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Consistent Networking Must Reach the Shop Floor

Why It Makes Sense to Retrofit with Fagor CNC

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PRESS RELEASE
Zoller

Many terms but just one trend: Industry 4.0, smart factory, or the Industrial Internet of Things. The future of machining will be a more networked one due to increased challenges in the machining sector, not just in terms of high volumes, but because even a batch size of one has to be produced to a high standard of quality, and procedures must be documented. For processes to be safe, it has to be possible to call up ever greater volumes of tool data from any location for machine and software systems to work together effectively - and all of this under conditions of rising pressure on time, cost, and quality. *Parts must move*

through production more rapidly and with better quality than ever before. Despite all of that, commercial considerations cannot be neglected. This calls for more flexibility from machines, tools, and the technologies they employ. For this, networking and Industry 4.0 must arrive on the shop floor and ZOLLER contributes greatly towards this networking.

"The increasingly broad range of products calls for a wide variety of different tools and for frequent tool changes. This means that the greatest variable in the production process is located squarely between machine spindle and workpiece: The tool!" states Christoph Zoller, CEO. He then goes on to say, "This variable is one that can be managed by ZOLLER using networked systems. Tool data are processed in such a way that, at every step in production, the requisite tool data are being provided - from the planning stage, the creation of a CNC program, the inspection of tools, or the transfer of data from presetter to machine in a compatible format for the controllers involved. We have lots of experience with this, and have undertaken some forward-thinking and pioneering work. Indeed, the open-ness of ZOLLER products to all systems involved in the production process has been our hallmark characteristic right from day one."



Solutions That Grow With You

With forward-looking tool presetting and measuring machines, and TMS Tool Management Solutions for efficient tool management, ZOLLER offers economical solutions that grow to meet challenges of the future. ZOLLER tool presetting and measuring devices are not standalone solutions. Instead, they can be integrated into the existing production process. Existing data structures can be adopted, data already recorded can be reused, and missing data can be downloaded from the cloud. All conventional third party systems from ERP and CAM systems, cabinet and lift systems, and machines can be networked. ZOLLER solutions complement one another and can be interconnected via the central tool database, z.One. This means they can be expanded, modified, and stocked at any time. ZOLLER products meet increasingly stringent in-process reliability, documentation, and traceability requirements.

The Future: Communicating Tools

"What isn't possible today may well be so in the near future." These are the words of Bernd Schwennig, Sales Director and ZOLLER's nominated member on the smartTool Project (part of the high-tech strategy of the German Ministry of Education and Research, which aims to promote the development of intelligent tools).

Tools are a major expense. With a transparent view of tool inventory and inventory locations, reliable tool performance information is always available. Schwennig said, "The tool and tool holder are going to accommodate more sensor systems. Tools are going to be exchanging information with their environment by means of RFID and DMC technology. The aim is to achieve a higher level of networking in the tool circuit, and through this to optimize tool logistics and tool usage."



Fundamentals for Industry 4.0

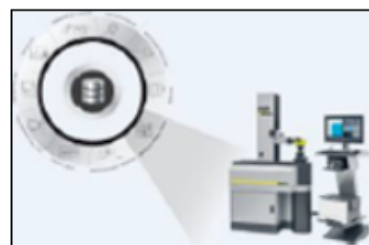
Tool track and trace - for transparent networking between systems and for tool service life - is based on unique tool identification for complete tools and individual components. The latest release of ZOLLER software allows tools and components to be represented individually and traced along the entire production process. This unique identification facilitates genuine transparency in the tool department, and lays the foundation for systematic tool management and for Industry 4.0 processes. Experience-based values are derived for future processes and enable targeted optimization.

Already a Reality: Process-reliable Data Transfer to the Machine

Consistent networking of the tool circuit is still a subject for research however, the transfer of data for individual steps within a process is already a reality, for example, direct communication between tool presetter and manufacturing machine. Worldwide, there is a large number of machine manufacturers who use various control systems so ZOLLER makes secure transfer of tool data possible via label, RFID chip, post processor, or higher-order production control systems - and transfer is independent of the manufacturer. One simple, but incredibly efficient method involves encryption of the actual data in a data matrix code scanned by a scanner device connected to the controller on the CNC machine. Data transfer by means of an RFID chip is just as simple. The RFID chip is written with its actual data by a tool identification unit on the tool presetting and measuring device and scanned automatically by the machine tool. For several years, it has been an option to use the post processor to prepare data for use by the controller, and to transmit it to the machine controller with the click of mouse.

User Interface Integrated Into the System Environment

One aspect that is occasionally lost, all the focus on networking and production transparency, is ease of operation. But this is unfortunate as this is an important criteria due to the shortage of skilled personnel, and due to variations in ages, nationalities, and education of employees. Even networked production facilities must be operated.



"Anyone can operate our devices and software solutions and you can depend on the outcome," states Christoph Zoller. "Ever since day one, we have been committed to having a clear operating structure, carefully thought out ergonomics, and to stripping away of all non-essential items. Everything runs as automatically as possible. Interfaces to other systems secure data consistency and this prevents operator error. The globally proven »elephant« technology is a good example of this approach. This is extended into our recently developed software solutions."

This makes the ZOLLER »pilot« user interface very easy to operate across the full spectrum of applications, even for relatively inexperienced employees, and for staff still receiving training. The operator works with the same user interface across the entire system landscape. For example, the CAM operator will experience the accustomed CAM tool structure on the ZOLLER software interface. With ZOLLER automation solutions all the operator has to do is press the start button.

Solutions With a Real Future

"All ZOLLER solutions can be integrated in the existing production environment. This capability, combined with superlative technology, quality, precision, and long service life really pays it way, and the word has spread," summed up Mr. Christoph Zoller as he enumerated the reasons for success.

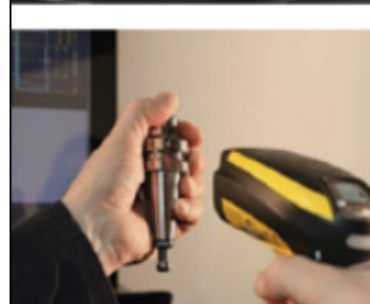
These principles of openness for all systems involved in the production process, the scope for expansion of solutions, and the simplicity of operation are principles that ZOLLER extends into all of its current developments - to find solutions to the challenging tasks of the future in close cooperation with its customers.

E. ZOLLER GmbH & Co. KG

With great enthusiasm for inspection and measuring technology, E. ZOLLER GmbH & Co. KG, based in Pleidelsheim near Stuttgart, has been developing innovative solutions for increased efficiency in manufacturing processes for over 70 years. More than 30,000 presetting and measuring machines with internationally unrivalled software solutions have been installed to date worldwide. ZOLLER is increasingly moving from being a manufacturer of presetting and measuring machines to a globally operating provider of technology and system solutions. An international network of subsidiaries and agents guarantees maximum service quality through personal customer care.

About ZOLLER Inc.

In 1945, Alfred Zoller founded the company ZOLLER in Germany, which is today in its third generation. On March 1, 1997, ZOLLER Inc. was founded in Ann Arbor, Michigan. ZOLLER Inc. is providing sales and service to its customers within the U.S., Canada and Mexico for tool presetting, tool measuring and inspection machines, tool management software, heat-shrink systems and balancing machines.



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