



STOPA tower storage system brings productivity boost

Thanks to the use of a STOPA TOWER Flex sheet metal storage system, the company Büchel Blech AG is benefiting from versatile material handling coupled with cost and time savings. Together, these advantages have resulted in increasing value-added and, ultimately, improved productivity.

By investing in a STOPA TOWER Flex, Marco Büchel, Managing Director of Büchel Blech AG, a company founded in 1981 and headquartered in Balzers in the Principality of Liechtenstein, has taken a decisive, forward-looking step towards increased economic efficiency. "We are able to keep a sufficient supply of sheets on hand in the high-bay storage and cut the material ourselves without having to buy ready-to-use cut sheets."

This has proved to be a smart decision. Especially as the contract manufacturer has been able to achieve cost reductions and time savings despite the cost of the sheet metal storage system, a laser cutting system and the additional personnel required. This is due to the fact that it is now able to manufacture the components and semimanufactured parts for its products in its own factory. This is an advantage that allows it to react without delay to market requirements, for example by responding speedily to inquiries and making rapid decisions. What is more, thanks to the uniform material grade used, it can achieve identical results in consistent high quality at all times.

The storage system developed by STOPA Anlagenbau GmbH in Achern-Gamshurst ensures an efficient use of space, faster access to sheets, improved organisation and careful material handling. In addition, the storage system is a vital prerequisite for process-optimised manufacturing, for which the flexible material provisioning of different sheet sizes and thicknesses is essential.

Simple material handling

Marco Büchel comments on how the laser cutting system is supplied from the sheet metal store. "Simple material handling is important because this work step is time-consuming compared to a mass production scenario. That is why we have invested in two transport carts that simplify parallel operations and consequently increase our flexibility. One example of this is the ability to perform storage and retrieval operations simultaneously."

Staff transport the sheets the short distance to the lasers using manual transport carts, which they also use to return leftover sheets to the store. To ensure that the same material of uniform thickness is always present on the system's 40 flat pallets, each of which has an effective area of 1,525 x 3,050 millimetres, they return these leftovers to the original load carriers. Because the manual transport carts are numbered, the material movements can be tracked by the operator's ERP system.



The solution with two transport carts performing simultaneous storage and removal activities makes Büchel even more versatile.

The contract manufacturer, whose extensive portfolio of products and services goes from design through to laser cutting, pressing, deburring, welding, rounding, blasting and barrel-finishing and on to cleanroom and assembly work, uses the STOPA WMS 4.0 for its warehouse management. The Warehouse Management System (WMS) performs all the functions necessary for the operation of a high-bay storage system with fixed-position storage, including administration and automatic control. The function

scope as well as the table view and interface language of the WMS can be configured on a customer-specific basis. The system also has other outstanding features, one of the most important of which is the batch tracking capability. A Microsoft SQL Server Express database manages and backs up the data as standard.

Marco Büchel, whose business enjoys annual sales of approximately four million Swiss Francs, has very clear ideas about the sheet metal storage system, in which he stores large and medium-sized sheets. "Another vital element in the decision was the fact that STOPA was the only manufacturer to offer two front-mounted stations as standard. The other companies we contacted would have had to build special solutions."

These stations take the form of a scissor lift table and a fixed-height transport cart. Büchel uses the scissor lift table, which is equipped with loading pins and insertable stops for setting up a shared corner coordinate system, for input and output. The transport cart which, like the scissor lift table, is equipped with a pneumatic pallet locking system, is used for output. Light barriers check whether the system is within the applicable permissible loading height.

Thanks to the compact design of the tower storage system, the operator, which processes 60 tonnes each of chromium steel and aluminium each year, together with 20 tonnes of special steels, is assured an ideal balance between storage capacity and space requirements. The company also benefits from a high level of economic efficiency. To make optimum use of the height of the system, Büchel opted for two pallet loading heights. Material that is processed in large quantities is stocked in the lower storage area, which has a maximum loading height of 275 millimetres. The company also uses this area to store material directly from the truck without having to repackage it, thus dispensing with the need for an unpacking table. The remaining pallets are configured for a loading height of 90 millimetres.

Solution highlights

- Büchel benefits from great flexibility in its material handling as well as from cost and time savings.
- The increased value-added results in enhanced productivity.
- The sheet metal storage system is able to supply sheets in sufficient quantities for Büchel to be able to cut the material itself whenever required, without having to buy ready-to-use cut sheets.
- The operator can respond to market requirements without delay.

The system components of the STOPA TOWER Flex, which operates on a single-shift basis, are controlled by a real-time soft PLC which is integrated in an industry PC. The PC is equipped with a touchscreen and is used to operate the system and display its states. This capability includes, for example, the graphic visualisation of the store and the twin-mast storage and retrieval unit as well as permanent plain text status displays.

Marco Büchel leans on the tower storage system's ergonomically designed operating terminal. "The system is easy to use. Alongside this terminal, STOPA has installed four more in our offices. When we initiate removal orders via the WMS, a light flashes in the store as soon as the material is available. We don't use the movement order pre-programming function. If necessary, we enter the orders individually.

Coherent solution package



By choosing the STOPA TOWER Flex, Büchel has taken a decisive, forward-looking step towards increased economic efficiency.

The STOPA TOWER Flex, which is approximately eight metres high, 4.7 metres long and 6.3 metres wide, started operation in September 2017 as planned. Büchel, which manufactures customised individual parts, series and assemblies, requested proposals from various vendors, three of whom were included in the final shortlist. One considerable challenge lay in the fact that the relocation of the ISO 9002-certified company was scheduled to take place in parallel with the finalisation of the storage system. In this context, the decision in fa-

your of STOPA was also dependent on a definite promise to meet the desired commissioning date. If the manufacturer had not been able to meet this deadline then production at Büchel, which primarily supplies the semiconductor industry, plant manufacturers in the semiconductor coatings and vapour deposition sector and the automotive and other industries, would have come to a standstill. STOPA even had to revisit its plans and reduce the loading capacity of each of the pallets from a maximum of three to one and a half tonnes because the factory foundations had already been laid.

Ralf Gerber, who is a Technical Manager at STOPA, points to the confined space within which the company installed the tower storage system with millimetre precision. "Due to the limited space under the factory roof resulting from the structure of the building, the already installed laser



Marco Büchel, Managing Director of Büchel Blech AG (left), and Ralf Gerber, Technical Manager at STOPA, consider the key benefit of the investment to be the increase in productivity it has made possible.

cutting system and crane rails, it was a real challenge to assemble the storage system, which had been designed with a dual-block configuration. Our fitters solved the problem by using a tracked vehicle equipped with a crane."

to be the increase in productivity due to the growth in our value-added. I would also like to emphasise STOPA's considerable consulting expertise, which gave us the confidence to come to our decision. All the issues that had to be clarified before the contract was awarded were discussed frankly and the decisions adhered to. What is more, the STOPA TOWER Flex is a tried and tested storage system. This was confirmed to us by the operator of a reference installation which we visited."

Marco Büchel believes that the system will pay for itself in five years and looks back at the decision-making process with satisfaction. "We consider one of the great benefits brought about by the investment

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