



# — Forward-looking logistics for German medical technology manufacturer ERBE Elektromedizin GmbH

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## AEB PROJECTS, SYSTEMS & SOLUTIONS || HIGHLIGHTS

- End-to-end process optimization — from order acceptance to worldwide distribution
- Customs integration for import and export
- Restricted-party address screening
- New warehouse management system ensures efficiency, stability and flexibility in logistics
- Warehouse, transport and export processes mapped in a single environment
- Electronic processing of all documents needed for shipping process



In business since 1847, ERBE Elektromedizin GmbH now has over 560 employees developing, producing and distributing medical technology for electrosurgery and waterjet surgery as well as equipment and accessories for hemostasis, tumor removal and minimally invasive operations. ERBE has a global presence with sites in the United States, Brazil, China, France, the Benelux countries, Switzerland, Poland, the United Kingdom, India and Russia. Tübingen in Germany is its sole production facility. For years, ERBE has achieved strong growth both at home and abroad. Exports currently account for some eighty percent of revenue. The structure that had evolved over the years was not equipped to fully meet these and other challenges.

The cornerstone of the new logistics center, built adjacent to the existing facility on the southern outskirts of Tübingen, was laid in February 2007. Production and logistics operations had to be maintained throughout the entire construction period. After thirteen months of construction, the new warehouse was ready for operations. It took just three days for ERBE to move into the new logistics

center with its six storage areas and get up to production level. The nearly 38,000 square meters of floor space in the new logistics center accommodate the following:

- Automatic small-parts storage area featuring storage trays for nearly 15,000 boxes and with a capacity of 260 stock removals per hour
- High-rack storage area with wire-guided narrow-aisle turret truck technology
- Block storage
- Quick-turnover zone
- Dangerous goods storage
- Sterile goods storage



ERBE logistics center as seen from outside

## IT support from ASSIST4 Warehouse Management

The entire warehouse process—from goods receipt to stock putaway, from picking and stock removal to packing, from complete freight document preparation to loading—is mapped by the transport and warehouse management software ASSIST4, developed by AEB in Stuttgart.

Standardization and automation were the benchmarks in planning and designing the IT architecture of the new logistics process. For ERBE Elektromedizin GmbH, automation means not only mechanized support but process support.

### This support is ensured by:

- Consistent use of scanners with an online link to the warehouse management system
- Generation of efficient transport chains within the warehouse
- Interfaces to the ERP system, so inventory is continuously synchronized among the systems
- Electronic processing of all documents needed for the shipping process
- Online transmission of import and export declarations to the Customs authorities

This represents another important step toward faster and more efficient order processing.

As soon as goods are received, the warehouse management system takes over inventory management, using diversified multi-stage transport order chains to route the goods into precise bin locations that have been predefined according to stock placement strategies. Interfaces to the ERP system ensure that inventory is continuously synchronized among the systems.

One innovation that facilitates stock putaway and removal in the automatic small-parts storage area is the inclusion of both a laser-guided display and a monitor display.

When an employee initiates stock removal during the picking process in the small-parts storage area, for example, movement orders are generated and the material flow computer controls the transport of the tray

to the appropriate picking bin. A laser beam points to the tray segment from which the goods are to be removed. A graphic display also indicates the right compartment on the monitor.

To avoid errors in the picking process, the picker first scans the handling unit from which the goods are to be removed, then the article to be removed, and finally the handling unit into which the article is placed for further transport to the packing station.



Laser-guided and visually supported picking in the automatic small-parts storage area

ASSIST4 also supports the picking process in the manual warehouses. The warehouse management software calculates the best route within the warehouse using transport chains and priorities stored in the master data. Employees receive route-optimized driving orders on the forklift radio terminal in the high-rack storage area. In the other storage areas, handheld devices are used. Scanners support the removal of the goods in all storage areas.

The pull principle, already implemented in production processes as “kanban” control, is now applied to logistics—for example,

through the installation of “pulling” packing stations that are mapped in the warehouse management system.

While consolidating goods from the various storage areas at the packing stations, bottlenecks are avoided by triggering a picking order only after a line or location in the staging area shows the appropriate capacity.

Picked goods—whether from the automatic small-parts storage, block storage or high-rack storage area—are now made available at the consolidation shelf or line originally defined for this consignment. The employee sees the consignment’s consolidation bin on the handheld device through control and monitoring scans. The consignment volume and weight determine whether the merchandise must be brought to the staging area or to one of the ten lines.

Following the system-supported check for completeness, the consignment is released for packing. The packer receives a corresponding alert in the packing station application. Data such as package type and package content and other information needed for the shipping process is collected and administered at the consignment level. The packing process is “qualified”: each article with a batch or serial number is scanned once more before being physically packed to make sure it is in the right consignment. This provides an extra layer of control against the errors of individuals in support of a system-wide zero-error strategy. It also enhances traceability based on batch and serial number.

Like the other consignment-specific documents, the package list is generated by the system during the process and printed and checked in the dispatch office, where it can then be added to the consignment as soon as the packing is complete.

The electronic link to German Customs also helps shorten lead times in shipment processing.

Integrated compliance screening, which automatically checks all ship-to and bill-to parties against EU and US sanctions lists, ensures that no consignment is sent out to anyone with suspected links to terrorism.

## Status Monitor and Logistics Indicators

The warehouse cockpit gives warehouse managers important information for planning and controlling the processes they oversee.

### For example:

- Current number of open transport orders
- Number of open and completed warehouse order items
- Overview of the number of warehouse orders, with color icons indicating their status



Due to the optimized picking and packing, customers benefit from faster and reliable deliveries.

The entire process is controlled and monitored by a system of indicators. All relevant process information—involved parties, lead times, consignment contents, consignment routes, track-and-trace information—is available for operational control, creating greater transparency in the

process, enhancing the reliability and lowering the error rate. By consistently tracking the relevant indicators, ERBE Elektromedizin GmbH is able to continuously increase logistical performance.

End-to-end software support yielded logistical processes that were less individualized but more reliable and efficient. The consolidation bins in front of the packing area have proven to be both physically and logically critical to shipping management. Here it is essential to have a seamless transition of the picking results into the packing process. The aim is to achieve the current benefits of consistently consignment-based but manual picking by an employee through quick and error-free consolidation of the now fragmented picking process. This will be a critical success factor of the warehouse process, which is much more heavily reliant on a division of labor.

Here we can see that the system was designed with very robust support to offer users rapid resolutions when incorrect entries are made or unpredictable inventory situations arise. The conscious selection of an integrated software package—in which warehouse, transport and export processes are mapped in a single environment—has paid off by reducing the number of interfaces.

## Summary and Outlook

ERBE Elektromedizin GmbH has responded to legal requirements and internal targets by reorienting itself and completely reorganizing its logistical processes within two years. The sales department has been relieved of organizational responsibilities and is now able to focus exclusively on customer contact, shipment releases and availability checks.

ERBE customers now benefit from faster and more reliable deliveries. They will also gain from other improvements in the future—as ERBE continues to shorten lead times, for example, by eliminating European logistical processing stages still in place to exploit further cost-cutting potential. In this way, logistics helps protect competitiveness. The quality of logistics is rising, meanwhile, as the



Qualified packing: The system supports a zero-error strategy.

risk of defects is lessened, which in turn decreases the number of costly returns.

The implementation of a new logistics concept already enables faster, more efficient and more customer-centered processing while offering further potential for future developments.

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