# "TGW Gave Us Three Way Optimization”

# A dynamic order buffer system from TGW optimizes goods receiving, order picking and shipping areas for Böllhoff

## *Böllhoff Group, headquartered in Bielefeld, Germany, is a world leader in the manufacturing and distribution of metal and plastic fasteners and joining solutions. To be able to optimally handle the necessary processes, Böllhoff analysed its logistics operations with external consultants and invested in a new automated system. This system was implemented by TGW during live operation, with no shutdown, similar to* changing the engine on an airplane while it was inflight.

According to Hayrettin Sariz, Director of Böllhoff's Logistics Centre North, the new automated system increased Böllhoff's overall throughput at the facility. "We were able to increase the productivity in all areas of the logistics centre and remarkably reduce our employees' weight load," says Sariz. A decisive factor for these improvements has been the new, fully automatic buffering system from systems integrator TGW that constitutes the ideal combination of human labour and automation for Böllhoff. TGW implemented a compact Commissioner storage solution at Böllhoff’s Bielefeld headquarters in February 2012. This solution was integrated into Böllhoff's existing material handling system, allowing the company to handle thousands of tote movements a day and optimize multiple areas of the logistics centre. "Today, the goods receiving, order picking and shipping areas work independently from each other," explains Sebastian Rose, Technical Director at Böllhoff. "The Commissioner storage buffer ensures that overloading in one area does not negatively influence the operations in other areas."

***Joining Together – Böllhoff's high-quality fasteners***

The Böllhoff Group is a family-owned company with over 2000 employees, operating in 21 countries around the world. The company manufactures products at the headquarters in Bielefeld, as well as at eight other production locations worldwide. In addition to its own products, the company distributes a great number of fasteners of other manufacturers, offering a comprehensive range of more than 100,000 items distributed through several logistics centres. The Logistics Centre North, located at the company headquarters, replenishes the other logistics centres and also distributes direct customer supplies for Germany and the international market.

Already the goods receiving operations make high demands on the workers in the Logistics Centre North. "We have a very strict incoming good inspection procedure, as we want to assure our customers of the maximum quality of Böllhoff fasteners," says LC Director Hayrettin Sariz. Besides a commercial check, the items are checked visually for the correct design with respect to technical function and geometry and only handed over to the following process if they have the proper quality.

In the goods receiving area, the items are repacked into Böllhoff's own special load carriers for small parts (KLT), unless the goods will be stored on pallets. And this is also the first process that benefits from the new buffering system. "In the past, there were sometimes tailbacks of goods waiting to be stored in the warehouse by the picking personnel," the director of Böllhoff's logistics centre in Bielefeld recalls. Today, the KLT totes are transported from the goods receiving area directly into the three TGW Commissioners where they are intermediately stored and not retrieved before they can be stored in the warehouse by the picking personnel.

***Buffering system for several picking areas***

Order picking is done in several areas - primarily in a mini-load warehouse and in the pallet high-bay warehouse operated by manned industrial trucks. Depending on the order volume, Böllhoff picks the orders onto pallets or in its own KLT totes. "In the past we used a conveyor loop as buffer between order picking and shipping," says Sebastian Rose, Technical Director of Böllhoff's Logistics Centre North. "Today, we have a considerably higher buffer capacity. What's more, we are now able to retrieve the totes from the Commissioner machines sequenced according to different criteria."

This enables the workers in the shipping area to work more efficiently than back in 2011. There are far less waiting times until a customer order is fully picked and ready to be shipped, and no manual ‘intermediate storage areas’ must be established at the outgoing goods inspection stations. "We have implemented a sequenced retrieval of orders for shipping, following the pull principle," explains Uwe Neumann, Sales Manager at TGW. "This approach required a close connection of our control system and software to Böllhoff's existing warehouse management system."

***Reducing unproductive times and weight loads***

The installation of the new buffering system was based on the identified improvement potential in the Logistics Centre North. "We noticed that the processes within the centre did not run 100% synchronously, which meant we would have to waste time every now and then," LC Director Hayrettin Sariz recalls. "Besides, we wanted to significantly increase the productivity of our workers without increasing their workload."

Böllhoff asked a logistics planner to analyse the actual situation together and to define the requirements for a new solution. In a functional specification, the basic features of the new system were defined: isolation of the processes, creation of buffer positions for KLT totes, maximum storage/retrieval cycles per hour, implementation during live daily operations without risking the company's ability to supply its goods. Sebastian Rose adds: "It was very important for us to get a low-maintenance system with sufficient reserve capacity. Today, we have a 30% reserve as a minimum for the control of the new buffer." And the limited available space was already emphasised in the requirements specification, too.

***A comprehensive package – reliability, performance, energy efficiency***

TGW's Commissioner was selected over several competitors. The decisive factor of the customer for awarding the contract to TGW was the comprehensive solution package - the integration of the new system into Böllhoff's existing warehouse management system, the controls concept, the modular design, the technology's high performance and reliability.

Energy efficiency was also an important topic. TGW’s energy-efficient components, ability to integrate energy feedback modules into the storage machines, and to dimension all drives according to their specific requirements was important. "We had to rely on the manufacturers' power specifications during the contract awarding process,” comments Sebastian Rose. “Thanks to our exact records we know now that the Commissioner solution consumes significantly less energy than our previously used conveyor loop buffer, and with a considerably higher performance."

***No interruption of operations during extension***

"The integration of this solution into the existing building structure was one of the biggest challenges, since we had to make sure not to interrupt the daily operations by any means," says Uwe Neumann. “Therefore, much of the work was done outside Böllhoff's operating hours, such as the erection of the conveyor system platform and the insertion of the Commissioner lifting beams. According to Hayrettin Sariz, everyone worked hard to make it happen. Our Maintenance department and TGW made a top job here, even if one or another weekend had to be used." Having the requirements well-determined beforehand made the job easier as all people involved were able to prepare.

The IT challenges were also mastered in close cooperation. TGW mapped the complex strategies for the flexible retrieval of orders from the buffer in its own warehouse control software CI\_LOG. TGW implemented an interface between the warehouse control and Böllhoff’s WMS used by Böllhoff. In the meanwhile TGW implemented an interface that ensures optimum interactions between the two systems.

***Change management as key to success***

Böllhoff's new system has been in live operation since the beginning of 2012 and the increase in productivity within the entire logistics centre is as expected, as LC Director Hayrettin Sariz points out. "You must not forget that our employees work quite differently today compared to one year ago, even if many of them no longer remember that." However, change management was really essential at the beginning. The staff had to lose their doubts and uncertainty of the new technology and become aware of its advantages. Today, no one wants to do without the Commissioner buffer.

And the in-house maintenance department is highly satisfied, too. The excellently skilled team around Sebastian Rose was intensively trained by TGW to be able to optimally service the system. "We attach great importance to preventive maintenance and a consistent documentation of the work in our in-house developed IT maintenance tool,” Rose adds. “The training provided by TGW permits us to carry out the necessary work for the Commissioners and the new material handling equipment as skilled experts," This strategy will help to prevent breakdowns of the automation solution in the long run.

www.tgw-group.com

***Project schedule:***

* Award of contract: 2011-05-30
* Start of erection (platform): 2011-09-30
* First real orders: 2011-12-20
* Go-live of full operation: 2012-02-20

**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:**

Source: TGW Logistics Group GmbH  
Reprint with reference to TGW Logistics Group GmbH free of charge. Reprint is not permitted for promotional purposes.

Boellhoff (1).jpg: The TGW Controls Commander overlooks all processes within the logistics centre.

Boellhoff (2).jpg: In the P&D area the established TGW conveyor equipment has been implemented guiding the goods into the right directions.

Boellhoff (3).jpg: In the visualisation the installation is displayed graphically – this way Boellhoff is able to stay on top of things.

Boellhoff (4).jpg: The Commissioner storage buffer ensures that overloading in one area does not negatively influence the operations in other areas.

Boellhoff (5).jpg: With the new buffer system, the workload of the Böllhoff associates could be reduced significantly.

Boellhoff (6).jpg: The new conveyor equipment was integrated into the existing installation and now works together with the old conveyor equipment.

Boellhoff (7).jpg: Sebastian Rose, Technical Director at Böllhoff and Hayrettin Sariz, Director of Böllhoff's Logistics Centre North.

|  |  |
| --- | --- |
| **Contact:**  TGW Logistics Group GmbH  4600 Wels, Collmannstraße 2, Austria  T: +43.(0)7242.486-0  F: +43.(0)7242.486-31  e-mail: tgw@tgw-group.com | **Press contact:**  Michael Etlinger  T: +43.(0)7242.486-1382  M: +43.(0)664.8187423  michael.etlinger@tgw-group.com |