

ERGONOMICS@WORK®



ERGONOMICS IN LOGISTICS WAREHOUSES

Ergonomics is the science of the relationship between man and work.

Even in times of high-technology warehouse automation it is still human performance that determines quality, throughput and delivery times. No matter whether goods receipt, picking, returns handling or shipping – the essential materials management tasks are performed by logistics staff.

Unlike other providers, SSI SCHAEFER has recognized that this makes the technical requirements even more demanding. Technology must serve man by supporting and facilitating optimum performance. In this respect the interface between man and machine assumes a crucial position and so does the ideal design of work systems and processes. SSI SCHAEFER'S **ergonomics@work®** provides sophisticated concepts and solutions for warehouse automation.



WORKSTATIONS

Optimized workstations for the various tasks in warehouse logistics are the main element of **ergonomics@work®**. The pictures show typical logistics workstations of the **ergonomics@work®** range by SSI SCHAEFER. SSI SCHAEFER workstations are all designed according to the same ergonomic construction principle to foster quality and performance, thus ideal logistics processes:

- ▶ Physical strain can be reduced by minimizing the loads to be lifted. The workstations and processes are so designed that weights to be lifted manually are usually only to be moved downwards or horizontally.
- ▶ Performance is increased by reducing unnecessary movements that do not contribute to the actual logistics tasks. This means the workstations are literally built around man.

- ▶ Quality is enhanced thanks to clear workstation design, easy and visual user guidance and integration of sensors into the workstation.
- ▶ Shapes and materials are specially selected to not impede movements, distract from work or cause injuries. For this reason, many elements are rounded and contact surfaces are made of wood.

This provides workstations that reduce loads to be moved, for instance in goods receipt, by more than 80% or picking stations that also stand the test in continuous operation with 1,000 picks/h.



▲ Light-controlled picking guidance and hand-held terminals facilitate space to move and ensure best picking performance.



▲ Increased performance at the returns workstation thanks to integrated conveying system

▼ Light curtains prevent picking errors

▼ Goods receipt – optimized workflow, error-free sorting into totes guided by light





▲ Picking always from top to bottom

▼ Light guidance minimizes picking errors

▼ Rounded edges and wood optimize the ergonomic workstation



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 SCHAEFER 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 SCHAEFER. 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.

PICKING AUTOMATES

SSI SCHAEFER has been deploying picking automates with channels for fast-moving products for years and is worldwide market leader in this field. This picking automat combines low costs with high performance and model ergonomics. Without interrupting the picking process the automat can be replenished during operation. The **ergonomics@work®** construction principles have been applied here too:

- ▶ High quality thanks to simple, clearly structured user guidance. A clearly visible lamp indicates that replenishment is required; the filling levels of the individual channels guide the user – even without additional numeric channel display that is available as option.
- ▶ The automat dispensers are fully protected and so designed to prevent injuries or impediments of pickers even in case of operating errors.
- ▶ Short distances for replenishment increase productivity and contribute considerably to the excellent cost/performance ratio of SSI SCHAEFER automates.



▲ Shortens distances: the gate
▼ Optimized working heights, short distances for lifting



▲ Specially coated base of totes for the silent conveying system
▼ Short distances between S-Pemat and replenishment rack



HANDLING SYSTEMS

The comprehensive range of SSI SCHAEFER handling systems aims at: relieving man from physically demanding or monotonous tasks.

- ▶ Stackers and destackers process up to 1,400 totes/h in continuous operation.
- ▶ Tote emptying machines provide more than 2,000 emptied totes per hour.
- ▶ Different kinds of insertion machines do not tire out, not even processing 1,300 totes/h or up to 2,000 printed pages/h. It is even possible to combine automatic address insertion with lidding.

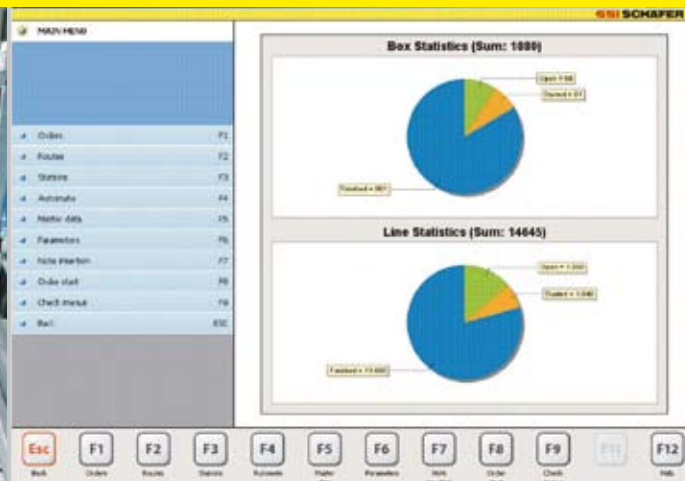
ergonomics@work® in handling systems does not only mean relieving man from physically demanding or monotonous tasks, it also entails sophisticated user guidance for operation and maintenance.

IT AND VISUALISIZATION

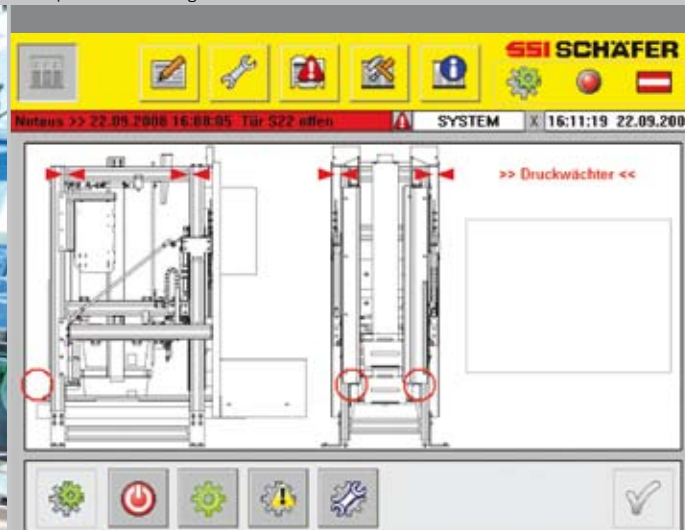
Ergonomics@work® has also made its way into IT solutions. Users who are familiar with Windows or Office can immediately work with the SSI SCHAEFER IT user interface. The interface design of the SSI SCHAEFER IT Software was developed together with ergonomics experts and designers to achieve the best possible user guidance. Thus SSI SCHAEFER is also market leader in this field.



- ▲ Fully automatic document insertion minimizes errors
- ▼ Tote stackers/destacker and lidding machines increase performance and relieve staff

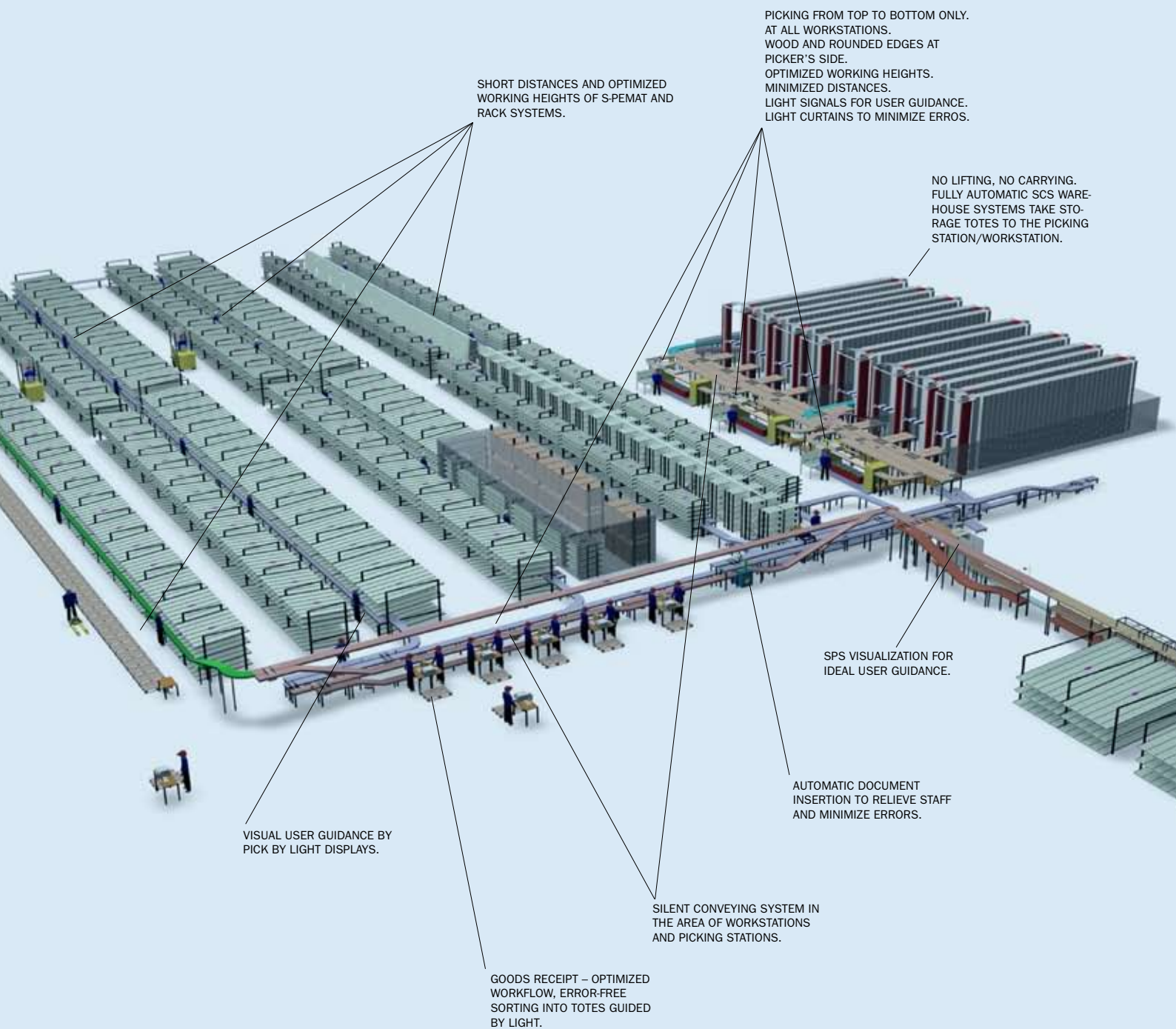


- ▲ Straightforward screen layout for ideal user guidance
- ▼ Graphical error messages with SPS visualization



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OVERVIEW OF A PICKING SYSTEM





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