

elumatec at BAU 2017: New high-performance solutions and enhancements designed to maintain our competitive edge

- **SBZ 122/75 world premiere: 5-axis profile machining centre for unbeatable versatility and profile dimensions in small spaces**
- **SBZ 122/71: Pioneering new concepts for cost-effective manufacturing**
- **SBZ 151: Flexible power pack for industrial and networked production**
- **Clever all-round solutions: machines and products in perfect harmony**
- **eluCloud: Taking steps towards Industry 4.0**
- **Preview of eluCad 4.1 with freeform removal, test runs and time computation functions**

elumatec AG, international market leader in the manufacturing of machines for processing aluminium, PVC and steel profiles, presents the newest generation of high-performance solutions at BAU 2017. Customer-focused innovations and enhancements are the best-value response to the trend towards increasingly complex requirements: “Our customers need to be able to machine an extremely wide variety of profiles that keep getting more and more sophisticated, all while making their lead times shorter and shorter. Needless to say, this requires fast production times with top-quality finishing, regardless of whether the product is a custom solution that will only be produced once or a standard product of which more than 100 units will be made, such as is often the case in the curtain wall manufacturing industry”, explains Ralf Haspel, member of the elumatec AG Board of Management.

SBZ 122/75: A one-of-a-kind machine in its category

To reduce manufacturing times while still supplying the highest quality – the brand new SBZ 122/75 5-axis profile machining centre meets these exact requirements. It handles profile dimensions that no other unit in its category can handle and its versatility allows for a broad range of applications. The system, which has been designed for window and door manufacturing, is able to machine PVC, aluminium and thin steel profiles with a length of up to 3,300 mm (standard version) and dimensions of up to 210 x 230 mm on five sides with one single clamping operation, all while taking up the same small amount of space as the 3-axis and 4-axis centres in the new SBZ 122 family.

All axes can be moved simultaneously, and the additional C-axis makes it possible to machine the face of profiles from the left and right. Another extra: The 2-axis add-on unit with the A-axis and C-axis can also accommodate a saw blade as a tool, enabling companies to perform all required sawing operations, such as the compound cuts and notches needed for door spreader bars, with one single clamping operation in order to save valuable time. This saw blade is held with the automatic tool changer with the spindle, can be inclined from -120 to +120 degrees and can be swivelled from -220 to +220 degrees, including all angles in between. The router spindle is sized with a powerful 7 kW, ensuring that it can be used for threading, milling and forming operations. Moreover, the latest-generation speed-controlled drives used on the unit guarantee optimum work results across a wide variety of loads while also cutting energy use by up to thirty percent.



Profile machining centre SBZ 122/75

The 12-fold tool changer and the V-axis with autonomous clamp positioning ensure fast change and setup times: In fact, the latter allows for individual or multiple clamps to be repositioned simultaneously even during ongoing machining. Moreover, our intuitive “eluCam” GUI ensures that operators can enter programs quickly and directly on the machine; useful when quickly switching between jobs. The SBZ 122/75, which has been designed for fast travel rates, is capable of machining large quantities of aluminium and reinforced PVC profiles in record times, with simultaneous processes ensuring that non-productive times are minimised when working with small batch sizes.

SBZ 122/71: From concept to undisputed best seller

elumatec will also be showcasing another model from the SBZ 122 series: the SBZ 122/71. This 3-axis machine, which was presented at BAU 2015 as a concept, has now become an undisputed best seller that makes it possible to machine steel profiles with a thickness of up to 3 mm, as well as aluminium and reinforced PVC profiles, reliably and in a cost-effective manner. In fact, the machine has been on the market since January 2016 and more than 60 units have already been sold. Without a doubt, one of the reasons behind this enormous success is the fact that elumatec continued to develop and enhance the SBZ 122/71 with a close focus on our customers' needs from the moment its concept saw the light of day. For example, the machine bed was placed 180 mm lower than the industry standard of 1,050 mm in order to enable operators to ergonomically feed profiles. In addition, the safety hood can be moved back and out of the way in order to make access easier so that operators can work with the profile and the machine in a much more ergonomic manner.

These and other features designed to enhance productivity are what increase the utility of what was already a tremendously useful machine. In fact, the groundbreaking redesign of this 3-axis centre and its high dynamic performance are a guarantee of high-precision, profitable production operations. A state-of-the-art controller, a controlled drive screw and powerful servo motors ensure precise and accurate handling while minimising power consumption. The dynamic and fast axes (such as the X-axis and its travel rate of 120 m/min), the machine's quick response to signals and the use of optimum parameter sets for drive control purposes not only maximise throughput, but process reliability as well.



Profile machining centre SBZ 122/71

The inclined machine bed, the working area of up to 300 x 300 mm and the height-adjustable control unit all allow for ergonomic and neat work. And to top it all off, intuitive touchscreen controls, together with an input wizard, make operating the machine much easier and enable companies to quickly show new operators the ropes.

SBZ 151: Powerful all-rounder for industrial profile machining

With its high level of automation, versatility and cutting-edge control technology, the SBZ 151 5-axis profile machining centre is designed to streamline the dimensionally accurate machining of aluminium and steel profiles. All work operations, such as milling, drilling, tapping, thread milling, notching and sawing are performed by a powerful spindle 21 kW (S1) on the stationary profile bar, ensuring that the process goes as easy as possible on the various profile surfaces. In addition, an optional angle head makes it possible to also machine profiles from below, ensuring that they can be worked on from all six sides with a single clamping operation. The large saw blade (400 or 500 mm) can cut tall profiles without a problem, and the on-board magazine with 13 standard tools and seven special tools (e.g. angle routing head and special cutters), together with the autonomous clamp positioning function, minimise setup and non-productive times. Moreover, the heavy-duty, low-wear direct drives ensure that the machining unit is quickly moved to the required position. Finally, two separate working zones make it possible to run the machine in shuttle operation mode, although the entire length can also be used to machine a single profile if necessary.



Profile machining centre SBZ 151

The SBZ 151 can be easily integrated into a company's network in order to implement digitally networked operations ("Industry 4.0"), and the eluCad software package developed by elumatec subsidiary elusoft also provides support with automated processes on the machine: For example, the "Software cycles" program can be used to fully automate the production of large quantities of small parts. Within this context, machining operations will first be performed on what will later be the parts, with the parts then being sawn off from the bar. Moreover, eluCad makes it possible to visualise and easily enter profiles and machining operations or import them from upstream systems, ensuring that programs can be entered quickly. Powerful post-processors will generate the production data necessary to ensure that the machine will be used in an optimal and flexible manner, and the central data pool makes it possible to easily send stored machining programs / jobs to any elumatec machine in a plant by selecting it as a target machine.

DG 244: Versatile saw for an extremely broad variety of requirements

The DG 244 double mitre saw combines power and versatility into a single unit that can be used to perform fast and precise cuts in a wide variety of applications. It can easily carry out any cutting operation on profiles with a large volume and thick walls. Moreover, its saw unit can be swivelled and tilted to any degree, making it possible to do all kinds of compound cuts, and in many cases eliminating the need for support blocks when sawing tall and wide profiles. A further advantage: Cuts are always performed based on outer dimensions, rendering complicated length calculations unnecessary when working with different profile heights.

All-in-one solutions for complex tasks

This year, visitors to our booth will again be able to learn more about the supplementary products being offered by elumatec subsidiary elusoft and elumatec partner Stürtz. “The fact that expert visitors from all over the world and from a large variety of industries will be there makes BAU an important platform for us that will enable us to showcase our innovations ‘live’. We’re already looking forward to seeing the response we’ll get and to interacting in person with customers and prospective customers who need equipment for all sorts of applications”, Ralf Haspel says.

elusoft GmbH innovations

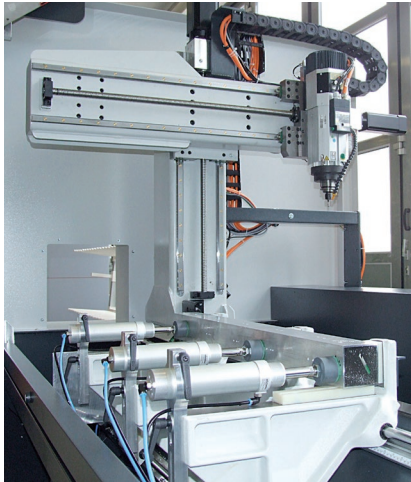
The eluCad profile machining software for profile machining centres developed by elumatec AG is continuously being improved and enhanced in line with the needs of our customers and the market.

eluCloud

One of the latest innovations consists of the new software product group known as “eluCloud”. eluCloud is designed to provide customers with increased convenience in terms of service and maintenance based on comprehensive machine data acquisition and analysis capabilities. The ability to connect to standard solutions, as well as production optimisation options, are other important advantages. Using acquired machine data as a basis, the software will provide customers with an overview of this data directly on the machine. So that users can, for example, configure automatic notifications for upcoming servicing tasks. For maintenance tasks, it will be possible to define custom intervals based on recorded machine data – e.g. operating hours or spindle operating hours – and set up reminders accordingly.



The acquired machine data will also be provided to external ERP and spreadsheet software in real time. To this end, elumatec and its subsidiary elusoft have developed a web service interface that allows fully automatic integration of machine data acquisition functions into existing software solutions. In addition, elumatec and elusoft offer their own app for easily and accurately monitoring and analysing operating data. This app is not only designed to show the current status and the efficiency of every connected elumatec profile machining centre, but can also be used to analyse usage and production times, as well as production steps such as feeding, removal and clamp positioning, in order to look for potential optimisation areas.



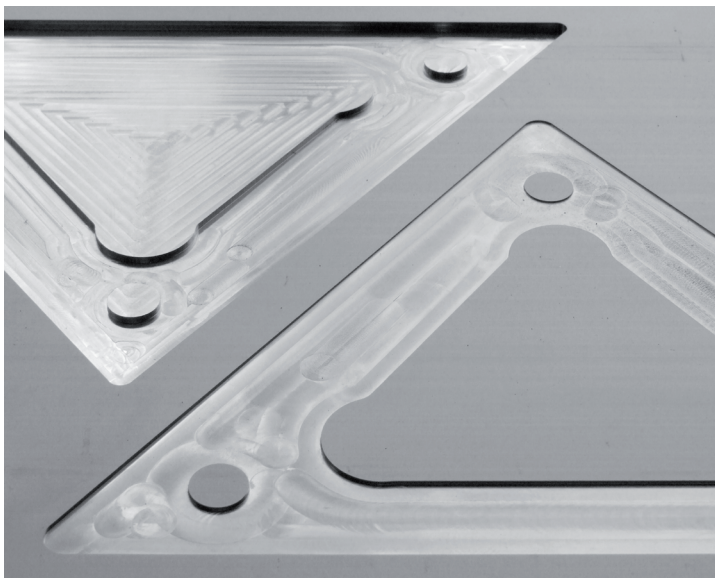
elumatec Profile machining centre SBZ 122/71, spindle and clamp

When does the spindle require maintenance? Was there any unnecessary clamp positioning?

eluCloud is designed to collect machine data and analyse it in such a way that it will be available for servicing and maintenance and production optimisation purposes, as well as for connections to ERP solutions.

Freeform removal

At the “BAU” trade show, elusoft will be giving a preview of eluCad Version 4.1 and its new “Freeform removal” function. Many customers – particularly in the industrial sector – do not want to fully mill through outer profile walls when doing freeform milling, but instead only want to remove 1 or 2 mm of material, for instance. For this type of application, eluCad is now able to automatically compute the toolpaths required in order to complete the full-surface removal for the specified free form, allowing operators to save programming time when it comes to inside toolpaths. Moreover, during the removal process, previously defined “islands” can be left alone, or material from the surface of these islands can be removed and the free form can be milled to a deeper level. When it comes to small corner radii, contours can be tracked with a tool that has a diameter with the appropriately small size. In addition, operations such as rough-machining and finishing can also be selected in order to get the desired surface characteristics, which can be helpful, for example, when electronic components such as transistors that will dissipate heat best when lying completely flat against the aluminium surface will be screwed into place.



Picture of results achieved with the elusoft freeform removal function, rough-machined.

The new “Freeform removal” function saves eluCad users from having to calculate the toolpaths on the inside required in order to remove the material for a free form. These toolpaths will instead be automatically computed, with the option of leaving previously defined surfaces alone or removing material from the surface of these “islands” and milling the free form to a deeper level.

Use test runs to remove any doubts

The new eluCad “PreCheck” function is designed to make work preparation easier for elumatec customers who are using a machine for which the programs are being created with eluCam software using the machine PC – this applies to versions from the SBZ 122, SBZ 130, SBZ 131, SBZ 137, SBZ 140 and SBZ 150 series with the latest controller generation. One of the advantages of eluCad is the fact that machining programs can be prepared at the office and then copied to the machine. In other words, this eliminates the need to stop the machine in order to enter a machine program on the machine PC, instead making it possible to continue machining.

Admittedly, however, there were cases in the past in which a machining program would be prepared at the office and work fine on the eluCad visualisation interface, only to not be executable on the eluCam machine because, for instance, a required tool was missing from the tool magazine. In cases such as these, machine operators without the required know-how who were just responsible for loading, unloading and starting the machine would be dependent on the help of someone from the Work Preparation department. The new “PreCheck” function solves this problem by ensuring that the target machine’s characteristics, such as the tools currently on the magazine, are already taken into account by Work Preparation personnel at the office. This means that the machining program created at the office will be able to run on that specific target machine later on. The desired result? During visualisation at the office, Work Preparation personnel will already be able to see whether the prepared machining program will run on the target machine or not, making it possible to avoid any mistakes in advance. On top of this, another new feature in eluCad is the fact that the assigned tools are now shown on the machine setup screen.

Time computation for SBZ units with the latest controller generation

We have developed a new plug-in for profile machining centres with the latest controller generations (i.e. specific versions of the SBZ 122, SBZ 130, SBZ 131, SBZ 137, SBZ 140 and SBZ 150 series) called “Time computation”. This plug-in is available for purchase as an optional add-on effective immediately. It shows, for example, the total time when adding machining and positioning times together, the total time for a component with loading and unloading times, and the time for shuttle operation. In addition, the plug-in lists the tools being used in the corresponding machining sequence. This information means that users can get an initial idea of the required production times even before starting the actual machining process.

About elumatec AG

elumatec AG is an international leader in the manufacturing of machines for processing aluminium, PVC and steel profiles. With its extensive product range, the company covers the entire spectrum of applications from small craftsman’s businesses to industrial profile processors. Custom-designed and modular machinery concepts provide flexible and individualized industry solutions for all groups of customers. The company, founded in 1928 with headquarters in the Swabian town of Mühlacker in Germany, has subsidiaries and dealers in more than 50 countries and, with over 700 employees worldwide, most recently achieved consolidated sales of about 120 million euros.

Pictures and other information about the enterprise are available from the News area of the elumatec AG website at www.elumatec.com.