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EuroBLECH | Sheet Metal Working Technology Exhibition

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Beckhoff at EuroBLECH 2026, Hall 27, Booth D89

End-to-end automation for sheet metal processing

“For a Stronger Future – Smart & Sustainable Production” is the theme of this year’s EuroBLECH. Taking place in Hanover from October 20 to 23, the exhibition will focus on topics that have always been at the heart of PC-based control. So, it’s entirely appropriate that Beckhoff will be in attendance, showcasing end-to-end automation solutions designed to increase productivity and efficiency in sheet metal processing and metal forming. Exhibits will include control cabinet-free machine architectures, the new TwinCAT MC3 motion control generation, and even system-integrated quality assurance with vision and machine learning.

Suppliers of sheet metal working machines and systems are under pressure. Investment decisions have long-term implications, while batch sizes are shrinking and product variety and efficiency are becoming increasingly important. Beckhoff is addressing these requirements with its open PC-based control platform, which integrates PLC, motion control, CNC, image processing, measurement technology, and AI. PC-based control reduces not only the number of interfaces but also effort and expense. Functional expansions become a software issue rather than a hardware one.

Control cabinet-free automation

The MX-System – the pluggable system solution for control cabinet-free automation – is a key feature of this year’s exhibit. Compact function modules with IP67 protection rating perform all the tasks of a conventional control cabinet. The result is a significantly reduced machine footprint, less cabling work, and a plug-and-play design that

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not only considerably speeds up planning but also allows for installation and service by non-specialist personnel. UL/CSA and IEC certifications mean that the system can be used worldwide without any modifications. The Diagnostics app transforms smartphones and tablets into diagnostic tools for service calls. The web-based MX-System Designer makes configuration and design a breeze.

Motion control and CNC

For presses, press brakes, and punching and forming machines, Beckhoff presents TwinCAT MC3: the next generation of motion control with multi-core and multitasking support. Axes can be distributed across multiple CPU cores as required. Likewise, axes with different cycle times can be operated on a single core. There is no fixed restriction on the number of programmable axes. With MC3 Fluid Power, the hydraulic system is fully integrated into TwinCAT, featuring manufacturer-independent control of position, speed, and pressure/force for valve-regulated, pump-controlled, and variable-speed drives, hydraulically optimized position control loop, automated recording of valve characteristics, and extensive support for position encoders. Electric and hydraulic axes are programmed using the same PLCopen-compliant function blocks, and real and simulated axes can be mixed, significantly reducing commissioning time.

Beckhoff is addressing cutting, laser, and EDM machines with TwinCAT 3 CNC, with up to 32 simultaneously interpolating path axes per channel, the option for up to 128 axes and 32 channels, look ahead function, programming in accordance with DIN 66025 with high-level language extensions, and access via function blocks in accordance with IEC 61131-3. The range of applications is expanding with the addition of new options for integrating customer-specific TcCOM modules, the programming of two independent paths within a single

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CNC channel, and the provision of predictive contour and dynamic data for external processes.

Vision and AI

Beckhoff's end-to-end vision portfolio, which includes cameras, optics, illumination, complete units, and the TwinCAT Vision software, demonstrates how quality assurance can be synchronized with the machine. EtherCAT P and distributed clocks are used to generate triggers for image capture and exposure that are precisely synchronized from within the controller – speeding up response times, increasing cycle rates, and reducing hardware, wiring, and footprint. In addition, TwinCAT 3 machine learning can execute neural networks directly in the controller. The Machine Learning Creator can be used to train models with a no-code interface – even without any prior knowledge of AI. Model updates can be performed during operation, without the need for machine downtime or recompilation. Typical applications include surface and geometric inspection, adaptive feed control based on current characteristics, and predictive maintenance using vibration and temperature signals.

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Press picture 01:



Picture caption:

The MX-System, a pluggable system solution for control cabinet-free automation, is opening up entirely new possibilities in sheet metal processing and metal forming.

Press picture 02:



Picture caption:

With TwinCAT 3 machine learning, neural networks can be executed directly in the machine controller.

Press kit:

www.beckhoff.com/media/downloads/press/2026/pr312026_beckhoff.zip