

Trading Successfully: Solutions for Retail & Wholesale

Automate processes,
enhance flexibility and efficiency,
optimize availability

[ssi-schaefer.com](https://www.ssi-schaefer.com)



SSI SCHÄFER



We act in Your Interest

The traditional differentiation between the sales channels retail business and mail-order business has often merged into one omnichannel model. End customers in particular benefit from the flexible, location-independent shopping experience. The online business has also gained increasing importance in wholesale. Here, a fast and error-free delivery to the desired location is essential.

Intralogistics challenges:

- Shorter delivery times (same day/next day delivery)
- Smaller quantities and delivery units
- Increasing number of products
- Larger quantity of returns
- Seasonal fluctuations
- Sales promotions such as Black Friday, Cyber Week, Singles Day, etc.
- Omnichannel sales with different order types handled in one distribution center

The SSI SCHAEFER comprehensive product and solution portfolio combined with its exceptional IT expertise provides you with customized and efficient solutions to meet the diverse needs of both retail and wholesale.



Solutions from SSI SCHAEFER

- Manual, semi-automatic and fully automatic storage and picking systems
- Ergonomic work station systems
- Versatile bins and trays
- Efficient returns handling
- Single- and multi-stage picking
- High-performance robotics, modular conveying systems and flexible automated guided vehicles
- Picking of diverse packaging units such as cartons and pallets for B2B and individual items for B2C
- Waveless picking that integrates incoming orders immediately and seamlessly into the picking process
- Process and IT solutions, also for temporary work stations during peak times
- Performant WAMAS and SAP software solutions

SSI SCHAEFER – Working With Highest Quality

Future-proof logistics solutions must fit seamlessly into your operational processes, be infinitely expandable, and adapt flexibly to new conditions. This requires absolute specialists. Experts who do not think in terms of individual solutions but in terms of systems.



All-in-one solutions from a single source

Our wide range of products and services forms the basis of industry-specific solutions that we can tailor to your needs. With such a portfolio, our experts can provide bespoke solutions that cover all areas of your internal material flow. Our customers benefit from the fact that we make all of the SSI SCHAEFER Group's components ourselves. Having more than 10,000 employees globally makes us a strong and reliable partner.

At SSI SCHAEFER, holistic thinking has been the key to our success for many decades. As a global general contractor, we implement complete logistics systems. Our team of consultants provide comprehensive system planning and project management services, which are certified by the International Project Management Association (IPMA). This approach enables us to provide turn-key systems with tailored service and maintenance packages. Upon request, we can also plan and build your project with our in-house construction department.

Dedication and commitment

If you know anything about SSI SCHAEFER, you will be aware that we put our customers at the center of everything we do.

This includes the obligation:

- to always provide the optimum solution
- to always be there for our customers
- to always keep our word

You can expect us to be fully dedicated to your concerns. Whether it be the devotion that our employees give to developing new solutions or the all round service we ensure during the life cycle of your systems, we will always be by your side, no matter where you are in the world. As a family company, we always think of the future and plan for the long term.

Specialists for the Retail & Wholesale market sector

Megatrends such as digitalization and urbanization combined with the demographic transformation mean that trading companies are confronted with diverse challenges and a vast product diversity.

SSI SCHAEFER has established its own team of logistics, IT and process experts dedicated to addressing the challenges in this market sector. We implement future-proof solutions for companies in fields such as:

- Furniture
- General Merchandise
- Electronics
- Books & Media
- 3PL
- Do it yourself
- Office Supplies

Regardless of the size of your project, we utilize our extensive expertise to develop and implement modular and scalable intralogistics solutions. These solutions are perfectly harmonized and integrate seamlessly into your processes. We cover the complete product spectrum, enabling us to address your specific needs.





Designed for High Performance: Holistic Solutions With Modular Systems

Diverse order types, rapid reactions and high availability – even during peak times – distinguish the new world of furniture retail. Ergonomic picking even for large products, zero-error picking and maximum delivery quality represent further challenges. All of these factors require integrated concepts to ensure the highest performance and process reliability.

High bay warehouses, ergonomic work station systems and robotics

Safe storage even at more than 40 m height. SSI SCHAEFER offers semi-automatic and fully automatic high-bay warehouses for your needs. You benefit from high storage density, direct access to every article, rapid and reliable processes, and excellent availability along with optimum space usage. Our storage and retrieval machines guarantee fast and flexible material transport with short access times.

The work stations connected to the storage systems are designed using the goods-to-person principle and fulfill the most demanding requirements

regarding ergonomics, safety, performance and employees health. Ergonomic pulling and pushing replace strenuous movements such as lifting and carrying. Intelligent communication and display systems intuitively guide the operators.

Alternatively, SSI SCHAEFER also offers solutions for fully automatic palletizing, depalletizing and picking. Articulated and gantry robots ensure consistent performance and significantly reduce physical strains on the employees.

SSI Flat Pack Picking: Automated Picking for Heavy and Bulky Goods

Loading heavy, unwieldy goods onto pallets manually is an exhausting, time-consuming task in warehouses. Picking furniture or furniture parts often involves combining goods of very different sizes and weights on one pallet. SSI SCHAEFER's unique SSI Flat Pack Picking solution is the answer: Based on pack patterns calculated for each specific case, a gantry robot picks the goods efficiently and fully automatically, minimizing the volume. From hardware to software, SSI SCHAEFER is a single source for all components. The SSI Flat Pack Picking solution has a modular design, can scale up flexibly and can adapt to e-commerce business growth at any time.

An international panel of experts agree that the intelligent SSI Flat Pack Picking robotics solution is a highly innovative approach. In 2022, the panel awarded the coveted IFOY Award (International Intralogistics and Forklift Truck of the Year Award) in the market comparison in the "Integrated Warehouse Solution" category.

JYSK: Intelligent material flow concepts for logistics centers

SSI SCHAEFER is a long-standing partner of the Danish furniture retailer, JYSK. The company is one of Europe's market leaders for bedroom, bathroom and living room articles. In collaboration with JYSK, SSI SCHAEFER has implemented distribution centers in Poland, Sweden and Denmark.

In Uldum, Denmark, SSI SCHAEFER set up three connected high-bay warehouses, two miniload systems, and ergonomic work stations along with an optimally customized logistics software that ensures that all of the processes in the distribution center run efficiently.

The company also assigned SSI SCHAEFER the task of expanding the distribution center. The fourth high-bay warehouse is distinguished by its higher capacity and improved efficiency.

Energy-efficient Exyz storage and retrieval machines are utilized to store and retrieve the pallets. In addition, SSI SCHAEFER also optimized the material flow between the four high-bay warehouses and converted the JYSK systems over to WAMAS, SSI SCHAEFER's own logistics software.

"During these projects, SSI SCHAEFER demonstrated their high level of expertise and experience in developing solutions. We are extremely satisfied with the final outcome."

Annika Löfgren
Logistic Manager, JYSK

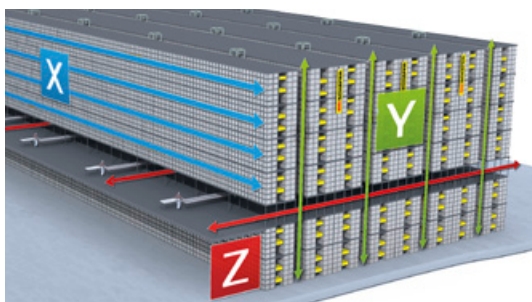




Dynamic and Highly Efficient: Shuttle Warehouses With Automatic Buffering and Sequencing

High throughput, enhanced process efficiency together with rapid and flexible delivery form the central requirements for intralogistics. We have developed multifunctional, modular and scalable solutions to address these challenges.

The 3D-MATRIX Solution®: Dynamics and throughput



The patented 3D-MATRIX Solution is a highly dynamic system solution for automated warehousing, buffering and sequencing. The special design treats the warehousing cube as a system open on all sides, eliminating the bottlenecks and restrictions of conventional solutions. The matrix consists of three key system components: Shuttle vehicles, lifts and conveying systems that serve all three axes and transfer the goods directly to the connected picking or shipping work stations.



Shuttle systems: Flexibility and maximum performance

SSI SCHAEFER provides you with shuttle systems tailored to your specific requirements and needs, ensuring optimized storage combined with short processing times. Capacity, flexibility and high performance are the key factors. Our scalable shuttle systems combined with the 3D-MATRIX Solution enable shorter access times and maximum availability due to the decoupled processes. In combination with the integrated sequencing, this guarantees unmatched process efficiency and throughput.

Gebr. Heinemann: Innovative shuttle system for a full-service warehouse

SSI SCHAEFER implemented the technical devices of the new logistics center in Erlensee for Gebr. Heinemann, one of the world's most important companies in the duty-free sector. The distribution center stocks 35,000 different duty-free articles.

A high-bay warehouse for pallets and a modern miniload system based on the 3D-MATRIX Solution concept form the heart of the 32,000 m² logistics facility. SSI SCHAEFER offers a highly dynamic

system solution for storing and picking together with a sequencing buffer for shop-specific order fulfillment. Orders are picked directly to the shipping cartons at multi-order-picking work stations supported by a Pick to Light system.

The outgoing goods pallets are loaded with the shipping sequenced in the branch layout. Scissor lift tables ensure effortless work in accordance with the ergonomics@work![®] principle.

"The figures prove that we achieve a significantly higher efficiency due to the order processing with the 3D-MATRIX Solution and the modern components. The rapid access to every storage location and the retrieval sequencing within the facility guarantee highly efficient processes. Furthermore, the system concept offers us maximum flexibility."

Markus Kellermann

Head of Logistic Operations Distribution Center Erlensee, Gebr. Heinemann



Maximum Performance in Minimum Space: Modular Warehouses With Optimized Picking

Providing an increasing number of articles and delivering a vast range of order sizes within the shortest possible time are major challenges in the electronics sub-market sector. We have developed numerous future-proof solutions with our modular system to address these needs.

Future Electronics: Flexible system concept for a logistics center

With 169 branches in 42 countries, Future Electronics is one of the largest distribution and marketing partner for semiconductor and electronic component manufacturers in the market. SSI SCHAEFER planned and equipped the Future Electronics distribution center in Singapore with a facility concept designed for growth.

Within three years, the company grew so drastically that Future Electronics decided to immediately implement SSI SCHAEFER's layout design including the planned future expansion options.

Following the manual person-to-goods multi-order picking, the order bins are transferred to the conveyor systems at the stations. The bins are then stored temporarily in one of five universal buffer systems until the orders are complete. Using this system, 1,700 orders per day are compiled from more than 50,000 permanently stocked articles.





ergonomics@work!®: Enhanced efficiency and quality with ergonomic work stations

We developed ergonomics@work! as a part of the concept for creating work stations designed to enhance productivity and reduce physical strain. This concept includes:

- Efficient and sustainable material flows
- Optimum layout of control elements and displays
- Clear, simple, and logical user guidance
- Natural, skin-friendly and yet robust materials
- Low-noise working environments
- Integrated error detection and support for error correction



“With the takeover of the distribution center Singapore we were already able to report a throughput increase of 40 percent in 2009 compared to the previous performance figures. With the now completed plant extension by SSI SCHAEFER we were able to once again increase the efficiency by 20 percent. Counting on SSI SCHAEFER has paid off with the delivery of a flexible, expandable solution.”

Martin Bates

Senior Director Operations, Future Electronics

Minimum Times, Maximum Flexibility: Efficient Warehousing and Error-Free Picking



E-commerce has become highly important in recent years. The traditional differentiation between the sales channels retail business and mail-order business is disappearing. Omni-channel business models are on the increase and becoming the standard when selling goods.

Warehouse processes have become far more complex as customers are often very demanding and expect immediate and error-free delivery of the goods. The challenge consists of simplifying the logistics procedures in the warehouse for

guaranteeing maximum flexibility in order to be able to react to the typical changes of the product portfolio in the e-commerce sector and for ensuring the necessary short delivery times.

SUNING
苏宁物流

Suning: Superlative e-commerce logistics center

The Suning Commerce Group is one of China's largest private retail companies. The company's product range encompasses electronic appliances, office supplies, cosmetics, fashion and groceries. At the new distribution center in Nanjing, SSI SCHAEFER installed a miniload system with about 500,000 storage locations, an automated pallet warehouse with 20,000 locations and a static rack with 18,500 fields.

The SSI Carousel System with a capacity to store and pick up to 350,000 articles is utilized for order picking. Customer orders are compiled at the high performance Pick to Tote work stations. The shipments are either

transported directly to the dispatch area or buffered in one of 20 carousels before they are diverted by a sorter with a capacity of 18,000 parcels per hour to the respective shipping destinations and loaded onto trucks. A cross docking station for pre-sorted goods from third parties and a returns center complete the solution.

Suning's IT system is used for administration and stock-keeping, while the SSI SCHAEFER WAMAS logistics software is applied for control purposes. The result: About 20 million articles are stored and up to 1.8 million positions are processed on a daily basis.



Pick to Tote: Efficient zero-error picking

Fast, gentle, ergonomic: The ergonomic Pick to Tote goods-to-person work station system ensures especially high-speed picking of slow-moving articles with a performance of up to 1,000 picks per hour. The items

are picked directly to order bins and cartons. Clear operator guidance and light barrier monitoring at the destinations guarantee the highest picking quality.

Niemann+Frey: Step by step automation of a spare parts warehouse

Niemann+Frey, a wholesaler for bike spare parts and accessories, permanently maintains more than 50,000 articles in its warehouse. Every day more than six tons of spare parts are picked, packaged and shipped throughout Europe. In 2010 Niemann+Frey implemented a 7,500 m² warehouse in collaboration with SSI SCHAEFER. The facility includes a pallet rack with 4,000 storage locations, a three-level platform

with wide-span racks and 12,500 meters of shelving, six packing stations, 16 shipping channels, ten dock levelers and eight loading ramps. Only a few years later, the warehouse was partially automated with two LOGIMAT® storage lifts for storing and picking small parts, along with a bin and carton conveying system that connects the incoming goods with the various picking stations.



niemann+frey

"The collaboration was outstanding - from the project management to the assembly during ongoing operation. A key aspect for me was that we only had one contact person at SSI SCHAEFER despite working with different departments. There are very few companies on the market that offer everything from a single source."

Thomas Schild

Representative and Head of Logistics, Niemann+Frey

Ergonomic, Efficient, Reliable: Faster Picking, Enhanced Picking Performance

Increasing e-commerce and fast store delivery, daily and seasonal volume fluctuations, along with continuously changing order structures and customer purchasing behavior, influence the business in the books and media sub-market sector. SSI SCHAEFER has developed the right modules to address these requirements and combines them to create unique and complete solutions.

"Our requirements for the logistics concept in the new warehouse regarding the throughput rate, rapid picking and zero errors were completely fulfilled thanks to the concept implemented by our partner, SSI SCHAEFER."

Uwe Ratajczak
Managing Director, KNV



KNV: State-of-the-art, automated media logistics center

The media wholesaler Koch, Neff & Volckmar GmbH (KNV) - meanwhile Zeitfracht Medien GmbH - is the market leader in German-speaking countries. The company's product range includes more than 540,000 books, DVDs, audio media, games and other book retail articles. KNV works with more than 4,700 suppliers and makes daily deliveries to around 5,500 media outlets in Germany, Austria, and Switzerland using its own transport logistics.

SSI SCHAEFER installed a miniload system with 56 vertically arranged storage and retrieval machines. This system provides the automatic storage and retrieval of slow and very slow moving articles while making optimum use of the available space.

More than 20 SSI Carousel Systems ensure that rapidly required goods are located closely to the work stations and that continuous resupply is available.

A 100%-goods-to-person principle completely eliminates moving times and enables exceptional productivity with more than 400 picks per work station and per hour. This solution also addresses the ever-growing proportion of slow-moving articles in the book retail market that previously required long paths into the depths of the warehouse.

Thanks to the intelligent combination of systems, the entire facility not only provides flexible and efficient processes but also significantly increases quality. The error rate of the entire picking process has been reduced to almost zero.

Even at the manual picking stations, the product removal features scanner-supported user guidance. Technologies support, confirm and monitor all of the logistics processes.

Other elements of the solution: 21 km of carton and bin conveying systems, pallet conveying systems, ten goods-to-person work stations, RF picking stations, 44 Pick by Voice picking stations, 108 Pick by Light picking stations, two sorting loops, handling systems, WAMAS logistics software.

The logistics center stores up to 1 million different articles. 75,000 packages per day and accordingly up to 10,000 packets per hour are shipped.

The high-performance pre-zone is a particular highlight and connects the storage system with the SSI Carousel System. Goods required in the coming hours are transferred from the miniload system to a connecting loop. This loop either buffers the goods in the SSI Carousel System or transfers them directly to the picking work stations.





Flexible and Highly Efficient: Intelligent Material Flows With Automated Guided Vehicles

Optimum stock management, high throughput and rapid order processing are key factors for third party logistics companies (3PL) in order to remain competitive. SSI SCHAEFER has developed solutions for intelligent material flows, highly efficient processes and greatest possible flexibility. Numerous customers successfully utilize these solutions.



2XL: High throughput and barrier-free transport

The Belgian logistics specialist 2XL N.V. decided against fixed conveying systems due to the changing article spectrum and to make flexible use of the available space. At the same time, the company also chose to largely automate the standardized transport on the fixed routes between incoming goods, the high-bay warehouse and the outgoing goods department.

Automated guided vehicles provided the solution. The fleet is connected to the warehouse management system's material flow computer and a laser positioning system supports the navigation. This enables pallets weighing up to 1,200 kg to be transported with a speed of up to 2 m/s.



"Automating the transport procedures by using automated guided vehicles has given us the necessary flexibility and efficiency, and we are now benefiting from barrier-free transport. The entire solution enables us to achieve optimum stock management, high throughput and fast deliveries. We therefore have more capacity to store a wider product portfolio but with less stockholding."

Jean Van den Poel
Company Founder, 2XL N.V.



Software Solutions: The Driving Force for Consistently Synchronized Processes

WAMAS logistics software

Our WAMAS logistics software guarantees intelligent solutions for the challenges of today and tomorrow. WAMAS encompasses around 30 years of expertise in the development and implementation of sustainable and scalable intralogistics solutions.

The logistics software can be seamlessly integrated into ERP systems, creating the perfect prerequisites for efficient control of all the logistics processes - from

customer order to the PLC and mobile end devices in manual areas. The software grows with your requirements, supporting your company through any and all expansions.

Proven SAP competence

As a system provider, we are your trusted partner for the selection, implementation, ongoing maintenance and further development of SAP logistics solutions. Our broad range of consulting and implementation expertise is reflected in numerous international projects.

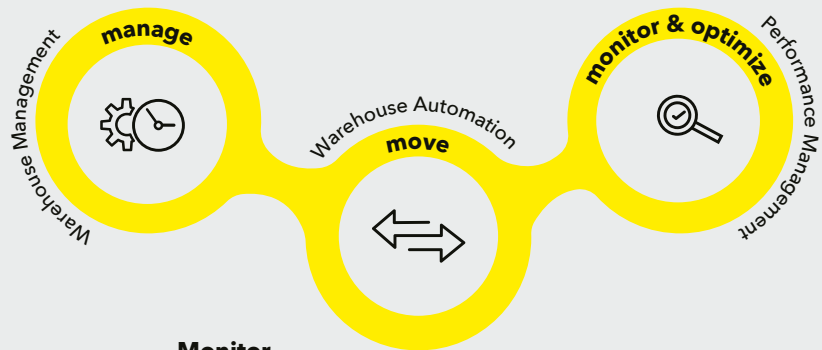
WAMAS® Portfolio

Manage

The state-of-the-art software controls and optimizes manual or highly complex automated processes based on the current daily orders.

Move

Whether forklift transportation, conveyor technology, shuttles or AGVs - WAMAS integrates all components into a high-performance overall system.



Monitor

The central information platform WAMAS Control Center provides insights into warehouse operations in real time and constantly shows potential areas for improvement.

Optimize Processes and Save Costs: More Power Through Modernization

New warehouse technologies and software releases can significantly enhance your warehouse performance, similar to the way in which the internet has massively boosted the mail-order business.

Technology updates streamline warehouse and picking processes and reduces costs. This includes also updates to previous investments. It does not matter if you purchased an installation from us or from another provider. We analyze your logistical situation together with you to increase sustainable performance and profitability. With our years of expertise, we advise you on areas for optimization and recommend customized solutions.

After preparing a return on investment analysis, we offer you:

- Optimization of organizational and warehouse processes
- Implementation of new picking methods
- Expansion to new warehouse areas
- Extension/modernization of mechanics, electrical engineering, control
- Software and hardware upgrading

Innovative Service Portfolio for Maximum Availability of all Systems

Once your system has been successfully commissioned, our experts will continue to support you. Our comprehensive service portfolio offers customized solutions for all requirements.

Preventive Services

- Maintenance
- Inspection
- Safety Inspection
- Rack Inspection
- Training and Certification
- System Monitoring
- System Security

Reactive Services

- 24/7 Technical Support
- Call Out Support
- SSI Augmented Support

Life Cycle Management

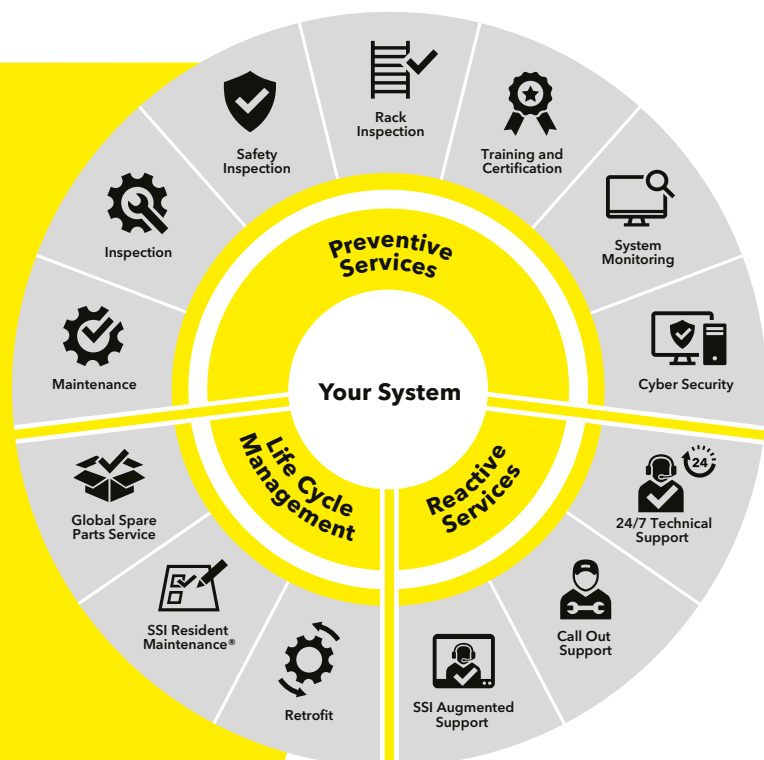
- Retrofit
- SMP
- Global Spare Parts Service

SSI SCHAEFER Maintenance Philosophy (SMP)

With our improved SSI Resident Maintenance® solution, we offer our customers "more than just service".

The SSI SCHAEFER Maintenance Philosophy is based on three core elements:

- Expert employees (SSI Resident Maintenance Team)
- Best-practice processes for technical maintenance and repair work
- Integrated service tools and systems



Six Reasons for Choosing SSI SCHAEFER

■ **Stability**

As a financially independent family business, SSI SCHAEFER is committed to long-term solutions. You can trust that our team of experts will be there for you today, tomorrow and in years to come.

■ **Efficiency**

SSI SCHAEFER solutions are scalable and able to grow with your business. You can always upgrade or retrofit.

■ **Quality**

As a systems specialist and original equipment manufacturer, SSI SCHAEFER provides tailor-made and high-quality solutions from a single source, specifically designed to meet your challenges.

■ **Reliability**

Thanks to our worldwide Customer Service & Support network, SSI SCHAEFER ensures smooth operation of your system, both during and after installation.

■ **Know-how**

SSI SCHAEFER solutions are always up-to-date with the latest technological standards and can be easily integrated into an existing (IT) landscape.

■ **Internationality**

As a global organization, SSI SCHAEFER has local offices worldwide. With over 70 operative subsidiaries, our team of experts speak your language.

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