

# UPDATE

## COMPANY MAGAZINE

**No.**  
**36**

### **50 SUSTAINABILITY & CLIMATE LEADERS**

Partner for sustainable, economical, and future-proof material handling solutions

### **E-COMMERCE & OMNICHANNEL**

A guide to find the best fulfillment strategy, and solutions for pharmaceutical and fashion material handling

### **CUSTOMIZED DIGITALIZATION**

Step by step toward digital storage and logistics solutions with harmonized hardware and software

IDEAS, VISIONS & SOLUTIONS FOR INTRALOGISTICS

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## **50 SUSTAINABILITY & CLIMATE LEADERS**

A RACE WE CAN WIN 

*Think Tomorrow.*

**SSI SCHÄFER**



**FORWARD THINKER,  
LONG-TERM PARTNER,  
AND MANUFACTURER. FROM  
STANDARD PRODUCTS TO  
COMPLEX SOLUTIONS:  
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*Think Tomorrow.*



**Dear readers,**

2020 remains a unique year. Many of our daily rituals, both at home and at work, change day-to-day. Things we deemed secure and stable are uncertain, making future planning a strenuous exercise.

Similar happenings are occurring in many industries. In retail, for example, the sudden customer shift toward digital channels means brand manufacturers and retailers must quickly evolve, reinvent themselves, and accelerate or rewrite their strategies. Pre-pandemic expectations by analysts, such as eMarketer, projecting e-commerce to reach 22% of all purchases by 2023 are long outdated. Still, the material handling industry faces challenges balancing both online and brick-and-mortar omnichannel strategies. However, it is our mission and commitment as a partner to support you in the long term.

Even in these unsettling times, we must remain focused on our priorities. Planet earth only has limited resources - let's do our part to use them as efficiently as possible. To raise a voice for sustainable, economically viable, and future-proof material handling solutions, SSI Schaefer joined the "50 Sustainability & Climate Leaders" initiative. Following the maxim "A race we can win", 50 diverse global companies committed to achieve the United Nations 17 Sustainable Development Goals showcase innovations and sustainable business models. As a business-to-business solutions provider, we asked three customers to share their own experience working with us to develop and implement sustainable solutions. This is just the beginning of a journey that extends well into 2021.

What does sustainable materials handling look like? While SSI Schaefer hasn't been vocal about its contributions in this area, we've developed a comprehensive solutions portfolio focusing on preventative maintenance, hardware for energy recovery, and software solutions for energy efficiency. The company also uses recycled plastics and consults on environmentally friendly construction.

Digital transformation, in general, is having a wide-ranging impact on the business environment, creating both opportunities and challenges. If used effectively, interrelated trends, such as e-commerce, big data, machine learning, artificial intelligence, and the Internet of Things, can lead to large productivity gains. However, Logistics 4.0 is not about fully digitalizing the entire warehouse. It is more about integrating the appropriate amount of digitalization and automation that a specific situation requires.

The material handling industry is the backbone of almost every sector, providing services that no modern society can function without. As a family-owned company, we focus on the total cost of ownership. This holistic perspective aims to help both large corporations and small-to medium-sized enterprises to increase efficiency and productivity continuously within their logistics processes. Ultimately, this enables them to be successful in the future as business grows. Our claim, "Think Tomorrow.", succinctly captures the spirit of innovation and the ambition we have in being a trusted, long-lasting partner for our customers. These are our core values. This is what SSI Schaefer stands for.

Please enjoy reading our publication. I hope you will find interesting articles and food for thought. We are looking forward to getting in touch with you to start a fruitful discussion and shape the future together.

Sincerely,

**Steffen Bersch**  
CEO of SSI Schaefer Group



Watch our new image film.

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# PARTNER FOR SUSTAINABLE, ECONOMICAL, AND FUTURE-PROOF MATERIAL HANDLING SOLUTIONS

As the only material handling company so far, SSI Schaefer joins the 50 Sustainability & Climate Leaders initiative.

The 50 Sustainability & Climate Leaders initiative is the response from the international business community, which demonstrates the desire, the drive, and the ability to take effective action in the fight against climate change and to meet the United Nations 17 Sustainable Development Goals (UNSDG).

The material handling industry is the backbone of almost every sector and provides services that no modern society can do without, enabling sectors to operate both locally and in a global environment. Having a functioning, sustainable supply chain is one of the success factors for

most companies. Resources are finite and need to be used wisely. Given its experience and portfolio of sustainable solutions and innovations, SSI Schaefer has been invited to participate to the initiative. The company tagline of "Think Tomorrow." is certainly fitting.

As a global supplier with a strong local presence, SSI Schaefer helps both large corporations and small to medium-sized enterprises innovate and increase efficiency within their logistics processes and supply chains. The objective is to enable these companies to be successful and sustainable long term.

## A RACE WE CAN WIN

Discover how our solutions, resources and activities can help achieve your company sustainability goals. Let's talk - together we will find a solution.



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**As one of the leading global providers of material handling solutions, we are an ideal partner for companies that pursue economical, future-oriented, and sustainable goals. We have a broad portfolio of innovative products and solutions, which we combine together for specific needs of each customer.**

Steffen Bersch CEO of SSI Schaefer Group

### Sustainability in different areas:

- Energy efficiency as well as environmentally friendly operations of warehouses and material flows
- Ecological construction methods
- Short supply chains
- Predictive and remote maintenance
- Healthy working conditions and a cleaner atmosphere
- Less waste and carbon footprint reduction

### Innovation and efficiency in material handling processes

SSI Schaefer is playing a key role in facilitating industries and partners that are driving efficiency in tandem with sustainability, finding ways to remain viable and profitable, as they tackle climate change.

### In order to present in the initiative what sustainability means, SSI Schaefer has partnered with three clients to showcase various solutions:

- Sustainable **innovation** to create a scalable solution for a new local food system with **Infarm** (Europe)
- Resilience against climate change and unpredictable events such as the COVID-19 pandemic with **ORCA Cold Chain Solutions** (Asia)
- A digital distribution center including energy-efficient hardware and a smart predictive maintenance software solution with **Pepperl+Fuchs** (North America)

## INFARM: SUSTAINABLE INNOVATION

Following the UN prediction that by 2030 80% of the population will live in cities, along with the expected population growth, the demand for food production will overwhelm our most precious resources. Infarm and SSI Schaefer worked together to enable the change from traditional agriculture to automated vertical farming. They have taken on a clear significance to help make cities and human settlements inclusive, safe, resilient, and sustainable. Compared to traditional farmland, the innovation is up to 400 times more efficient (on 25 m<sup>2</sup> farmers are able to produce the equivalent of almost two acres of farmland), it needs 95% less water, 75% less fertilizer, and no chemical pesticides at all.

Further solutions >

# 50 SUSTAINABILITY & CLIMATE LEADERS

A RACE WE CAN WIN



Think Tomorrow.







## ORCA: FOOD SAFETY AND SECURITY THANKS TO AUTOMATED COLD CHAIN FACILITY

In cooperation with ORCA, the Philippines' pioneering cold chain solutions provider, SSI Schaefer announced the opening of the country's first world-class cold chain storage system. ORCA selected SSI Schaefer as a partner for its stellar track record in technology as well as in construction and even customer support. In the heart of metro Manila's industrial zone, the ORCA Taguig facility significantly increases the country's logistics capacity and preparedness for unforeseen events.

Currently, ORCA has three facilities in Metro Manila: Alabang, Taguig and the currently being built Caloocan. All three sites are strategically located near ports and industrial zones. The Caloocan ORCA facility will also be fully automated and is currently being built jointly with SSI Schaefer.

### First ever fully automated cold chain facility in the Philippines

ORCA Cold Chain Solutions is the Philippines' first ever fully automated cold chain facility. It offers temperature-controlled logistics, warehousing and pre- and post-storage value added services to help food businesses and the agriculture industry prolong and maintain the freshness of their produce.

ORCA Taguig has approximately 20,000 pallet positions of frozen storage in roughly a hectare footprint. This is an unprecedented feat and is made possible by the rack-clad technology of SSI Schaefer. With automation, ORCA Taguig can move up to 4,800 pallets in one day. Powered by Automated Storage Retrieval System (ASRS), the development was awarded Pioneer Status by the Bureau of Investments, under the Philippine Government Department of Trade & Industry.

The SSI Schaefer scope of supply comprises an impressive range from the fully automated high bay warehouse with earthquake and typhoon resistant rack-clad technology, conveyor technology, ergonomic goods-to-person work stations to the logistics software WAMAS®.

### Transparency of processes and stock

Apart from the hardware, the SSI Schaefer supplied WAMAS warehouse management system provides real-time tracking of the goods. Aside from giving the clients of ORCA much peace of mind, it moreover allows them to efficiently track and move their goods according to a FEFO (First Expiry, First Out) system. Moreover, having accurate records ensures that all goods are accounted for, deterring pilferage, which is one other challenge that is unfortunately present in the country.

In a climate which has a lot of uncertainty, the technology and innovation provided by SSI Schaefer allow ORCA to reassure their clients with higher efficiency standards, accurate reporting, and quality customer service. Agnes Degala, Vice President for Sales & Operations at ORCA Cold Chain Solutions, sums up the successful cooperation, "ORCA is the first and only company in the Philippines to invest this heavily on what we call food infrastructure. With SSI Schaefer, we were able to make this grand vision a reality. As a sales head, we saw how customers gravitated to our brand because of the promise of automation. We also experienced firsthand the market perceive the value that innovation can bring. ORCA is indeed the only one of its kind in our country and together, we hope to create more of these world-class solutions for our nation."

## PEPPERL+FUCHS: IMPLEMENTING A MODERN DISTRIBUTION CENTER FOR A DIGITAL WORLD

Since 1945, Pepperl+Fuchs has been servicing an array of clients by providing innovative technology products. Today, the company is a global pioneer in automated sensor technology and electrical explosion protection products. The diverse product portfolio offers sensors for standard applications to complete custom solutions.

### Gaining a holistic view into fulfillment operations

A need for a new distribution center within the United States prompted Pepperl+Fuchs to choose Katy, TX as the location because of its perfect connections to the port, air traffic and other manufacturing companies. There were several goals outlined for the new distribution center. First, Pepperl+Fuchs wanted to erect a new facility that would utilize their automation sensors. Second, they wanted the technology within the facility to give a holistic view into the fulfillment operations. Most importantly, Pepperl+Fuchs needed to service their clients quickly with accurate product.

### Innovative and highly technical material flow concept supported by logistics software

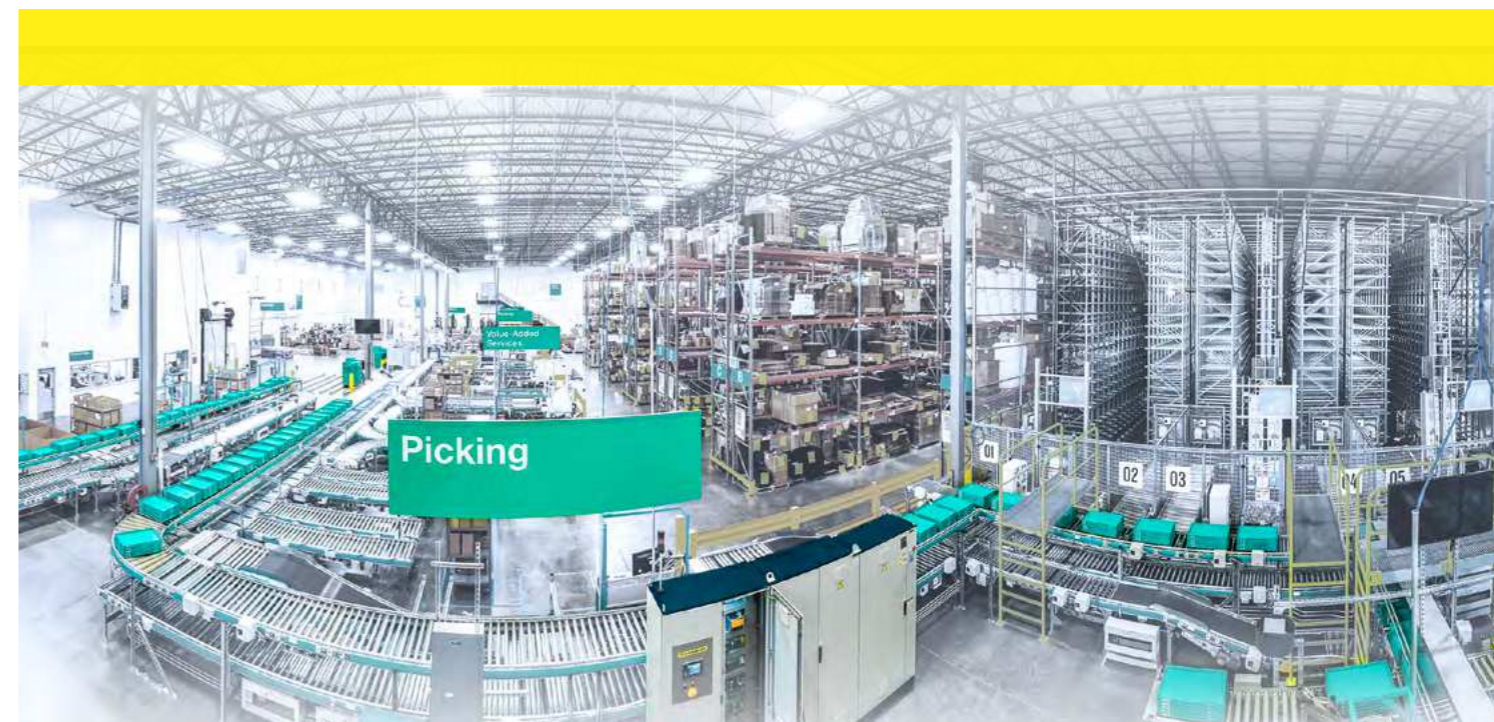
To meet this challenge, SSI Schaefer worked closely with Pepperl+Fuchs while implementing the proprietary logistics software WAMAS®. Data from Pepperl+Fuchs sensors feed into WAMAS® and WAMAS® Lighthouse, which operate the entire system and give real-time updates on key performance indicators throughout the facility.

However, the main objective of the system was to create faster customer deliveries with error-free picking. Together the partners have achieved this goal. Advanced technology throughout the facility highlights an array of analytic information that prevents bottlenecks and allows the operation team to be proactive for preventive maintenance and other key events.

The new facility encapsulates both pallet racking and a fully-automated storage and retrieval system (ASRS) operated by three Schaefer Miniload Cranes (SMC) with approximately 28,000 storage locations. The new distribution center provides a complete facility to warehouse, distribute, and create custom applications for clients.

**For us, SSI Schaefer is our system integrator and sustainability partner. With innovative technologies, such as WAMAS® Lighthouse, we could monitor our systems preventively and have a reliable, modern, and sustainable solution.**

**Robin Stratthaus**  
Supply Chain Manager Americas  
at Pepperl+Fuchs





## HOW TO DETERMINE WHICH E-COMMERCE FULFILLMENT SOLUTION IS BEST FOR YOUR BUSINESS

**Online:** A best practice guide to getting started or retrofitting your fulfillment solution

Currently, retail is shifting in ways that we've never seen. Between changes in consumer buying patterns, unrest in market conditions, and now a pandemic, retail and brand manufacturers are facing major challenges and reinventing themselves to attract consumers. Before the global COVID-19 pandemic, e-commerce was on a track to reach 22% of all purchases by 2023 according to eMarketer. Amazon and other large retail giants contributed to the consumer shift with free online shipping and same day deliveries.

COVID-19 will accelerate the adoption of e-commerce and cause a permanent change in buying patterns. Many would be brick and mortar shoppers are trying e-commerce, and the adoption behavior is sticking according to UBS analysts. TechCrunch stated that U.S. e-commerce jumped 49%, while Internet Retailing states that six in ten Europeans will continue to shop online once the pandemic ends. Shopee, the largest online shopping platform in Asia, saw a jump of 74.3% from the first quarter according to Nikkei Asian Review. Brand loyalty is also wavering as out-of-stock products are forcing consumers to pick other brands or shop online elsewhere. With this new shopping reality, retailers and brands are finding ways to circumvent the online experience. Aside from panic buying, the reality of consumers' e-commerce shopping patterns is changing too.

Grocery and food retail represent the larger shift in adoption. However, other retail segments are seeing a different reality, which looks dire. With malls shuttering and consumers staying home, the shift is to focus on e-commerce. Distribution center growth has been fueled by this behavior change and over the past decade, e-commerce and omnichannel fulfillment centers have been growing while brick and mortar locations are closing.

Manufacturers are also looking to make the switch. As more of the brick and mortar retail distribution network closes, brands are switching to online - selling directly

to the end-consumer and fulfilling orders to keep sales and brand loyalty afloat. As once powerful retail stores close, brands need a direct to consumer strategy - and e-commerce is performing. Categories for products such as healthcare items, small appliances, food and beverage, sporting goods, and pet food are trending in an upward direction. But with brick and mortar stores closing, decreasing categories are forcing brands to deal direct - like clothing, luggage, and household goods. All of these facts point to one thing - have an online selling strategy or shutter.

### Working to implement an e-commerce distribution strategy

With so many changes happening in the market, both retailers and manufacturers are looking for ways to implement or revamp digital strategies. E-commerce fulfillment is something that is often overlooked, even though the frontend consumer e-commerce experience is well planned and implemented. Thus, the SSI Schaefer e-commerce experts have prepared this guide to help you determine online order complexities, how to plan, and how to execute fulfillment depending on your strategy.

### What to expect:

- Understand the differences in automation storage and retrieval equipment, sortation, picking options, warehouse technology, and consumer touchpoints within the fulfillment process.
- Upon completion, one will be able to make an informed decision on whether or not automation is the right choice or which fulfillment method is right for a specific application.
- Determine how to proceed with a solid distribution fulfillment strategy and understand what steps to make to start the process.

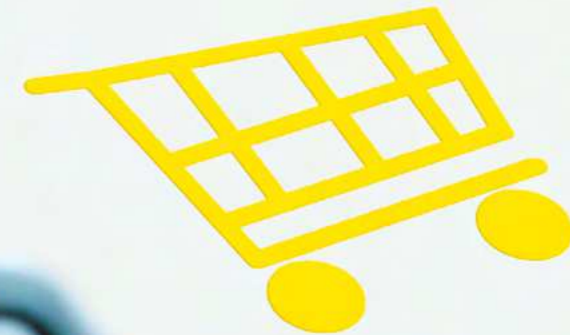
This guide gives the tools necessary to move forward with scoping, planning, and implementation for e-commerce fulfillment.

## ONLINE

Download the best practice guide now and start defining your fulfillment strategy step by step!



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## STATE-OF-THE-ART HEALTHCARE LOGISTICS THAT IS FIT FOR GROWING E-COMMERCE

The everyday role of e-commerce in retail, wholesale, and fashion industries, becomes also more important for pharmaceutical and cosmetics companies with the growth of online pharmacies.

Increased consumer health awareness, coupled with self-medication trends, is leading to higher online demand for over-the-counter products and beauty and care orders. Online ordering of prescription drugs brings additional complexity because of zero-error tolerance. In particular, the COVID-19 pandemic caused an enormous surge in online drug demand.

The importance of e-commerce in different parts of the world varies. In Europe, for example, e-commerce is playing a more significant industry role. Moving forward, a holistic interaction among manufacturers, wholesalers, brick and mortar, and online businesses will lead to greater efficiencies and product fulfillment.

**Customized logistics for efficient order processing**  
The expectation is that online pharmacies will deliver their products fast, cost-effectively, and safely to their end

customers. A smoothly coordinated supply chain and a tailor-made logistics solution for online business are the keys to success. Flexibility and modularity are decisive to react to new trends and technologies. In e-commerce, the order structure also places higher demands on material handling. To meet demand requires effective solutions that accommodate large order volumes with small order sizes simultaneously—and for a diverse range of products.

**Transparency and zero-error tolerance**  
The new normal of e-commerce means increasing expectations for next-day or same-day delivery, coupled with the highest-quality standards. A singular logistics strategy is essential to meet customer demands, as well as the high legal requirements of tracking and tracing associated with zero-error tolerance. SSI Schaefer has made patient safety its top priority and provides a comprehensive solution portfolio for this purpose.

### Accelerated drug supply with high process reliability

Increased shipping volume of over 35 million parcels per year, zero-error tolerance, and 24/7 operations – these are the requirements that SHOP APOTHEKE EUROPE, one of continental Europe’s leading online pharmacies, would like to achieve. Together with SSI Schaefer, they developed a future-oriented and highly automated solution. In addition to an automated small parts warehouse (ASPW), they deployed the high-performance shuttle system SSI Cuby as an order buffer. Shuttle vehicles supply the storage locations with up to 800 double cycles per aisle per hour.

Part of the innovative overall solution are also A-Frames, which enable fast processing of complex orders through automatic order picking, even during peak loads. Furthermore, they equipped the logistics center with Put to Light workstations and work stations for single-order sorting and compiling bulk orders. The logistics software WAMAS® coordinates the material flow. The new, customized e-commerce distribution center in Sevenum, Netherlands, will begin operations at the beginning of 2021.

## WEB SEMINAR

“Fast-growing online businesses will continue to change warehousing significantly. To support our staff in efficient e-commerce order processing in the best possible way, custom-fit automation tools and ergonomic solutions become more and more important,” Thomas Kaiser, Sales Manager Food Retail at SSI Schaefer, expects. During this web seminar, Kaiser explains more about the topic “Smart logistics solution for increased requirements for e-commerce and sustainability” and derives the suitable degree of automation for modern material handling in this workshop.



Watch the web seminar online

[https://pages.ssi-schaefer.com/upd36\\_e-commerce\\_seminar](https://pages.ssi-schaefer.com/upd36_e-commerce_seminar)



## CASE STUDY: FLEXIBLE SOLUTION FOR OMNICHANNEL LOGISTICS



**FENIX**  
OUTDOOR LOGISTICS GMBH

Aiming to achieve a “best in class” logistics operation, Fenix Outdoor Logistics invested in building a new distribution center in Ludwigslust, Germany. At the center of the new system, one will find the SSI Carrier – a highly dynamic pouch sorter for hanging and flat goods. The automated system reduces handling and provides quick delivery of items at packing stations in the desired sequence.

If you are looking for suitable equipment for your next outdoor adventure, Fenix provides a wide range of premium goods – including brands Fjällräven, Hanwag, Brunton, Primus, and Tierra. The subsidiary Friluft Retail Europe AG includes stores Naturkompaniet (Sweden) and Partioaitta (Finland), as well as the German retailer Globetrotter. To meet the growing operational challenges of the omnichannel business, Fenix Outdoor International AG recently founded a logistics company within the group. The goal of Fenix Outdoor Logistics GmbH is to supply stores in Germany and Scandinavia as well as e-commerce customers who cannot wait to gather exciting outdoor experiences with suitable equipment. >



Watch the video to see the tailor-made logistics concept for both brick and mortar and e-commerce delivery from one single warehouse.

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# POUCH SORTER SUPPORTS THE FENIX FULFILLMENT STRATEGY



## A new distribution center for flexible omnichannel fulfillment

The major challenge is to ensure efficient handling of deliveries to brick and mortar retail stores and a growing number of e-commerce customers from a single warehouse. In order to provide an optimal shopping experience, high availability of goods and efficiency despite daily and seasonal order fluctuations, as well as optimum handling of different characteristics of sales channels are decisive. Store deliveries are all about precise pre-sorting and sequencing of goods, while e-commerce fulfillment stresses fast order processing of numerous small orders and highly efficient processing of returns.

The core element for coping with these requirements is the SSI Carrier. The SSI Schaefer pouch conveyor is modular in design and is able to transport, accumulate, buffer, sort and sequence up to 4,500 different items per hour. The daily shipping volume comprises of approximately 25,000 store items and 5,000 packages, which are sent to customers. "We installed a 'best in class' logistics solution for the future," says Felix Köhler, Warehouse Manager at Fenix Outdoor Logistics. "The pouch sorter is an important component of the design. It serves to process 90% of orders using goods we have in stock. This results in very short throughput times with significantly reduced costs and a 100% reliable processing," Felix Köhler continued. The pouch sorter impresses by both its scalability and flexibility. The system meets the desired performance rates and the requirements regarding the item structure in the warehouse.

## Sophisticated intralogistics solution from a single source

"Our decision to use SSI Schaefer was due to the company's ability to jointly develop a customized and individual solution for our requirements. Also, SSI Schaefer

was able to deliver this solution as a single source as the general contractor," explains Felix Köhler. The scope of delivery includes the SSI Carrier with 25,000 pouches, six ergonomic loading stations, and eleven ergonomic unloading stations as well as two vertical lift conveyors. There is a three-story static R 3000 rack system with approximately 92,600 storage locations, and a pallet rack system with more than 1,500 storage locations. Also, there are three telescopic conveyors and 1,500 order bins. Furthermore, there are in-feed and take-away conveyors for flat goods, used cartons and empty bins. The processes of the conveying system are managed and controlled by the SSI Schaefer logistics software WAMAS®.

### BENEFITS AT A GLANCE

- Tailor-made logistics concept for both brick and mortar and e-commerce delivery from one single warehouse including turnkey implementation
- Increased productivity and maximum process stability
- High availability of goods and efficiency despite daily and seasonal fluctuations
- Reduction of order and cycle times
- Natural workflow thanks to improved ergonomics at work stations
- Fast re-integration of returns
- Complete system with high flexibility and future scaling capabilities for business growth

## A well-rounded system for supplying different sales channels

A majority of the goods pass through the SSI Carrier system. At the loading station, each pouch is filled with an item. By scanning the item, the product barcode is married to the respective carrier ID and the software knows which pouch contains which product. The loaded pouches pass different buffer areas where batches containing up to 216 pouches are formed. Afterwards, they arrive at the matrix sorter, the main element of the SSI Carrier. The matrix sorter sorts pouches and creates customer orders out of the batches in sequence. At Fenix, a matrix sorter with three sorter stages of six lines each was installed. After sorting the pouches according to orders, items continue in the correct sequence to a packing buffer to the unloading stations. The entire process is controlled by the logistics software WAMAS, which communicates with the customer's superordinate warehouse management system. The SSI Carrier is also crucial for fast returns processing. After a check, returned goods that are in high demand are stored directly in the dynamic buffer of the SSI Carrier, not the static rack system. The goods are thus immediately back in the system and automatically available for new orders and re-shipment at any time.

## Further expansion at new location planned

On the way to a "best in class" logistics to strengthen e-commerce business and stationary retail stores alike, Fenix Outdoor Logistics plans the construction of a third building to be equipped with SSI Carrier technology, probably in 2021.



**SSI Schaefer is a reliable and long-term partner, we are more than satisfied with the custom solution. Due to the great success of our business model, we plan on extending our intralogistics solution and look ahead with a positive outlook.**

**Felix Köhler**  
Warehouse Manager at Fenix Outdoor Logistics





**Markus Klug**  
Data Science & Simulation  
at SSI Schaefer

# FLEXIBILITY IN THE WAREHOUSE

## STRIKING THE RIGHT BALANCE BETWEEN STANDARDIZATION AND INDIVIDUALITY

In an age of increasing digitalization and growing e-commerce, the challenges of volatile markets and unforeseeable environmental and societal events - along with fluctuations in demand that are virtually impossible to plan for - make flexibility a vital top priority. We all aim for individuality in both our personal lives and in business. However, to gain efficiencies in material handling (with the associated software), one must look for the right balance of custom flexibility and standardization.

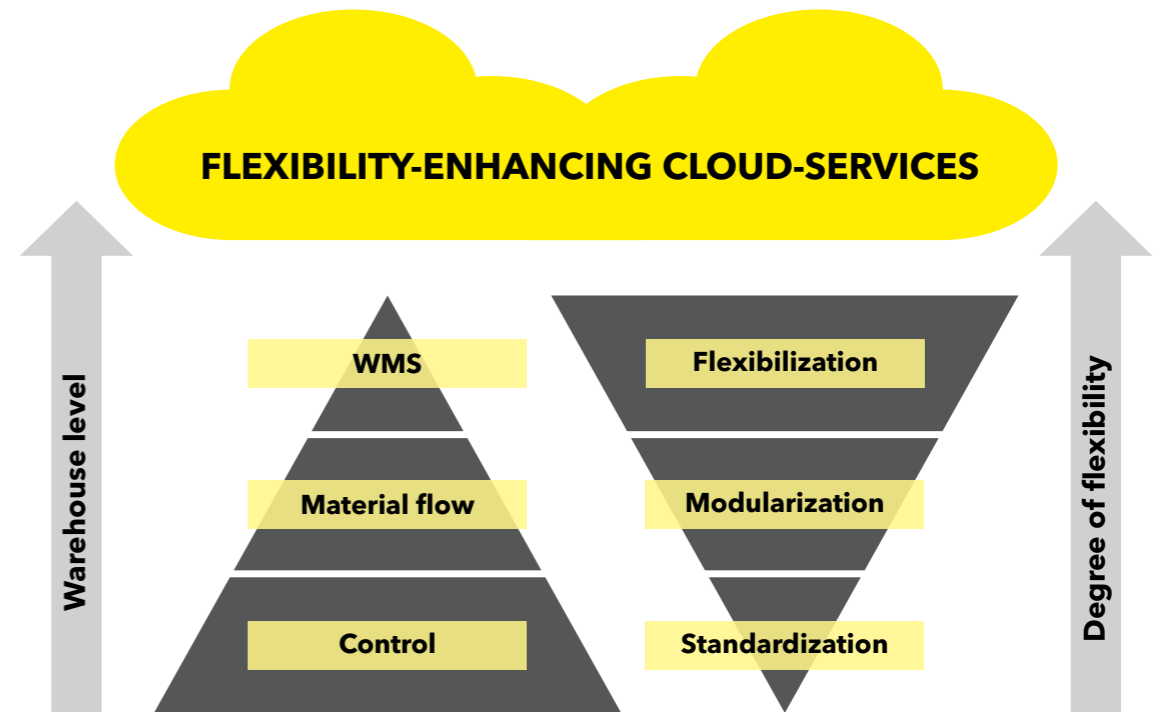
Every year, smartphone manufacturers launch the latest generations of products on the market. All phones of the same model leave the factory in a completely identical state. However, as soon as the customer receives the cell phone, switches it on for the first time, and makes the basic settings, the process of customization begins. Apps are installed and notification settings are selected, thereby tailoring the device to its individual user and intended use. From this moment on, no device resembles another regarding its configuration.

Within the material handling industry one of the basic prerequisites for providing modern intralogistics is the ability to customize the value-added services that today's warehouses need to offer to operators and, in some cases, to customers. Essentially, these customization capabilities are nothing new. However, in light of competition, companies also have to consider investment costs and if customization is too costly, it is not viable. How then do we go about resolving the tensions between flexibility, quality, and costs?

### Flexibility Achieved by Combining Modularity with Standardization

The smartphone industry is a good example of how it can be done, which to a large degree, smartphone hardware is standardized. Although there are differences between the respective versions, many of the same components are used across multiple models in terms of the processors, displays, and other features installed. But to create a customized user experience, manufacturers are now starting to supply different software add-ins together with the device itself.

Within the material handling industry, software is likewise becoming increasingly important alongside the hardware. In addition to basic technical performance, just-in-time call-off capability is vital. This demands a holistic view across all levels of the warehouse. One of the biggest challenges is keeping a storage system fully flexible without allowing it to get out of control by entering an undefined state. The warehouse must always be able to respond to current requirements and each component must function reliably. This results in the following flexibility structure, with quality and stability also needing to be achieved at the same time.



At the **control level**, maximum efficiency is crucial. Once they have been sent, control commands need to be implemented as time-efficiently as possible. No time must be lost as a result of response times or other delays. Data has to be exchanged efficiently using a standardized format that is comprehensible to the higher-level systems so that the information can be processed in near real time. With a view to achieving these aims, it is necessary to adopt an appropriate form of standardization that creates a reliable foundation for the superordinate levels. Ultimately, standards speed up the project while ensuring greater security and cost-effectiveness during maintenance and operation.

The **material flow** is modular. Components are able to co-operate and are work with one another. Modules such as shuttle aisles perform the subtasks expected of them.

The **WMS level** (warehouse management system level) co-ordinates the warehouse with its vast array of flexible functions. The wide range of parameters allows the warehouse of the respective customer to be tailored to individual requirements. However, there is an increasing need for these services to be extended beyond the confines of local intelligence.

This possibility opens up new approaches that rely on intelligent solutions (including AI supported ones) and cannot be accommodated by the locally available computing power.

Flexibility calls for reliable framework conditions. If the components (control, material flow, and WMS) and the installed infrastructure provide these, the way is clear for customizable warehouse operations. However, to make even greater use of the potential of flexibility, these services need to be extended beyond the confines of local intelligence. That is where new approaches that rely on intelligent solutions - including those supported by AI - come into play in the form of **flexibility-enhancing cloud services**. In other words: cloud services that are capable of outperforming the locally available computing power.

With its extensive range of WAMAS® and SAP EWM software, SSI Schaefer covers all kinds of processes, from warehouse to material flow management. At the same time, our software experts devise customized solutions to optimize customer productivity and efficiency. This way we make it possible to manage the warehouse actively by measuring and assessing processes with the help of KPIs.





## STEP-BY-STEP TO A DIGITAL WAREHOUSE

Felix Lütkebomk, Head of Product Sector Dynamic Systems at SSI Schaefer explains how existing storage solutions can be made more efficient and transparent.



## ALWAYS ONE STEP AHEAD FOR PERMANENT AVAILABILITY

Elie Zita, SVP Customer Services & Head of Business Unit Customer Services at SSI Schaefer, on digital Customer Services to ensure long-term permanent system availability.

**D**igitalization, automation, industry 4.0, and smart logistics are buzzwords that are discussed in many companies. Material handling has numerous examples of well implemented digitalization strategies. In sectors where storing and picking items is not yet part of the core business, there are still longstanding structures with manual registration tasks, little transparency, and no interconnectedness. Making a future-proof warehouse requires digitization, which is now a prerequisite in order to stay competitive. One can achieve modernization through a gradual implementation of flexible upgrades and retrofits.

### Transparent material handling processes for digital transformation

Fast and complete transparency and a clear structure of stock and orders is the basis of a successful storage solution. Furthermore, the automatic and secure recording of stock plays an increasingly important role for deploying an existing workforce as efficiently as possible. In addition to overall process optimization, an error-free and simple inventory is also crucial.

### Software that can be operated intuitively helps implement these requirements without great IT effort:

- Communication between warehouse and ERP system
- Paperless picking with Pick by Light using barcodes or RFID technology
- Printing of receipts and labels directly in the process
- More efficient inventory thanks to clean data

### Requirements for gradual digitalization

Simple concepts such as Pick by Light or the use of barcode scanners can be easily implemented. They already work with a stand-alone computer without connection to a superordinate system.

However, to use all benefits and digitization modules, a connection to a superordinate system is usually recommended. But even this is no longer a major hurdle. All common ERP systems by default support multiple interface protocols.

### Clean master data management as a basis for digital processes

Some small and medium-sized companies have a certain amount of catching up to do in terms of clean data and master data management. Well administered master data are crucial for any type of digitalization and therefore a good preparation. If the step towards a digital warehouse is in short notice, there is, for example, the standard software WAMAS® LOGIMAT of our vertical lift module, which requires very little information and is fully functional with item number, item description, and unit quantity.



### SSI LOGIMAT® vertical lift module can integrate into every digital strategy

No matter whether you are only just starting with digitalization or if you already have a digital factory, the SSI LOGIMAT with its flexible software solution can integrate as a direct component. Direct connection to a superordinate ERP or WMS interconnects your processes and creates transparency. You can start working with SSI LOGIMAT with manual processes and prepare everything for a future integration. Thanks to modular and flexible software components, digitalization in your warehouse can be individually integrated into your long-term strategy.

**W**ith the growth in e-commerce, the ability to obtain products from anywhere and at any time is increasingly becoming a matter of course. Customers' expectations in this regard are on the rise, and as a result, retailers must be prepared not only for daily and seasonal business but also for sudden, unforeseeable fluctuations in demand. The goal of ensuring continuous and flexible supply requires just the right processes along with logistics that always work.

This includes: Preventive Services, which offer high system protection with proactive, digital maintenance measures. Reactive Services for quick and reliable 24/7 problem-solving. And optimized Life Cycle Management to ensure the necessary high system availability and make the system fit for the future.

### Preventive Services for Maximum System Availability

Our Preventive Services allow us to fully utilize the potential of digitalization. With our Responsive Services, we only replace or repair components if there is a need to do so, allowing us to shift more and more to preventive service. Preventive maintenance measures, such as the replacement of wear parts, depending on the running time or switching cycles, offer high system protection and keep system downtimes at a minimum.

As such, along the lines of a Maintenance 4.0 concept, we use our SSI Schaefer Computerized Maintenance Management System (CMMS) to digitally plan, control and implement each maintenance measure. The solution's core elements

are CMMS Web and the CMMS app. The system is linked to the real world using the 1D or QR barcodes applied to each system component and smart phones for service technicians on-site. Based on the available data, the maintenance manager plans preventive measures in CMMS Web. After synchronizing with the CMMS app, the service technicians can use their smart phones or tablets to edit the planned activities in the system directly, document them and synchronize the system with the data obtained.

The extensive volume of data provides a good basis for further analyses and evaluations with which to plan specific maintenance intervals and future preventive activities and to continuously optimize maintenance processes. Potential malfunctions can be consistently prevented with proactive actions.

### Responding in Real Time with Augmented Support

If short-term responses and interventions are necessary, we are there for our customers with a 24/7 support. In addition to on-site service, we also offer SSI Augmented Support. This form of remote maintenance is a flexible solution module, which, even in times of travel warnings due to a pandemic or natural disaster, can play a significant role in the success of our customers.

As a mobile real-time video communication system, SSI Augmented Support meets all requirements for efficient troubleshooting and repairs. An on-site technician activates the SSI Augmented Support, which then quickly establishes a connection to our service center. The

event is transferred without delay, so that troubleshooting can begin immediately with the aid of voice and video assistance. The user-friendly application and direct communication in real time prevent potential misunderstandings and longer response times as a result of time delays. With a minimum number of downtimes, this makes more detailed troubleshooting, interactive work processes and high system availability possible. Malfunctions can be fixed better, more flexibly and more quickly, which saves time and costs.

### Increasing System Efficiency with Systematic Modernization

During the construction and equipping phases of any logistics building, we take a proactive role in planning the layout with our customers. "Grow as you go!" is the motto we apply, offering solutions that grow with the requirements, thus significantly extending the service life of the system. By planning possible automation or expansions from the beginning, we ensure the necessary scalability and flexibility of the system. The focus is always on the best possible system and energy efficiency.

Our services let us make both our own systems and third-party systems state of the art - with a performance increase of up to 30%.



Learn more on the topic Customer Service & Support.

[https://pages.ssi-schaefer.com/upd36\\_digital-services](https://pages.ssi-schaefer.com/upd36_digital-services)



# EFFICIENT USE OF STORAGE SPACE

How we deal with lack of space, high energy costs and rising property values with an individual and adaptable rack system.



**“The appropriate rack system helps make optimum use of the building in every dimension.”**

Mr. Frank Matysiak, Head of System Planning at SSI Schaefer, explains how the appropriate rack solution can solve typical warehouse challenges, and how SSI Schaefer provides customers with individual and future-oriented support in finding the most suitable racking system.

**What challenges do companies face in the warehouse?**

Over the years, the number of items in a warehouse usually grows and capacity becomes limited. Due to rising property values or unavailable expansion options, building a new warehouse is often out of question. Instead, existing storage space needs to be examined. From an economic point of view, it must be determined whether footprint and room height have been optimized. If not, there is a range of options to increase storage space and ensure the company is prepared for future expansion. Another challenge is how to efficiently use existing staff to increase turnover times, for example in order picking of small parts.

**What decision criteria can help when choosing an appropriate storage solution?**

First, the available space in the current warehouse is examined - is the existing building height efficiently used for storage? You also need to consider the type of stored goods, whether you need large load carriers (e.g. pallets) or a solution for small parts, as well as the turnover speed and frequency. If necessary, seasonal peaks have to be taken into account and a corresponding, flexible solution has to be found. Changes to items in stock in terms of size and volume must also be considered in order to find the most suitable storage solution for the customer, one which is also designed for long-term use.



More space in the same space or less - discover more information about mobile racking here.

[https://pages.ssi-schaefer.com/upd36\\_mobile-racking](https://pages.ssi-schaefer.com/upd36_mobile-racking)

**Which storage solutions can effectively overcome the challenges described above?**

The appropriate rack system helps make optimum use of the building in every dimension. Making efficient use of the storage space provides a warehouse operator with numerous benefits: gaining space through additional footprint, cost savings (e.g. in terms of energy, possible rent or property prices, combined with the costs for a new building), and time savings thanks to logical warehouse organization.

Mobile rack systems are a suitable storage solution for large load carriers. These systems use the existing space more efficiently than conventional static pallet racks and can increase the storage volume by up to 100% (see charts). This is particularly useful in deep-freeze warehouses, where mobile racks help to use the air-conditioned space more efficiently. Almost twice the quantity of goods can be stored in the same footprint, while valuable energy for air-conditioning is saved. Even more energy can be saved using various functions and options in our mobile rack solutions. For instance, the pre-control for the lighting ensures only lamps for the open aisle are switched on. The options for picking position, remote control, and automatic forklift detection help accelerate system operation and make it easier for employees to work with the rack system. When connected with a warehouse management system or ERP system and corresponding storage strategies, the mobile rack system increases efficiency even further.

Platforms and multi-story systems provide an intelligent solution for creating additional storage space without having to make structural changes to the existing warehouse. They enable efficient personnel deployment while simultaneously increasing picking performance, and can easily be adapted to suit customer requirements.

Static rack systems work either as part of a multi-story system or individually as an adaptable solution. A wide range of accessories is available for individual modifications, which can also be added at a later stage to account for varying goods and quantities, for example. Individual storage can be changed easily, guaranteeing high storage density and efficient picking processes at all times.



Pallet racks in conventional arrangement



Mobile racks for optimized use of space



Mobile racks for higher storage capacity requirements





## IMPROVE PICKING QUALITY BY USING ERGONOMICS IN MATERIAL HANDLING

Manual picking methods in material handling have always been physically demanding. In addition, the aging demographic and decreased physical ability of older employees put further strain on operations. For these reasons, ergonomics plays a central role in the development of logistics systems. Ergonomic workplace design is also critical for younger employees, in order to avoid damage to health and to minimize sick leave. This is why SSI Schaefer develops solutions for innovative storage systems and high-performance conveying systems with the guiding principle of healthcare.

Decreased performance, higher error rates and increased sick leave are just some of the consequences of physically demanding tasks. About 25% of employee absences due to illness are caused by musculoskeletal disorders. Innovative technologies together with natural, human movements are crucial when designing and planning systems and work stations. All kinds of product groups are taken into consideration: silent conveying systems, visualized user guidance via screens and light displays, equipping work stations with wooden surfaces, round edges, and optimized processes for picking movements, as well as short walking distances and ideal work heights for picking automats (for example an A-Frame) and rack systems.

All these aspects of work station design are summarized as ergonomics@work!® at SSI Schaefer. This concept helps to counteract the consequences of manual activities along the entire material handling process chain, which puts significant stress on the human musculoskeletal system. The work stations are characterized by the fact that all movement sequences, especially lifting and carrying, are replaced by ergonomic pulling and pushing, and operators are guided by communication and display systems. With ergonomics@work!, SSI Schaefer addresses the changing requirements of work station design caused by an aging workforce.

**The concept ergonomics@work! pursues four goals for the ergonomic design of manual and semi-automatic work stations.**

- Processes and work stations are designed to minimize physical stress as much as possible. Loads are only moved horizontally or with the gravity downwards.
- Movements that are not necessary for the work process are avoided. The work station is designed "around the operator" to reduce walking distances and arm movements.
- Increased picking quality is achieved through fatigue-free workstations with clear design, optical user guidance and sensors.
- The work stations are designed using shapes and materials that ideally support the workflow, facilitate freedom of movement and avoid injuries. Elements and edges are rounded off and contact surfaces are made out of wood.

Surveys conducted by the Institute for Ergonomics & Human Factors at the Technical University of Darmstadt (IAD) said the extraordinary health-preserving benefits of ergonomics@work! are a ground-breaking contribution towards sustainable material handling solutions, addressing the challenges of an aging workforce and the vital role of ergonomics.

### Work station ergonomics in practice

Ergonomics are essential, especially when picking loose material. To enable an ergonomic picking process from top to bottom at an SSI Schaefer work station, order bins are supplied on the lower level at hip height on one long side. The conveying system supplies the source bins horizontally, presenting them to the operator at chest height and tilted by 30 degrees for optimum vision and access. In multi-order picking, several target bins can be supplied from one or more source bins, and the conveying system returns the source bins automatically to their storage location. The key advantage here is the sophisticated human-machine interface based on the ergonomics@work! concept. Light-controlled picking guidance, ergonomic design, and touch-friendly surfaces optimize processes and ease the workload.

## TRANSPORTING HAZARDOUS GOODS SAFELY

The new hazardous goods container by SSI Schaefer meets the special safety requirements for transporting solid dangerous substances.

Dangerous substances are included in all kinds of products and are used in different sectors of industry. Transporting hazardous goods in a warehouse, either for further processing or to the customer, poses challenges for logistics because it is unsafe. In compliance with all guidelines and safety claims, packaging must protect the stored goods and facilitate optimum handling in the material flow at the same time. The new hazardous goods container by SSI Schaefer meets these requirements, combining safety with efficient handling.

"The new hazardous goods container by SSI Schaefer combines safety with optimized and sustainable handling. The RL-KLT GGV was developed to meet the requirements of hazardous goods transportation, and fits smoothly into existing logistics processes," explains Jörg Vicktorius, project manager for hazardous goods packaging at SSI Schaefer.

Hazardous goods refer to substances that pose risks of fire or explosion. For example, in the automotive industry they are found in airbag systems, belt reels, retractors and anchor pretensioners. Such products can be found in every car, truck and the increasingly popular electric cars, and must be handled with special care during transportation.

Strict regulations are in place to prevent risks when transporting hazardous goods. Special containers made for this task feature increased stability and a locking mechanism, greatly reducing risks during transportation. They are subject to strict regulations and, after thorough, successful testing, are officially approved as suitable containers and marked with a UN label.



### BENEFITS AT A GLANCE

- Hazardous goods container for international transportation of hazardous goods on roads according to ADR 6.1.3.1.
- Corresponds to the UN Recommendations on the Transport of Dangerous Goods, GHS (Globally Harmonized System of Classification and Labelling of Chemicals)
- Approved for the transportation of hazardous goods of packaging groups II and III
- SSI Schaefer commissions type approval and the 6(c) Bonfire Test
- Hazardous goods container with removable lid
- Intuitive locking mechanism with a 4-fold lock with spring
- Time-saving handling through flexible lid insert
- Seals on the lock prevent unauthorized access and manipulation of the transported goods
- Stable walls, flat base and ergonomic hand grips
- Safely stackable for optimal space usage and complies with European dimensions
- Sustainable returnable container made of polypropylene and therefore 100% recyclable (incl. lock)
- ESD versions and a wide range of colors and height variants available
- Compatible with inserts for centering and fixation of the hazardous goods
- Customization through QR or barcodes



## CHIRON PLANS AHEAD TO GRADUALLY AUTOMATE AND EXTEND STORAGE SOLUTIONS

For the CHIRON Group, a specialist in CNC-controlled, vertical milling, and turning centers, SSI Schaefer created a concept for a new logistics center. CHIRON Group provides turnkey solutions from its production facility in Neuhausen ob Eck, Germany. The material handling project aims to supply installation work stations more efficiently. The system layout is designed as a step-by-step implementation towards automation. The manual warehouse equipment, such as pallet racks and static racks, is the perfect foundation for this plan.

“Success in competition requires high flexibility,” says Christian Kalisch, Logistics Director at CHIRON Werke GmbH & Co KG in Tuttlingen, Germany. “To achieve success, we continuously extend our product portfolio.” Consequently, warehouse capacity for production supply and complex processes decrease. This has been the largest investment project within the last hundred years for the CHIRON company, and corporate management decided to build a new production center with a connected

warehouse area - the CHIRON Precision Factory. “The most modern machine factory throughout Europe,” explains Mr. Kalisch. SSI Schaefer was awarded the contract for the material handling equipment, which was tailor-made for the requirements.

For optimum access to required components, SSI Schaefer installed a 6-aisle pallet rack system for manual operation with a special cable drum rack, as well as a rack system with about 840 shelves for storing small parts. In the new static rack system, the LF series open front containers are used. Furthermore, SSI Schaefer marked all storage locations to ensure transparency and smooth linking of stock data with the processing IT system SAP MM. The entire rack system is equipped with QR code labeling too. This facilitates mobile data gathering and fast changes of storage location, if necessary. The storage equipment has been designed as an adaptable system that can extend and automate according to requirements. The concept provides for a future heavy-duty rack and four storage lifts.



## EXTENDING CENTRAL WAREHOUSE FOR EFFICIENT HANDLING OF E-COMMERCE BUSINESS

One of the largest fashion and sports providers in Austria, Kastner & Öhler, has commissioned SSI Schaefer with equipping its central warehouse in Graz. The flexibly expandable solution to be implemented will facilitate shorter delivery times while enabling considerable efficiency increases for order processing for the growing online business.

The family business Kastner & Öhler was founded in 1873, which gained international recognition in the fashion world thanks to innovation and quality. Under the brand name Gigasport, Kastner & Öhler is also a leading sports provider. It is the largest Austrian owned fashion and sports company, with both its headquarters and a central warehouse located in Graz. The company operates a total of 33 locations in Styria, Carinthia, Burgenland, and Upper Austria as well as two outlets in Graz. In the Kastner & Öhler and Gigasport online shop, customers have access to a wide range of products. The new shipping solution will be able to process more than 10,000 shipments per day.

Large online providers have opted for products and solutions by SSI Schaefer for years. For the Kastner & Öhler central warehouse in Graz, modern intralogistics will ensure efficient processing of shipments for the e-commerce business. Scaling up for a future implementation can be easily done too, thanks to the already considered extension stages.

Regarding the logistics concept itself, efficiency and flexibility were just as convincing as was the ergonomics factor, which played an essential role in the design of shipping work stations.

Completion and commissioning of the project is scheduled for October this year - just in time for Black Friday and holiday shopping. This helps achieve short delivery times even in case of higher shipping volumes for a positive customer experience.







## NEXT STOP: AUTOMATING EXISTING PROCESSES

How can existing material handling solutions adapt to a new situation on the market? How can companies achieve increases in productivity and cost savings at the same time? We automate and link your internal material flows individually and make them fit for the future using AGVs and robotics.



### Case study:

How C+C Krug saved 50% of the time need and increased availability by 90%.

*Think Tomorrow.*