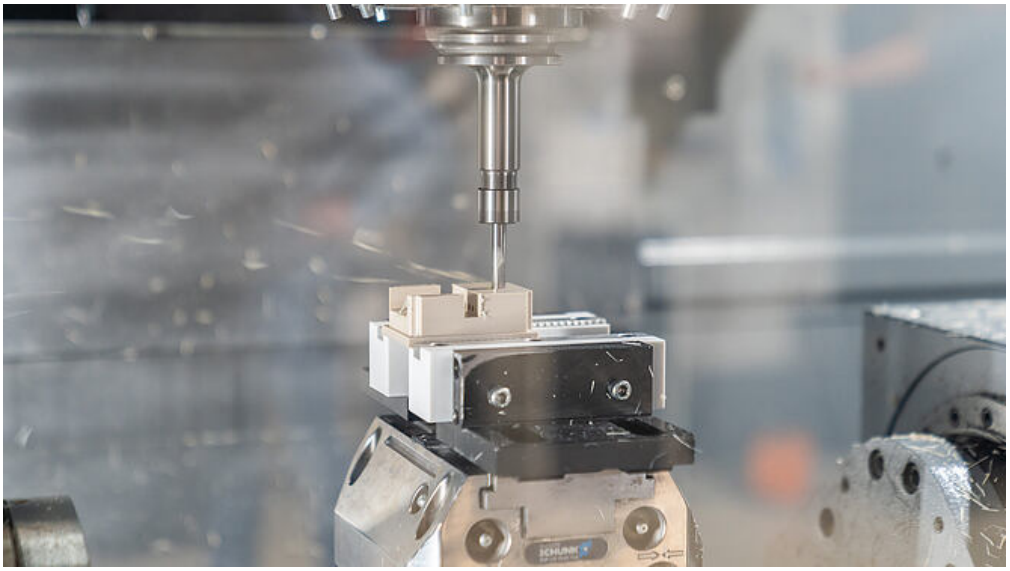
AN EYE FOR AUTOMATION

Plastic parts rarely make up the majority of the costs of a system. However, they are often not installed until the end and the entire production comes to a stop if they are not delivered on time. Therefore, for BL-ICK Kunststofftechnik GmbH, reliability is just as important as quality. This is now guaranteed with the automated 5-axis machining center VMX 30 Ui from HURCO.

The machining process for plastics follows its own set of rules. Not just as far as the brittleness of materials and spalling on the component are concerned—the machining sequence also plays an important role, such as for preventing warping and defects in the shape. “We exclusively machine thermoplastics, which include standard materials such as PE, construction materials such as PET and high-performance materials such as PEEK,” reports managing director Christoph Icking. “That requires more than just the specialized knowledge and professional experience of the employees. It also depends on setting up the machinery as universally as possible,” emphasizes fellow managing director Klaus Blömer. “To meet the demands of our customers concerning the size and complexity of parts, we therefore use 5- and 3-axis machines of varying dimensions. The majority are HURCO machining centers, including one VMX 30 Ui, one VMX 42 SRTi, two VMX 42 i’s and one VMX 50 i. A uniform control system means we can have any employee work at any machine.”

Car trips and reliably high quality



BL-ICK Kunststofftechnik specializes in the production of individual parts and small series. Since the portfolio also includes medium quantities, the company deals with automation. “Our customers come from wide-ranging fields in general mechanical engineering, the pharmaceutical industry and medical technology. But they also come from filling technology, the paper industry, the automation sector and car manufacturing,” reports Icking. “For these customers, we tend to manufacture smaller parts in batches of 5 to 200, which are used in a range of things from guides, sensor holders and plungers to gripper fingers for handling workpieces.” The daily challenges that BL-ICK has to master here involve not only the specifics of materials and machining, but also the interplay between component design and manufacturability. The success of contract manufacturers today is critically dependent on many years of experience, along with reliably delivered quality. “The customers almost always want a fast response from us, and we want to guarantee that. So there have also been times when we got into the car on the weekend and delivered parts.”

All three at the table

BL-ICK_Automatisierung_Köster

To enable efficient, high-quality machining of larger quantities as well, a workpiece handling system has now been installed in Heek, northwest of Münster, Germany, consisting of a loading system with drawers, a pick-and-place robot and camera technology. The automation system was delivered by Kösters Maschinenbau GmbH, which has its headquarters about a mile and a quarter north of BL-ICK. Explaining the reason for this addition, Icking says, “Since they are nearby, we can receive support quickly.” After the decision was made, Kösters swiftly contacted HURCO so that the machine manufacturer—represented by the application technology department—was on board right away. For implementation to go smoothly, all three parties were brought to the same table early on. “First we received the VMX 30 Ui and became acquainted with it,” says Icking, describing the subsequent implementation. “After a year, we received the automation system. One month before that was delivered, the final details for interface communication were clarified. Commissioning then took place without delay. A service technician from HURCO

came by once to unravel a 'knot' in the connection between the machine and the automation system. But it was just a small issue and was quickly fixed. Since then, the combination has been working flawlessly, despite the fact that the companies never had anything to do with each other before."

Handling with clear priorities

The VMX 30 Ui was already prepared for automated operation. The two systems communicate through a software-based DNC interface in which the Kösters control system is in charge with commands such as "Ready for loading" and "Loading completed." "While repetitious tasks are handled in this manner, our employees can dedicate themselves to more complex tasks," underscores Blömer. "This is also the reason why we pushed ahead for automation. With this solution, we can now produce 100 or 200 parts without needing an employee to insert pieces and press buttons. This mindless switching is something our employees had often done on the side. Now it is no longer necessary. Aside from this, we are also able to have parts produced at night or on the weekend, which gives us additional production time."

Making an impression

Bl-ICK_Material_Automation_Köster

For BL-ICK, this was the first automation solution implemented on a machining center. "We had two or three employees who were immediately excited," Icking recalls. "But there were also some waiting in the background a bit skeptically. Today there are four employees who are very well versed and always strive to have the combination running." It is not running seven days a week, 24 hours a day now. "A 24/7 solution would not be needed for our range of parts—our products are simply too specialized," Blömer clarifies. "But we achieve the maximum additional hours possible for us." The folks in Heek have been positively surprised by the effects of the solution, and further automation is within the realm of possibility. "We would definitely combine with a 5-axis machine here," says Icking.

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Back to overview

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