AUTOMATED SYSTEMS

By the SSI SCHAEFER Group
Automated systems by the SSI SCHAEFER group

With international headquarters located in Neunkirchen, Germany, FRITZ SCHAEFER GMBH primarily targets components for automated warehousing – the manufacturing of steel racks for mini-load and rack-supported buildings. SSI SCHAEFER’S extensive product line also includes a wide range of storage and transport containers, pallet rack, bin shelving, mobile rack, mezzanines and much more.

SSI SCHAEFER NOELL GMBH in Giebelstadt, Germany designs and implements integrated logistics systems. Acting as the general contractor, SSI SCHAEFER NOELL has completed over 300 systems worldwide. Our capabilities include system design and consulting, implementation of turn-key installations, as well as customer oriented after sales service and maintenance packages.

SSI SCHAEFER PEEM GMBH in Graz, Austria, focuses on modular picking applications. SSI SCHAEFER PEEM plans, develops and manufactures highly dynamic conveyor systems for bins and cardboard boxes as well as automated order fulfilment systems.

As a general contractor, SALOMON AUTOMATION GMBH offers an extensive range of customized solutions covering every type of storage system, whether manually operated or fully automated. The company is committed to assisting its customers throughout the entire life cycle – from initial planning and software implementation to the selection of a suitable IT and storage technology infrastructure and, finally, comprehensive training designed to familiarize staff with newly integrated software and systems. Tailor-made service ensures operational reliability and best-in-class system availability.

SSI SCHAEFER’S production plant in Hranice, Czech Republic:
All products for automation – storage and retrieval machines, pallet conveyor systems and the SCS Carousel System, a high performance horizontal carousel for the dynamic supply of containers – are manufactured and pre-tested here.
Advantages of One Single Source

SSI SCHAEFER’S automation division ranks among the leading experts for the planning, design and implementation of sophisticated, efficient intra-logistics systems. With an extensive, market oriented product range we generate individually tailored logistic solutions.

This enables us to assure optimum efficiency and profitability for our customers’ individual business processes. In addition, compatibility of system components offers extensive flexibility and lays the groundwork for future expansions using state-of-the-art technology, ranging from single systems to complete installations.

The support, expertise, synergy and innovation under SSI SCHAEFER’S umbrella brand name offer the complete range from one source – reliability and availability for state-of-the-art systems, fast project implementation, including general contracting, and lasting value for long-term investments.

Products developed, designed and manufactured by SSI SCHAEFER provide the basis for logistics solutions. In every phase of a project this facilitates efficiency and flexibility, focusing on specific customer needs – anywhere in the world.

Advantages of dealing with a powerful group of companies:
- Know-how transfer
- Short reaction times
- Highest quality standards due to our own production facilities
- Worldwide availability
- Long-term warranty for all services and products
- Maximum profitability due to optimized planning and short implementation times

Our services:
- General contracting
- Planning and consulting
- Project management
- Contract work and foundation planning for high bay warehouses
- IT and automation systems
- Upgrading and modifying systems
- Service and maintenance
- Highly dynamic order-picking systems
- Steel construction and racking systems
- Storage and retrieval machines for pallets/containers, etc.
- Materials handling technology for pallets, bins, boxes and trays
- Bin handling systems
- Paperless order-picking systems
- Sorting and shipping systems
Detailed data analyses – Basis of each plan

Simulation in 3D-Model
Creativity, Know-How and Vision – Logistics Planning

**Together we plan your future.**

Efficient logistic processes are the basis for economic success. Let our specialists do the planning for you. With the knowledge and experience acquired by completing a couple of hundred projects worldwide for leading logistics service providers and well-known businesses in all industrial sectors – SSI SCHAEFER delivers the essentials:

Innovative ideas and concepts as well as reliable components for integrated solutions of complex logistics management applications.

By involving the customer in the early stages of project planning we work together, starting with the system lay-out to the distribution systems for specific materials and work flow. Process analyses, simulation studies and profitability calculations not only confirm the economies of scale of the proposed solutions but also show the future growth potential for our customers’ business.

**Solutions from one source.**

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**Our Tools:**

- **Plant**
  - Data evaluations
- **Tecnomatix**
  - Simulation
- **Auto CAD**
  - 2D Layout
- **3D Studio Max**
  - 3D Animation
Automation

As little automation as possible, as much automation as necessary. To implement this golden rule of intra-logistics continuous availability and reliability of all system components is necessary. Using software automation results in a coordinated process flow and reliability even during continuous operation. The use of the latest electro- and control techniques incorporates the implementation of efficient transport and conveyor processes and assures the compatibility of all components with the materials handling technology.

With the help of comprehensive, mostly self-explanatory visualization tools, the materials flow system displays the degree of utilization of all system components, based on the detail needed. With one glance the processes in receiving-order picking, goods replenishment or dispatch can be registered – and if necessary, early intervention can be initiated.
Customized IT

SSI SCHÄFER’s warehouse management system provides a state-of-the-art IT basis designed to ensure universal transparency and efficient control of all operating processes in warehouse management and distribution.

The system’s sophisticated cross-industry architecture and consistent focus on user interaction are reflected in the modular structure and extensive number of user interfaces. Incorporating a wide range of user interfaces and offering efficient management of numerous order-picking systems in both manual (pick by light, RF, pick to voice) and automated (Schäfer Case Picking, Mercury, goods-to-person picking) fields, this system is able to deliver an effective solution for every task imaginable. The standardized system is the product of SSI SCHÄFER’s extensive experience, complemented by the evolutionary process of software development. Specific customer needs are addressed flexibly by means of repetitive, incremental processes.

The system has many recognized logistical functions (including goods receipt, storage location optimization, replenishment of supplies, order picking, packaging and dispatch) and offers maximum integration capability with specific customer IT environments. Thanks to scalability and adaptability, customers – whether managing a small warehouse or a complex distribution center – can expect a solution tailored to their precise needs and based on a standard system.
Customer Service and Support

High availability and durability, efficient operation and responsiveness in case of malfunction – customer oriented after-sales-service and regular maintenance are the most critical challenges to extend the lifetime and operational reliability of devices and systems.

SSI SCHAEFER has met these challenges by establishing a service and maintenance network which is available worldwide. Constant availability, elimination of malfunctions via modem or on site and preventive service for mechanical, control and IT-systems are part of the scope of services provided by SSI Schaefer and are as much a part of the design as a perfect installation. With customer specific service and maintenance models in place, innovative spare parts concepts, individual support and training, as well as managing the entire technical operation of the installation, the service-team assures short downtimes, highest operational reliability and maximum customer satisfaction.

The SSI SCHAEFER hotline – your direct contact around the clock.
Small-Parts Logistics

Nominal space requirement and minimal access times, flexible links to other storage systems and modularity of our time-tested systems are the basis for efficient, automated storage logistics for bins, trays, and cardboard boxes.

From racking and conveyor systems to order picking strategies, we design and implement customized solutions that can be adapted to customer specific requirements, down to the smallest detail.

Our innovative logistics solutions like the SCS (Schaefer Carousel System), the SQS (Schaefer Quad System) and the miniload (automated small parts storage system) were especially designed to meet the requirements of highly dynamic logistics processes and warehouses – and are more than just a complement to our extensive pallet of classic system components.

Proven systems and innovative solutions for small-parts logistics.
Superior Performance – the SCS

The Schaefer Carousel System (SCS) stands for **high-speed order picking with minimal use of space** using the “goods-to-man” principle. Up to 1,000 picks per hour, 50 per cent higher storage density and a modular system concept make the SCS an intelligent solution for dynamic order picking processes at high proficiency and profitability levels.

Precise operator input confirms, guides and controls each function, resulting in zero-error-order-picking. The integration of efficient conveyor- and sophisticated control technologies assures high stocking and picking rates.

Result: fatigue free operation, continued high throughput and quick, economic order picking – at less than one sixth of the energy consumption of conventional systems.

A standard module consists of four rotating carousels with one decoupled automatic stocking and picking unit each. Space saving shelf arrangement results in a capacity of up to 6,000 bins with a standard 4 carousel system. Like building blocks the units can be combined, allowing them to be scaled to a specific project.
High Density Dynamics – the SQS

SSI SCHAEFER’S SQS (Schaefer Quad System) is a storage system for **highly dynamic throughput using bins**. The system is based on the “goods-to-man” principle and is designed for use as an intermediate or dispatch buffer for high performance order picking in an automated miniload.

The SQS is used wherever space is limited and high performance processes need a large number of standard containers in the shortest time possible.

Characteristics: Compared to conventional storage and retrieval machines (SRMs) the SQS achieves a throughput that is five to ten times higher. This is due to **four load carrying devices per shuttle**, very high speed load changes and the elimination of telescoping movements. The system stands for maximum dynamics using minimal space.
SCP
Schäfer Case Picking

What is SCP?
SSI Schäfer’s newest order-picking system designed to automatically select and palletize mixed, full-case orders.

Design of the SCP
- Separation of the incoming manufacturer pallets on layer trays
- Intermediate storage of the layer trays in a highly-dynamic tray buffer
- Automatic layer tray retrieval and automatic sequencing by family group or store planogram
- Automatic stable pallet stacking and pallet wrapping

SCP Features
- Gentle, product-specific handling & palletizing as they are designed (the right way)
- Efficient use of space and energy
- Modularity and scalability
- Provide flexibility for future growth and business changes through modular design
- Minimally impacted by diverse packaging designs (6-packs, trays, ….)
- Low cost-per-unit-shipped (full costs)

SCP is a modular scalable and extendible solution from 30,000 up to 300,000 cases per day.
**Pick by Voice:**
Voice-guided picking - advantage in comparison to Pick by Light: several pickers can work on a picking area at the same time.

**RF Picking:**
Picking with radio frequency technology is used in the manual picking areas. An integrated scanner reduces the number of manual entries to a minimum.

**Pick by Light:**
Fast access to single products is controlled by light signals – this is one of the best known types of hands-free picking.
Piece Picking

In many cases the key to efficient and optimal picking processes is the adequate combination of automation and manpower. To guarantee highest picking quality at semi-automated and paperless picking, we implement modern, ergonomically designed technology for perfect guiding of pickers, shortest warehouse access times and reliable quality in delivery.

Thanks to the mobile user interface (UIM), SSI SCHAEFER can incorporate all standard systems available in the market for radio frequency transmission with user dialogues that are independent of hardware.

**Pick to Tote:**
This was especially designed for the picking of large, heavy or delicate articles that are picked directly into the order tote.

**Pick to Bucket:**
This is picking with the use of an independent collection bucket before it enters the order bin. Pick to Bucket workplaces are designed for highest picking throughput rates. A combination of Pick by Light and Put to Light as well as a special buffer allow personnel to have their hands free for the picking of lightweight and droppable products.
Automated Picking Systems

Automatic Picking Systems (APS) bring together all articles from individual orders – with flexibility and at highest throughput rates.

Permanent batch tracing is a fundamental principle of this concept.

Highest system reliability and quick access times as well as the combination of different types of systems allow the handling of nearly all product groups and goods.
Conveying Systems

This is a customized solution with perfectly interacting components.

Modular designed standard components that can arbitrarily be combined and expanded offer SSI SCHAEFER a wide range of conveying systems for effective intra logistics. The conveyors can transport standard bins or individually designed transport units. In any situation the conveyor system has to be tailored to fit even these types of totes and meet all business requirements. The high efficiency and throughput of the system are guaranteed by perfectly interacting components and special purpose machines for the handling of totes as well as an ergonomically stable profile of the materials handling equipment.

Ongoing development of systems provides for a wide range of state-of-the-art components – with variable fields of application, extremely quiet operation and easy to do maintenance.

Silent conveying system

An excessive noise level in logistics workstations is a significant cost factor because noise affects concentration and leads to more errors and less performance. Therefore the new "silent conveying system" by SSI SCHÄFER forms an integral part of ergonomics@work®. The silent conveying system consists of a whisper tote with new, patented contact surface on the one hand and a noise reducing equipment for the FT+ conveying system on the other hand.

It is thus possible to reduce the noise level of either the whole system or only particularly sensible areas, for instance those near highly efficient workstations. The design has been developed in a way to enable retrofitting existing conveying systems installed by SSI SCHÄFER.

The result is a conveying system that is nearly inaudible in typical warehouse environments as the noise level is about 10 dBA and thus below the ambient noise.
Pallet Conveyor Systems

Pallet transport – for repeat functions and identical routes, materials-handling technology from SSI SCHAEFER provides the basis for sound economics.

Components of this materials-handling technology provide excellent flexibility, and are easy to assemble and maintain. Built-in modularity, a special frame for chain and roller conveyors driven by moving conveying elements, belt and telescoping conveyors, discharge chutes or cascades – these system components, including a wide range of accessories, offer limitless possibilities for the design of installations using conveyor technology.

Produced in-house, we guarantee the quality and reliability of individual components and the installation.
Storage and Retrieval Machines –
Maximum Efficiency

Where optimized pallet storage with *fast material transport and short access time* is required, automatic storage and retrieval machines are the answer. They handle storage and retrieval operations in a high bay warehouse and move the product to the transfer stations.

SSI SCHAEFER offers a wide spectrum of standard devices that can be adapted as single or double mast units based on capacities, travel and lifting speeds, installation height and load based on requirement and application to meet the exact needs of the customer.

Compact assembly groups and pre-tested storage and retrieval machines guarantee short assembly times. Proven, high-quality machine parts result in comfortable maintenance schedules.

The following special designs are also available:

- dedicated load carrying device
- multiple load pick-up
- fittings for special elements in a deep-freeze environment
- SRM with aisle transfer bridge
- flexible drive concepts
- redundant configuration with several SRM’s per aisle
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