

# Pallet Shuttle – A Warehouse “Space” Odyssey

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In the next decade, as much as 85% of the businesses are projected to adopt a digital route around the globe thanks to Industry 4.0. With increased impetus on scalability across geographies, speedy deliveries and the demand for global products, continual innovation in logistics & warehousing sector has emerged as the need of the hour for all businesses.

Be it e-commerce, food retail or manufacturing giants, the location of their warehousing facilities is one of the pivotal pillars for their operational excellence and supply chain planning. Ideally, warehouses need to be closer to the cities to reduce the transit time for goods. However, close-by lands often come with higher rentals. An optimal solution in such cases of higher rentals is to utilize the height of the warehouse in an efficient manner. Flying high, does make sense if you intend to utilize the space of the warehouse efficiently. To utilize the height of the distribution centers and warehouses, it is essential that they equip themselves with Pallet Shuttle which assists in increasing the **storage capacity** through vertical stacking of the inventory.



## What is Pallet Shuttle and how does it work?

**Pallet Shuttle** is semi-automated compact storage solution which reduces operating costs while simultaneously improving efficiency of the **warehouse storage**. **Pallet Shuttle** facilitates, **dense racking**, which does not require aisles between storage racks, thereby efficiently utilizing the warehouse space.

In traditional storage systems, forklifts drive through each of the aisles and store pallets in the racks. However, in these systems, the depth of storage is compromised as a lot of space gets wasted to make room for forklift's movement. Through dense racking, Pallet Shuttles have reduced this dependence on forklifts, thereby maximizing the space that can be used for storage. In a **Semi-Automatic Dense Racking storage system**, the operator only needs to drive the forklift that places the pallets on channel's entrance. Then the operator activates the pallet shuttle by sending a remote wi-fi signal. Thereafter, Pallet Shuttle moves the pallets horizontally until it finds an available location, where it deposits the pallet. Pallet Shuttle then returns to entrance of the channel and repeats the process till the entire channel is filled. Similar process is used to retrieve the goods from racks as well.

## Advantages of using Pallet Shuttles

- **High Storage Space:** Through Pallet Shuttle, aisles can be eliminated in warehouses as forklifts are not required for end-to-end loading and unloading. In dense racking you can store 2.84 Pallet /m. sq. as compared to 1 Pallet / m. sq.
- **High Throughput:** Since operators aren't required to drive the forklift in the aisles, loading and unloading time reduces considerably
- **Scalability:** You can easily customize dense racking system according to your requirement. More shuttles can be easily employed as the per productivity requirements. Also, Pallet Shuttles can work in both FIFO and LIFO mode.
- **Safety:** Pallet Shuttle is equipped with safety sensors and automatic braking system to avoid any collision and accident.
- **Ease of Operation:** The system is quite easy to install, maintain and run.
- **Maintenance:** Owing to the way the structure has been built, chances of damage to the metallic racks are minimum. Also, the shuttles require minimum maintenance.



## Application of Pallet Shuttles

- Although Pallet Shuttles are quite customizable, when we consider economies of scale or special circumstances then the following industries will benefit the most from it: -
- Warehouses that requires **higher throughput**. This translates to a high number of pallet storage locations(More than 5000).
- **Seasonal Products:** Pallet Shuttle system comes in handy when items are stored all throughout the year, but withdrawal of the products happens extremely fast based on the season.
- **Captive Distribution Centres:** Pallet Shuttle based dense racking system is very beneficial for large captive DCs that are attached to factories in the FMCG sector
- **Cold Storage:** Attaining cold temperature becomes increasingly difficult and expensive upon expanding the size of the warehouse. Here, Pallet Shuttles can provide immense relief by utilizing the existing space efficiently.
- **Beverage Industry:** It is ideal for operations where the number of Stock Keeping Units are less, and the inventory turnover is high.

