

## PRESS RELEASE

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### The best ways to combat skills shortages

#### Remote maintenance, automation and innovative training solutions can all help

*Frankfurt am Main, 18 July 2023 – How can you ensure that production remains up and running despite shortages of skilled workers? Fortunately, a whole range of possible solutions is available. Some of these will be featured at EMO Hannover 2023 from 18 to 23 September. Innovative training is a key tool for combatting the shortage of skilled workers. But novel technical solutions such as fully automated production machines or remote maintenance can also help. Visitors can discover the latest "Innovate Manufacturing" trends in industrial production and the most effective man-machine cooperation methods at the world's leading trade fair for production technology.*

The books are brim full, yet there are too few qualified staff to process the orders in time. This is a problem which all too many companies in the manufacturing industry are familiar with. When skilled employees are working at their limits, it is important for companies to be able to access external resources in order to keep production up and running. This is especially true when there are not enough experts who are able to repair broken machines. This is where remote maintenance can close the gap.

**Innovate Manufacturing.**

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### **Remote support raises efficiency levels**

Being able to respond quickly to potential disruptions remotely in cases of unforeseen machine breakdowns is now possible today. Grob-Werke GmbH & Co. KG, a manufacturer of production and automation systems based in Mindelheim in south-west Germany, has achieved positive results with remote maintenance. "Our staff can access the customer's components and controls remotely. And this, off course, saves time not only for the customer, but also for us. Our remote maintenance solutions certainly provide crucial support in cases where skilled workers are in short supply," says Christian Müller, Chief Sales Officer at Grob-Werke. This saves the specialist staff a significant amount of travel time. "The time they save by not having to travel to and from a job can be invested directly in the next job," says Müller. "This enables our staff to process significantly more jobs in a short period of time."

Trumpf SE + Co. KG, a machine tool manufacturer based in Ditzingen, Germany, also relies on remote maintenance to keep its customers' machines up and running, even in times of skills shortages. "Trumpf Remote Support allows Trumpf experts to connect to customers' machines and find the cause, or remotely guide them through fixing the problem themselves via Visual Assistance," explains Alexander Kunz, Head of the Smart Factory unit at Trumpf. This makes many service technician call-outs superfluous, he says. And this in turn allows the machine operators to resume their work more quickly.

### **Automation can compensate for skills shortages**

Companies can also counter the shortage of skilled workers by making greater use of automation. Digital networking and automation are key ways in which companies can compensate at least in part for skills shortages. "Non-productive time, which includes activities such as searching for dockets or fetching trolleys, accounts for around 80 percent of the throughput time of an order. Digitalization, on the other hand, helps companies to save time and use their employees' manpower for value-adding activities," explains Trumpf manager Kunz.

Automation helps to counteract the shortage of skilled workers because it simplifies many activities and saves time. In many cases, even minor automation solutions can yield enormous increases in productivity. "In the past, automation was often purchased in order to reduce staffing levels. Today, it's purchased because the companies can't find staff," says Kunz, summing up the situation.

### **Three-shift unmanned working**

The machine tool manufacturer's new *Pay per Part* digital business model represents a special solution for companies which have large numbers of orders on their books but are struggling with staff shortages. Trumpf offers the model for its fully automatic TruLaser Center 7030. "The machine is then operated on the customer's premises, but it actually belongs to Trumpf Bank and is remotely operated by Trumpf experts from the Neukirch site with the help of special technologies," Kunz explains. The user then pays a predefined unit price for each part produced. "This raises productivity levels by over 50 percent and the company can produce parts in unmanned three-shift operation."

It is only a matter of time before the trend towards fully automated plants takes off. Grob-Werke is convinced of this. "Today's machines already have a much higher degree of automation than a few years ago," says Grob CSO Müller. Digitalization has also been playing an increasingly important role in recent years and can offer "positive support and take care of certain task areas" where there are shortages of skilled workers, Müller says.

### **People remain indispensable**

Despite all the automation, people remain indispensable when it comes to ensuring that production runs smoothly. Training will therefore be indispensable in tackling the long-term problem of too few skilled workers. "Policymakers and the education system need to increase the shrinking pool of qualified workers," says Prof. Jens Wulfsberg, President of the German Academic Association for Production Technology (WGP), which brings together leading academics in the field of production science.

WGP researchers recently sounded the alarm at their spring meeting in Schwerin because the last five years have seen significant falls in the numbers of freshmen taking engineering at universities in Germany. "And this in turn affects our industry, of course, which is already having great difficulty finding sufficient numbers of well-trained young people. And that ultimately makes it a problem for society as a whole, as our prosperity – as we all know – is founded on manufacturing," Wulfsberg warns.

"The companies have already registered the problem; the lack of young talent is one of the biggest challenges many of them are facing – bigger even than the energy crisis and supply chain bottlenecks," states Wulfsberg, who also believes that companies need to appeal to young people by adopting "a genuine system of values that they actually adhere to."

Andre Wilms, management board member of the Youth Education and Development Foundation for Mechanical Engineering, is also convinced that technical solutions such as remote maintenance and automation will not be enough to counter the shortage of skilled workers. As a consequence, the Frankfurt-based Foundation has set itself the task of promoting the training of specialists in the sector.

### **Initial and further training must be made more effective**

"Qualified specialists are the guarantors of technological progress. If the digital transformation is to succeed, companies need to step up their initial and further training efforts significantly," explains Wilms. The main benefit for companies in conducting training lies in the possibility to discover and develop young talent and to create strong ties to the trainees. "Technical solutions such as the automation of production processes can, however, help to make more targeted use of the existing skilled labor potential within the company and compensate for the shortage of skilled workers to a certain extent," says Wilms.

### **Young talent from recruitment networks**

Meanwhile, demographic changes are continuing to widen the skills gap and exacerbate the problem. According to Wilms, over the next ten years the number of employees leaving the labor market upon reaching retirement age will be greater than the number of those joining it. According to the NRW Skilled Workers Monitor ("Fachkräftemonitor NRW"), this alone will create a shortfall of around 25 percent of technical specialists in mechanical engineering by 2035. "In the future, the entire sector must take responsibility for shaping the recruitment of young talent," Wilms demands. He also makes a concrete proposal: "Companies could increasingly rely on recruitment networks for this and recommend good applicants within their own network who they cannot train themselves. This would keep the skilled workers in the industry."

Meanwhile, innovative training programs can help ensure that cutting edge expertise is passed on effectively. To counter the shortage of skilled workers "... flexible training solutions are needed that can keep pace with rapid technological developments," says Wilms. The purpose of the MLS ("Mobile Learning in Smart Factories" platform is to give learners the advantage of first-hand knowledge by bringing them together with external partners, such as machine and software manufacturers or content publishers, Wilms explains. The learning content can be flexibly combined and adapted to the specific needs of the individual companies. In addition, users could import their own content, create it themselves using an educational authoring tool, or share it

with other organizations. "This ensures that companies' initial and further training programs have access to the very latest knowledge, and that employees can be trained according to their needs," says Wilms.

### **Specialist staff for critical production startup**

Manufacturers of production machinery, too, are taking the training of machine operators into their own hands. "In terms of machine operation, we have various training courses designed to teach the operators as simply, quickly, effectively and intuitively as possible to operate our machines," says Müller from Grob-Werke. Customers can select the appropriate training options for their employees from various modules. "In addition, we are continuously expanding the training departments in all our production plants," says Müller. Furthermore, Grob, in coordination with its customers, provides its own specialists to take care of critical production start-ups.

Trumpf, for its part, offers training courses in all disciplines relating to sheet metal production all around the world – including everything from part design to digital production control. Last year, the laser specialist also founded its own consultancy company, Smart Factory Consulting GmbH, which supports companies in setting up networked manufacturing. "This allows productivity potential to be leveraged without the need to hire additional staff," Trumpf manager Kunz emphasizes.

It is often particularly difficult for manufacturing companies which operate abroad, such as in the USA or China, to access qualified technical specialists. Can machine tool builders offer their customers special solutions to alleviate the shortage of skilled workers in key foreign markets? Large international suppliers such as Trumpf also keep resources available for this. "We support companies around the world in addressing the shortage of skilled workers," says Kunz, presenting a technical solution.

### **Software which frees up employee capacity**

Users can deploy Trumpf's Oseon software for digital planning and control of their production, for example. "This frees up employee capacity, as they don't have to worry about things like transporting materials," says Kunz. "The use of Automatic Guided Vehicles, for instance, allows companies to automate the material handling process," he explains. In addition, the software provides production personnel with a clear overview of all relevant information on the next work step in their work environment on a tablet. "This reduces errors and helps get new employees up to speed more quickly."

### **Companies need to play an active role**

Grob-Werke also offers product-related training to customers in foreign markets "... in order to prepare personnel optimally for operating our equipment," Grob CSO Müller explains. But Müller, too, is aware that training and technical solutions such as automation can only help to a limited extent in cases where no skilled workers are available: "Of course, we can't search for skilled workers for our customers; each company has to take care of that itself."

((Length: 12,083 characters including spaces))

*Author: Daniel Schauber, Specialist Journalist, Mannheim*

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### **Remote support for machine tools**

The following video shows in detail how remote maintenance works – based on the example of a solid-state laser from Trumpf:

<https://www.youtube.com/watch?v=p5xirSzACGY>

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### **Learning platform for skilled workers of the future**

A video available at <https://mls.mobil-lernen.com/images/Landingpage/NWS-Video2-Final.mp4> shows how the MLS ("Mobile Learning in Smart Factories") online learning platform helps to convey first-hand, up-to-date knowledge to future skilled workers

## Background

### **EMO Hannover 2023 – World's Leading Trade Fair for Production Technology**

International manufacturers of production technology will be presenting smart technologies for the entire value chain at EMO Hannover 2023 from 18 to 23 September 2023. Under the banner of Innovate Manufacturing, the world's leading trade fair for production technology will showcase the entire range of modern metalworking technology which is at the heart of every industrial production process. The latest equipment will be on display, as will efficient technical solutions, product-related services, sustainable production methods and much more besides. The main focus of EMO Hannover is on cutting and forming machine tools, manufacturing systems, precision tools, automated material handling, computer technology, industrial electronics and accessories. EMO visitors come from all major industrial sectors including machine and plant construction, the automotive industry and parts suppliers, aerospace technologies, precision engineering and optics, shipbuilding, medical engineering, tool and mold making, steel and lightweight construction. EMO Hannover is the number one international meeting place for the industry. More than 2,200 exhibitors from 47 countries attracted nearly 120,000 trade visitors from around 150 countries at EMO Hannover 2019. EMO is a registered trademark of the European machine tool association Cecimo. EMO is organized by the VDW (German Machine Tool Builders' Association), Frankfurt am Main, Germany

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