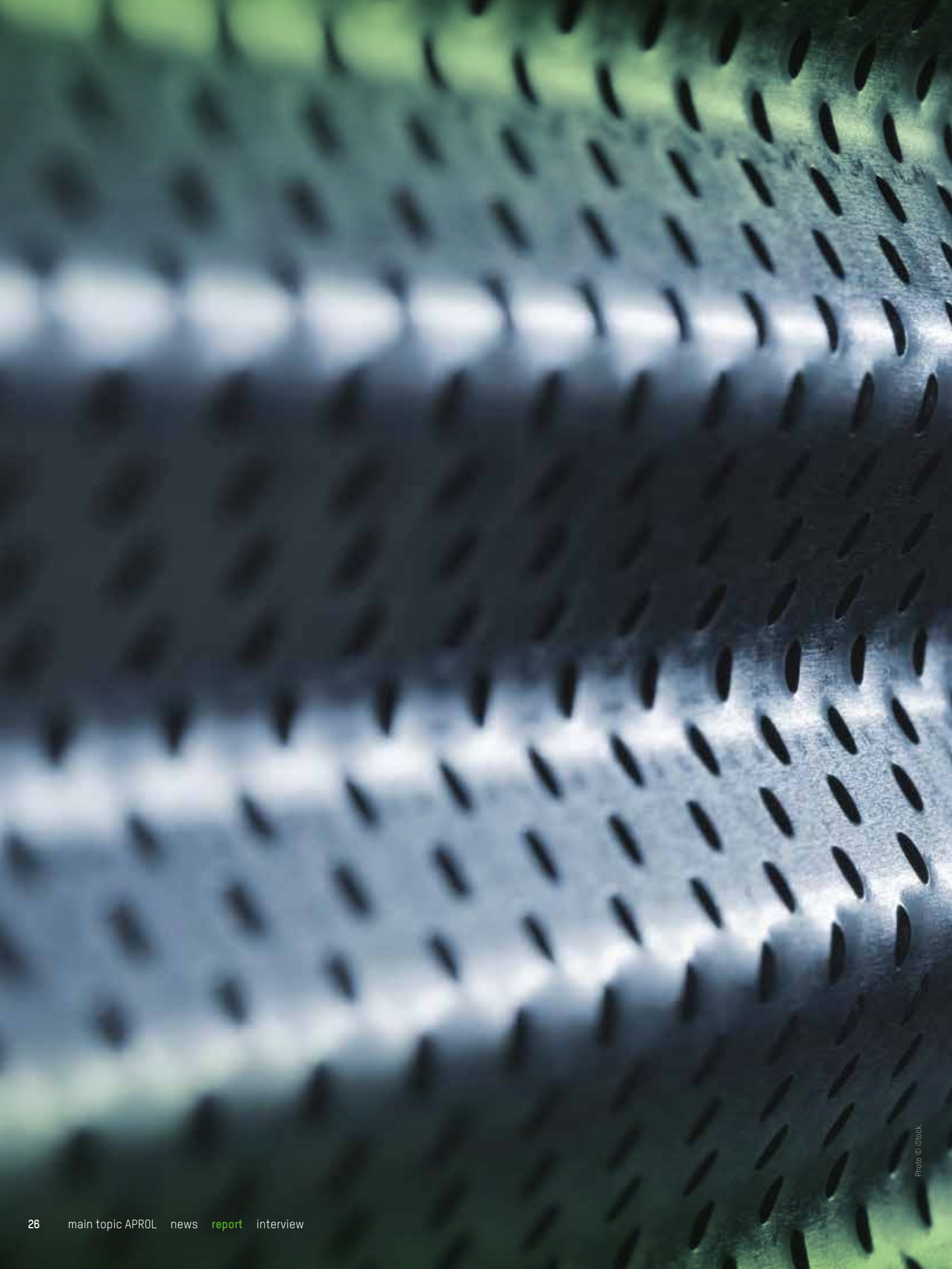

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Machine tools

Shear genius

The transition from a disjointed patchwork system with a conventional controller to a fully integrated, perfectly scalable B&R automation solution was an important step for EHT. Users now have a much easier time taking advantage of the versatile functionality offered by the company's power squaring shears. Known worldwide for its sheet metal forming and cutting technology, EHT was also able to step up the shears' performance while simultaneously reducing the cost of producing both standard and specialty machines.

EHT developed the software for the new ECS-Touch controller used in its successful VarioCut and MultiCut series of power squaring shears entirely in Automation Studio. The openness of the engineering environment is essential for the company, giving it unlimited access to make software adjustments on their own at any time. The full integration and centralized data management have allowed EHT to reduce development and commissioning times and minimize customer downtime.

"Since switching to B&R, we need considerably less time to commission our systems," says EHT's sales manager, Holger Ebin. "What used to take us three days is now done in two hours." For Ebin, this is the natural result of having a uniform, fully integrated automation system with centralized data management.

With the control and HMI software as well as all motion control parameters all stored on a CompactFlash card, all you have to do is insert the card in the slot on the controller and start up the machine. The B&R system then automatically copies the software to the respective automation components and configures them. All that's left to do is home the machine, and it's ready to go.

Centralized data management simplifies commissioning and maintenance

"It's just as easy to get our machines back up and running after a component failure," adds Alexander Eirich, who developed the new EHT controller. "Replace the defective part, insert the CF card and set the POWERLINK address – then switch it on and you're done."

Yet the time saved during commissioning and maintenance doesn't fully explain the substantial reduction in costs that EHT has experienced compared to its previous control solution. The greatly simplified architecture played an important role as well, as Eirich explains: "Since we're able to control our hydraulic proportional valves with an X20 motor module that we were already using for I/O, we've been able to do away with the separate upstream modules." The X20 module also allows for more precise ramp settings, and in turn more dynamic hydraulic movements, so EHT was able to increase the cut count as well. The motor module also functions as a counter card for the shear's motorized backgauge.

Reduced number of components with B&R technology

The simplification was even more dramatic with the VarioCut series. Like the MultiCut series, these high-precision swing beam shears are available in numerous varieties with countless options. What sets them apart is that EHT customizes them to user specifications and optionally integrates them into the production line. Due to the rigidly limited functionality of the old standard controller, the additional tasks that arose through customization and integration had to be handled by a second, higher level controller.

Thanks to the performance and openness of the Power Panel 520, a single controller is able to handle the automation of the entire line. With its 10.4" screen, B&R's controller has plenty of resources left over to serve as an HMI operator panel.

Complete, homogeneous and flexible automation

All of the machine's software, including the HMI application, was created using Automation Studio. The environment's complete openness allows EHT to maintain, adapt and expand the software without any outside assistance. B&R delivered the basic framework, shortening the development phase and freeing up EHT's programmers to implement new functions. The libraries provided in Automation Studio inspired Eirich to integrate a function that allows machine operators to generate analytical data and save it on a flash drive.

"We're then able to use this data – which they can send us directly via FTP – to provide them with an updated software image that preserves all of the operator's settings," explains Eirich. "Machine updates are completed in no time and with minimal impact on production."

The new control solution also minimizes downtime in the event of an error. "Before we switched to B&R technology, the task of troubleshooting alone was problematic," recalls Ebin. "Now we have a complete and

EHT's MultiCut series of power squaring shears, featuring an ECS touch screen controller, is designed for one-off and series production of parts of all sizes. Its extensive selection of sophisticated options make it especially efficient and ergonomic to use.

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ETHERNET POWERLINK

EHT's new ECS-Touch controller is based on a Power Panel 520 from B&R. In addition to controlling all of the machine's processes, it also serves as an HMI platform and operator interface.

homogeneous automation solution that also allows remote VNC access – so we can quickly identify and correct errors without ever setting foot on site." In a hotly contested market like sheet metal cutting, where profit margins are extremely thin, this is a significant cost advantage.

Price increase successfully avoided

EHT was particularly impressed by B&R's ability to achieve a level of positioning precision using an AC motor that would otherwise require an expensive servo motor, and took advantage of this to implement a highly precise, yet very cost-effective, position control solution for the backgauge. The AC motor is controlled by an ACOPOSinverter P74, which communicates with the Power Panel and the X20 system via POWERLINK.

The controller and POWERLINK are powerful enough to operate all of the machine's axes at once during setup – barring any collisions – and utilize the machine more efficiently. "The topic of control has become an important selling point for us. The B&R solution has also made a significant contribution to the success of our company by helping us lower our production costs enough to avoid an impending price increase." ←

Holger Ebin
Sales Manager, EHT Werkzeugmaschinen GmbH

"The B&R solution has helped us lower our production costs enough to avoid an impending price increase."