### Neat logistics solutions by TGW make a difference at Kärcher

# High pressure in spare parts replenishment

**When it comes to cleaning systems, the whole world relies on products and solutions by Kärcher - private as well as professional users. But what to do, if a nozzle of one of the high pressure cleaners is blocked up? No problem - Kärcher's spare parts distribution centre realized by TGW in the German town Obersontheim cares for a fast replacement.**

Who does not know them, the mostly yellow high pressure cleaners, vacuums, pumps or steam cleaners of Kärcher. The Swabian family-owned company is the worldwide leading supplier of cleaning systems, cleaning products and services for spare time, home, trade and industry with regards to quality and technology. 12.5 million devices were sold by Kärcher only in the year of 2013 - and counting. 10,700 employees work at Kärcher, operating sales offices in 60 countries.

**Fast spare parts supplies from the central warehouse**

Keeping the large numbers of private and industrial users worldwide in mind, a fast spare parts replenishment contributes to the customers' satisfaction. Kärcher thus relies on a central warehouse solution. "From our site here in Obersontheim, we distribute spare parts, accessories and parts of our detergents into the whole world, which emphasizes the importance of the site. Spare parts have to be available quickly and this is exactly the challenge we are faced with," explains Roland Fahrmeier, Vice President Logistics Management at Kärcher.

Since 1993, Kärcher has been operating the logistics centre in Obersontheim. The quick growth and permanent expansion of their product range as well as an increase in direct deliveries of end customers, demanded a new concept for this site in 2009. Fahrmeier remembers: "We came to the result that the strategically best option was to stay in Obersontheim, and to build on the existing structure and staff." The location of the site is beneficial, as Obersontheim can be found in the centre of the major delivery area. The disadvantages e.g. through missing direct connection to the motorway, are balanced by many other aspects.

"The rough concept for the expansion was done by Miebach Consulting," says the Head of Logistics. "Subsequently Miebach supported us in the project management too." After a wide tender, systems integrator TGW was entrusted with the implementation of the technical solution. "We searched for a systems integrator, covering as many aspects as possible. TGW offered all these features: they were able to do the engineering, they were able to program the respective software, and they could do more for us than building 'just' a mini-load warehouse, a P&D area for the high-bay warehouse or a shuttle, they were able to implement the entire solution."

**65,000 items - from screws to brush rollers**

The volume handled by Kärcher's employees in Obersontheim is impressive: more than 60,000 spare parts and about 5,000 accessories are stored in Obersontheim, among them a lot of slow-movers stressing the sense of a strong, centralised distribution centre. 2.8 million order lines are shipped per year, 2.2 millions of them are sent to the service technicians or event to the end users directly, the other 600,000 order lines are shipped to international subsidiaries and retailers. And the seasonal variations should not be forgotten. During the months of spring, when cleaning devices for the outer areas are used again, the distribution centre handles about 300,000 order lines per month, in weaker months, this value decreases to about 150,000 positions.

In order to cope with these masses, especially with the short delivery times for end customers, the decision for an automated warehouse and picking system was rather easy. "We had a lot of person-to-goods processes where our employees had to walk more than 10 km per day in order to reach the aisles and pick the goods. Today, we mainly work with a 'goods-to-person' approach, which is only possible, if you intensify automation," says Roland Fahrmeier. Thus, the throughput times of the orders in the distribution centre were drastically reduced. Orders with only one item are generally available within a time frame of 30 minutes.

But not only the masses and the paces are presenting them with a challenge. Also the product range has to be handled ideally in the new solution. "We basically have all kinds of spare parts: from o-rings, screws - really small parts - to big brush rollers for the cleaning of cars. To handle all this is difficult," explains Fahrmeier. Thus, they decided for a solution with various warehouse and picking areas, in order to choose the right process for each product. The biggest part with regards to quantity is taken by the mini-load warehouse, from where about 70 % of the order lines are picked.

**Goods-to-person - automated picking system**

The automated TGW mini-load warehouse provides 85,000 storage locations for totes, which are filled with items adapted to the size of the totes in the goods-receiving area. In eight aisles with a length of 77 meters each Mustang stacker cranes care for the single-deep storage and retrieval in 14-meter high racks. This automated mini-load warehouse cares for the fully automated replenishment of the picking workstations.

In the picking area, a goods-to-person strategy has been applied, in order to spare the employees long walking routes and save time. In the design of the picking workstations, Kärcher, planner Miebach and TGW paid particular attention to an ergonomic design and high picking performance. This is why eight TGW PickCenter workstations were implemented. On each workstation, alternating source totes are provided from where the goods are picked. The open order tote is situated in the middle. All three positions are inclined to provide ideal insight into the totes and to enable optimum arm distances. Furthermore, a very quick exchange of totes has been realized at those workstations, which results in no waiting times.

**Ergonomic workstations for high picking performance**

Besides ergonomics in the functional and optical design, TGW also used the findings of ergonomics research in guiding the worker at the picking station. The position of the screen, on which the instructions for the employee are shown big-sized and as simple as possible, was chosen accordingly as well as the buttons for confirming the picking processes. In order to be safe and pick the correct item also from multiply divided totes, a red light indicates the correct section from which the item has to be picked. All these measures enable the employees to achieve highest picking performances on each workstation, including all secondary activities like counting, packing and labelling of goods.

Alongside to the picking in the small parts area, bigger items are picked in other areas of the distribution centre. "Normally we have at least three order lines per order," says Fahrmeier. "This means we have to consolidate goods from various areas. This was one of the reasons why we implemented the shuttle system." The two-aisle buffer storage accommodates 5,200 totes. On the whole, 36 TGW Stingray shuttles care for the required 1,800 storage and retrieval movements per hour. The picked totes are consolidated and provided in the ideal sequence for packing.

**Stingray Shuttle System as high-performance consolidation buffer**

"The shuttle systems allows us to retrieve the goods at the latest possible time to consolidate the goods into one package and ship it to the customer. Therefore, we are able to prepare as few packages as possible for our customers. And if the customer orders several times a day, we are aiming at consolidating these orders into one package too," says Kärcher's Vice President Logistics Management. The cleaning specialist's customers have the advantage to receive exactly one package per day; for Kärcher this means furthermore that less packing material is required, that the packing is able to work more efficiently and that fewer packages are sent.

In addition to the goods in the totes, which are automatically transported from the Stingray shuttle system to the packing stations, bigger goods are provided manually. The working focus in this area is in the afternoon between noon and 6 pm to have all orders ready for delivery at the departures of the trucks.

The new logistics solution in Obersontheim contributes notably to extremely satisfied and enthusiastic customers.

**The future is all about e-Commerce**

For Kärcher's logistics team, this does not mean to lean back. Further growth and the corresponding expansion of their parts range is as good as certain. The current logistics solution will be able to cope with the growth for some time. For the time after that, the plans of the existing DC already included the option of using the already available footprint to duplicate the current capacities in the future.

"The second big challenge will be the e-commerce topic," Roland Fahrmeier is certain. "Depending on the development of this area, we will adapt to different paces and service promises for our customers." A query among worldwide sales companies resulted clearly in "same-day availability towards 2020", says the logistics expert. An ideal collaboration between the central warehouse in Obersontheim with its great variety of goods and regional distribution centres, close to the customer, will be handling the replenishment of the customers with Kärcher spare parts.

www.tgw-group.com

**About TGW Logistics Group:**

TGW Logistics Group is a worldwide leading systems provider of highly dynamic, automated and turn-key logistics solutions. Since 1969 the company has been implementing different internal logistics solutions, from small material handling applications to complex logistics centres.

With about 2,000 employees worldwide by now, the Group implements logistics solutions for leading companies in various industries. In the business year 2013/14, the TGW Logistics Group generated sales revenues of 371 million Euros.

**Pictures:**

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<http://www.tgw-group.com/fileadmin/user_upload/news_uploads/ski_131031-07_3.jpg>:   
Roland Fahrmeier, Vice President Logistics Management of Alfred Kärcher GmbH & Co KG, in the new distribution centre in Obersontheim, Germany.

<http://www.tgw-group.com/fileadmin/user_upload/news_uploads/ski_131031-18_3.jpg>:   
70 % of the order lines are picked from the automated mini-load warehouse.

<http://www.tgw-group.com/fileadmin/user_upload/news_uploads/ski_131031-10_3.jpg>:   
Ergonomic workstations by TGW care for high picking performance and lowest error rates.

<http://www.tgw-group.com/fileadmin/user_upload/news_uploads/ski_131031-15_3.jpg>:   
Additional tasks like counting, packing and labelling of goods has been taken into account when designing the picking workstations.

<http://www.tgw-group.com/fileadmin/user_upload/news_uploads/ski_131031-31_3.jpg>:   
In the consolidation buffer, Stingray shuttles by TGW consolidate the orders.

<http://www.tgw-group.com/fileadmin/user_upload/news_uploads/ski_131031-25_3.1_3.jpg>:   
The working focus in the packing area is in the afternoons between noon an 6pm.

<http://www.tgw-group.com/fileadmin/user_upload/news_uploads/ski_131031-23_3.jpg>:   
The logo of the cleaning technology specialist at the distribution centre in Obersontheim is clearly visible from far away.

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