



# GEBHARDT Omnipallet

Flexible Storage Without Compromises



## PALLET SHUTTLE STORAGE SYSTEM FOR MAXIMUM EFFICIENCY

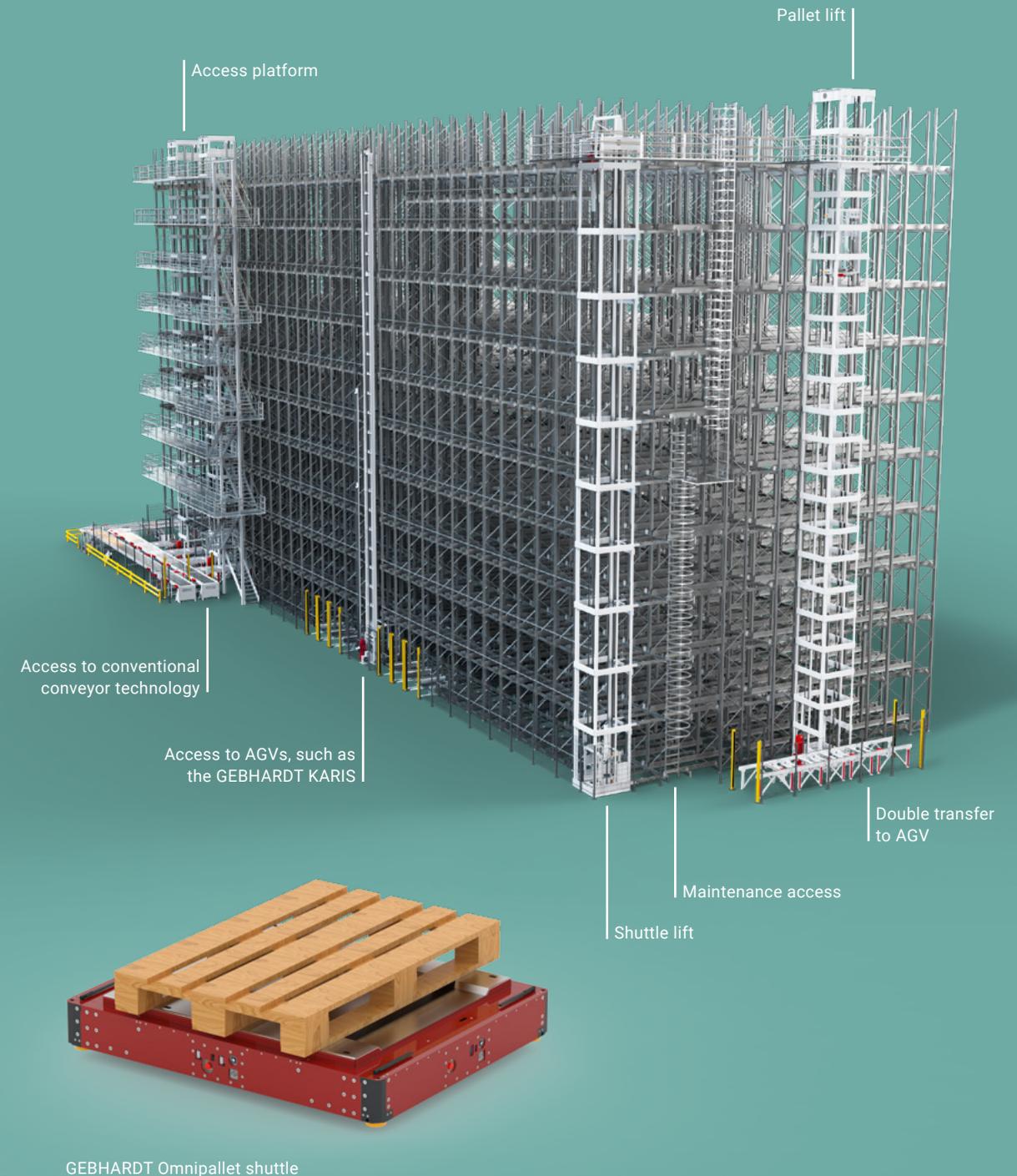
With the robot and shuttle-based GEBHARDT Omnipallet, GEBHARDT delivers a pioneering innovation in the field of pallet storage technology. This innovation transfers shuttle technology, which is already established on the market in container and carton conveying technology, to pallet storage technology.

### GEBHARDT OMNIPALLET: FLEXIBLE PALLET SHUTTLE FOR DYNAMIC STORAGE TECHNOLOGY

Omnipallet's storage system automation doesn't depend on a central core, unlike high-bay warehouses that use storage and retrieval machines. Instead, the system uses numerous small robots that move independently within the warehouse structure. In this way, higher demands on pallet storage and conveying technology, such as high dynamics and flexibility, can be met. Using Omnipallet can achieve significantly higher throughputs, maximum system flexibility, and high scalability of the overall system.



The flexibility of a warehouse can only be guaranteed if the devices within the warehouse can work autonomously and adapt to their environment. In contrast to the pallet SRM, the new shuttle is not permanently assigned to a rack aisle and, unlike conventional pallet shuttles, is not dependent on a parent vehicle, as both points restrict flexibility too much. For this reason, the robot moves bi-directionally. The system thus enables a variety of storage concepts, whether in cooperation with or without pallet conveyor technology. Storage can be single-deep to multiple-deep and combined in any way. The shuttle can change the rack aisles independently. The shuttle can determine the optimum route and avoid blockages, even moving in an occupied pallet channel without a load. The shuttles can change levels using vertical conveyors. Several shuttles can operate deadlock-free on each level and aisle. Another significant advantage of Omnipallet technology is the high storage density that can be achieved. This means multiple functions, such as storage replenishment and picking, can be carried out in a single storage cube. An intelligent software system that coordinates the vehicles is at the heart of efficient control.



## COST-EFFICIENT STORAGE VARIATIONS

The innovative shuttle enables a variety of storage variations. These can be both high-performance storage and storage with low throughputs. The size of the storage system only plays a subordinate role, as the variable size and the throughput are not directly linked, unlike automatic storage and retrieval warehouses. For example, entry-level solutions with Omnipallet work according to the FIFO or LIFO principle (Fig.1-2) and store large load carriers with a high storage density. Compared to manually operated warehouses, in particular, this results in a significant efficiency gain. Wide travel paths for forklifts are almost entirely eliminated.

The system is equally suitable for production, raw material, stock, or material warehouses. Omnipallet can also demonstrate its strengths in distribution logistics.

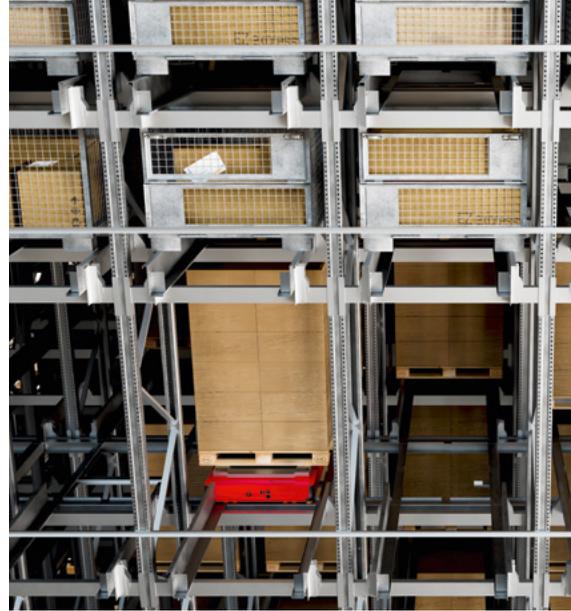


Fig. 1: First-In-First-Out principle (FIFO)



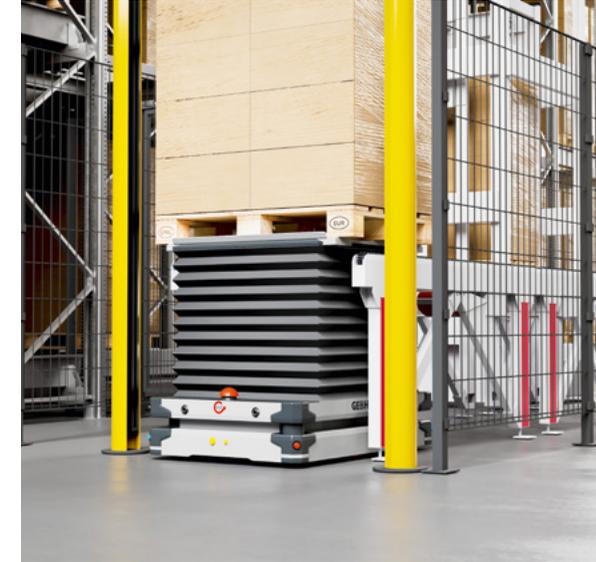
Fig. 2: Last-In-First-Out principle (LIFO)

## INTELLIGENT SHUTTLE CONTROL FOR OPTIMUM OPERATION

The intelligent control system enables the entire system to work effectively without blockages. Robots are efficiently routed through the warehouse structure. Loading management and task distribution are also part of the package and ensure smooth operation. The software can be flexibly connected to various WMS and offers great flexibility. Compared to many competing solutions, our software can route robots along the shortest route, even if this leads to two-way traffic of different robots or trips under occupied channels. The software prevents deadlocks and blockages and thus ensures high throughput without detours.

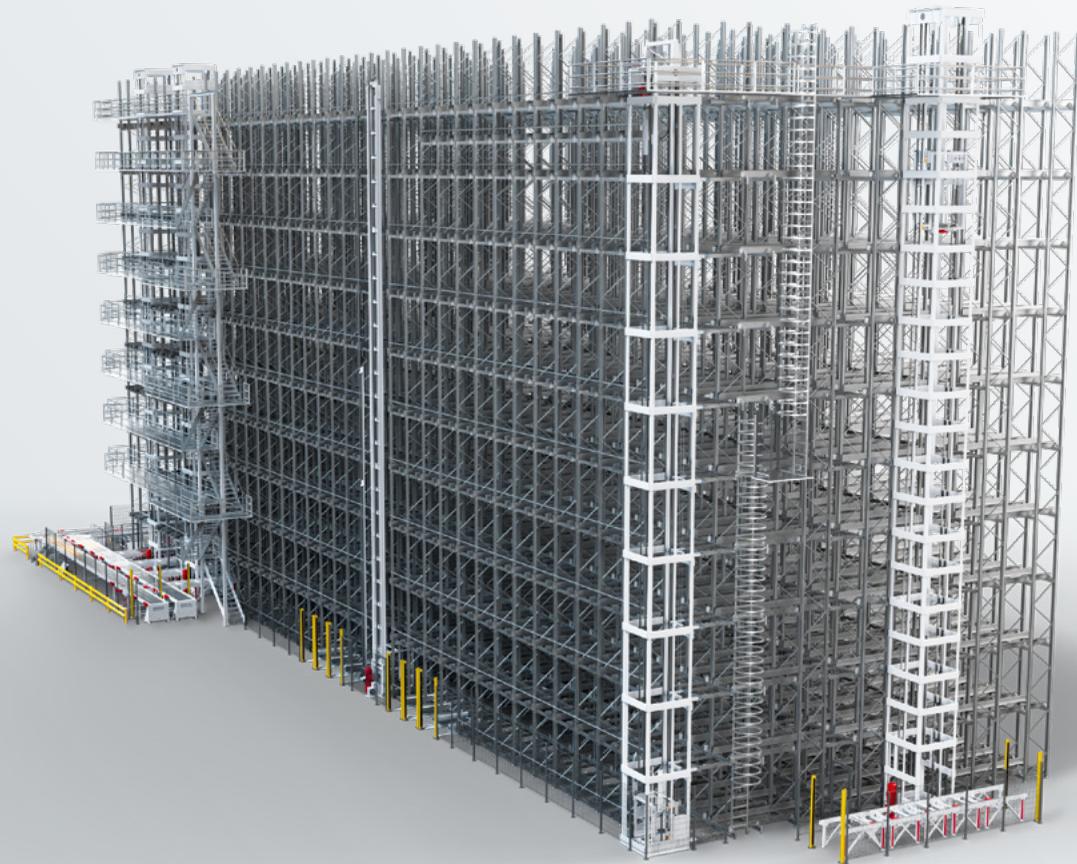
## MODERN ULTRACAP TECHNOLOGY FOR MAXIMUM AUTONOMY

Omnipallet's power supply uses ultracap technology, as long conductor rails can be expensive. The ultracaps can be quickly charged while in the rack, allowing the robots to operate 24/7 without long charging breaks. This means that the charging time is not considered as additional waiting time, and the shuttle's availability remains high. To achieve greater autonomy, the innovative mechanical system reduces the number of installed motors, resulting in lower acquisition costs and dead weight. The most significant advantage compared to pallet storage and retrieval machines is the low tare weight of the shuttle, which means that the ratio of tare weight to maximum payload is only approximately 1:4.



## EIN SYSTEM – VIELE VORTEILE

- High scalability
- Maximum degree of space utilisation
- High and low outputs possible regardless of the size of storage
- Cooperation with conventional conveyor technology
- High energy efficiency designed for continuous operation thanks to automatic, split-second charging
- Single and multi-depth storage can be freely combined
- Higher throughput and greater flexibility for the storage of pallets, mesh boxes, and large load carriers
- Suitable for Industry 4.0



Degree of space utilisation

**>75%**

Storage unit dimension up to

**1,2x1<sup>m</sup>**

Dead weight to payload ratio

**1:4**

Storage depth up to

**25 deep**

Charging time

**30-45<sup>s</sup>**



### HIGH-PERFORMANCE PALLET SHUTTLES FOR HIGHER THROUGHPUT AND FLEXIBILITY COMPARED TO AUTOMATIC STORAGE AND RETRIEVAL MACHINES

Like the shuttles in the automated miniload warehouses, these pallet shuttles enable higher throughputs, flexibility, and energy efficiency than conventional SRM solutions. Higher performance can be achieved by operating several shuttles simultaneously. As the number of shuttles can be adapted to customer requirements, a high degree of flexibility and scalability is also guaranteed. Furthermore, the energy balance related to the transport of a pallet is significantly better due to a shuttle's much lower tare weight.

In contrast to storage and retrieval machines, the weight of a shuttle is independent of the storage height. Higher racking systems, therefore, do not lead to an increase in the energy consumption of the robots. Finally, a higher availability of the entire system is possible, as the failure of a shuttle, if at all, only leads to a standstill of a very limited part of the system.



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# NEXT GENERATION INTRALOGISTICS

Already in its third generation, the name GEBHARDT is closely associated with innovative intralogistics solutions. The company has always developed, manufactured and installed individual products as well as complete turnkey solutions. The portfolio includes storage systems, conveyor systems, sorting and order picking systems as well as goods lifts, automated guided vehicles and software applications.

The complete range of systems, intelligent software and life cycle services enables the most reliable and efficient automation technology for retail & e-commerce, food & beverages, automotive, healthcare, contract logistics, fashion & consumer goods and industry.



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