# Lenze – Becoming Europe's Logistics Hub With TGW

## *Becoming the hub of logistics for Middle and South Eastern Europe - that was the goal Lenze was pursuing. Therefore, Lenze invested in a new ultra-modern storage and commissioning system for state-of-the-art material handling to guarantee perfect customer supplies. Based on a long-lasting partnership, TGW implemented the core element of Lenze's logistics centre in Asten, Austria.*

3,100 employees worldwide, 60 countries and growing business activities – that's what the German drive and automation engineering expert Lenze stands out for. Five logistics centres provide for worldwide availability of Lenze's products: they are located in Chicago in the US, Shanghai in China, Ruitz in France, Hameln in Germany and one at Lenze Austria's site in Asten. This location is of particular importance, since 80 per cent of the locally attended customers are based within a 600 kilometres radius. This way, Lenze is able to comply with their declared 48-hour delivery period. It was Lenze's goal to turn this location into a new logistics hub for Middle and South Eastern Europe. And this goal was pursued with the help of TGW.

In the past few years, Lenze was having an extraordinary state of business with growing activities in Eastern Europe. For this reason, the Austrian site has now been massively extended, gaining strategic importance: "Being one of three logistics hubs in Europe is an appreciation and a challenge at the same time. On the one hand, this appreciation of the Austrian site paves the way for further growth, and on the other hand, it presents us with new duties. For instance, the logistic support service for Italy will be handled from there as of beginning of 2013", reveals Marco Gattringer-Ebner, Managing Director of Lenze Operations Austria. With its old logistics centre, Lenze soon reached its functional limitations and decided to install a completely new building, part of which was dedicated to an automated warehouse by TGW.

**Individualised solution for Lenze**

Lenze shares a long-lasting partnership with the Austrian systems integrator TGW based in Wels: TGW's material handling solutions are equipped with Lenze's excellent drive systems, while Lenze is using TGW solutions for their own logistics operations. "This is already the third solution we get to implement for Lenze. We are very happy to have found a reliable partner as well as a customer in Lenze", says Markus Lehner, Sales Manager at TGW. The two companies are successfully developing methods for energy management together, such as a tool which permits to calculate the power demand of a system already beforehand. "Nowadays, this tool is used for every installation", Markus Lehner points out, "and needless to say, adequate energy management was a very important aspect for Lenze."

TGW was entrusted as general contractor to implement the entire logistics solution within the new building in Asten. One of the main goals was to optimally use the available warehouse footprint through multi-deep storage equipment. Therefore, TGW implemented a scalable and well-proven software system with simple user interface and high IT security. A professional energy management and integrated energy recovery provided for sustainability and professional service in all system areas. And of course TGW exclusively used Lenze components in the whole project.

**Comprehensive software solution**

Lenze's system is monitored and controlled by the TGW CI\_LOG Supply Chain Management Software. This software manages all stocks and storage locations of the different Lenze storage areas as well as assumes the control of storage and retrieval functions, stocktaking, material flow control, HOST interface and much more. The warehouse management system as well as the material flow controller and Commander controls are provided by TGW. All these components are connected to the SAP host system via the CI\_LOG interface. The TGW material flow controller is used to coordinate the Lenze systems, it serves for optimising the capacity utilisation, for instance, for storage and retrieval strategies as well as for transferring orders to the downstream PLCs. The visualisation system graphically represents information from the warehouse management system and from the material flow controller.

TGW's Commander control system provides for efficient energy management within Lenze, implemented by an automatic stand-by mode in the material handling equipment. If no tote movements are requested, the system will switch into stand-by mode. Energy feedback modules were installed in all storage & retrieval machines which immediately convert the braking energy into power for the lifting axis. This measure reduces the operating costs by up to 20 per cent.

**Mini-load and high bay warehouse by TGW**

In order to support Lenze's growing business and their intention of making the Asten site Europe's logistics hub, TGW installed a 20 metre high, fully automated high bay warehouse with integrated mini-load warehouse accommodating up to 9,000 pallets and up to 18,000 totes, holding more than 20,000 different SKUs in stock. The advantages for Lenze and its customers are obvious: improved availabilities, increased flexibility and reduced lead times. Besides, the externally rented storage space was cleared, while the internal storage capacity was increased and the material flows within production were improved. "We have much more space now – to the existing 4,800 square metre assembly hall we added the high bay warehouse with an additional 1,650 square metres and the new 3,000 square metre hall. And still, we managed to simplify the material flow in the hall", adds Marco Gattringer-Ebner, Managing Director of Lenze Operations Austria GmbH.

The automatic mini-load warehouse handles up to 260 storage and retrieval cycles per hour and is served by TGW Magito cranes and Combi Telescopes as load handling device. "Despite their enormous height, our Magitos have acceleration values comparable to a sports car, which is due to the lightweight design of the equipment", Markus Lehner explains.

Besides the automatic mini-load warehouse, the solution includes four ergonomic order picking workstations with Pick&Pack technology. "The Pick&Pack workstations permit the picking personnel to immediately pick the items into cartons or onto the pallet - there is no need for order totes as intermediate step, they are able to finish the order right away", explains Markus Lehner. Pick-to-Light modules support the workers in their work. Particular attention was paid to an ergonomic design of the workstations, all requirements were specified beforehand together in collaboration with Lenze.

In the automatic pallet warehouse, three single-mast stacker cranes store and retrieve the goods into or from simple or double-deep racks, achieving a performance of 100 cycles per hour. A further four order picking workstations are situated behind the pallet warehouse. "Manual handling of pallets is no longer required - now the goods come to the worker", explains Lenze Operations Austria's Managing Director Marco Gattringer-Ebner.

The warehouse is connected to the pallet picking area via a sequencing buffer which allows Lenze to operate the two systems independently from each other. The pre-picked totes from the mini-load warehouse are supplied to the pallet picking station in a pre-defined sequence.

Another innovation was implemented in the Pick&Pack workstations: A SAP interface permits the worker to check the serial number of the goods – which testifies the importance Lenze attaches to quality assurance.

**Drive technology by Lenze for Lenze**

The entire drive equipment for the stacker cranes were implemented with in-feed and feedback modules as well as servo inverters and drives by Lenze. Furthermore, the in-feed modules for the tote and pallet transfer cars and all drives for the tote and pallet conveyors as well as the belts for transfer cars and stacker cranes, drive elements and control cabinets were provided by Lenze, as well. Lenze and TGW have been partners for many years already: "Seen from a local standpoint, we are nearly neighbours. On the other hand Lenze offers the ideal drive and control systems for the TGW product portfolio", explains Markus Lehner, Sales Manager at TGW. Both companies are proud of the forward-looking collaboration, combining technologies of either of them.

**Capacity extension incl. high-performance technology**

In September 2011, the construction of the new assembly hall in Asten was started. About a year after that, production went live. "The new high bay warehouse was built in silo construction design, that is to say the building envelope is supported by the steel structure of the warehouse", explains Markus Lehner of TGW. "This enterprise was a big challenge for us as general contractor, since we had to install the warehouse in winter. For us and our partners, this meant erecting a rack and installing the face of the building with snow and ice around us."

Fire protection was a sensitive topic for the entire building in Asten: "Fire prevention within the warehouse is ensured by an oxygen-deficient atmosphere with an oxygen content reduced to 15 per cent. In our high bay warehouse, you feel like being at a 3,300 metre altitude", adds Marco Gattringer-Ebner. To ensure the reduced oxygen level in the warehouse, TGW paid particular attention to the building envelope. "We had to guarantee a defined tightness of the building envelope to be able to achieve the planned oxygen-deficient environment. This is why the maintenance personnel are only allowed to stay in the system for a certain period of time. Even if you move around in there for just a short while, you will soon notice that your breathing is changing", explains Markus Lehner.

With a total investment volume of 14 million Euros, Lenze finally reached its goal: besides a new paint line and assembly areas, the company now disposes of a new logistics hub for Middle and Eastern Europe, a warehouse with perfect footprint utilisation and energy-efficient components and processes, high performance technology as well as a tailor-made IT system for long-term intra-logistics.

www.tgw-group.com

**About TGW Logistics Group:**

TGW Logistics Group is an integrated solution network. Since 1969 the company has been implementing different internal logistics solutions, from small material handling applications to complex logistics centres.

The companies of TGW Logistics Group can look back on a successful development. With about 1,500 employees worldwide by now, the Group implements logistics solutions for leading companies in various industries. In the business year 2011/12, the TGW Logistics Group generated sales revenues of 362.3 million Euros.

**Pictures:**

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Lenze\_Building\_20.jpg: Lenze‘s new logistics hub in Asten near Linz, Upper Austria.

Lenze\_Warehouse\_01.jpg: In the automated mini-load warehouse up to 18,000 totes can be stored. handles up to 260 storage and retrieval cycles per hour and is served by TGW Magito cranes and Combi Telescopes as load handling device.

Lenze\_Picking\_02.jpg: Besides the automatic mini-load warehouse, the solution includes four ergonomic order picking workstations with Pick&Pack technology. They allow the picking personnel to immediately pick the items into cartons or onto the pallet - there is no need for order totes as intermediate step.

Lenze\_Warehouse\_08.jpg: Up to 9,000 pallets are stored in the high bay warehouse, holding more than 20,000 different SKUs in stock.

Lenze\_Picking\_11.jpg: Four order picking workstations are situated behind the pallet warehouse. "Manual handling of pallets is no longer required - now the goods come to the worker", explains Lenze Operations Austria's Managing Director Marco Gattringer-Ebner.

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