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Profile machining centre SBZ 122/74: High throughput with large and small quantities

Whether the batch size is 1 or 1000: the 4-axis profile machining centre SBZ 122/74 ensures high throughput. Designed for high speeds, it processes a large number of units within a short time and with a high degree of accuracy. In case of small quantities, parallel processes reduce the non-productive time within the manufacturing cycle. It will benefit industrial customers and metal engineering companies who process aluminium, reinforced PVC profiles, or light steel profiles.

As a member of the newly designed modular SBZ 122 series, SBZ 122/74 inherently offers the best prerequisites in order to increase the efficiency, ergonomics, and level of benefit. Intelligent control technology, powerful servo motors and a machine bed designed for high rates of travel deliver perfect finishing with high speed and efficiency. State-of-the-art components such as the control system, the RPM-regulated spindles and the energy-efficient drives save operating costs and ensure optimal machining results.



Profile machining centre SBZ 122/74

High capacity with a small footprint

The low number of compact components minimizes the vibrations and ensures excellent stability. The travelling column moves on a machine bed that is executed as a modern „inclined bed“. Thanks to the 45° incline, the operator can step very close to the machine table when positioning profiles, providing an ergonomic working position. The machining area measures up to 300 x 300 mm, facilitating machining of large-volume profiles.

“Thanks to the protective enclosure of the machine, we could do without the light barrier, and thereby minimize the required footprint, and improve noise protection”, explains Achim Schaller, project manager from the development department.

Fast setup and high rates of travel

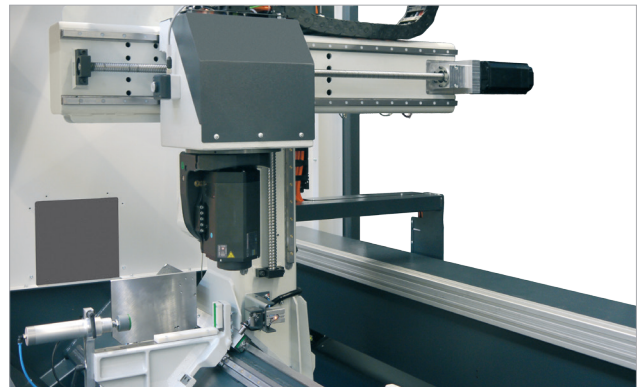
The machine is controlled via the modern elumatec Customer Interface, and machining tasks can be entered quickly and easily using the intuitive eluCAM graphic user interface. The input, which is supported by an assistant, is checked in the background using plausibility checks in order to reduce potential input errors to a minimum. Additional features, such as automatic calculation of the clamp positions, or a 3D preview, facilitate rapid input of complex machining tasks.

The clamp axis has a separate servomotor, which allows for adjusting multiple material clamps simultaneously. In addition, the linear bearings increase the clamp rigidity. The clamps can be repositioned even during the current machining task thanks to the autonomous clamp positioning.

Without the chip protection, the routing unit is lighter and can travel faster. „The machining cycles are shorter by up to 20 percent. The new drive technology and the more powerful motors have also contributed to this speed boost”, says Michael Schmid, one of those responsible for the electric development. Thanks to the double-speed servo-axes, for example the X-axis reaches up to 120 m/min, and the Y-axis up to 60 m/min.



Machine bed that is executed as a modern „inclined bed“



Continuously adjustable angle setting from -120° to +120° (A-axis)

Powerful and flexible router spindle combined with intelligent control technology

The powerful, water-cooled router spindle, which has an output of 7 kW (S1), can pivot steplessly from -120° to + 120° (A-axis), while performing machining tasks from the front, top and back at any intermediate angle in 0.1° intervals. The router spindle can also cut, mill, and mold threads. This versatility, in combination with intelligent control technology, allows effective and energy-efficient profile machining. “In the lower speed range up to 6000 rpm, the spindle is regulated, which results in energy savings of up to 30 percent”, explains Michael Schmid. The spindle is only supplied with as much energy as it needs for the particular machining step, instead of its full rated power. In addition, the extremely high degree of consistency in speed ensures outstanding machining quality.

Fast and energy-efficient machining

Strong servomotors that are optimally placed for the machining task support swift profile machining with tight tolerances. The latest generation of engines allows for high rates of travel, despite the fact that the 1-axis head of the A-axis is heavier with respect to the simple router spindle of a 3-axis machine. Again, the intelligent control technology reduces energy consumption. Achim Schaller explains the energy-efficient concept: “The braking energy from one axis can be used to drive another axis”.

In addition, the regulator retrieves the optimal parameter set for every tool, such as drill, disc milling cutter or router, to achieve the best machining result. “With all these features, SBZ 122/74 creates the basis for high throughput, and supports the user in achieving an important objective: reducing unit costs”, concludes Achim Schaller.

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.

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