Fully Automated Storage Systems

Modern automated high-density storage system in a warehouse

- Installing capacity: 3,468 pallet positions
- Stacking: pallets are stacked in 6 layers, with 25 pallets per layer
- Order picking: 12 slots per hour
- Designed pallets: IN/OUT frequency: 40 pallets per hour respectively
Fully Automated Storage System
- Carrier, Shuttle, Hoist, Transfer Model
Fully Automated Storage Systems - Carrier & shuttle

- Hidden jointless slide wires as power supply and guide rail patent technology (Invention patent No.: 2013101426242).
- High-performance motor from International well-known brands.
- Excellent acceleration performance and operation stability.
- Global leading automatic lossless charge-discharge technology.
- Intelligent uninterruptible power control technology for layer transfer.
- Advanced stable ON-OFF operation.
- Powered by leading super capacitor, unrestricted recharge cycles.
- Online charging without human intervention, smooth operation.
- Obstacle-free shuttling technology (Patent No.: 2013202022082, 2013201983256, 2013202041261).
Fully automated storage system

- Hoist

**Features:**
- With gearless permanent magnet synchronous traction machine, hoist works high-efficiently and can ensure energy saving.
- Around 100 pallets can be moved in and out by the cargo platform which can be lifted up and down at high speed.
- Built-in conveyors system realizes the stable butt joint between the carrier & shuttle and ground conveyors.

**Main Technical Parameters:**
- Overall width: 1700mm
- Overall length: 2920mm
- Chain conveyor length: 1480mm
- Chain conveyor speed: 0.02 meter per sec.
- Max. Lifting speed: 1 meter per sec.
- Operating noise: 70dB(A)
- Conveyor motor power: 0.4-0.75 KW
- Lifting motor power: 6.3-9.5 KW
Fully Automated Storage System - Transfer

The function of the Layer Transfer is to lift up and down the Carrier & Shuttle and transfer them at different layers when a few Carriers & Shuttles but more layers are available. Usually it locates at the end of the carrier rail of the high-density storage system. It consists of the machine body, Carrier & Shuttle platform, steel wire traction power system, counter-balancing system and control system. Seamless connection with the master control system can be realized by it.

Features
With gearless permanent magnet synchronous traction machine, hoist works high-efficiently and can ensure energy saving.
Patent technology: Carrier & Shuttle layer transfer with uninterruptible power
Fully Automated Storage System
- Intelligent Four-way Shuttle

Intelligent Four-way Shuttle is one of the key equipments for the automated high-density storage system.

Functional characteristics: “Four-way travelling, Vertical Layer Transferring, Intelligent Controlling”

Functions:
- automatic single/continuous storage & retrieval,
- automatic retrieval of specified quantity of goods,
- goods layer or lane transferring

It can travel along the longitudinal and transverse direction of the guide rails of the three-dimensional storage rack and deliver the goods to any specified location without manual operation.
Stacker crane is the important device of the automated storage and retrieval system. It consists of the machine body, cargo platform, travelling mechanism, lifting mechanism and electric control system. With 3-axes movement, it travels in the lane of the racking system of the automated storage and retrieval system, carries the cargo from the entrance of each lane of racking and put at the specific location on the racking, or picks the cargo from the racking and carries to the entrance of each lane.
Automated Auxiliary Part
- Roller Conveyor

- Length (L)
- Height (H)
- Width (W)

底脚螺栓调节高度±50mm
Adjusted height of the anchor bolts ±50mm

- 底部托架
- 终端箱
- 光电支架
- 支架专用上盖
- 末端止挡
Automated Auxiliary Part
- Chain Conveyor

图一 Fig. 1
图二 Fig. 2
图三 Fig. 3
Ferry Car is used for bridge connection among the ground conveyors at entrance and exit side. It consists of car, travelling machine, conveyors and control system.
Automated Auxiliary Part
- Conveyor Joint

Function: The roller conveyors are connected with the chain conveyors by the conveyor joint so that goods can make a 90 degrees turn.
Automated Auxiliary Part
- Mobile Conveyor

There are two types of mobile conveyors: roller type and chain type.
Pallet related devices

On-line Pallet Tidier

Pallet tidier: the function of the pallet tidier is to tidy the scattered pallets up, normally for the pallets at the end of the production line or warehouse exit.

Pallet fetcher, single pallet can be picked up from a bundle of pallets by pallet fetcher and forklift & handcart. It is applicable for the empty pallets pick-up on the front of production line.

On-line depalletizer is applicable for disassembling pallets or line palletizing