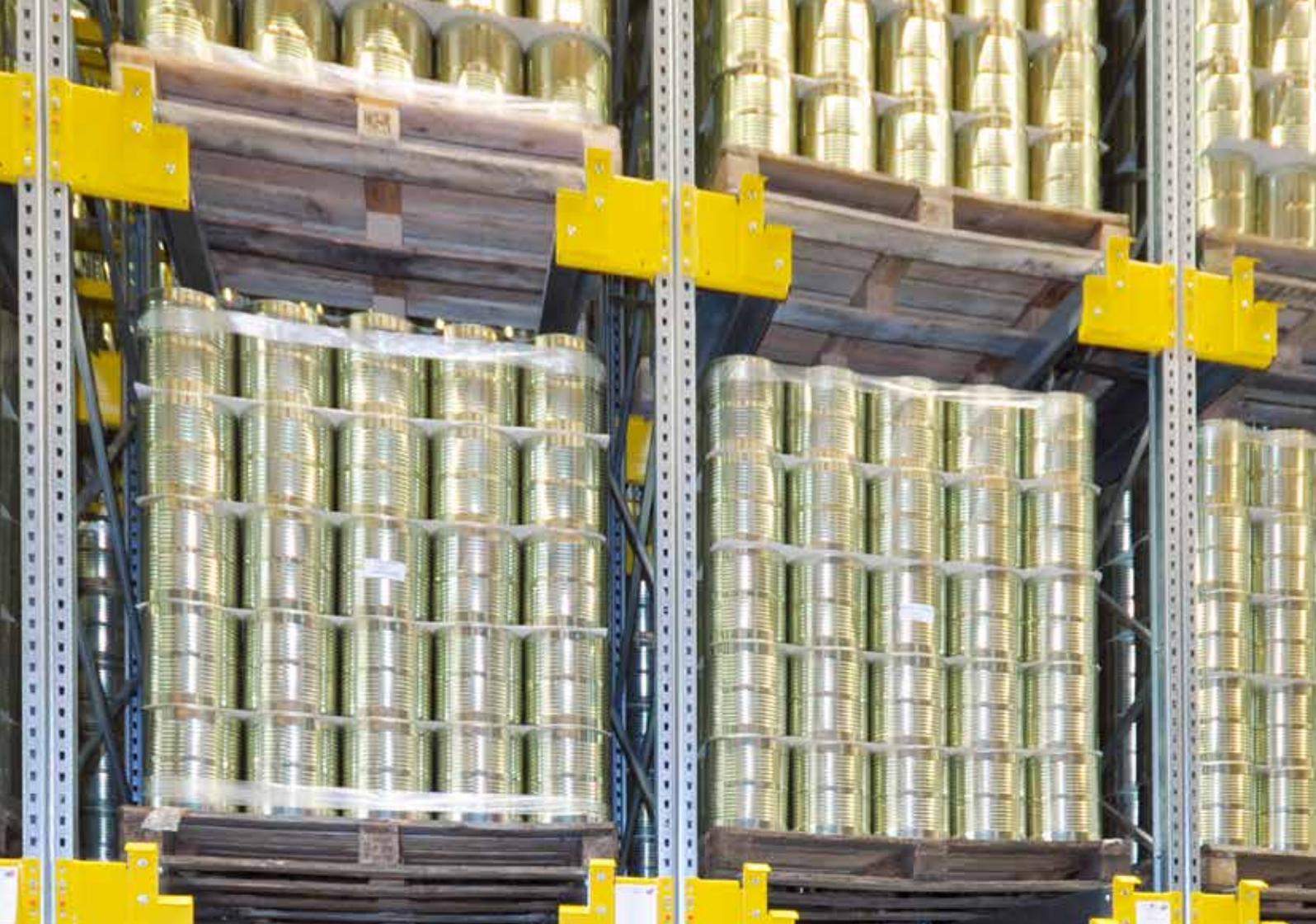


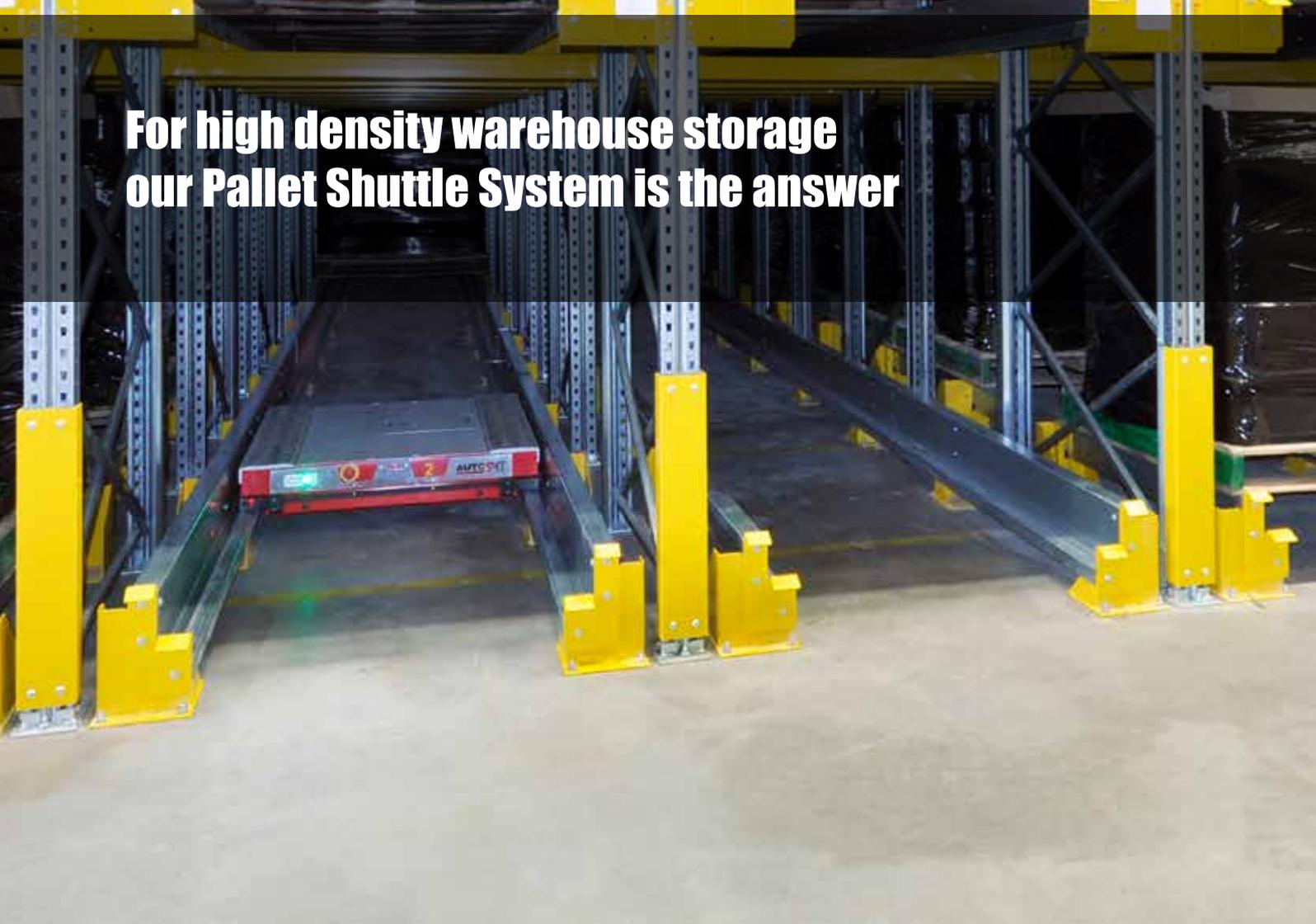
PALLET SHUTTLE SYSTEM

Semi-automatic high density storage solution





**For high density warehouse storage
our Pallet Shuttle System is the answer**



Key Benefits

- 130% more storage capacity than traditional pallet racking
- No need for specialist trucks, any fork lift truck can be used
- Handles pallets up to 1500Kg
- Operating temperature range -30°C to +45°C
- Eliminating damage to the storage lanes compared to Drive-in
- Low battery automatic return to channel entrance
- Lightweight radio control handset, simple to use
- Display on handset for immediate information on shuttle

Pallet Shuttle System

When considering a high density storage system look no further than the Pallet Shuttle System. Operating in a racking structure, similar to Drive-in, this system uses a remote controlled, semi-automatic, moving platform to place and retrieve pallets. The Pallet Shuttle System removes the need for forklift trucks to enter the storage lanes, eliminating the risk of damage to the uprights within the channel and offering a cost effective storage solution.

The Pallet Shuttle System is ideal for warehouses storing goods with a bulk stock profile and is suitable for a wide range of temperatures. This high density solution can significantly reduce the size of a warehouse required and ultimately cut running costs.

Different pallet types can be used together and located at varying distances between each pallet. Storage lanes can be in excess of 50m in length making the Pallet Shuttle System one of the most efficient bulk storage solutions compared to alternative pallet racking configurations.



Why consider a Pallet Shuttle System?

This system eliminates the need for access aisles and reduces the overall storage area needed in a warehouse.

Once installed the system can be used for both mixed and bulk storage and is equally suited to both LIFO and FIFO operations, removing many of the stocking limitations associated with Drive-in racking.

Specialist fork lift trucks are not required for this solution.

| Racking System | *Warehouse 100m x 100m x 9m with 1.1m high Euro pallets |
|------------------------------|---|
| Standard Wide Aisle Racking | 20,000 pallets |
| Pallet-Flow System | 36,000 pallets |
| Pallet Shuttle System | 46,000 pallets |

The table above shows an example of the number of pallets that can be stored with different racking systems in a fixed size warehouse.

More information see:
www.constructor-storage.com

Structure and Operation

Pallet Racking Structure

The Shuttle runs on specially designed single profile rails supported by standard Dexion pallet racking frames, that are fitted with special support beams, creating channels within the structure.

Requiring only 350mm clearance from the top of the loaded pallet to the next level, with a standard 1350mm opening, this is an optimum use of space. Different entry widths can be provided to accommodate pallet overhang or reduced pallet dimensions.

Shuttle operation

Each racking channel is treated

independently and the shuttle is easily moved between channels, by the forklift truck operator.

Simple instructions are sent to the shuttle by the operator using a hand held radio control unit.

The shuttle can determine the dimensions of the pallet load and move to an optimum position, before lifting it. When placing a pallet in a channel it will position it at a predetermined distance from the adjacent pallet. The shuttle will automatically return to the front face to receive the next load.

This action can take place while the

truck operator is collecting the next pallet for loading, making efficient use of the operators time.

The shuttle is powered by a rechargeable longlife Lithium battery with a 5 year life expectancy and a quick charging time, lasting up to a maximum of 10 hours. However, should a battery run low, the shuttle will immediately stop what it is doing and return to the front face for changing.



PALLET SHUTTLE FEATURES

- Powerful, but light weight shuttle at 220Kg - 230Kg
- Automatic and manual functions operated from radio control handset
- In-lane pallet counting function available
- Lithium battery provides up to 8-10 hours per charge
- Simple and quick battery change over process
- Short battery recharge time
- Battery recharge station provided



 More information see: www.constructor-storage.com

Pallet Shuttle Specifications*



Longlife lithium battery removed for recharging
*Shuttle by Autosat

| | |
|--|---------------------------------------|
| Radio Frequency | 433 Mhz |
| Max. Load | 1500 Kg |
| Pallet Depth | 800 - 1200mm |
| Pallet Width | 1000 - 1200mm |
| Speed (metres/minute) | With load: 35 m/min Without: 70 m/min |
| Channel Length | In excess of 50m can be achieved |
| Temperature Range | -1°C to -30°C or 0°C to +45°C |
| Operational Time | Up to 10 hours |
| Battery | Lithium Ion MNC 48v, 20 Ah |
| Battery recharge time | 3 hours (80%), 5 Hours (100%) |
| Battery life expectancy | >5 years (min 900 recharges) |
| Remote Control Display | O-LED (suitable for coldstores) |
| Warranty | 2 years |
| The Pallet Shuttle System is a CE marked system and is produced in the EU. | |

LIFO or FIFO?

The Pallet Shuttle system can be used for either LIFO or FIFO handling and is ideal for cross docking and consolidation areas.

In a FIFO operation, it is possible for two shuttles to be operated in the same lane. These are controlled from both entry points and a non-collision mode is available.



HOW MANY SHUTTLES?

Calculating the number of pallet shuttles required for a project is dependent on;

- No. of pallets moved per hour
- Length of the channels
- Time required to offload and return

Contact our sales team for advice.



Handset Features



- ✓ Automatic or Manual control function, so you can adjust operation of the shuttle according to the goods stored
- ✓ Information is relayed from the shuttle and shown on the handset display
- ✓ Lightweight, rechargeable, radio control handset, operating time ~22hrs
- ✓ Easy operator usage, shuttle can be easily controlled from inside the truck
- ✓ Stand by 43 days
- ✓ A handset can control up to 8 shuttles
- ✓ Continuous operational in and out mode is available
- ✓ Water and dust repellent in accordance with IP65 standards

References

B. Volwater & Zonen B.V.: (08-2013)

Type of good stored: Food jars and cans

Location: Roelofarendsveen, Netherlands

Type of operation: LIFO

Pallet dimensions: 1200 x 800 & 1000 x 1000

Pallet weight: 1000 kg / 1250 kg

Pallet height: 1450 mm

Size: 54 lanes, up to 20 pallets/lane, 6 levels,
1080 pallet positions

When Volwater & Zonen decided to extend their storage capacity for their canned and tinned food production, they opted for a shuttle system. This offered them a greater mix of products at the same high density as their existing Drive-in racking. However, the shuttle system allowed them to have deeper lanes and to change their ways of working for a faster operation. The shuttle has also help avoid damage to the racking within the lanes.



GC Rieber Salt AS: (09-2013)

Type of goods stored: Bags of Salt for various uses

Location: Ålesund, Norway

Type of operation: LIFO

Pallet dimensions: 1200 x 800 (with load overhanging)
1200 x 1000mm

Pallet weight: 1000 kg

Pallet height: 1600mm

Size: 23 lanes, 13 pallets per lane, 4 levels, 1012 pallet positions (euro)

GC Rieber wanted a safe, compact and high speed system in an unheated warehouse very close to the sea. The solution provided by Constructor has a hot dipped galvanized surface to the Racking and a customised Pallet Shuttle that can work in either a cold or ambient environment.

Expert Advice and Services

Keep your warehouse safe

- Spotting defects early

The daily moving of goods is likely to cause some knocks and damage to your storage system. In the long run, these minor defects can change the capacity of shelving or pallet racking and lead to incidents that could possibly cause damage to both man and material.

Regular inspections will minimize the frequency and effect of these incidents by identifying crucial damage at an early stage.

Our inspectors are highly experienced and certified. They provide yearly inspections to keep your facilities safe and up-to-date. Every inspection is followed by an offer of suggested replacement parts including fitting.



When fully approved, you receive an official certificate of approval until the next inspection date.

The benefits of a Dexion rack inspection:

- Comprehensive professional inspection
- Certified and experienced inspectors
- No interruption to operations
- Detailed inspection report
- Prevention of damage to people or goods
- Extending life span of facilities
- Early risk discovery minimizes future repair costs
- Repair work can be completed quickly
- Provides independent expert to assess equipment



More information see:
www.constructor-storage.com



Pallet Racking - P90



Shelving - HI280



Storage Machines - Tornado



Mobile Pallet Racking - MOVO



Cantilever



Rack Inspection

