



Gebhardt Fördertechnik invests in a second tower storage facility for sheet metal

In order to maintain its high level of delivery quality and punctuality, Gebhardt Fördertechnik GmbH, based in Sinsheim, has invested in a second tower storage facility for sheet metal and an additional laser cutting system. The tower storage facility provided by STOPA prevents bottlenecks, which can never be ruled out when there is a high order volume. The benefits include quick access to the sheets in their compact storage area, reduced handling effort and shorter throughput times. The new storage system also increases the company's delivery capability.

Compact storage system

At the incoming/outgoing goods station a forklift truck sets the unpacked sheet stacks onto the plungers of the scissor lift table that is used for storing and retrieving material. The stacks are precisely positioned in relation to coordinates created by insertable stops. A photoelectric sensor makes sure that the maximum loading height of 160 millimetres is heeded.

Gebhardt Fördertechnik has assigned fixed storage locations and article numbers to most of its sheet metal grades. The warehouse management computer shows the operator where space is available to store material or add material to existing stocks. Most of the sheets used by the company are between one and 20 millimetres thick. The materials are sheet steel, aluminium, high-grade steel and film-coated high-grade steel.

The STOPA TKL consists of two storage blocks. The basic elements are compact, sturdy upright frames with longitudinal connections and diagonal bracing. The tower storage system is about 5.8 m high, 4.7 m long and 6.3 m wide. These are not the limits, however; heights of up to 20 m are possible. The modular design permits expansion

at any time, for example by connecting additional machines.

The twin-mast lifting beam moves in the Z axis, storing and retrieving the flat pallets that serve as load carriers. For this purpose it uses a push/pull device with roller chains and pusher dogs that can be extended on both sides. For lifting, the beam is equipped with a low-wear and low-maintenance chain lifting gear with special forward-elongated roller chains and a synchronizing shaft. Precise positioning of the robust lifting beam is ensured by an absolute, load-independent digital measuring system that

does not have to move to a reference point. The beam reaches speeds of up to 12 m per minute when lifting and 6 m per minute when pulling. All functions are monitored to ensure reliable operation.

Front-mounted self-supporting contact rollers keep the 30 flat pallets on their inclined supports. The pallets have a carrying capacity of 3,000 kilograms in order to handle the large and medium-sized sheets used by the customer.



The new tower storage system has a number of important benefits: efficient use of space, fast access to sheets and short throughput times

Laser cutting with minimum waste

A TRUMPF TruLaser 3030 flat-bed laser machine is connected to the loading and unloading station at the front and retrieves the required sheets from the towers. If a sheet cannot be completely used for parts related to the order, the operator can nest additional standard parts. In this way the sheets can be processed in a single cycle with minimum waste.

The twin station is equipped with upper and lower carts at fixed heights and with a LiftMaster automatic loading and unloading machine. The lower cart, which serves for loading and automatically detects the last sheet, has a loa-

ding height of 130 millimetres. The laser cutting system works around the clock.

At night the company returns semi-finished parts, finished parts and leftover sheets to the TKL. During the day semi-finished and finished parts are sent right to the outgoing goods station where they are placed on pallets for shipping. Ninety percent of the semi-finished parts are further processed and put into buffer storage racks for this purpose.

Simple operation

A real-time soft PLC, integrated in an industrial PC, controls the components of the system and communicates



The two tower storage systems are an example of how sheet metal can be stored compactly in a relatively small area

orders. The control unit also performs diagnostic functions and has a counter for operating hours. If a fault occurs, STOPA can access the control unit remotely, analyse the fault and rectify it.

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