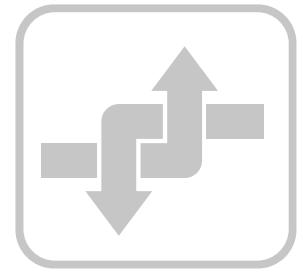


# PowerShuttle



## Stöcklin PowerShuttle: Space-saving storage in the deep lane warehouse

### The ideal solution for goods with limited SKU count and high storage density

A deep lane warehouse and/or compact warehouse is particularly advantageous for efficient storage of goods like foodstuffs and drinks. Stöcklin has developed the PowerShuttle specially for this purpose.

In general, so-called compact warehouses are used when there is a limited range of goods or preferably for single-variety products.

The space allocation takes place according to the instructions of the warehouse management system and thereby takes into consideration the earliest use-by date of the goods, preferably according to the principle of First-Expired-First-Out (FEFO).

The PowerShuttle can also be used in frozen product warehouses with temperatures as low as  $-30^{\circ}\text{C}$ .

The PowerShuttle offers the opportunity to store pallets of various sizes in one lane, whereby the pallets are positioned so that they take up as little space as possible in the lanes.

The shuttles can be integrated as load handling attachments on all stacker cranes.

### The advantages of our deep lane warehouse system at a glance:

- High level of flexibility (Full Flexible Storage)
- High level of scalability
- Reduced space requirements
- Maximum storage density
- Secure positioning
- Longevity and energy-efficiency
- Low investment, maintenance and operating costs

### QUALITIES

#### Space-saving

*With the PowerShuttle, you can store goods efficiently several positions deep.*

#### Automated

*The PowerShuttle communicates via radio and is positioned using a laser distance measuring device in combination with absolute encoders and sensors. It has its own source of energy.*

#### Long-lasting

*The long lifespan of 1 million loading cycles is a huge advantage of the maintenance-free power source.*

#### Energy-efficient

*The braking energy is channeled back into the energy store.*

### Functionality

The PowerShuttle is driven by the stacker crane to the front of a channel and travels horizontally along the tracks into the channel. Here, a pallet is either placed on the rails or driven out of the rack and removed.

This all functions without any wiring to the mother vehicle. The PowerShuttle communicates via radio and is positioned using a laser distance measuring-device in combination with absolute encoders and sensors.

With the "Full Flexible Storage" function, lines of racking comprising two neighboring aisles are used, which achieves greater system availability and redundancy.

The PowerShuttle is available in versions for one or two pallets (single or double PowerShuttle) and also for use in temperatures as low as -30 °C.

### Power supply

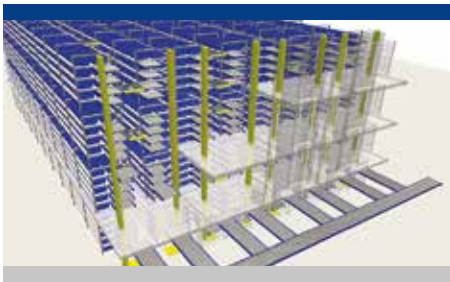
The PowerShuttle is driven by a power source of supercaps, which can be charged within 10 seconds via charging contact on the stacker crane. The long lifespan of 1 million loading cycles is a huge advantage of the maintenance-free power source. To ensure the PowerShuttle functions reliably across a wide range of temperatures, the energy management system monitors the supercaps cells for heat development and operating voltage. The charge level is continually checked, so the SPS control system always knows how much power is available and can direct the PowerShuttle back to the stacker crane safely whenever this falls below the limit value. The braking energy is channeled back into the supercaps, so it doesn't require as much power in the next charging process.

### WMS solution

The embedded solution offers extremely efficient strategies and functions. Further subsystems can be connected via interfaces. Visualization and statistical functions offer a direct insight and thus permit proactive maintenance. What's more, errors can be rectified promptly.

- Seamless development: Directing the movements of lifts, conveyors and shuttle vehicles
- Execution of transport orders, monitoring and control of processes and many other functions

This guarantees the optimum interplay of all subsystems and thus a high level of system availability.



#### System data and input values

##### Pallet requirements

Weight	Max. 1200 kg
Dimensions	Euro type 1: 1200 x 800 x 144 mm Euro type 2: 1200 x 1000 x 144 mm CHEP: 1200 x 1000 x 162 mm

##### System limits

Traveling speed up to max.	1.5 m/s
Acceleration up to max.	1.0 m/s <sup>2</sup>
Temperature range	-30 °C to 40 °C

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