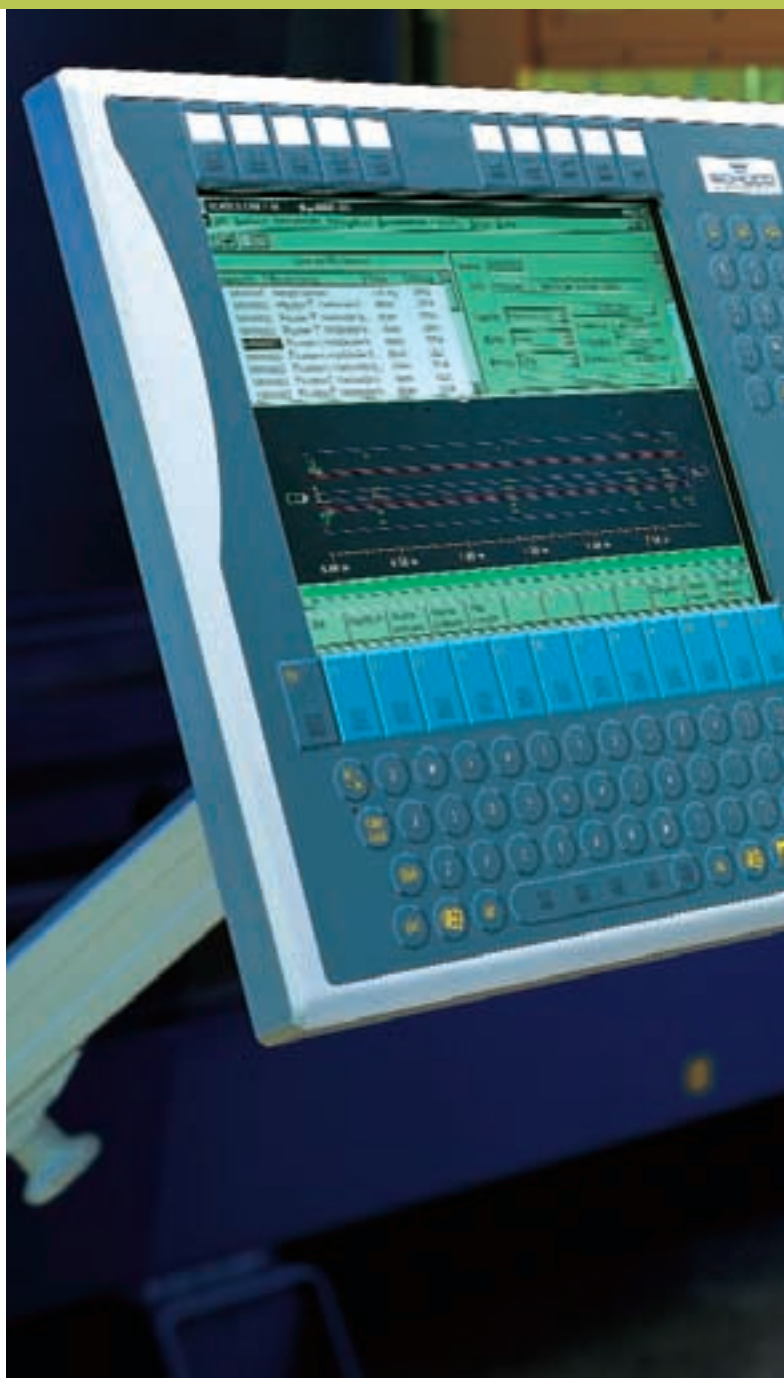
Sawing | Milling | Clinching | Drilling in a Single System

Optimal automation is like winning in Formula 1: Only when all components are best defined in relation to one another can the best results be achieved. Schüco, the German system developer and builder for window, door and facade profiles and solar systems, achieves this twice over. The corporate partner of the successful Formula One team of West McLaren Mercedes offers its profile machining system with the elegantly-shaped Beckhoff Control Panel.



Decentralised operating approach via Control Panel:
Form follows function

Among profile machining systems, genuine "efficiency artists" enjoy a high rating these days. One example of such a systems solution for the rational fabrication of windows, doors and facade elements from aluminum and steel profiles is the "Schüco-PBS" profile machining system. It has a convincingly comprehensive overall concept with many options, optimized for Schüco profile systems. It offers customers a high price-performance ratio and provides for production reliability and production quality over the long term. The developers of the profile machining centers proudly proclaim the concept of building the machine by teamwork "quasi" around the profile. "This gives the shortest processing times and noticeably reduces the amortization period for our partners," say the builders of this machine. Another unusual feature: The center is operated from the elegant and highly functional Beckhoff Control Panel. Thanks to its futuristic shape and its aluminum housing, it fits seamlessly into Schüco's Corporate Design. The fact that this satellite control station is connected with the central computer in the control cabinet by only two thin coaxial conductors makes the installation and use of the machine in factories unusually flexible.

Functional Control Panel
allows simplest operation

This machining center, which Schüco offers its market partners as a service enhancement package, allows milling, clinching, drilling and tapping, both for aluminum and for steel, on a single system. With only one clamping, as many as five sides can be machined at once and notches on the profile ends completed from underneath. The developers are proud of their hardware and software solution at the man-machine interface. The hardware side is represented by the advanced technology equipment set, consisting of an Industrial PC with integrated PLC and NC control, and the operator-friendly Beckhoff Control Panel, the latest state of the art.

But this solution evolved by stages: At Schüco, they remember the 1997 prototype, when the machine builder demonstrated the installation and it had to be operated from a bulky PC cart: "The first reaction to the operating panel was devastating." Too big and too massive, too unergonomic and too operator-unfriendly; in addition to that, a cable bundle as thick as one's arm running through the

The optimal interplay of all components and optimal operation via the Beckhoff Control Panel allow the best results to be achieved with the Schüco profile-machining system (Picture: Schüco)

This is Schüco International

The small metal fabricating firm began its success story in January 1951 with aluminum profiles for shop-windows, with a workforce of six employees: Heinz Schürmann & Co. – Schüco for short. Now more than 4100 people work for Schüco International world-wide. In 1999 it achieved a turnover of 1.95 billion DM. In addition to the 14 enterprise sites in Germany, Schüco is represented in more than 41 countries world-wide. The fundamental idea and unaltered enterprise philosophy is systems partnership. This refers to the entire process of window, door and facade construction. Materials, creativity, construction, manufacturing, installation all enter into it. Participants include internationally known architectural offices, construction companies, facade construction enterprises and handicraft shops. The co-operation partnership with the world champion Formula 1 team West McLaren Mercedes, in force since the beginning of 1999, has considerably enhanced the image, goodwill and recognition of the make.

set provided the electrical connection to the machine. What is more, practical workers saw the pull-out drawer for the keyboard as a failure-prone solution. It soon became clear that the machine developers did not want to offer this solution to their market partners. The unequivocal credo: He who manufactures architectonically esthetic products such as windows, doors or facades can only be attracted, even in the realm of product compatibility, by an appealingly styled and functional profile machining center. Lastly, they know at Schüco "that the potential buyer also buys with his eyes."

In searching for an alternative, the development team ran into Beckhoff. This specialist in advanced Industrial PC and automation solutions was at that time introducing its new Control Panel family to the market. "That was our solution" say the Schüco employees in retrospect. They found the new PC operating interface, which fits well into the scene thanks to its elegant line and its flat shape, both impressive and satisfying. What is more, the video display housing was manufactured from a single block of aluminum. "If one seeks, as a developer of Schüco machines, to transpose the Corporate Design into one's machines, then only this display is right for this machine," says the uncompromising credo.

Linking satisfying operational advantages with the "fun factor"

The Schüco machine specialists found it especially elegant that only two thin coaxial conductors carried data to the machine. Thus the operating terminal, which in addition is built to the IP 65 protection class, can be almost invisibly installed up to 65 meters away from the machine, thus optimally accommodating individual space allocations. "The solution was obvious" they remember, so that nothing stood in the way of a fruitful collaboration.

First, however, it was necessary to translate this approach into practice, the guiding philosophy in this connection being to guarantee the customer unitary operation for many years into the future, regardless of the location where the machine was installed. To accomplish this, the first thing to do was to separate the usually integral industrial PC computing kernel and operating and display units. The Industrial PC, equipped with a Beckhoff CP-Link interface card, which allows the Control Panel to be connected with any chosen PC, moves to the control cabinet. With CP-Link technology, connection of a single PC to as many as three Control Panels is possible. In the Schüco profile machining system, the Panel is mounted on a swinging support arm system to give the machine operator the best overall view of the manufacturing process. The mounting location is often determined only after installation of the machine. Separating controller from the operating interface ensures that the "look & feel" of the machine remains the same, regardless of future developments in the world of automation. Thus it is unimportant whether in the future functional considerations drive the adoption of considerably more powerful computers, or more compact industrial PCs come into use to save space.