

Results at a Glance:

Space-optimised storage for more than 6,500 different materials

20 percent more throughput due to optimised storage and materials handling

Fully automated production processes means fewer sources of error

Direct connection possible to CNC machines from all current suppliers

Possible expansion potential for future requirements

Technical specifications:

Warehouse size: 55 m × 8 m × 11 m (L × W × H)

Storage capacity: 1,000 cassettes storage cells at 3 t payload

Max. material length: 6,8 m or 2 × 3,3 m

2 storage and retrieval machines from Remmert

2 handling systems with up to 50 bar changes per hour

Transport of round material from 20 mm to 260 mm

Transport of flat, square and hexagonal material (15 × 15 mm to 260 × 200 mm), bar weight: 2,5 t max.

PRO FMS Enterprise flexible manufacturing system including the function of a production control centre, controller for all storage and handling processes

SAP interfaces

2 RKS 451 cold circular saws from Kaltenbach

2 KBR 371 band saws from Kaltenbach

2 sorting robots from robofact ag

Your contact:

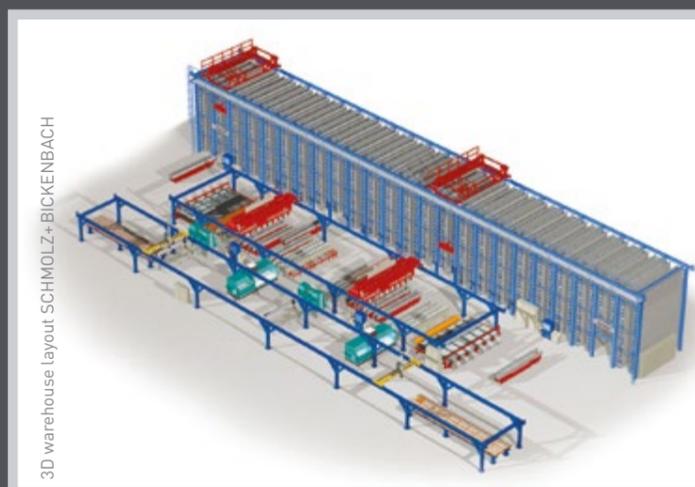


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3D warehouse layout SCHMOLZ+BICKENBACH



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**AUTOMATIC SAWING CELL IN THE
STEEL INDUSTRY**
EXAMPLE SCHMOLZ+BICKENBACH/WIL (SWITZERLAND)



Outcome

SCHMOLZ + BICKENBACH also closed down its existing short-ends store as part of the restructuring process. When cutting small batches to size, the steel specialist previously included remnants from other orders. The company stored short ends on racks which took up a lot of space and time and, although the entire contents of this store were recorded in the HOST system, searching for the material and transporting it to the saws was time-consuming. By restructuring, it is possible to fully integrate the short-ends store into the sawing cell and automated production process.

As Walter Hegelbach explained with obvious delight, "by investing in the new sawing cell, we can guarantee to process our customers' orders efficiently, flexibly and accurately." "The fully automated production steps have also made it possible to reduce potential sources of error." The entire system therefore ensures that all the processes are intelligently linked – from the storage of raw materials and optimised, fully automated, loading of machines through the job-specific sorting of pieces cut to size up to the final dispatch of orders.

A steel service centre at the cutting edge of technology, the steel company's Swiss subsidiary, SCHMOLZ + BICKENBACH AG specialises in the storage, cutting and pre-processing of high-quality steel products. The Swiss company's high-bay warehouses holds more than 20,000 tonnes steel which are delivered to its 30 high-performance saws just-in-time to be cut to the required fixed length.

Sawing cell – the optimum cutting technology

SCHMOLZ + BICKENBACH Stahlcenter AG at Wil, Switzerland has integrated a fully-automated sawing cell from Remmert in order to provide its customers with highly efficient operations for small-scale and very small-scale production along with the usual fast delivery service. The overall system ensures that all process flows, from the storage of raw materials and streamlined automated loading of the machines to the job-specific sorting of the pieces cut to size, are intelligently linked.

The modular fully-automatic processing cell consists of five different system components – a space-optimised bridge storage system, two single-bar handling systems (pick systems for short), the flexible PRO FMS production software, four powerful Kaltenbach saws and two picking robots.

Objective

The requirements which SCHMOLZ + BICKENBACH Stahlcenter AG imposed

on the technology and project implementation were relatively high. The solution must fully automate the production of small batch sizes and the company planned to increase its stock turnover by 20% by integrating the sawing cell. In order to achieve this, a three-shift system would have to be introduced in the warehouse with a maximum of two staff members per shift. "We found Remmert to be a competent partner which has fulfilled our expectations and satisfied the demands of the project 100%," said subsidiary Manager Walter Hegelbach commenting on the collaboration.

Solution

The new processes have been implemented as follows. At goods inward, SCHMOLZ + BICKENBACH records the incoming raw material and enters all the important data in the SAP HOST system. The material is then stored in the two existing fully automated high-bay warehouses. From these warehouses, the steel specialist

now only serves those orders which either require no blanks or require blanks which involve a lot of material. SCHMOLZ + BICKENBACH also loads the new sawing cells with material from the high shelves. A shuttle system transports the raw materials to the sawing cell where all the small batch orders are processed automatically.

The compact bridge warehouse for the sawing cell has enough capacity for around 1,000 cassettes with a max. payload of 3 t. The compartmentalised load carriers mean that the storage system has space for approximately 6,500 different items.

The pick systems take on the mechanical linkage from the warehouse to the processing machines. They remove the relevant raw material from the eight warehouse system's outgoing goods stations and forward it to the processing machines.

