Reichenbacher Hamuel GmbH equipped the largest cutting and machining center for wooden parts in Switzerland. The system automatically cuts, mills, drills, chamfers and grinds complex panels and components for assembly with lengths of up to 13.5 m, widths of up to 3.5 m and thicknesses up to 250 mm on five sides without reclamping.

The Vision III-TTT Sprint CNC gantry machining center with a 5-axis cardan head and stationary “pin table” with over 400 individually controllable vacuum pin cylinders is the core of the system. This is embedded in a roller table system to fully automatically feed in and remove unmachine and machine parts. A moving tool magazine with 24 locations, three pickup stations for saw blades and a multi-spindle drilling gear that can be equipped with 15 vertical as well as four horizontal spindles that can be equipped with two tools are integrated.

CNC and drive technology from Siemens

A SINUMERIK 840D sl precisely and dynamically controls the various positioning and machining operations. This multi-channel CNC system, with the same mechanical design as a SINAMICS S120 drive system, is scalable regarding performance and the number of axes – and supports modular machine designs. This makes it admirably suited as basis to engineer cost-efficient and customized solutions.

The SINUMERIK Operate is the new operating standard, with integrated, ShopMill – the intuitive workshop programming system. The CNC represents the interface to the CAD/CAM systems, therefore facilitating direct data transfer via the network and in turn the shortest preparation and re-equipping times. The Numerical Control Unit 730.3 PN – presently the unit with the highest performance – and PROFINET communication ensure the highest control dynamic performance with feed velocities of up to 60 m/min (rapid transverse up to 85 m/min). This results in a machining precision of 0.1 mm in all dimensions.

Efficient drive connection

The Control Unit automatically reads out the electronic rating plates of SIMOTICS servomotors via the digital DRIVE-CLiQ bus, therefore making tedious and error-prone manual parameterization a thing of the past. This also reduces cabling costs and time when commissioning the system.
High energy efficiency

Also in the woodworking domain, energy efficiency is a strong argument when purchasing equipment. Each time the drive brakes, SINAMICS converters feed energy back into the line supply – therefore achieving a very high efficiency. With the PROFIenergy PROFINET function, stations that are not required, for example in non-operational periods, can be selectively shut down. This is a feature that further improves the energy efficiency.

Safety included

With the integrated safety functions (SINUMERIK Safety Integrated), the well-proven protection concept based on safety switch strips can also be employed at the gantry itself. When these strips are actuated, they stop the machine in the specified response time. Safely Limited Speed (SLS) facilitates the flexible implementation of safely limited speeds when setting up the machine. This means that the functional safety can be simply and cost-effectively implemented without any additional hardware and wiring via PROFINET/PROFIBUS and the PROFIsafe profile.

Vision III-TTT Sprint from Reichenbacher Hamuel

- Fully automatic sawing, milling, drilling, chamfering and grinding on five sides in one clamping operation
- Highly flexible 5-axis machining of parts and components up to 13.5 m long, 3.5 m wide and 250 mm thick
- Feed rates of up to 60 m/min (rapid traverse up to 85 m/min)
- Machining precision, 0.1 mm

Control and drive technology from Siemens

- Standard and modular concept
- Simultaneous machining operations with multi-channel SINUMERIK 840D sl with high-performance NCU 730.3 PN
- SINUMERIK Operate with the intuitive ShopMill workshop programming
- Integrated safety functions
- Fast, fail-safe communication via PROFINET and PROFIsafe
- Straightforward commissioning using the DRIVE-CLiQ digital bus and electronic rating plates of SIMOTICS servomotors
- High energy efficiency through energy recovery and shutting down loads with PROFIenergy

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A Vision III-TTT Sprint 5-axis CNC gantry machining center from Reichenbacher Hamuel is the core of the system (left).

Sawing, milling, chamfering, drilling and grinding on five sides in one clamping operation – with the shortest production times and the highest precision. (Images: Balteschwiler)