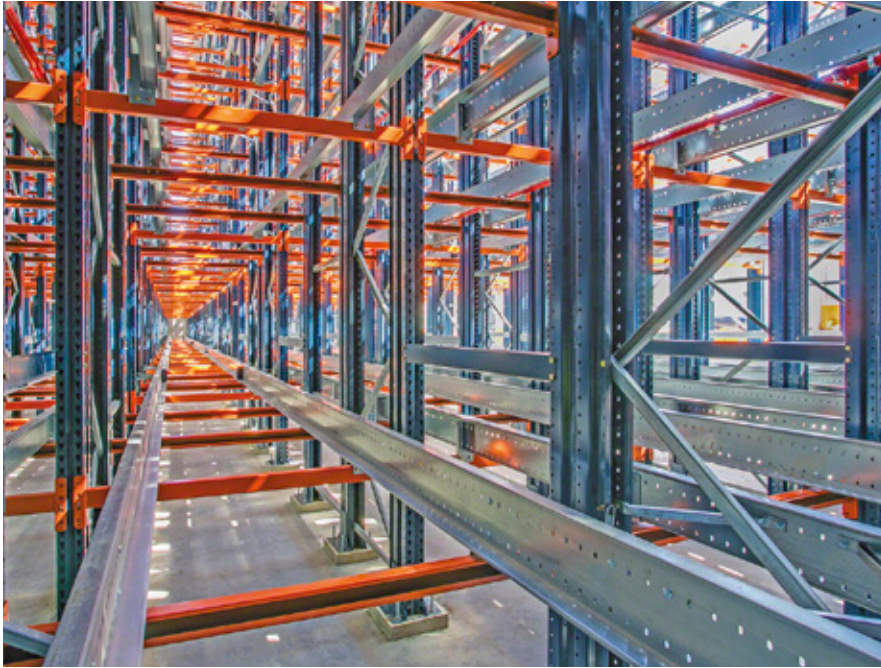


HIGH-DENSITY AUTOMATED PALLET SHUTTLE SYSTEM





The automated Pallet Shuttle is a compact storage system that uses electric shuttles and automated handling equipment (stacker cranes or transfer cars) to boost the capacity and productivity of the warehouse. The system executes the orders given by the Easy WMS warehouse management software.

DISTINGUISHING FEATURES

Automation results in the **elimination of errors** and a rise in the number inbound/outbound pallet cycles per hour.

High travelling speeds:
110 m/min unloaded and 70 m/min loaded.

The pallet shuttle's **supercapacitors** automatically charge while resting in the cradle of the stacker crane or transfer car.

With this system, it is possible to establish **continuous flows** of goods with uninterrupted operations.



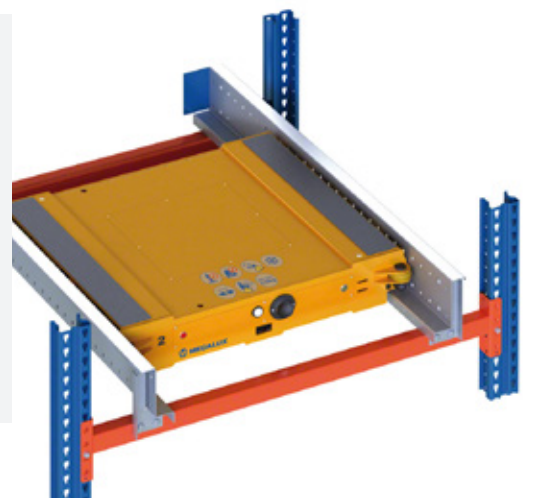
The automated Pallet Shuttle system can be **implemented in stages**, tailored to the changing needs of the warehouse.

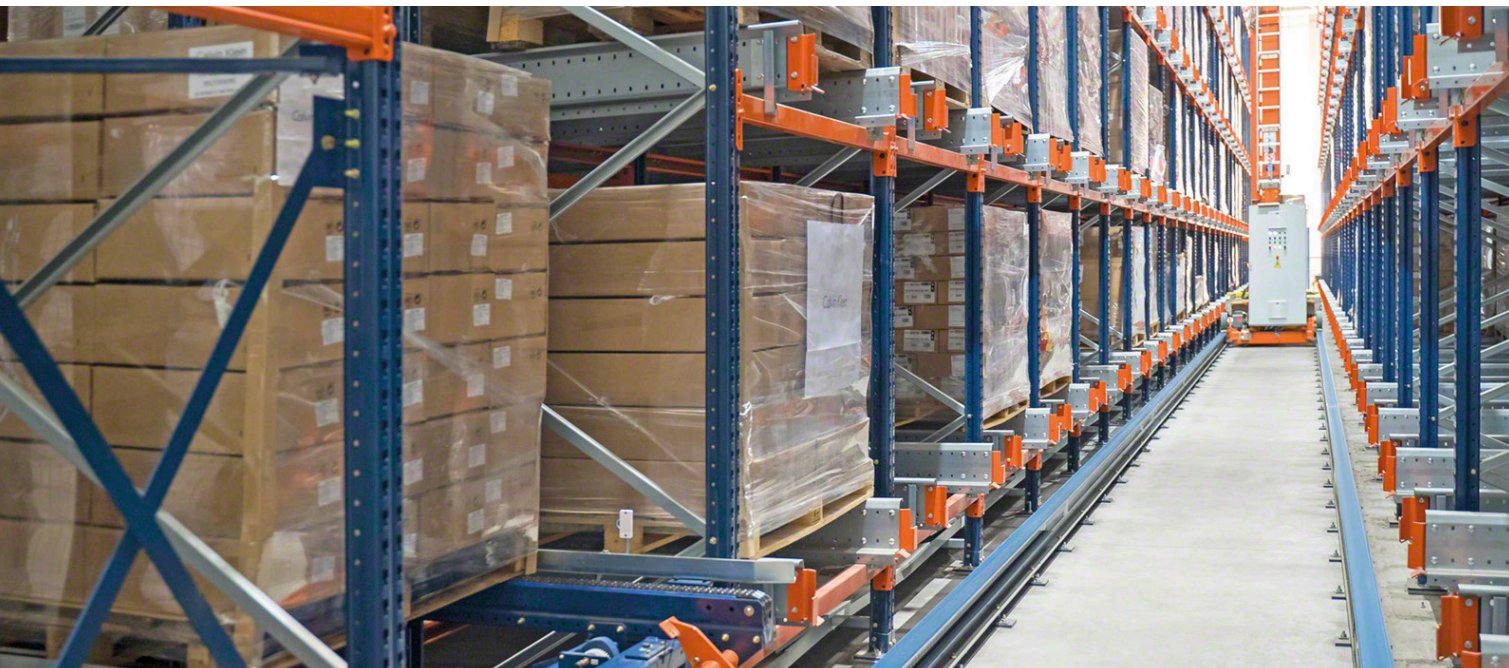
Its benefits compensate the initial investment with **immediate cost savings** and a fast ROI.

The use of stacker cranes or transfer cars requires a narrower width between aisles (less than 1,600 mm), thereby obtaining **greater storage capacity**.

Characteristics of the shuttles

Pallet width	1,200 mm
Pallet depth	800 / 1,000 / 1,200 mm
Load capacity	Up to 1,500 kg
Wheels	8
Unloaded travel speed	Ambient: 110 m/min / Cold: 76 m/min
Loaded travel speed	70 m/min
Lift time	2 s
Work temperature	Ambient: 5 to 45 °C / Cold: -30 to 5 °C
Battery	Supercapacitors





ADVANTAGES

The joint benefits of compact storage and automation

» GREATER STORAGE CAPACITY

Up to 40 m of storage in depth and 40 m in height.

» AUTOMATED MANAGEMENT

Stock control, real-time inventory and optimisation of all warehouse movements and processes thanks to Easy WMS.

» ENHANCED PRODUCTIVITY

Large increase in the number of cycles/hour, especially in systems with transfer cars.

» COST SAVINGS

Lower labour and energy costs and smaller surface area required to build.

» VERSATILITY

Possibility of grouping a different SKU in each storage channel and operating with pallets of different sizes and widths.

» SAFETY MEASURES

Use of safety devices that reduce the risk of accidents and ensure absolute control of goods, preventing inventory shrinkage.

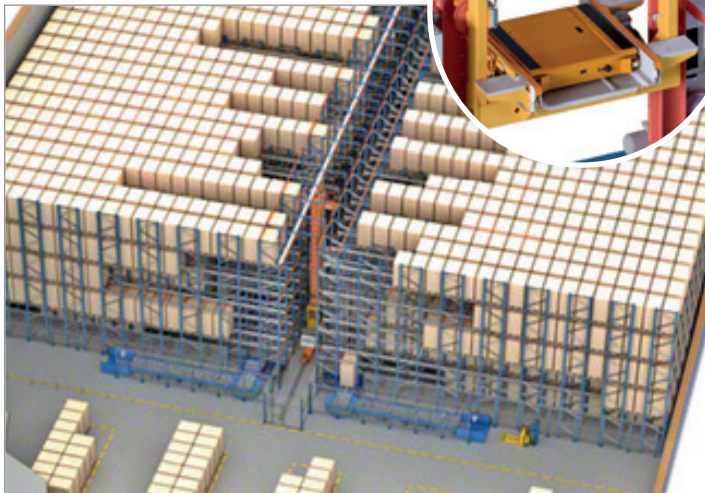




HOW DOES IT WORK?

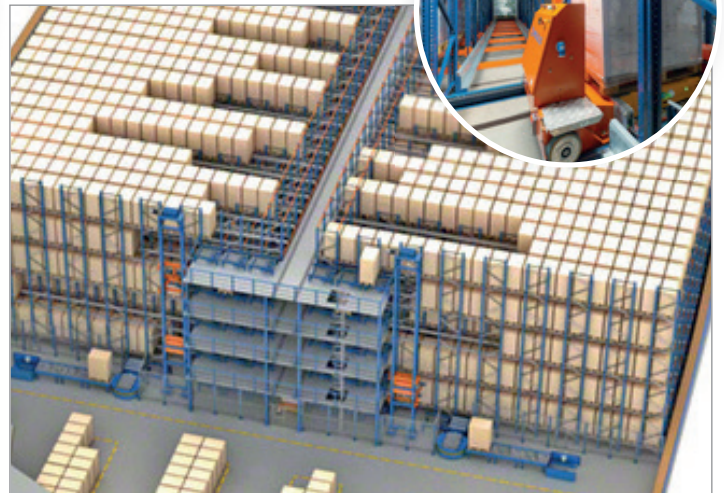
In automated storage and retrieval systems (AS/RS) with the Pallet Shuttle system, forklifts are replaced by automated handling equipment: stacker cranes or transfer cars. This considerably reduces the time needed for each operation. The pallet shuttle is placed inside a specific high-density structure in an automated warehouse. The type of handling equipment chosen will depend on the number of input and output movements, the numbers of SKUs and the quantity of pallets per SKU or batch.

» AUTOMATED PALLET SHUTTLE SYSTEM WITH STACKER CRANE



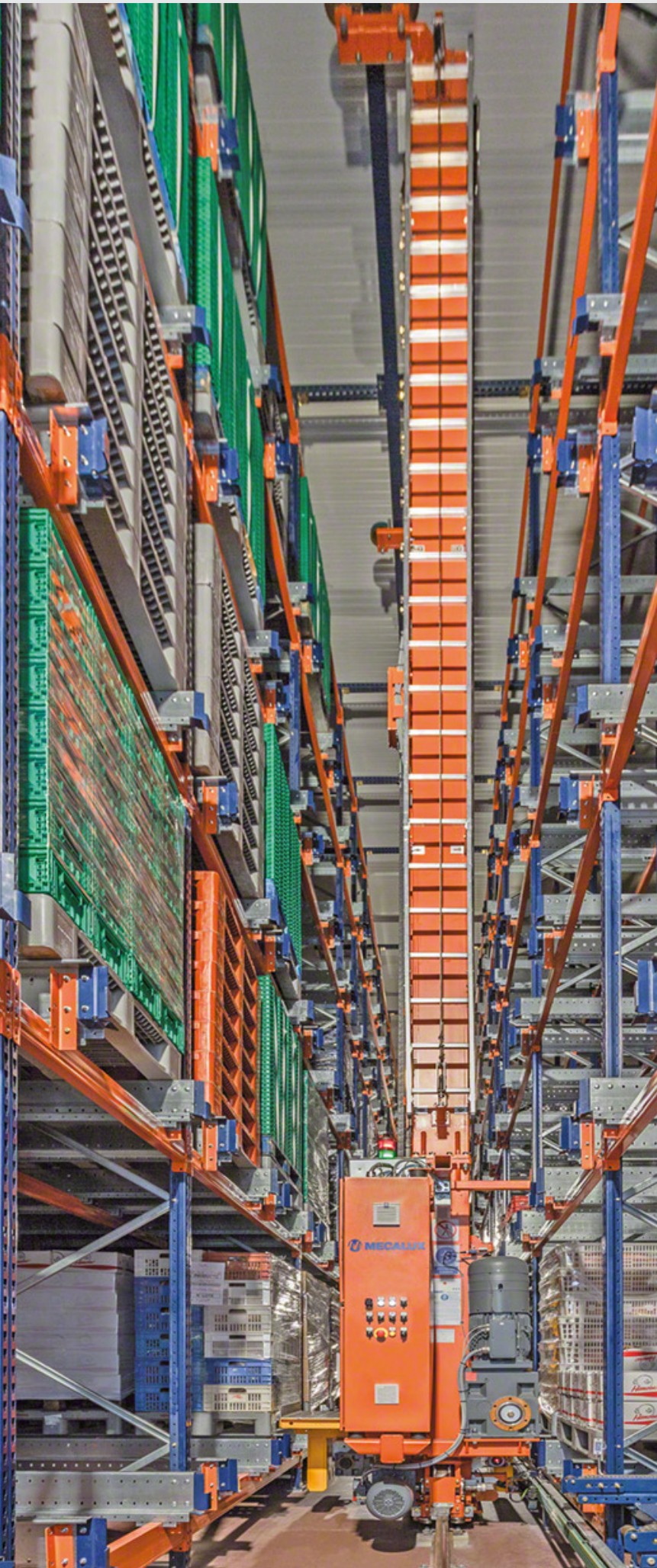
The stacker crane executes movements from the AS/RS input and output positions to any storage channel. The pallet shuttle is tasked with moving pallets from the cradle of the stacker crane to the location in the corresponding channel. Generally, two compact storage racking units are installed, one on each side of the working aisle.

» AUTOMATED PALLET SHUTTLE SYSTEM WITH TRANSFER CAR



Instead of a stacker crane attending to all levels of all the storage channels, a walkway-type structure is set up to enable a transfer car to move on each level. So, if the AS/RS is five levels high, five transfer cars are used to perform the movements from the lift to the storage channels on each level. This way, the number of movements (i.e., cycles/hour) is multiplied by the number of levels in the AS/RS.

This is the most efficient compact storage system for combining both high capacity and a large number of movements.



SUCCESS STORY HEMOSA

Hemosa, a meat company that supplies fresh and frozen products, has automated a portion of its warehouse with the Pallet Shuttle system with a stacker crane

Hemosa is present in all segments of the market (local distribution, superstores, industry and foreign trade), offering the highest quality fresh, frozen, processed and cured pork products.

As part of its commitment to innovation and to position itself at the forefront of production processes, Hemosa recently built a new headquarters in Pinto, Spain. The company wanted to streamline space while maintaining speedy pallet input/output operations. Moreover, it needed to preserve the cold chain, as it deals with fresh products.

To meet these requirements, Mecalux installed a high-density storage and retrieval system (AS/RS) with the automated Pallet Shuttle served by a stacker crane. This machine deposits the pallets in the storage channel assigned by Mecalux's Easy WMS warehouse management software. The process is done at great speeds and with efficient stock control while ensuring product traceability. The capacity achieved is 1,050 pallets, 800 x 1,200 mm in size and each with a maximum weight of 700 kg.

To avoid temperature loss, the access doors to the AS/RS are protected by vertical blinds that only open when the WMS indicates that a pallet is ready to enter.

Among the immediate advantages obtained by Hemosa with the installation of the automated Pallet Shuttle system are:

- **Maximum storage capacity.**
- **Savings in energy costs** by reducing the volume required to keep cold.
- **Enhanced productivity** because the stacker crane performs a high number of pallet cycles per hour while eliminating the need for operators in sub-zero temperatures.
- Total control of the warehouse, **real-time inventory** and optimal product traceability.



AUTOMATED PALLET SHUTTLE PERFECT SOLUTION FOR HIGH PRODUCT TURNOVER

Generally, this system is ideal for the following:

» **Facilities requiring high throughput**, with high product turnover and where maximum use of space is imperative.

» **Companies with mass storage of products**, with medium- and high-demand SKUs, or with a large number of pallets per SKU.

» **Cold storage**: the volume to be cooled is reduced, and operators need not be present in low-temperature environments.

» **Buffer** (for temporary storage).

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