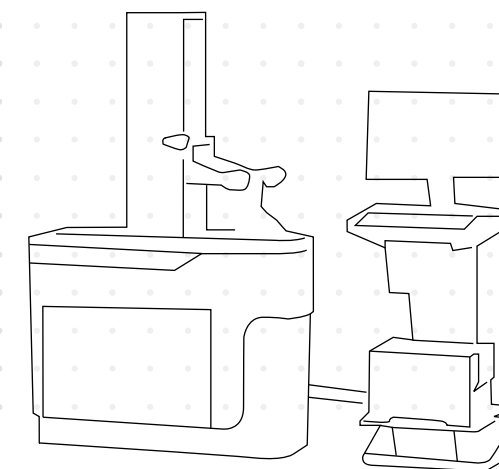
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ZOLLER Has Always Been Willing To Venture Into Uncharted Technological Territory



With innovation and a broad perspective on the system

The first tool presetting device for turning tools was developed by ZOLLER. The same goes for the first NC-controlled presetting and measuring device and the first tool inspection device. In 1978, ZOLLER introduced the first digital setup sheet. This evolved into the first tool management software available on the market.

Over the years, these products have evolved into ZOLLER Solutions – highly specialized solution application areas. Together, they form the world's only system that seamlessly integrates and supports tooling and machining processes from CAM-to-Part: The ZOLLER System.

When our father and grandfather, Alfred Zoller, opened his mechanical workshop over 80 years ago, this development was not planned. Yet, in retrospect, it was the logical next step. ZOLLER has always been close to the market and close to its customers. There was never any reluctance to engage with electronics, optics, computer science, automation, or artificial intelligence. This openness was crucial to building unique technological expertise. In this issue of ZOLLER Magazine, we want to shed light on what distinguishes systems in general and the ZOLLER system in particular.

Because we, as a company, are ourselves part of a sensitive system, we take sustainability very seriously. We received certifications for our sustainability efforts in 2025. Learn more about our projects, goals, and initiatives in this magazine.

We hope that you enjoy reading this edition of the magazine and look forward to your feedback.

Christoph Zoller, Eberhard Zoller, and Alexander Zoller
Management of E. ZOLLER GmbH & Co. KG



THE CAM-TO-PART SYSTEM – THE NEW ORDER IN MANUFACTURING

For a long time, individual solutions were entirely sufficient to meet production targets. However, the requirements have changed. Companies that want to have longevity and a successful future will have to change their approach from standalone solutions to a connected CAM-to-Part system. Many ZOLLER customers have already taken their first step toward a system and can continue to evolve their production processes into a smart factory.

“Cosmos is the Greek word for order – a conscious built counterpart to chaos.”

Carl Sagan

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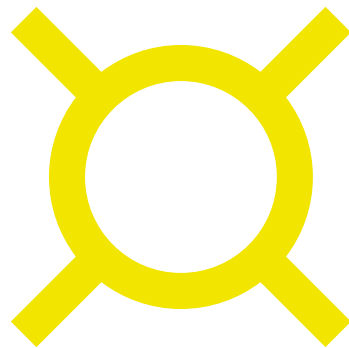
YEARS
OF EXPERIENCE
IN TOOLING
PROCESSES

PRODUCTS
FOR
CAM-TO-PART

MILLIONS OF LINES
OF CODE
IN »PILOT« AND
TMS TOOL MANAGEMENT
SOLUTIONS

SOLUTIONS
IN
ONE
SYSTEM

ZOLLER solutions



The astrophysicist Carl Sagan once said:
"Cosmos is the Greek word for order –
a deliberately constructed counterpart to chaos."
Anyone who wants to follow this path from
chaos to order does not need to reach for the stars.
When the right relationships emerge among many
individual parts, the confusion begins to disappear.
A system emerges.

More complex – yet more structured

However, as these interconnected relationships grow, so does the complexity. Paradoxically, this is precisely one of the greatest advantages of systems: because they are complex, they can achieve more than the sum of their parts. Structure gives them an edge but it is not all about order, at least not according to the cyberneticist Heinz von Foerster. His credo: "Order is not the goal of the system – it is its means."

The only system for end-to-end CAM-to-Part processes

Over the course of its more than 80-year history, ZOLLER has brought a wide-ranging product portfolio to the market. Customers can use this portfolio to build their own complete, customized CAM-to-Part infrastructure.

The foundation consists of approximately 25 tool presetting and measuring devices and inspection machines – expanded with various models. They embody ZOLLER's long-standing tradition: using measurement technology, optics, electronics, sensor technology, and image processing to accurately capture geometric data from tools.

The entire range of ZOLLER products, from software, to components for tool storage, solutions for automated data transfer, more than 2,000 tool holders to fully automated systems, is represented by the seven ZOLLER Solutions:

- Presetting & Measuring
- Tool Management
- Inspection & Measuring
- Automation
- Tool Heat Shrink Technology
- Tooling Solutions with »idChip«
- Tool Balancing Technology

The unique feature: With the exception of the two tool carts from the Tool Management portfolio, all ZOLLER products communicate with each other and exchange data. This gives rise to the relationships mentioned above. These relationships transform ZOLLER products into the ZOLLER system – the only system for tooling processes from CAM to part. As a result, ZOLLER customers can manufacture more efficiently and cost-effectively than would be possible with a hodgepodge of individual components.

A product solves a problem – a system unlocks potential

CNC machines, tool presetting and measuring devices, software or other technical equipment used in manufacturing solve a specific problem. Each solution has its place. However, those who rely solely on one-off solutions engage in technological island-hopping, and must accept a loss of efficiency: CAD/CAM-data does not match the tool management software, tool life data is not updated; for shrink-fit holders, documentation regarding heating and cooling processes is missing. Data transfer throughout the CAM-to-Part process is done manually and makes the process time-consuming, prone to errors, and a risk to process reliability. A system builds bridges between the islands. It organizes the data and links the stations into a continuous route without unnecessary stops. In a system, data flows automatically and flawlessly, tools are ready on time and process steps flow seamlessly into one another. The result: Faster workflows, greater process reliability, and greater future-proofing for manufacturing.

Systematic CAM-to-Part is becoming the new standard

So far, many users have been content with the technological hopping from one standalone solution to another. But the limitations of this approach are increasingly clear. A shortage of skilled workers, rising quality requirements and intense cost pressure are intensifying competition. Anyone who wastes time with manual data transfers, incomplete tool data, interface problems, or multiple solutions will lose ground in the race for orders. Even manufacturing operations in industrial companies cannot escape this competitive scenario.

Deficiencies in processes result in higher costs. The future is taking shape: In CAM-to-Part processes, networked systems will prevail. They grow with the requirements, integrate new technologies, and can be expanded modularly – from tool holders to fully automated production lines. Machine downtime decreases, tool changes are optimally prepared, tool life is maximized, and each tool is selected proactively for the production run.

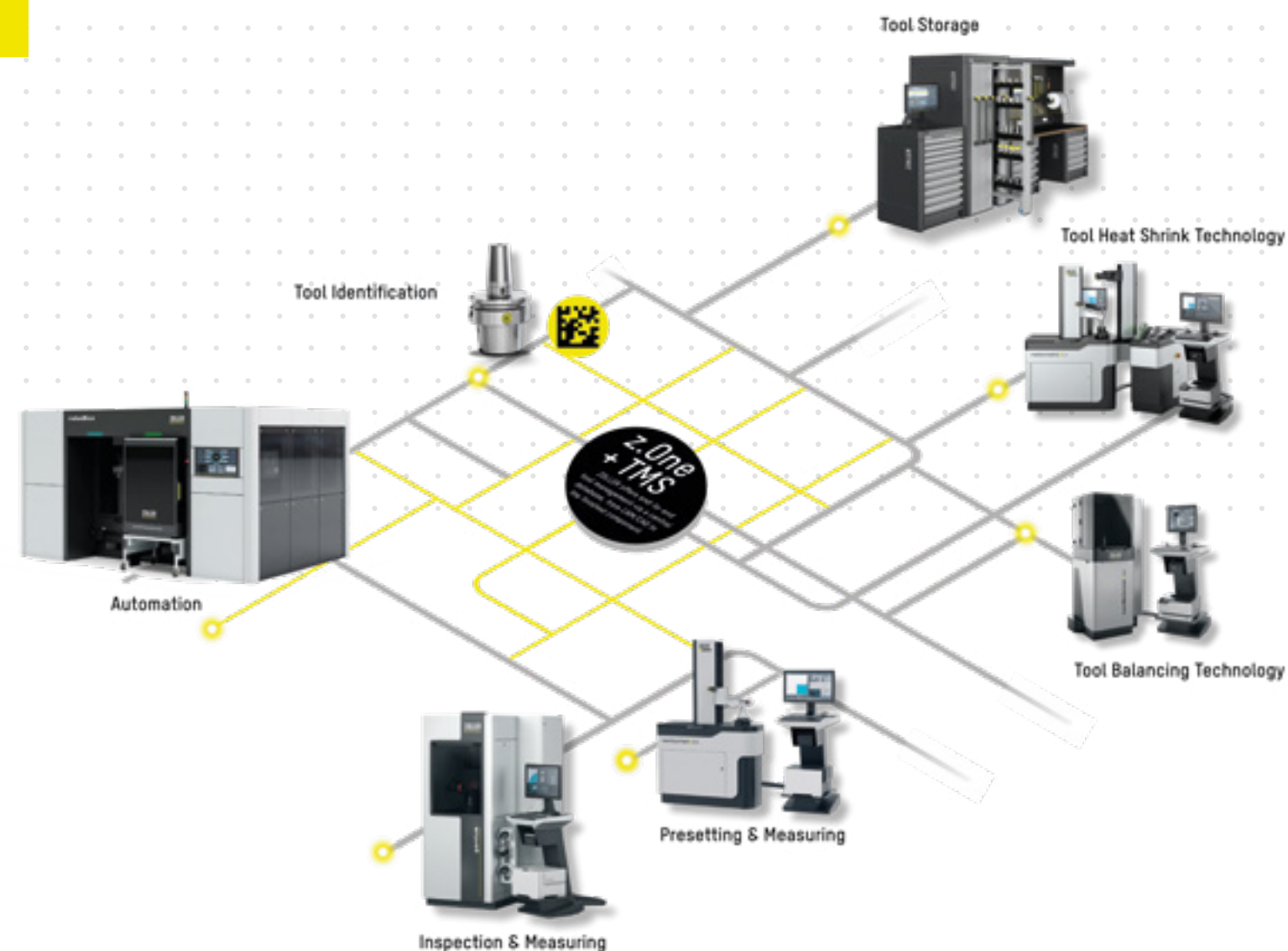
Benefits for everyone involved

Manufacturers, toolmakers, and grinding shops all benefit equally from this systematic approach. It applies to cutting tools and grinding wheels. It speeds up data transfers to the controls of vertical lathes, milling machines, and grinding machines. This systematic approach delivers results, both in quality control during incoming inspection and in final tool inspection. The benefits of these systems extend across all industries.

The ZOLLER System: An evolving story of growth

When Alfred Zoller opened his workshop in 1945 no one had yet thought of a system. One thing is clear: the modular system available today is the logical extension of the ZOLLER portfolio. Thanks to its technological versatility and innovative strength, ZOLLER has developed not only excellent individual solutions, but also the connecting elements. Tool management software, machine software, image processing, interfaces, and the decentralized z.One database expand the solutions into a modular system. The data keeps together what belongs together.

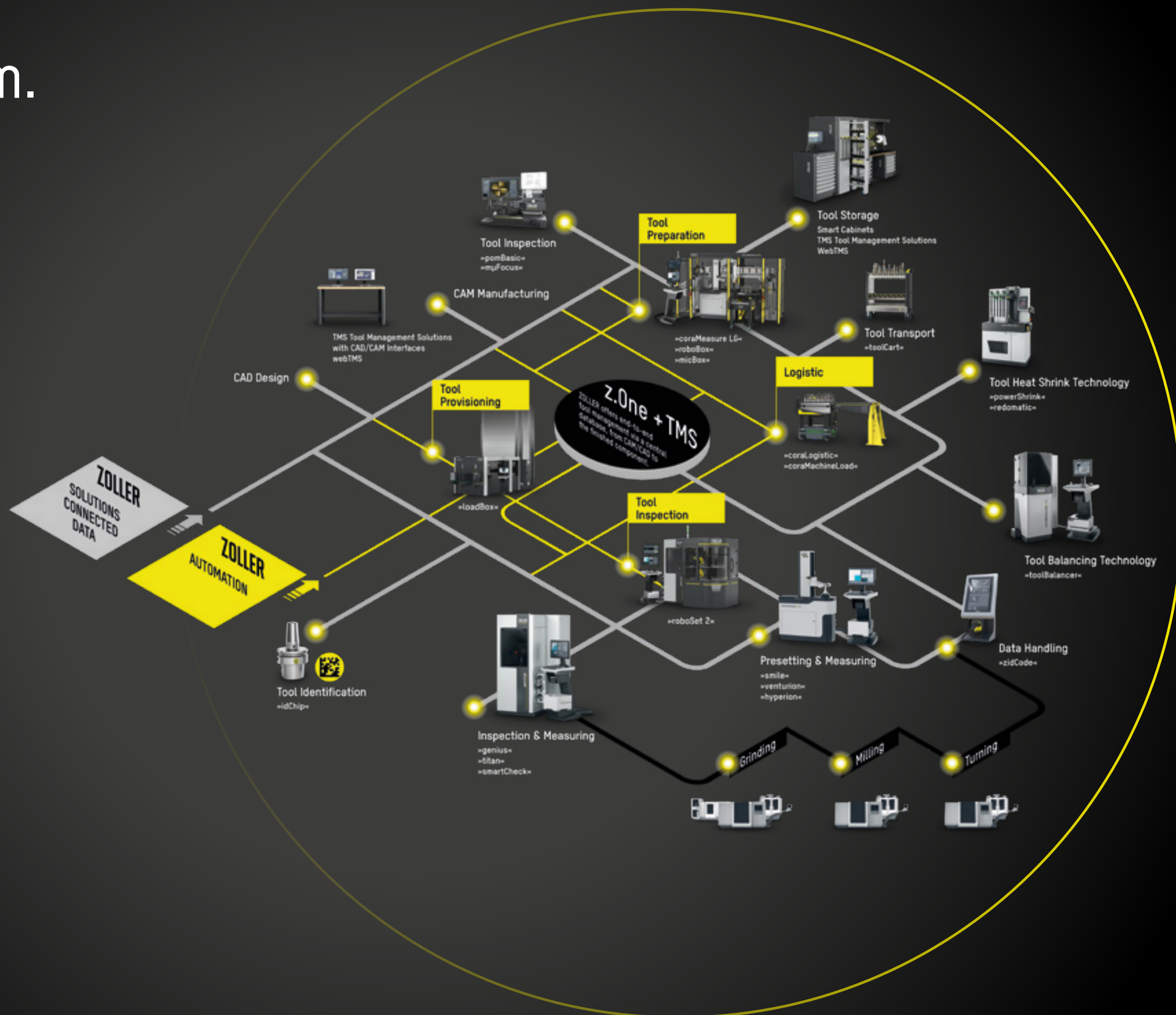
Start With a Solution.



Enter a System.

TMS Tool Management Solutions and the z.One database form the foundation for integrating ZOLLER products into the ZOLLER system. It is the only system for tooling processes from CAM-to-Part.

This enables ZOLLER customers to manufacture more efficiently and cost-effectively than what would be possible with a hodgepodge of individual components.



At ZOLLER, the transition from individual solutions to the system is a step-by-step process.

The modular structure gives each customer time to prepare for the next stage of development and implement it at the right time. The following steps are a typical roadmap to implementing the system.

Start: Manufacturing operations take the first step with a ZOLLER tool presetting and measuring machine, typically a »smile« or »venturion«. Tool manufacturers and grinding shops select a tool inspection machine from the »genius« series, a process-oriented device from the »pomBasic« series, or a universal measuring machine such as »smileCheck« or »smartCheck«. This investment is not only the starting point but also pays off quickly in terms of operational efficiency. The data from these devices, accurate to the micrometer, optimizes processes and ensures quality.

Digital Expansion: The TMS Tool Management Solutions software brings structure to tool data. This initial step functionally links the "Setup and Measurement" or "Inspection and Measurement" phase with the tool data of the CAM-to-Part process. Data exchange with CAD/CAM systems runs reliably via the ZOLLER interfaces. Those who additionally integrate »zidCode« or »zidCode 4.0« can transfer measurement data automatically and error-free between the ZOLLER devices, the tool management system, and the CNC machine controls. A single scan is all it takes; the ZOLLER system handles the rest.

Smart Cabinets: With ZOLLER tool cabinets and assembly stations, physical and digital tool management converge. Tool availability, total inventory, storage location, and withdrawals become transparent and visible in real time. Anyone who already has a well-organized tool inventory can usually manage it with the TMS Tool Management Solutions.

Customization: Manufacturing operations that balance tools or shrink and unshrink them can tailor their system to their specific needs. The ZOLLER solutions »toolBalancer«, »powerShrink«, and »redomatic« integrate seamlessly into process chains and data management.

Automation: Companies seeking maximum efficiency and reliable independence from the skilled labor market can expand their systems with ZOLLER Automation Solutions. These modular solutions make it easy to gradually automate all processes – from tool preparation and the retrieval and activation of tools from storage to the loading of the machine magazine. This represents the highest level of manufacturing: the Smart Factory.

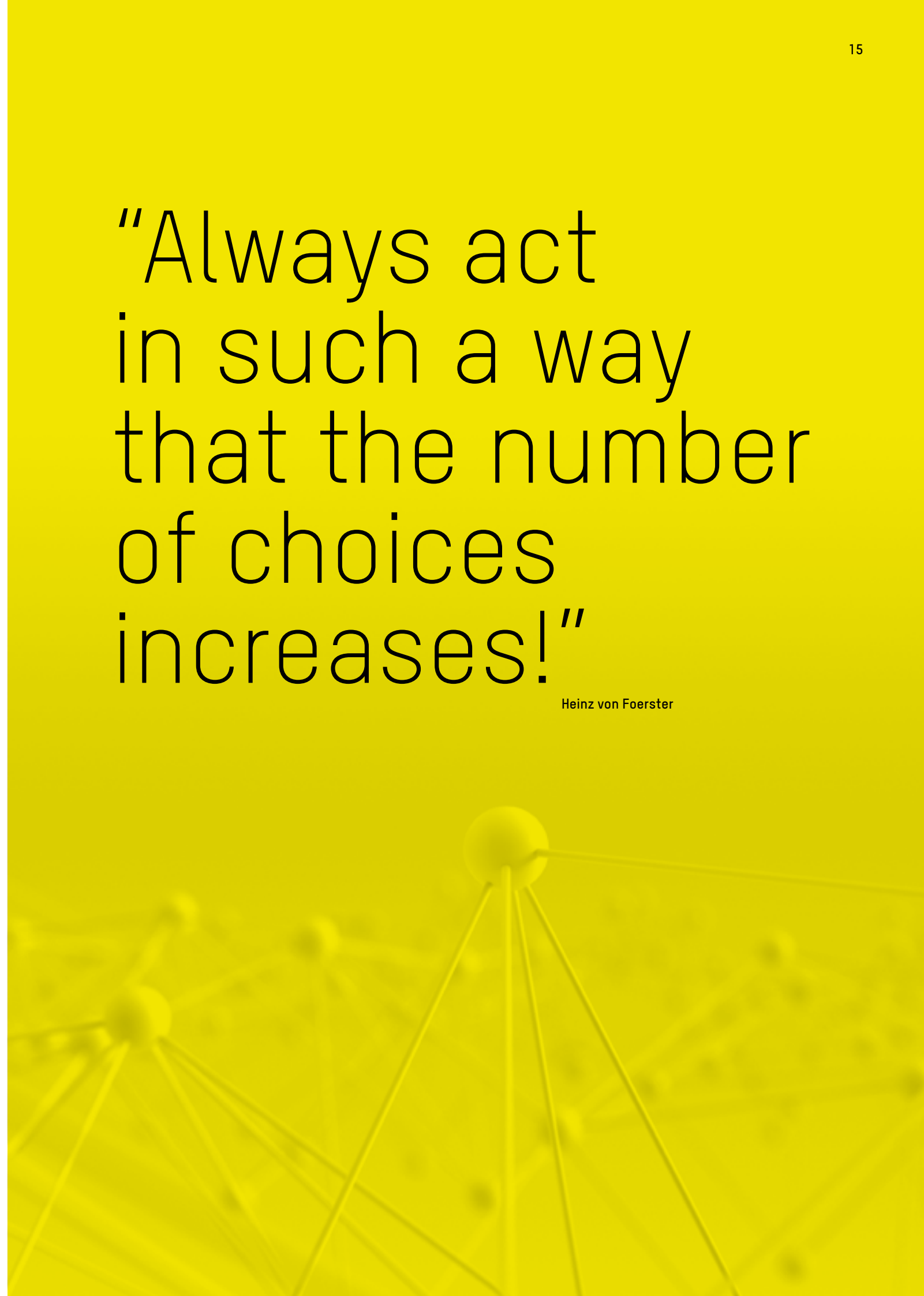
Always up to date

Because a system is never truly complete, ZOLLER is constantly expanding its range of applications through new solutions. The guiding principles: new market conditions, customer requirements, emerging market trends, and new technologies. ZOLLER has always been an innovation-driven company. Customers can trust that their systems will be expanded with world-class innovations such as »pomBasic Micro« and »coraMeasure LG«, or the new AI-powered solutions with »zKI« and »micBox«.

ZOLLER has a clear goal: to help its customers succeed. It goes without saying that the company takes a systems-based approach to achieve this: it offers by far the best options. Heinz von Foerster would have put it this way: "Always act in such a way that the number of choices increases!"

"Always act in such a way that the number of choices increases!"

Heinz von Foerster



Five Misconceptions About Digitalization

Digital Even Works for Small Shops



When it comes to tool preparation, ZOLLER is a leader.

When it comes to digitalization, ZOLLER is a pioneer.

The best conditions for your success.

Small businesses, in particular, are hesitant to digitize their manufacturing processes, thereby needlessly forfeiting significant efficiency advantages over their competitors.

These hesitations are often rooted in misconceptions. It is high time to dispel some of these misconceptions and, at the same time, present suitable solutions for small and medium-sized manufacturing operations.

Digitalization is all about efficiency. Digitalization is always a benefit when it makes processes simpler, faster, cheaper, or more secure. This principle applies to large, medium, and small manufacturing operations.

If a digital tool helps a company gain an efficiency advantage, the investment is worthwhile.

Small businesses often perceive the cost of digitalization as too high and the benefits as too low. The fact is, however: Virtually every manufacturing operation offers opportunities for digitalization.

A brief look at five common misconceptions and ZOLLER's solutions.

1st Error:

»Our tool data is stored in extensive Excel spreadsheets. We can't possibly enter all that data manually into a tool management system.«

ZOLLER Solution:

With ZOLLER, there is absolutely no need to manually enter Excel data. The import filter in the ZOLLER software handles the import quickly and easily. ZOLLER imported Excel data for 140 tools into the z.One tool database for a customer in no time at all.

The data transfer from Excel is almost complete on its own. With the data transfer, you've already taken the first step toward digital tool management.

After that, every machine operator uses this central database whenever they want to use a tool. He or she can access all information regarding tool type, tool holders, extensions, and target and actual data via the database. Setup sheets are also created using the tool database.



2nd Error:

»For us, as a small manufacturing operation, digital inventory management is pointless. We already know where our tools are.«

ZOLLER Solution:

Everyone knows how frustrating it can be to search for a tool or component. The next job is waiting, time is running out, and stress levels are rising. For one customer, ZOLLER has set up the storage location management system so that a tool's storage location is automatically indicated on the setup sheets. This ensures that tool preparation runs smoothly.

In inventory management, tool data is supplemented with location information. The software knows what is located where and makes this information available to every employee with a single click. This means less stress and greater process reliability in work planning. Even small manufacturing operations benefit from this.

By the way: ZOLLER also offers a fixture management system. This system makes it easy to see which fixture belongs to which component, which mounting is required for what purpose, and where everything is located. Measuring equipment, tools, and accessories can also be organized digitally with ZOLLER.

These features can be expanded to include fully digitized tool management in tool cabinets with software integration.

At ZOLLER, these storage systems are called Smart Cabinets. When combined with ZOLLER's TMS Tool Management Solutions software, it enables any manufacturing facility to create a digital representation of its tool inventory. This gives you full transparency regarding storage locations, tool turnover, and inventory levels.

Planning and switching to digital tool management is a breeze with the right storage location templates. And it doesn't matter which storage system you use in your production facility.

Every company should implement digital warehouse management. The effort involved is manageable. At the very least, when you are seeking certification, digitization becomes indispensable.



3rd Error:

»There’s no need to transfer tool data digitally. Our machine operators are so experienced – they’ve always entered all the data by hand.«

ZOLLER Solution:

Entering all tool data manually into the CNC machine every time is not time-efficient – not to mention the risk of a transposed digit creeping in. With »zidCode«, data transfer is fast and error-free. This ZOLLER solution automatically transfers relevant tool data to the control system of the CNC machine.

Digital solutions provide real relief, especially for routine tasks like entering numbers into machines. »zidCode«, the plug-and-play application for tool identification, handles tool data transfer to the CNC machine automatically and without errors.

With »zidCode«, each tool is assigned a unique tool ID. After the measurement process on the tool presetting and measuring device, a printer prints the data as a code onto a label. The machine operator then attaches this label to the tool.

To transfer the tool data to the CNC machine without errors, simply scan the code using the »zidCode« handheld scanner. If a network is available, »zidCode 4.0« comes into play. You scan the tool ID on the CNC machine – for example, using the ZOLLER »idChip« on the tool holder. This uniquely identifies the tool. The corresponding data is retrieved from the z.One database and transferred to the machine control system.

»zidCode« eliminates sources of error and makes the process safer. An effective tool for greater cost-efficiency in manufacturing.



4th Error:

»Tracking downtime? It’s not worth it. For us as a small business, it’s far too time-consuming to track, record, read, and analyze downtime. The effort is completely out of proportion to the benefits.«

ZOLLER Solution:

Tool life data is valuable for production and cost planning. With the »flash« software, you can immediately see how much tool life is left on your tools. This allows you to optimize tool changes and reduce costly machine downtime.

ZOLLER’s »flash« provides clarity on tool life. During the first measurement of a tool, the specified tool life on the ZOLLER tool presetting and measuring device is stored. This makes tool life an integral part of the tool record.

»flash« uses this data and monitors the changes in service life during the production run. The remaining tool life is displayed on a monitor in the toolroom using a traffic-light system. You can always see which tool needs to be replaced and when. This helps you reduce machine downtime.

Since »flash« tracks all remaining tool life, you can select the tools whose remaining life best matches the next production run when picking parts for an order.

In addition, »flash« helps you with cost calculations. If tools wear out more quickly on certain materials, »flash« provides you with the average tool life you can expect. This gives you a reliable basis on which to assess the cost-effectiveness of your calculations.



5th Error:

»There are ten of us, so no one can take care of the network. Besides, we don't know anything about it.«

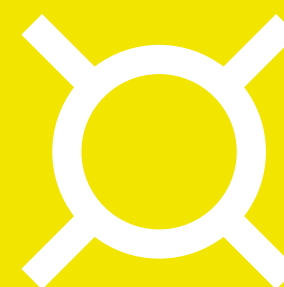
ZOLLER Solution:

Digitalization requires networking. Yet many companies view networks as a critical issue. Valid questions arise, such as: "What if the network goes down? Then everything comes to a standstill." ZOLLER offers effective, affordable, and secure solutions that are easy to manage and reliably fulfill their purpose.

You can set up a separate network for manufacturing. This provides a clear and secure setup because it is isolated from the internet. A MySQL server serves as the foundation, and the software required is free. Both setup and administration are manageable for small-scale manufacturing operations. The ZOLLER TMS Tool Management Solutions software runs on the MySQL server and handles the networking of the machines.

ZOLLER has extensive experience with these processes. When customers consult with ZOLLER before launching their digitization project, they receive the perfect solution right from the start.

Digitalization doesn't mean you have to do everything at once. ZOLLER takes a modular approach with packages and expansion stages. This allows even small businesses to develop and expand their digitalized manufacturing step by step, in line with their needs.



When we examine common misconceptions about **digitalization**, it becomes clear that digitalization has a positive impact even on small businesses – through significant **cost savings**, enhanced **security**, and increased **productivity**. Today, digitalization is no longer an option, but rather a necessity for staying competitive.

ZOLLER is a pioneer in the digitalization of processes related to cutting tools. We are happy to guide you into the digital future with solutions that are proven in practice and easily integrated. They work just as well in small businesses as they do in Industry 4.0 companies. Get more out of your manufacturing.

A team of approximately 160 developers at ZOLLER is driving forward research and innovation. ZOLLER customers should be able to rely on premium technology with outstanding quality, precision, and ergonomics in every product.

Research and Development

The Future Begins in the Mind



A soft hissing sound indicates that the ACE spindle of the »venturion« tool presetting and measuring device has securely clamped the tool. The measurement can begin. It will provide geometric data accurate to the micrometer, which is used to program the CNC control of a machine tool for precision machining. "The pneumatically powered tool clamping system is one of many special features of the »venturion« device," emphasizes Christian Pfau. He heads the Research and Development department at ZOLLER and knows every detail of ZOLLER's technologies. "You could also clamp the tool by hand. However, when it comes to maximum precision in measurement, power-assisted clamping always wins out over manual clamping," he says.

A commitment to excellence as a guiding principle

Maximum precision is the standard we set for our products at ZOLLER. Christian Pfau and his team are committed to making measurements even more accurate and ensuring that ZOLLER customers can capture more geometric parameters of a tool, and processes related to the tool can become even more efficient. The Research and Development department at ZOLLER operates at the highest level every single day. Setting new benchmarks in measurement. Being the first to bring a technology to market. Making the best the standard. Continuously raising the bar for ergonomics and safety.

Responsible research: safety and ergonomics

"Ergonomics has been a key focus at ZOLLER for nearly 40 years," explains Christian Pfau. In the late 1980s, Senior Partner Eberhard Zoller commissioned the redesign of the tool presetting and measuring devices. "He recognized that ergonomics is an advantage because an ergonomic device is easier to operate, significantly reduces

operating errors, and – this should not be underestimated either – is more enjoyable to use," says Christian Pfau, describing the background.

Ergonomics is a key feature throughout the ZOLLER portfolio, from the »toolCart« tool cart and the »pilot« software to the high-end »titan« measuring machine. For the »toolBalancer« balancing machine, the developers opted for a swing door instead of a drop-down hood. This simplifies opening and closing the measuring chamber and reduces strain on the machine operator by eliminating the need for overhead work. "Avoiding unnecessary fatigue is a central aspect of ergonomics. That's why we closely examine the operating procedures on our machines and design the controls to be ergonomically optimal," explains Christian Pfau.

Sometimes less is more

To achieve this, ZOLLER takes an unconventional approach and sometimes opts for smaller versions of key components than its competitors. Christian Pfau: "Large monitors look impressive and particularly powerful – but with touchscreen operation, they increase the distance the user has to reach because the working distance is greater. ZOLLER therefore relies on sizes that are tailored to the machine and the operator's position." Smaller tool presetting and measuring devices such as »smileCompact« typically have fewer functions and therefore fewer buttons in the software. Smaller monitors are then the better solution. The user always maintains the optimal working distance from the screen and can still directly reach the tool spindle and the controls on the machine from their working position.

For the past five years, ZOLLER has had every **new machine model** certified to TÜV and UL/CSA standards.

Safety certified by TÜV and UL/CSA

A great deal of development work also goes into safety and accident prevention. For the past five years, ZOLLER has had every new machine model certified according to TÜV and UL/CSA criteria. This sometimes leads to unexpected adjustments. To reliably cool the electronics, each machine had a fan. With the TÜV certification, a second fan had to be installed – a requirement set by the inspectors. “A fan almost never fails, yet such feedback is important to us. Redundancy and a safety net are simply part of device safety. That’s why we also conduct rigorous internal testing, as exemplified by the development of the »toolBalancer« swing door,” says Christian Pfau.

Safety inspection at the ZOLLER shooting range

During tool measurement, a »toolBalancer« accelerates the tool to high rotational speeds. This raises safety concerns because a tool or tool insert could potentially come loose and be hurled against the machine door. To determine whether the transparent door can withstand such an extreme scenario, the development team built an unusual test rig, internally dubbed the “shooting range”. “We created a defined, tapered weight and dropped it onto the inside of the door from various heights. From this, we were able to determine whether it can safely catch a tool in an emergency. The door passed the tests and later also received certification,” explains Christian Pfau. The secret behind its exceptional stability: the so-called sacrificial pane. The door of the »toolBalancer« features an additional, highly stable inner pane. Should it be struck by a tool, it absorbs the entire impact. The intricately shaped outer pane of the door remains undamaged. If the sacrificial pane breaks, only it needs to be replaced. For customers, this is the most cost-effective solution.

Another key focus of research and development at ZOLLER is software. More than 45 years ago, Eberhard Zoller laid the groundwork for **digital tool management.**

Software expertise from ZOLLER

Another key focus of research and development at ZOLLER is software. As early as about 45 years ago, Eberhard Zoller laid the groundwork for digital tool management. In 1981, the company introduced the first software for tool management. But ZOLLER is not only a major player in this area. The software for tool presetting, measuring, and inspection devices is also programmed in-house. The current version, »pilot 4.0«, is the most advanced device software on the market. With intuitive operation and a high degree of customization, it puts the user at the center. It is sophisticated, but with a simple user-friendly interface. The software of a tool presetting and measuring device or a universal measuring machine goes far beyond functions such as image processing, device control, or data management. In addition to the mechanical controls, it is the most important interface between the user and the equipment. The quality of the software is crucial for ergonomics and user-friendliness – and thus for success.

Programmed support

Since 2007, the »elephant« assistance software has been integrated into the »pilot« system. Thanks to »elephant«, anyone wishing to take measurements on a ZOLLER machine no longer needs any prior knowledge. The assistance software guides users reliably through tool selection, machine operation, and measurement procedures. “We are also investing in the software. We invest a lot of time and energy in ergonomics,” says Christian Pfau.

Help prompts are provided for every function, every tool presetting option, and every parameter, some of which are accompanied by images or graphics. Everything is carefully worded by the ZOLLER documentation team, reviewed for content, and translated into many languages. If a function changes, the help prompts are updated immediately. “No other manufacturer goes to this extent. But that is why our products are unique not only in terms of precision, but also in terms of operation and ergonomics. We consider this effort justified, because the benefit for the customer is enormous. This clearly sets us apart from competitors who simply refer users to the manual when they have questions,” explains Christian Pfau.

Development with a vision

ZOLLER places great emphasis on ensuring its products have a wide range of applications. Manufacturing operations should be able to meet as many requirements as possible with a ZOLLER solution. This frequently puts the development team in a dilemma. “When we develop a new machine or upgrade an existing one, we keep both the many potential customer requirements and our entire tooling portfolio in mind,” says Christian Pfau, describing the starting point. “This makes every development project a balancing act between feasibility and cost-effectiveness from the very start.” Balance in development means keeping costs in check, working with as few technical limitations as possible, and ultimately delighting the widest possible customer base. Instead of offering countless specialized products, ZOLLER follows

the principle of offering a portfolio of versatile, comprehensive solutions that fill individual gaps with specialized equipment. “We primarily focus on breadth, as impressively demonstrated by the »roboBox« automation solution,” says Christian Pfau. “Our goal was to automate various applications of tool assembly, including tool inserts, screwing, and heat shrinking while also being compatible with different clamping devices and being able to use as many tools as possible. That was challenging, but we succeeded.”

From idea to market innovation

Inventive spirit and a commitment to innovation have always been core strengths at ZOLLER. The world’s first tool presetting device for turning tools dates back to the company’s founder, Alfred Zoller. It was Eberhard Zoller who succeeded in bringing it to production readiness. The first NC-controlled tool presetting and measuring device, the first device to use camera-technology instead of a transmitted-light projector, the first digital setup sheet, and high-precision digital image processing: all innovations from ZOLLER. Research and development have been a constant, strategic cornerstone throughout ZOLLER’s corporate history.

A partnership with a future

ZOLLER customers choose not only precise technology, but also a partnership with a future. With every solution, they invest in quality, ergonomics, and future-proofing. And they rely on a company that has proven: The future begins in the mind.

Inventive spirit and a commitment to innovation have been core strengths at ZOLLER since the world’s first tool presetting device for turning tools was developed by the company’s founder, Alfred Zoller.

Sustainability

Back to Balance

When people act sustainably, the environment, society, and the economy remain in balance. If this is not achieved, the quality of life for future generations is put at risk. With its sustainability strategy, ZOLLER aims to strengthen this balance.



“Every ZOLLER product contributes to sustainability in manufacturing.”

Eberhard Zoller

Four wheels, a single handle, 450 kilograms of payload – the ZOLLER tool cart »toolCart 750« is a workhorse for manufacturing. “A simple, yet sustainable product,” says Eberhard Zoller, Senior Partner at ZOLLER. “The cart protects and reduces strain on staff, requires no electricity, and lasts almost forever.” Sustainability often only becomes apparent at second glance. If a product is environmentally friendly and resource-efficient, can be used for many years and is easy to repair, has high recycling potential, and reduces physical strain through ergonomics, it has many sustainable features.

Protect and preserve

A flashback to the 18th century, to the roots of sustainability. In 1713, Hans Carl von Carlowitz argued that no more wood should be cut from a forest within a year than would regrow during the same period. In doing so, he defined the essence of sustainability: using resources while at the same time preserving them. An early and wise idea. It was quickly overtaken by reality. In the second half of the 18th century, the first spinning machine, the “Spinning Jenny,” and the mechanical loom put many artisans in the textile industry out of work. Strategic decisions in the economy had immediate negative consequences for parts of society. The concept of sustainability had to be broadened.

A broader understanding of sustainability

Some 300 years later, sustainability has become an established topic, and its scope has been redefined. The urgency of the issue has been clearly articulated for decades. In 1972, the Club of Rome report demonstrated that growth has its limits. In 1987, the Brundtland Report made it unmistakably clear: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” What a shift in meaning. While Carlowitz’s understanding of sustainability still focused on the future of his forest, today it is about responsibility for the future of subsequent generations. Nevertheless, many stakeholders are struggling to make their operations as sustainable as possible. Yet the need for action has never been greater.

Sustainability is a system comprising economics, ecology, and society

Sustainability no longer refers to a specific resource, such as forests.

The environment and society form a complex system. This system must remain in balance because its pillars interact with one another. Our understanding of what keeps a pillar stable and what causes it to falter is now deep and extensive. The same applies to these interactions. If the economy falters, it drags society down with it. If the economy and society disregard the laws of the environment, it changes. In fact, it has changed drastically in recent times.

Everything has its limits – even the planet

In 2009, around 30 scientists introduced the concept of the Planetary Boundaries. The goal: to show humanity just how much – or how little – leeway there is with regard to the “Environment” pillar of sustainability. The concept provides a detailed look at what underpins the stability of this pillar. The scientists have defined nine sub-areas. These include biodiversity, material flows in nature, and the availability of freshwater. For each area, it is specified how much external pressure is permitted – that is, how much impact the economy and society are allowed to have. In 2023, experts considered the limits to have been exceeded in six areas. By October 2025, the number had risen to seven. The details are available in the report “Planetary Health Check 2025,” published by the Potsdam Institute for Climate Impact Research. The only option: quickly restore balance.

Sustainability requires stability

If even one of the three pillars comes under pressure, it weakens sustainability. The reverse is also true: products, processes, and decisions must be sustainable in order to permanently stabilize the triangle of economy, ecology, and society. “We are aware that we make extensive use of resources and raw materials,” says Eberhard Zoller. “This increases our responsibility to act prudently. That is why we support our customers in achieving their sustainability goals and drive our own forward.”

Greater sustainability for ZOLLER customers

Every ZOLLER product contributes to sustainability in manufacturing. Tools achieve longer service life, and tool data transfers run smoothly. The risk of defective parts and machine crashes decreases. The new AI solution »zKI« detects wear patterns and provides recommendations for each tool. »pomBasic« delivers fast and precise spot checks right in the manufacturing process. Each component reduces errors, helps optimize the use of energy, materials, and infrastructure, and supports the team.



Solar panel system on the roof of the ZOLLER global headquarters



The sustainability team at ZOLLER



Bee haven: the Helene Zoller garden

Securing the future:
Our Sustainability Goals

10 %

trainees/students per
year through 2030

1,25

customer satisfaction
through 2028

3

social projects
supported by 2030

100 %

of our packaging should
be recyclable by 2030

90 %

the A-suppliers should come
from the region by 2030

40 %

less CO₂e-
emissions by 2030

Solar power, hydropower, more regional suppliers

ZOLLER has developed a sustainability strategy with measurable goals and implemented measures. Example: Resource efficiency has increased. ZOLLER's entire headquarters uses 100 percent electricity from sustainable sources. Part of this is generated by the photovoltaic system on the roof of the headquarters. The remaining demand is covered by hydroelectric power. 40 percent of packaging is already recyclable. Goal for 2030: Every piece of packaging will meet this criterion. The "Paperless Office" project is also bearing fruit. By 2024, ZOLLER reduced its paper consumption by 25 percent relative to the number of employees.

By the end of the decade, regional partners are expected to contribute more to value creation than they have in the past. As of 2025, 70 percent of A-tier suppliers are based in the region – a figure set to rise to 90 percent by 2030. Today, 98 percent of mechanical parts come from Baden-Württemberg. "We will also make further progress in the areas of education and social affairs," says Hartmut Schneider, who is jointly responsible for sustainability at ZOLLER. By 2030, the proportion of apprentices and students is expected to have grown from five to ten percent.

Certified sustainability

ZOLLER's strategy follows the transparent standard "Sustainable Business Practices". It was developed by the Center for Sustainable Business (ZNU) at Witten/Herdecke University. In 2025, auditors assessed how far ZOLLER's efforts had progressed. The result: audit passed. ZOLLER's sustainability is now certified. "We're pleased about that. But the certificate is no reason to rest on our laurels. We will continue to take the issue of sustainability very seriously. Planet B is not an option," emphasizes Eberhard Zoller.

Sustainability –
Completed Projects

100 %

Use of multi-packaging

In 2024, our products were shipped in reusable containers or fabric packaging. Compared to PE bubble wrap, fabric bags are significantly more durable and easier to reuse.

25 %

Paperless office

Thanks to digital processes in ABAS and ELO, we reduce paper consumption every year. In 2024, consumption fell by 25% relative to the number of employees.

4

Locations in Germany

ZOLLER has four service locations in Germany. This results in short distances, reduced travel times and costs, lower emissions, and, ultimately, high customer satisfaction.

100 %

Green energy

Compared to Germany's national electricity mix in 2023, we reduced our electricity consumption in 2024. By using only renewable electricity, we avoided 404 metric tons of CO₂e-emissions.

Sustainability at ZOLLER takes many forms. Visit to learn about the 20 projects we have implemented or are currently carrying out: ranging from reforestation to electric forklifts, LED lighting and green roofs to measuring food portions.

Learn more about our goals through 2030 and the certification process.





Presetting & Measuring

THE 1,000,000 DOLLAR STORY

Tom Bassett is the owner of ProCam Services LLC in Michigan, USA.

When he expanded his production facility with a »smile 420« tool presetting and measuring machine, he had to convince his team. Today, their doubts have vanished. Bassett's investment has long since paid off.

If you ask several manufacturing plant owners, each of them wants to reduce setup times, speed up changeovers between jobs, and increase machine tool utilization. However, if you ask the same people about the technology they want to use to work more efficiently, the answers vary widely and reveal a broad range of approaches.

Nevertheless, due to the ongoing shortage of skilled workers, more small and medium-sized businesses are realizing the benefits of tool presetting machines. These machines measure various parameters of cutting tools, such as length, diameter, and offset, before the tools are used on the machine tool.

"It's not uncommon for people to underestimate the importance of presetting and measuring tools", explains Dietmar Moll of ZOLLER Inc., the U.S. subsidiary of ZOLLER. "But once a presetting machine is up and running and the team sees the results, the only complaint is often that they didn't buy it sooner."

Investment in a tool presetter pays off

That's exactly how it went at ProCam Services LLC, a family-run CNC manufacturing company in West Michigan, USA. Tom Bassett founded the company nearly 30 years ago. Today, his company, which employs 25 people, generates approximately \$4 million in annual revenue.

"IT'S NOT UNUSUAL, THAT WE WORK WITH WORKSHOP OWNERS, WHO MISTAKENLY BELIEVE THAT PRESETTING MACHINES AREN'T FOR THEM."

Dietmar Moll, Sales Manager at ZOLLER Inc.

At first, he, too, was skeptical about tool presetting machines. But after purchasing a ZOLLER »smile 420« over six years ago, his skepticism vanished.

The machine measures tools with micrometer-level accuracy. Measurements are completed in just a few minutes. Internal tests conducted by ZOLLER show that measuring with a presetting machine is at least 45% faster than using the CNC machine's internal measuring system.

By shifting tool measurement to the tool presetter, machine operators at ProCam were able to save valuable time. While a job is being machined on one machine, the tools are already being measured for the next production run. This reduced machine downtime and increased production capacity.

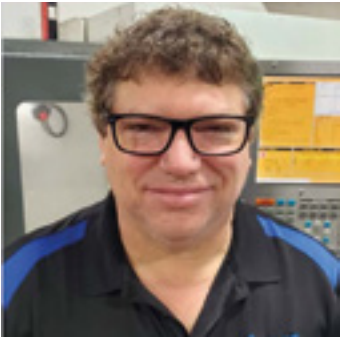
ProCam Services LLC
CNC Milling, Turning, and Routing

FOUNDED
1995

LOCATION
Zeeland/Jenison, Michigan, USA

Employees
25

Core competencies
CNC milling (3-5 axes), turning, routing



“SOMETIMES A CUSTOMER CALLS
IN THE MORNING BECAUSE HIS MACHINE
HAS BROKEN DOWN, AND BY
THE AFTERNOON, HE ALREADY
HAS THE REPLACEMENT PART.”

Tom Bassett, owner of ProCam

In 2019, the first year using the ZOLLER
presetter, revenue increased by \$300,000,
and by an additional \$700,000 the following
year. Bassett attributes most of the
increase to more efficient processes.

“I don’t think I’ve ever brought a device
into the workshop that has changed so
much,” he says. “There are things where
you find yourself thinking, “If only we’d bought
this sooner”, but none of them ever had as
big an impact as our »smile 420« from ZOLLER.”

**Works for a wide variety of manufacturing
processes**

Bassett used to think that presetting machines
weren’t suitable for CNC shops with a lot of
product variations, small batch sizes, and
frequent changes in orders.

From the very beginning, ProCam positioned
itself as a flexible operation with shorter deli-
very times than what the competition offers,
and with higher quality. The company often
processes 20 to 30 orders a day. Customers
come from industries such as aerospace,

automotive, agriculture, and several others.
The 3,500 m² facility houses eight milling
machines, including vertical, horizontal,
and three-, four-, and five-axis models. In
addition, there are three lathes, including
a six-axis machine, and two CNC milling
centers. This enables ProCam to handle a
wide variety of orders quickly and flexibly.
“Sometimes a customer calls in the morning
because his machine hasbroken down,
and by the afternoon he already has
the replacement part,” says Bassett.
“Most of the time, our order backlog is
about two weeks.”

Tool presetting increases efficiency

Every minute spent on setup or changeover
is a minute the CNC machine is idle. This
reduces productivity and revenue. According
to the “Top Shops 2019” study by Gardner
Intelligence, more profitable manufacturing
facilities use tool presetting machines more
frequently. 55% of businesses with revenue
exceeding \$180,000 per employee use
them, compared to only 29% among
the least profitable businesses.





Accuracy and consistency in the tool preset

Today, tool presetting with the »smile 420« is a standard procedure at ProCam whenever a job is being prepared. In addition to the enormous time savings, the machine ensures a level of repeatability that even experienced machinists cannot achieve.

“In the past, every employee had their own ‘Method’,” explains Bassett. ‘Day shift’ starts the job, night shift continues, and you’ll start seeing discrepancies, which can lead to quality issues. Since we started using the ZOLLER setting and measuring device, that hasn’t happened anymore.”

Error-free data transfer

The tool presetter can transmit the measurement data directly to the machine control, which eliminates typing errors. ProCam has even developed an in-house solution to transmit data to multiple machines.

“It’s so firmly integrated into our workflow, that I can no longer imagine life without it,” says Bassett.

Convincing employees to break old habits

At first, however, he had to convince his team to abandon their usual measurement methods. It sometimes took up to 45 minutes to adjust 15 tools by hand – with »smile 420«, it takes less than five minutes. One employee was tasked with comparing the two methods. “After a week, he stopped adjusting his tools himself,” Bassett explains.

Up to four times longer tool life

In addition to the »smile 420«, ProCam also uses ZOLLER tool holders and, since 2022, a tool heat shrink machine called the »powerShrink 600«. “We’re already seeing a significant increase in tool life, in some cases up to four times longer, and we’re able to achieve higher cutting speeds,” Bassett reports.

For Dietmar Moll, the starting point for optimizing manufacturing is clear: “The presetting and measuring machine is the most effective way to boost sales. But with us, you don’t just get a device; you also gain access to an entire ecosystem of manufacturing solutions, and a strong partner.”



MORE PROFITABLE MANUFACTURING COMPANIES ARE INCREASINGLY USING PRESETTING MACHINES. 55% OF COMPANIES WITH OVER \$180,000 IN REVENUE PER EMPLOYEE USE THEM – COMPARED TO JUST 29% AMONG THE LEAST PROFITABLE OPERATIONS.

Results of the “Top Shops 2019” study by Gardner Intelligence

Toolroom of the Year

The Proud Winners

At the 2024 International Manufacturing Technology Show in Chicago, ZOLLER Inc. announced the winners of its first „Toolroom of the Year“ competition.



Left: Alexander Zoller and the MetalQuest Unlimited team, which took second place.

Right: The winning team, from Atlas Fibre.



“THIS AWARD IS A TESTAMENT TO OUR TEAM’S COMMITMENT TO EXCELLENCE.”

Max Egan, Managing Director of Atlas Fibre

Atlas Fibre, a leading manufacturer of thermoset composites, took first place at the awards ceremony on September 12 at the ZOLLER booth at IMTS. The Northbrook, Illinois-based company specializes in high-mix/high-volume machining for the aerospace, semiconductor, electrification, and defense industries.

MetalQuest Unlimited, a precision machining company based in Hebron, Nebraska, took second place, while Primetals Technologies, a global manufacturer of steel mills with offices and a production facility in Sutton, Massachusetts, took third place. ProCam Services LLC, a full-service CNC shop in Zeeland, Michigan, received an honorable mention.

“With the ‘Toolroom of the Year’ competition, we want to recognize companies that share our vision of more efficient and connected manufacturing,” says Alexander Zoller,

“TOOLROOM OF THE YEAR”
RECOGNIZES COMPANIES
THAT USE ZOLLER’S
TECHNOLOGY TO OPTIMIZE
AND MANAGE PROCESSES
RELATED TO CUTTING TOOLS.

President of ZOLLER Inc. “Congratulations to all the winners – they embody what it means to shape the toolroom of the future.”

Launched in the summer of 2023, the “Toolroom of the Year” competition highlights companies that use ZOLLER technology to optimize processes related to machining tools. A seven-member jury of ZOLLER experts and industry leaders evaluated the entries based on criteria such as organization and setup, interfaces with CAD, CAM, or ERP systems, integration with warehouse systems, data exchange, and overall integration into the manufacturing process.

Tool availability, inventory transparency, and the scope of the tool database were also taken into account.



The CNC experts from ProCam Services received an honorable mention.

The jury included:

- **Jeremy St. Pierre**, Chief Operating Officer at Deco Manufacturing
- **Joseph Forsyth**, Director of Advanced Manufacturing at Intech
- **Rick Melvin**, President and Co-owner at Powell Tool Supply
- **Cedric Hasenfratz**, Sales and Partnership Manager, Tool Management Solutions at ZOLLER Inc.
- **Felix Kanbach**, National Service Manager at ZOLLER Inc.
- **Dietmar Moll**, Sales Manager at ZOLLER Inc.
- **Rita Conroy-Martin**, Director of Marketing and Customer Experience at ZOLLER Inc.

The jury praised Atlas Fibre for its exemplary use of ZOLLER technology for data-driven optimization of tool room management, resulting in shorter setup times, greater process reliability, reduced downtime, and increased profits. ZOLLER systems for presetting, tool management, data transfer, tool balancing, shrink-fit technology and tool integration are integrated throughout the company’s 11,000 m² facility.



„CONGRATULATIONS TO ALL THE WINNERS – THEY EMBODY WHAT IT MEANS TO SHAPE THE WORKSHOP OF THE FUTURE.”

Alexander Zoller,
President of ZOLLER Inc.

“We are deeply honored to be the first company to receive the ZOLLER ‘Toolroom of the Year’ award,” said Max Egan, CEO of Atlas Fibre. “This award is a testament to our team’s commitment to excellence and our dedication to optimizing every aspect of our toolroom processes. ZOLLER’s advanced solutions have played a decisive role in expanding our capabilities, and we look forward to continuing to push the boundaries of innovation and precision with their technology.”

As the winner, Atlas Fibre can look forward to a trip for two people to the ZOLLER headquarters and to the Smart Factory in Pleidelsheim. MetalQuest Unlimited wins a »keeper« tool cabinet, while Primetals Technologies receives one of the fully customizable »toolCart« tool trolleys. Anyone interested in learning more about the winners and their toolrooms can find short video profiles on the ZOLLER Inc. YouTube channel.

In 2026, the “Toolroom of the Year” competition will enter its next round. We’re already excited to see who comes out on top.

DATES FOR 2026

MEET THE EXPERTS

Trade shows and events are the perfect opportunity to meet the ZOLLER team and experience our latest products firsthand. From A for Automation to Z for “zKl,” we’ll tell you all about our solutions and the ZOLLER system.

➤ APRIL

APRIL 21-24 INTERTOOL

Wels, Austria

The focus is on digitalization and automation in industrial practice. We will be showcasing many efficient solutions at booth 20-0118.

➤ MAY

MAY 5-8 GRINDINGHUB

Stuttgart, Germany

Come see ZOLLER’s inspection and measurement technology in Hall 10 at Booth 10B60 at the international trade fair for grinding technology.

MAY 20-21 INSIDE “Q” TECH DAYS

Illingen, Germany

For the second time, we are presenting our solutions for perfect machining processes. Achieve greater success with ZOLLER’s networked precision.

➤ SEPTEMBER

SEPTEMBER 14-19 IMTS

Chicago, USA

We’ll showcase the full range and capabilities of the ZOLLER system. From entry-level machines to software and the automation of tooling processes, everything will be on display at the ZOLLER booth.

SEPTEMBER 15-19 AMB

Stuttgart, Germany

At AMB, the leading trade fair for metalworking in Stuttgart, we will be presenting the latest software solutions for process optimization, our current product portfolio for tool setting, measurement, and inspection, as well as ZOLLER TMS Tool Management Solutions.

➤ OCTOBER

OCTOBER 13 SIANE

Toulouse, France

Siane brings together manufacturers, suppliers, service providers, and technology partners. Through our solutions for automation, digitalization, and Industry 4.0, we showcase how manufacturing can evolve.

OCTOBER 13-16 BI-MU

Milan, Italy

We are at Italy’s leading trade fair for the manufacturing industry, metal cutting and metal forming, robotics, automation systems, and digital and additive manufacturing.

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E. Zoller GmbH & Co. KG
Adjustment and measuring instruments
Gottlieb-Daimler-Str. 19 | 74385 Pleidelsheim
Tel: +49 7144 8970-0
post@zoller.info | www.zoller.info

Editorial Team
E. Zoller GmbH & Co. KG | ABSICHT GmbH

Concept | Design | Production
ABSICHT GmbH
Christophstraße 38 | 70180 Stuttgart
Tel: +49 711 620098-21 | office@absicht.ag
www.absicht.ag

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NEWS, IMPRESSIONS, INTERVIEWS:
ARE AVAILABLE ON OUR
SOCIAL MEDIA CHANNELS.



One System for Maximized Value

At the end of February, the moment finally arrived:
ZOLLER’s completely new website went live.

Our previous website was no longer able to showcase the many innovations of recent years or the unique features of the ZOLLER system. That is why we worked with the team at the Stuttgart-based agency ABSICHT to completely redesign the layout, content, and structure of our website.

Visitors to zoller.info who follow the main navigation from left to right can explore the unique ZOLLER story. It begins with the ZOLLER system, highlights customer

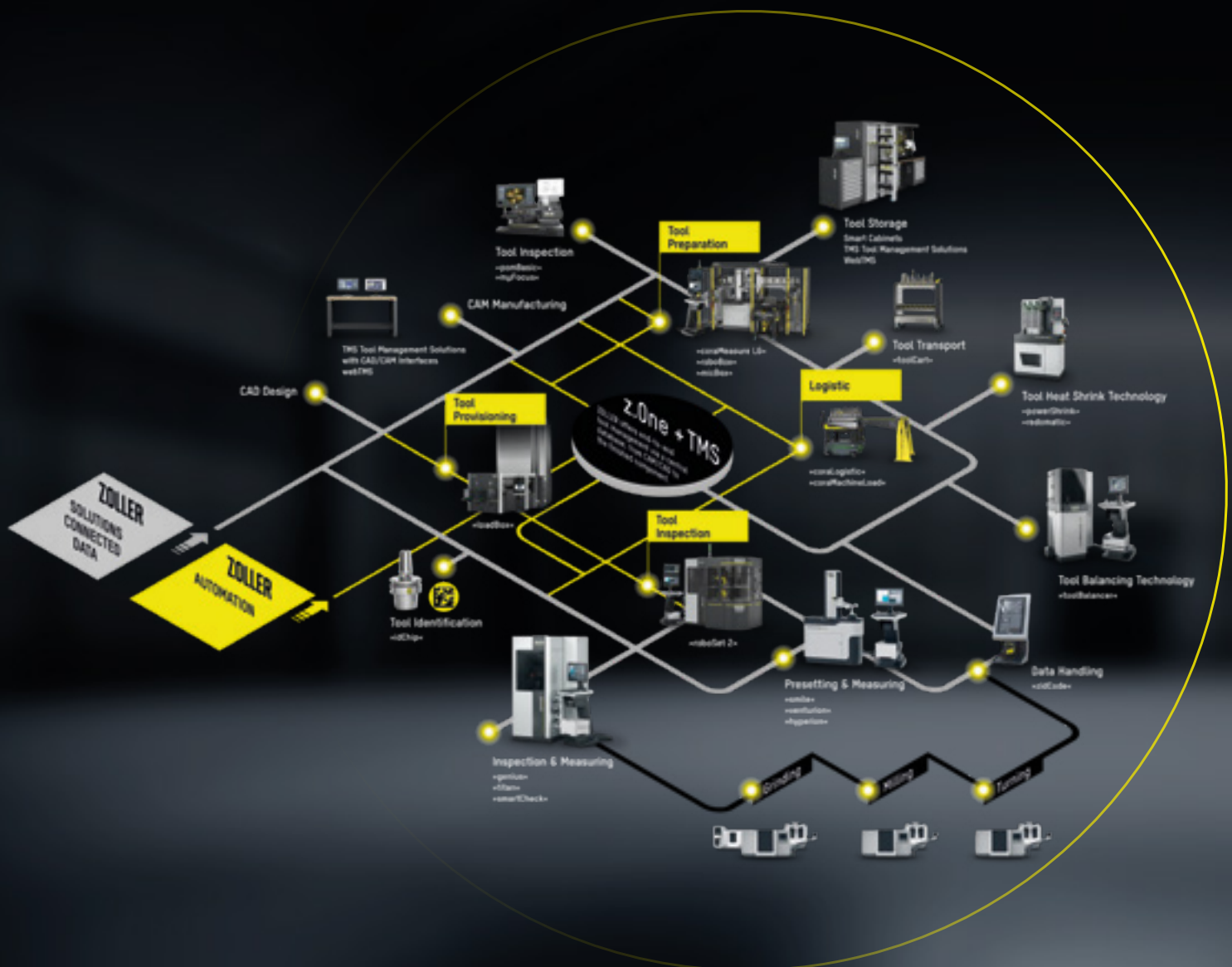
success stories, showcases the seven solution areas – the Solutions – and presents ZOLLER’s high-quality precision products.

In addition, the website deep dives into the Academy’s offerings, the event calendar, and other key ZOLLER topics, including career opportunities, sustainability projects, and our company history.

Rediscover ZOLLER: www.zoller.info



ZOLLER



Start With a Solution. Enter a System.