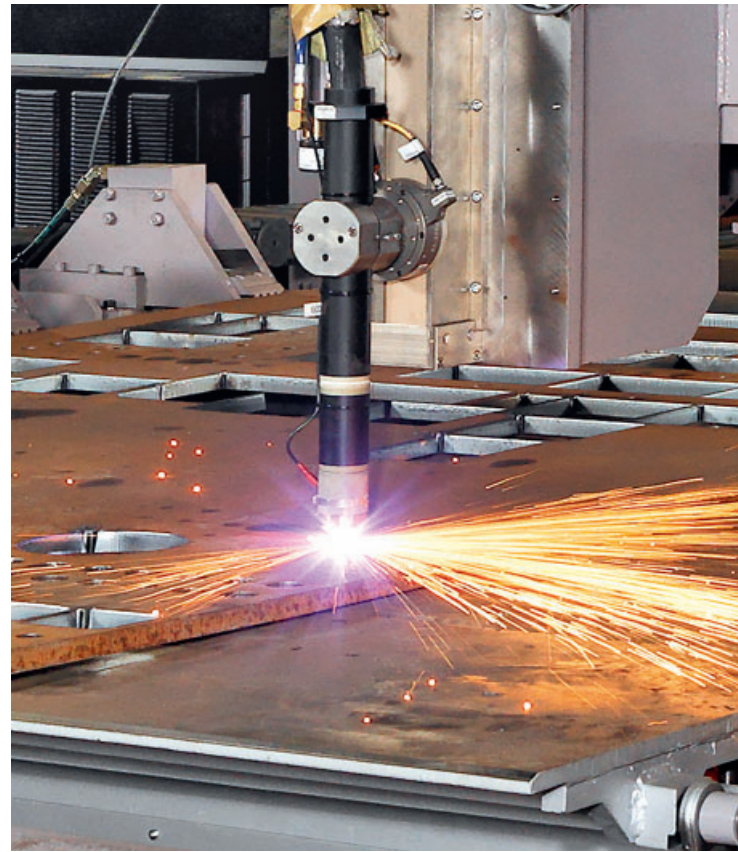




Multi-spindle high-speed drilling unit from Vernet Behringer for machining structural steel beams



CNC machining centers all based on PC and EtherCAT

The long-established French company Vernet Behringer based in Dijon has converted its entire machine range for machining flat and contoured metal to a uniform PC-based control platform. The machine tool lines made up of integrated components are all equipped with an Industrial PC, TwinCAT, EtherCAT, Bus Terminal I/Os and Drive Technology from Beckhoff.

Vernet Behringer makes PC Control standard

Vernet Behringer's product range includes high-performance CNC multi-spindle gantry drilling machines, universal machines for punching, drilling and marking, shear and punching units and CNC flame-cutting equipment for machining steel profiles and steel plates. All machine modules have a PC- and EtherCAT-based automation platform from Beckhoff. EtherCAT enables rapid communication between the PC controller, drives and I/Os, thus optimizing the whole production process.

The machine type MAG B from Vernet Behringer provides a drilling, punching, marking and plasma cutting machine for steel plates measuring eight by two meters with thicknesses of up to 50 mm. Equipped with tool changers on the drilling and punching units and various options for marking, this machine enables a variety of machining processes.

Integrated automation increases productivity

In order to meet the requirements of particular markets, the integrated automation of "stand alone" machines into flexible machining centers is an absolute must. "The resulting increase in productivity is a primary selling point," explained Loïc Guillou Keredan, automation manager for Vernet Behringer: "We have been installing PC-based control systems and user interfaces since 1990. This enabled us to provide a simple and user-friendly interface for controlling our machines and to integrate direct connection functions which were implemented in advance for the CAD clients."

"After examining various Motion Control suppliers, it turned out that Beckhoff's open, PC-based control platform with EtherCAT as well as TwinCAT PLC and NC/CNC for automation and Motion Control is ideal for controlling our CNC machine tools," Keredan explained, adding: "The EtherCAT performance is remarkable: delays are in the range of a few nanoseconds."

Standardized control platform creates price advantages

"The Beckhoff automation platform has been universally in use for our entire product range since January 2007 after it had been tried out on the



The MAG B from Vernet Behringer is a universal machining center for sheet metal up to a max. 50 mm thickness (for flame-cutting and drilling) and up to 20 mm thickness (for punching). It is used mainly in steel construction for quick and accurate flame-cutting of contours, for drilling, punching and for marking.

Loïc Guillou Keredan, automation manager, and Hervé Nawrocki, IT manager, from Vernet Behringer. The machine tool manufacturer uses the PC and EtherCAT-based control technology from Beckhoff in its entire machine range.



Beckhoff Servo Drives control 14 axes with a cycle time of 2 ms.

Miter cutting bandsaw and multi-spindle high-speed drilling unit from Vernet Behringer for machining structural steel beams



MAG B for three years," the automation manager reported. A strategy which aims at interoperability and flexibility and is in line with Vernet Behringer's company philosophy. Further benefits include standardization of the control cabinets and the reduction of the training period for operating and maintenance personnel.

"PLC and Motion Control are now combined in the reliable, economical and compact C69xx Industrial PC. It is easy to install, connect, program and maintain. In addition, the PC platform can be extended with additional functions," Hervé Nawrocki, IT manager at Vernet Behringer stressed. By using EtherCAT, no additional fieldbus cards are necessary in the IPC. Furthermore, the quality of the machine is improved because importing processing files such as e.g. the cycles for drilling, tapping, guiding, lubrication control, automatic measuring functions for extension elements, collision protection systems for slides and flame-cutting units, gripper control etc. takes place considerably faster.

Due to the compact construction of the C69xx, the Industrial PC only requires a small amount of space in the ventilated and temperature-regulated control cabinet. The control cabinet can now be made smaller and is also lighter, more accessible and easier to connect.

PC platform enables future integration of additional functions

"The TwinCAT software replaces the customary PLC hardware. We have developed exchangeable software function blocks on various machines. In the future, this control architecture will allow us to concentrate more on NC and to manage or re-group more axes, to work at interpolations or to think about vision systems," explained Hervé Nawrocki.

A further advantage is to be able to carry out control and maintenance tasks decentralized via Internet. "Secure remote maintenance gives us an overview of the machine and its operating state at any time. This guarantees rapid assistance and at the same time allows a reduction in the time and energy expended, as over 80 percent of the problems that occur can be solved without a technician needing to be on site. Maintenance and repair will be simplified because all data will be stored centrally by the PC," Hervé Nawrocki concluded.

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