

MASTER 万事达

Specialized In Logistics Equipment

£ million

- Income
- PBT
- BGI/BlackRock deal costs

CAGR (04 – 08)
Revenue 20%
PBT 15%

Projected sales in 2013

Share of market activity

Changes in the activity of the active and passive market is uncertain. Established positive trends in various market segments.

穿梭立体库智能存储系统
SHUTTLE & STACKER CRANE HIGH-RISE WAREHOUSE INTELLIGENT STORAGE SYSTEM

天津万事达物流装备有限公司
Tianjin Master Logistics Equipment Co., Ltd.

Shuttle & Stacker Crane High-rise Warehouse Intelligent Storage System

穿梭立体库智能存储系统



系统由巷道堆垛机、穿梭车、水平输送系统、货架系统、WMS/WCS 管理控制系统组成。堆垛机代替了穿梭母车和垂直提升机，简化了水平搬运和垂直搬运的流程，是传统的堆垛机和穿梭技术的融合，从而实现密集存储的目的。

The system consists of an automatic laneway stacker, shuttle, horizontal conveying system, racking system, WMS / WCS management and control system. The stacker replaces the shuttle & carrier and vertical elevator lift, simplifies the horizontal and vertical handling processes, and is a fusion of traditional stacker and shuttle technology, thus achieving the purpose of dense storage.

Shuttle

穿梭车

穿梭子车负责纵向存储巷道的物料搬运

穿梭子车采用8轮设计,不但使用寿命长且运行平稳,有效避免了轨道接缝过大造成的失衡。

WIFI 接收系统采用的国际知名西门子品牌,具有信号稳定、速率快、信号覆盖范围广等特点。

电机采用进口伺服电机,更宽泛的动力输出、更精准的速度及制动控制、更迅捷的信息通讯且可靠性高、故障率低。伺服电机的回初始点功能可确保穿梭子车回到起始位置,提高穿梭子车的运行安全。



SHUTTLE IS USED FOR MATERIAL HANDLING IN LONGITUDINAL STORAGE AISLE

The shuttle is designed with 8 wheels, has a long service life and stable operation, and can effectively avoid the imbalance caused by excessive rail joints.

WIFI receiving system adopts the internationally renowned brand - Siemens, which has the characteristics of stable signal, fast speed and wide signal coverage.

The motor adopts imported servo motor, which has wider power output, more precise speed and brake control, more rapid information communication, high reliability, and low failure rate. The zero return function of the servo motor ensures that the shuttle returns to home position, thus improving operating safety of shuttle.

序号 Number	名称 Name	参数 Parameter
1	额定承载 Rated load	1200KG
2	WIFI 接收系统 WIFI receiving system	西门子或相近品牌 Siemens or equivalent
3	光电系统 Photoelectric system	倍加福或相近品牌 Pepperl Fuchs or equivalent
4	PLC	西门子 Siemens
5	控制方式 Power supply	联机自动 / 单机手动 Online automatic / stand-alone manual
6	适用温度 Suitable temperature	-20° C~+50 C° (电池) -20° C~+50 C° (Battery)
7	空车速度 No-load speed	1.2 米 / 秒 1.2m/s
8	重载速度 Overload speed	1.0 米 / 秒 1.0m/s
9	电池 Battery	48V/40AH (多元锂电池) 48V/40AH (Lithium battery)
10	充电时间 Charging time	不大于 3 小时 (常温) ≤ 3hours (Normal temperature)
11	续航能力 Endurance	不小于 8 小时 (常温) ≥ 8hours (Normal temperature)
12	电机 Motor	进口伺服电机 Imported servomotor
13	电机功率 Motor Power	750W*2



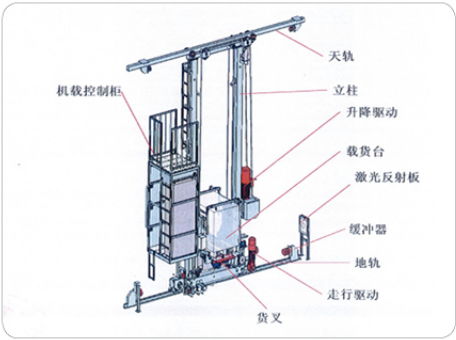
Stacker Crane

堆垛机

堆垛机设备由水平驱动装置，垂直提升装置，及伸缩货叉组成

堆垛机主体采用双立柱式稳定强化结构设计，水平驱动采用德国德玛格行走装置，提升采用卷扬机提升设计，货叉选用欧洲进口品牌，SEW 电机驱动，西门子控制总成，在水平及垂向上采用二维码精确定位控制。

整机设计新颖，结构稳定，行驶速度快，加速度大，定位精度高，行驶噪音小的特点。经过特别处理的防低温设计使得本系统亦适用于冷库型存储项目。



序号 Number	名称 Name		参数 Parameter
1	额定载荷 Rated load		1200KG
2	水平行走 Horizontal running	定位精度 Positioning accuracy	≤ ±5mm
		水平运动速度 Speed of horizontal running	220m/min
		水平运动加速度 Horizontal running acceleration	0.5m/s ²
		升降方式 Lifting mode	钢丝绳牵引 Cable-driven
		定位 (Y 方向) 精确 Accurate positioning (Y direction)	≤ ±3mm
3	货台升降 Cargo platform lifting	垂直运动速度 Vertical running speed	60m/min
		垂直运动加速度 Vertical running acceleration	0.5m/s ²
		定位 (Z 方向) 精确 Accurate positioning (Z direction)	≤ ±3mm
	伸缩货叉 Retractable fork	空载伸叉速度 No-load fork extension speed	60m/min
		重载伸叉速度 Heavy-load fork extension speed	30m/min
4	操作方式 Operation method		手动、本机自动、联机自动 Manual, local auto, online auto
5	通讯方式 Communication mode		红外光通讯 Infrared communication
6	各电机驱动方式 Motor driving mode		变频调速 Frequency control
7	供电方式 Power supply mode		4P 安全滑触线 4P safe electrical sliding contact line
8	供电电源 Power supply		AC 380V 50Hz

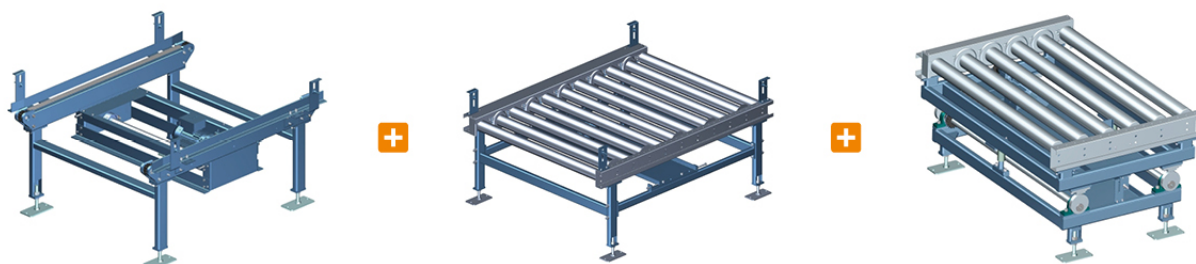
THE STACKER CONSISTS OF A HORIZONTAL DRIVE DEVICE, A VERTICAL LIFTING DEVICE, AND A RETRACTABLE FORK

The main body of the stacker adopts double-column stabilization strengthening structure; the horizontal drive device adopts German Demag running gear, and the lifting device adopts winch hoisting design. The retractable fork adopts European imported brand. Stacker adopts SEW motor for driving, Siemens control assembly, and QR code precise positioning control in both horizontal and vertical directions.

The whole machine is featured with novel design, stable structure, fast driving speed, high acceleration, high positioning accuracy and low driving noise. The specially designed low temperature-proof design makes the system be suitable for refrigeration storage projects.

Horizontal Conveying System

水平输送系统



该系统主要由链式输送线、滚筒输送线、顶升移栽机组成。

其功能是：根据控制系统的指令驱动输送线上的电机正转、反转、顶升和直角转向，用于托盘类货物的水平输送以及与其它设备的货物交接。

具有结构简单，可靠性高，使用维护方便等特点。

The system is mainly composed of chain conveying line, roller conveying line and jacking load transfer machine.

Its function is to drive the motors on the conveying line to complete forward, reverse, jacking or right-angle steering actions according to the commands from the control system. It is used for the horizontal conveying of pallet goods and the delivery of goods with other equipment.

It has the characteristics of simple structure, high reliability, convenient use and maintenance, etc.

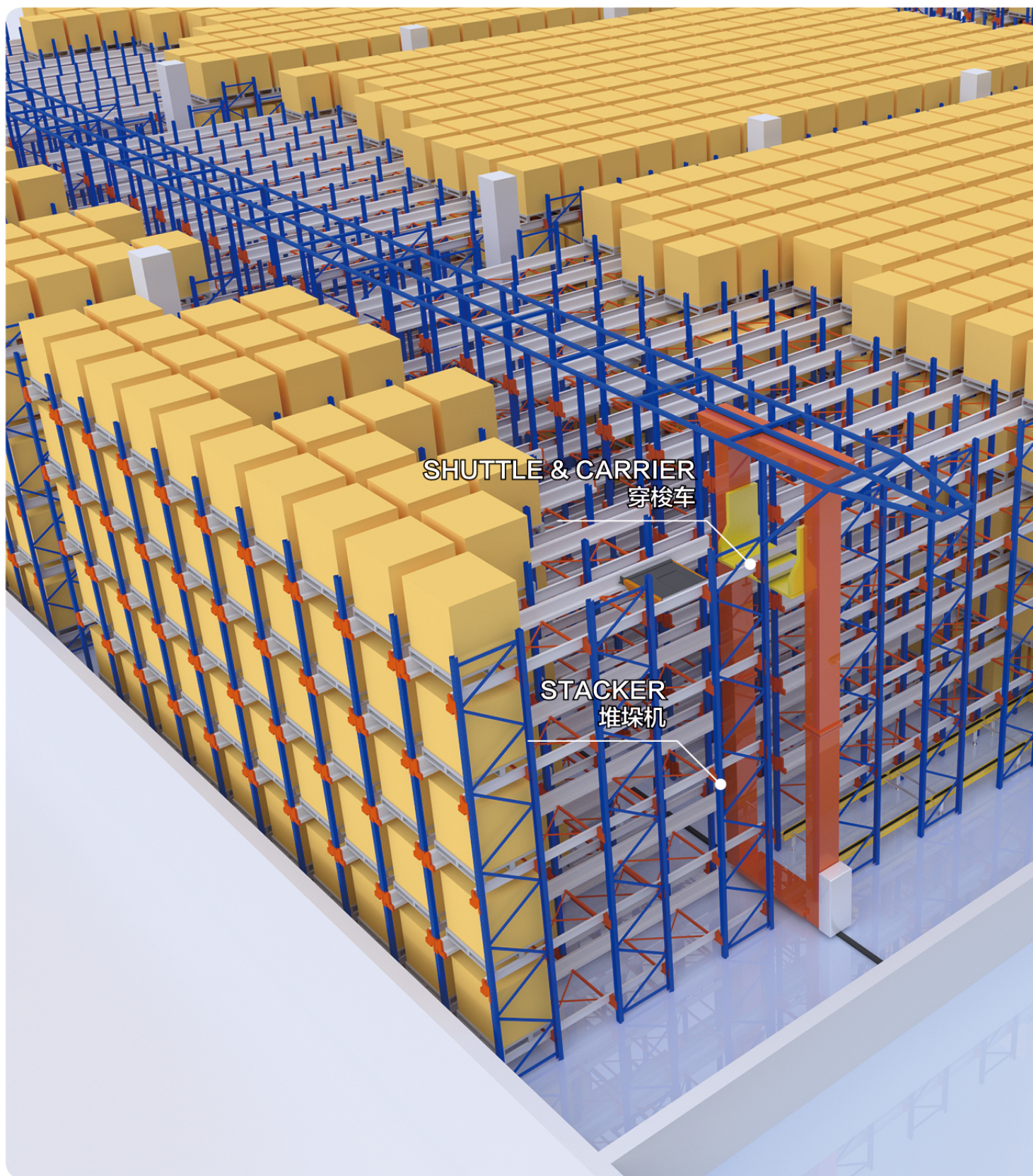
序号 Number	名称 Name	参数 Parameter
1	额定载荷 Rated load	1200 KG
2	输送速度 Conveying speed	16m/min 符合设计和环境噪声控制标准要求 16m / min, meeting design and environmental noise control standards
3	机架材质 Frame structure material	碳钢 Carbon steel
4	电机品牌 Motor brand	西门子或同等品牌 Siemens or equivalent brands
5	供电功率 Power supply	0.75 kw
6	设备涂装 Equipment painting	环氧树脂粉末静电喷涂，推荐灰色，厚度 60 ~ 80 μm Epoxy resin powder electrostatic spraying, gray recommended, thickness 60 ~ 80 μm
7	控制方式 Control mode	手动、单机自动及联机自动控制方式 Manual, stand-alone automatic and online automatic control methods



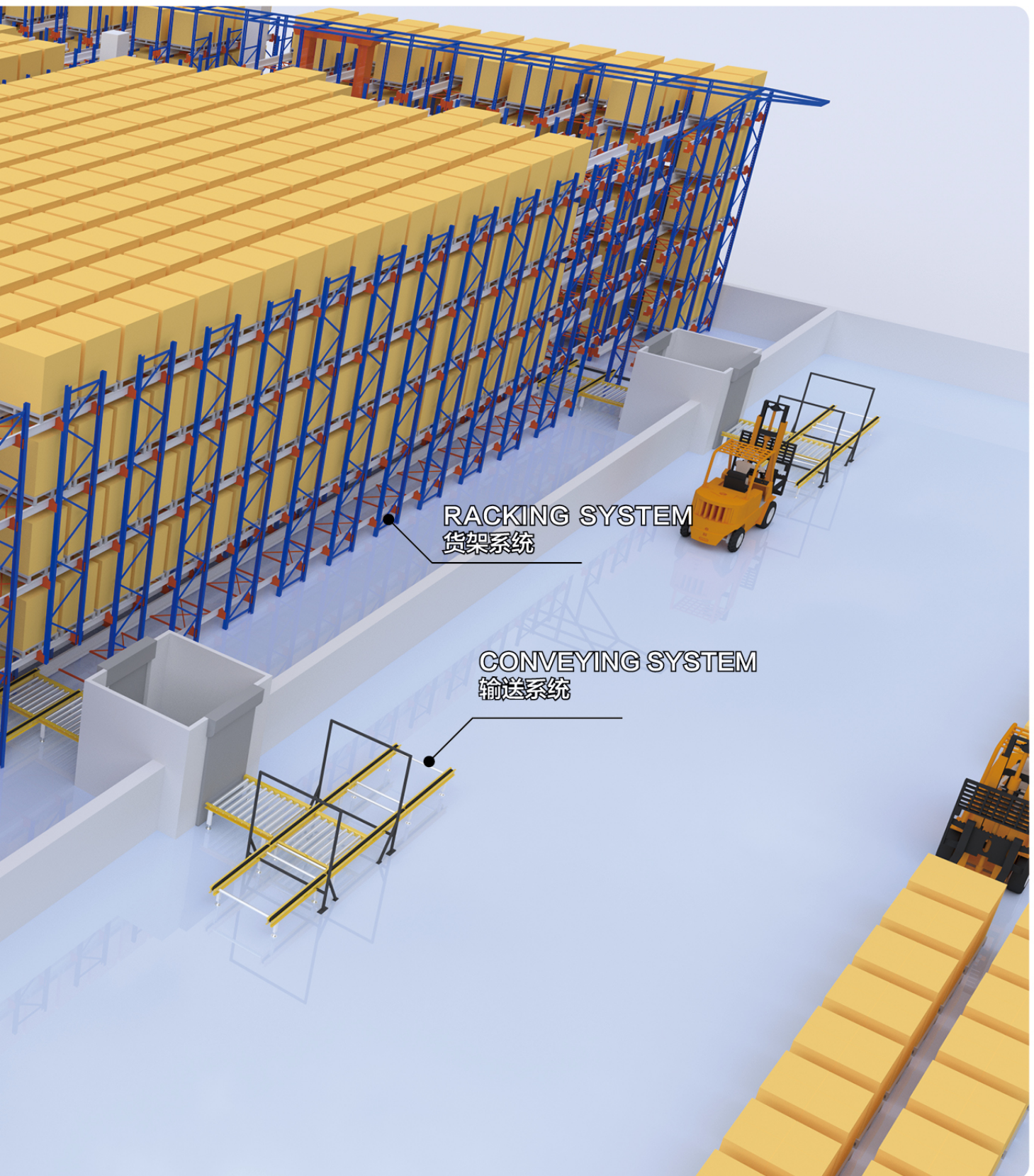
Shuttle & Shuttle & Carrier High-rise Warehouse

穿梭立体库智能存储系统鸟瞰图

Tianjin Master Logistics Equipment Co., Ltd.



Intelligent Storage System Aerial View





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