



STOPA LG-E shelving system for long-span goods: designed with the future in mind

Lehnhoff Hartstahl, a supplier of hydraulic excavators and related equipment, has invested in an LG-E shelving system for long-span goods developed by STOPA. The benefits include efficient use of space, greater productivity and faster access to material.

Frank Spengler, production manager of Lehnhoff Hartstahl GmbH in Baden-Baden, praises the advantages of the STOPA LG-E (Basic EcoPlus) shelving system for long-span goods: "We save time when retrieving stock and can use our space efficiently. This enables us to store more material and keep our saws running closer to capacity." Another important advantage of the system, which replaces cantilever racks, is clear organisation. "Although we now use more material and need more space, handling has become simpler." Productivity has also increased thanks to an optimised material flow. Time-consuming transport and relocation of stock is no longer necessary.

Good prospects for the future

The LG-E shelving system for long-span goods was developed by STOPA Anlagenbau GmbH, Achern-Gamshurst. The version chosen by Lehnhoff Hartstahl is about seven metres high and eight metres long. It is a double tower (without stations) and has a width of four metres. The investment is seen as promising because of the modular components, which will enable the company to adapt its production methods to rising demand or changes in market expectations. The LG-E facility has 39 storage locations for cassettes measuring 840 by 6,500 mm, with heights of 215 or 250 mm.

The load carriers take a maximum payload of 3,000 kg and have divisions for separating the contents. The cassettes fully encompass their loads, permitting denser storage.

Flexible solution

Other advantages include reduced damage to material and simple handling. The system functions as a link between the material supply and the metalworking machinery. Supported by software, it enables rapid storage and stocktaking.

Cassettes are a more efficient solution than horizontal storage because they provide quicker access to the material and make it easier to keep track of inventories thanks to integrated material management. The storage system is also flexible when it comes to configuring the storage and retrieval stations.

Lehnhoff Hartstahl, a leader in its market sector, specialises in quick-change systems and mounted implements for excavators of all



The STOPA LG-E shelving system for long-span goods saves space, increases productivity and provides quick access to material.

brands and types up to 130 tonnes. The company, which has some 200 employees and annual revenues of 40 million euros, stores round and flat stock, some of which is high-strength knife steel, in lengths of three and six metres. Material is stored all the way up to the ceiling. There are no interfaces to the sawing machines, so the material is transported to them by an indoor crane with suitable lifting gear. “Now that we’ve installed the shelving system, we can cut the knife-steel bars in batches, which saves time,” says Spengler. “Material is returned only in exceptional cases. We process the bars as fully as possible to avoid remainders, but these can also be managed.”

Safe operations

At Station 1 of the system the company, which supplies construction companies, dealers and OEMs, has a transport cart at a fixed height



STOPA can set up the shelving system right next to an exterior wall inside the building, and a transport cart can travel outdoors through a roll-up gate.

with a lift-out unit for storage and retrieval. STOPA safeguards all functions by means of a deadman switch and monitors them with a photoelectric barrier. To store a cassette, the SRU picks it up and passes it to the transport cart, which is parked in a waiting position below the shelf tower. The operator, who receives this information at the control console, opens the roll-up gate for the cart and closes it when the cart reaches the end position. When loading is complete, the procedure goes in reverse. Opening and closing of the outside gate is monitored automatically by the

Highlights der Lösung

- high level on safety when handling long goods
- economic use of space
- more productivity
- quick access to the material
- significantly longer search effort
- minimized material damage

System.

The SRU is positioned in height by an absolute, load-independent digital travel measuring system which requires no movement to a reference point. All functions are monitored to ensure reliable operation and prevent overloading during storage or retrieval.

Station 2 of the system has a conveyor for transverse movement of cassettes that is positioned on the long side for storage and retrieval. The safety requirements are the same as those for Station 1, but there are also safety fences on the steel structure for protection against falling parts, as well as an access monitoring system.

A programmed Siemens hard PLC controls the system. The switchgear cabinet has a control panel with touchscreen at an ergonomic height for operating the system and displaying its states. Individual orders can be processed automatically once the start and finish coordinates have been entered.

LVS-Turm with a large program package

The shelving system for long-span goods comes with the warehouse management software LVS-Turm, which includes all the functions needed for operating the system at a fixed location. A Microsoft SQL Server Express database manages the data. As a part of its warranty, STOPA provides a teleservice that can diagnose faults and make suggestions on how to rectify them. This includes remote diagnostics of the control system via the STOPA telepresence portal. The LG-E shelving system for longspan goods went into operation at Lehnhoff Hartstahl in August 2020, and thanks to this software it offers a wide range of func-

tions that can be adapted as needed to changing requirements. “We are also considering, but have not yet installed, sharing of data between the shelving system and the ERP system and between the shelving system and the production systems to be supplied,” says Spengler. “This would enable us to share inventory data and provide material tracking information when initiating transport jobs. In this way we would benefit from seamless documentation of the stored goods.” Manual entry of some information is unnecessary because the software generates orders automatically. Inventories, listed as total stocks and partial stocks, are now more reliable. STOPA’s graphic program interface includes intuitive user guidance, and parts of the program that are not needed are kept out of sight. Access can be restricted to individual users and defined parts of the system.

The storage system, which operates in two shifts with almost 100 percent availability, is very userfriendly thanks to its clearly organised graphic interface. Full withdrawals, partial withdrawals, warehouse admission and relocation of stock are equally simple.

Long service lifetime

Spengler sums up his assessment: “We are highly satisfied with the solution we have chosen which was based on a longstanding relationship with a partner in our vicinity. Our first order from STOPA was for a sheet metal storage system, and now we have invested in our first shelving system for long-span goods. We estimate that it will pay for itself in two years.”

STOPA’s LG-E shelving system for long-span goods operates at much higher speeds than

entry-level products for automated material storage offered by other players on the market. This competitive advantage, coupled with a greater variety of stations, is what makes such large numbers of storage and retrieval operations possible. STOPA also deliberately dimensions its components in the upper range of the market in order to en-



Frank Spengler, production manager at Lehnhoff Hartstahl, is completely satisfied with the solution chosen by his company.

sure a long service lifetime for its systems, even when used intensively.

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