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CASE STUDY

LFS COORDINATES WAREHOUSE AUTOMATION FOR MISUMI EUROPE

Industry Leader Chooses EPG ONE Supply Chain Execution Suite

Global players must manage vast amounts of data daily to efficiently control their material flows. Few areas feature automation at the level seen in intralogistics. MISUMI Europe GmbH, a manufacturer of mechanical components for custom machinery, has continuously expanded and automated its European central warehouse in Frankfurt. A key element in this transformation has been the Warehouse Management System (WMS) LFS from EPG (Ehrhardt Partner Group). EPG's supply chain specialists implemented LFS and integrated other automation solutions from the EPG ONE Supply Chain Execution Suite, including the multi-carrier shipping software ISS and the Supply Chain Control Tower (TIMESQUARE). Only due to the perfectly synchronized systems and the high-performance LFS is MISUMI able to achieve a fully transparent supply chain, ensuring a highly efficient and effective material flow.

MISUMI Europe GmbH specializes in configurable components for custom machinery. Customers can select from a portfolio of more than 20 million items, including linear shafts with a specific number of threads and matching ball bearings with the corresponding screws. Typically, the company ships complete assemblies on the same day the order is placed. From its central warehouse in Hesse, MISUMI serves the entire European market and large parts of Africa. On average, 1,500 shipments leave the warehouse every day.

LFS ENABLES HIGH AUTOMATION LEVELS

Due to growing orders in the B2B e-commerce segment, MISUMI decided to expand its 2017 warehouse with a highly automated logistics system. Since then, the warehouse area has been expanded to two halls. One section features a manual area with



CHALLENGE

- Complex warehouse processes for small and large components
- Growing e-commerce orders required automation
- Integration of various software systems



SOLUTION

- Implementation of LFS for flexible warehouse management
- Integration of an automated shuttle warehouse
- Enhancement with ISS and TIMESQUARE



RESULTS

- Efficient and transparent logistics processes
- Time and cost savings through automation
- Optimized shipping and inventory management



a four-story racking system offering 240,000 storage locations, plus 1,000 additional pallet spaces for very large and heavy items. The second section is an automated shuttle warehouse with up to 250,000 storage locations. Spanning an area of 39 x 46 meters, the shuttle warehouse has ten aisles and 22 levels, storing up to 200,000 items.

MISUMI uses about 56,000 reusable containers; around 46,000 are used as inventory containers in the shuttle warehouse, while the remainder are used in order consolidation. These boxes can be subdivided into up to eight compartments, optimizing storage space. Order picking follows the goods-to-person principle. “The integration of this highly automated technology would have been impossible without LFS,” says Mathias Schmidt, Operations Manager and Stock Management at MISUMI.

SHUTTLE WAREHOUSE SOFTWARE COMMUNICATES IN REAL-TIME WITH LFS

When the shuttle warehouse was integrated into the warehouse management system, MISUMI opted for a highly flexible solution: thanks to LFS’s modular architecture, integration with third-party software was seamlessly implemented. “Due to LFS’s intelligent networking and adaptability with custom interfaces, which we had already programmed during implementation, expansion and integration were straightforward,” says Mara Matthieß, Logistics Consultant at EPG.

Since both systems communicate in real-time, there is no time loss for MISUMI. On the contrary, the

shuttle warehouse enables the company to optimize storage capacity and increase employee productivity. “Long walking distances are no longer necessary. The goods are automatically brought to the employees. Not only that, but the workstations in the shuttle warehouse are much more ergonomic,” explains Schmidt. Simultaneously, a comprehensive LFS update with additional programming was carried out. “This enables employees to work efficiently with LFS at all automation stations,” Matthieß adds.

LFS AS A CENTRAL COMPONENT OF MISUMI’S SUPPLY CHAIN

MISUMI has relied on LFS for several years. “When we expanded our warehouse from 800 to 10,000 square meters, our previous warehouse management system couldn’t handle the expansion,” Schmidt reports. EPG’s supply chain experts quickly implemented a transparent, high-performance, and modular warehouse management system. “LFS is flexible enough to easily integrate with our custom ERP system and also offers a standard interface in case we want to use a different ERP system in the future,” Schmidt explains.

A challenge was the relatively complex inventory at MISUMI Europe GmbH. “We had to consider that MISUMI predominantly has very small components, all stored in the automated warehouse, but also works with very large and heavy components that cannot fit into the conveyor system or, more importantly, into the reusable containers,” Matthieß explains.

For the global company, the critical outcome of the process was ensuring that all warehouse areas work seamlessly together and can be managed through





LFS. “Logistics processes have become much more transparent with LFS. The old system only had a few checkpoints, so we could never accurately track the status of each item,” Schmidt explains. He also highlights LFS’s sample inventory feature, which makes a full count of the 55,000 boxes in the automatic warehouse unnecessary. Instead, warehouse staff now only need to count about 1,000 boxes—saving significant time.

ISS AND TIMESQUARE ALSO IN USE IN FRANKFURT

LFS’s industry-specific software module covers all the necessary specifications for shipping screws, washers, or camshafts. For this reason, the Multi-Carrier Shipping Software (ISS) is also integrated into LFS for more efficient parcel management in the Frankfurt warehouse. The shipping solution provides access to over 250 different carriers, freight forwarders, and postal services through a single interface. This multi-carrier strategy allows B2B customers to optimize their deliveries, adapt flexibly to the strengths and weaknesses of each carrier, and reduce shipping costs. The software also automatically assigns the correct shipping label to each parcel. In addition, MISUMI uses the Supply Chain Control Tower TIMESQUARE. This all-in-one dashboard serves as a cockpit for process monitoring

in logistics, visualizing all relevant key performance indicators and contributing to greater flexibility in daily warehouse operations.

EPG’S EXPERTISE ALSO IN DEMAND FOR OTHER PROJECTS

Further changes are planned for Frankfurt: This year, MISUMI aims to replace its custom ERP system. The expertise of EPG’s supply chain specialists will play a significant role in the implementation. Overall, MISUMI’s experience has been overwhelmingly positive: “The smooth launch and expansion were by no means a given and only possible because the project teams worked so well together over the years,” says Schmidt.

ABOUT MISUMI EUROPE GMBH

MISUMI Europe is a leading provider of standardized and customizable machine parts and components. Based in Frankfurt, the company has been supplying customers in the mechanical engineering, automation, and industrial production sectors across Europe since 2003. MISUMI’s extensive product range includes more than 20 million items, including mechanical components, fasteners, automation parts, linear guides, and support systems.