VARIABLE TOTE-HANDLING SHUTTLE ROBOT SYSTEM-SLS400

Product Brochure

HWArobotics PTE. LTD.

HWArobotics

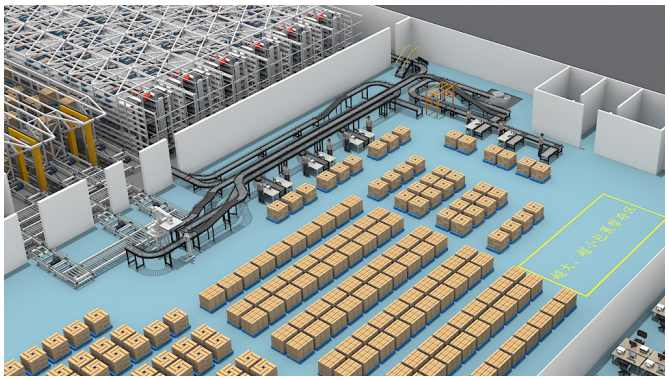
SYSTEM INTRODUCTION

This is the fourth generation of tote-handling shuttle robot automated storage and retrieval system developed by HWArobotics PTE. LTD. (hereinafter referred to as “HWArobotics”). This product is the 400 series automated hybrid storage and retrieval system for different forms of hybrid storage, picking, buffering, sorting and other operations of cases and cartons with different sizes and specifications.

SLS400 SIDE VIEW

SYSTEM COMPOSITION

HYBRID STORAGE VARIABLE SIZED



- SLS400 tote-handling shuttle robot automated storage and retrieval system is composed of modules including multi-level racks, goods lifts, shuttle lift, variable-width shuttles and control system. All goods storage and retrieval operations are under the unified control of WCS/WES and other control software.

- The multi-level racks in this storage and retrieval system offer several advantages. They have a compact layout, a sturdy structure, and are easy to install and scale. The racks can be quickly and flexibly deployed, expanded, or adjusted based on the customer's on-site requirements. This capability significantly reduces the customer's investment costs.

- The variable-width shuttles in this storage and retrieval system use integrated assembled forklifts which uses the proprietary technology of HWArobotics. The shuttles can pull to retrieve and push to store goods effectively and efficiently with longer service life of parts, thus greatly reducing the failure rate and maintenance cost of shuttles.

- The innovative high-speed goods lift serves as an effcient and reliable transportation system for goods in and out the racks. It is seamlessly integrated with the multi-level shuttles, significantly reduces the accumulation of goods on the conveyor and device vacancy rates. As a result, it accelerates the circulation of orders, optimizes operational effciency.

ADVANTAGES AND FEATURES

SLS400 Advantages

High storage density

Effective double deep location design with dense storage spaces

Dynamic allocation of tote position

The size of tote position can be dynamically adjusted as needed

Compatibility with multiple specifications of case containers

Length & Width
200-850mm*200-650mm
(7.8-33.15in*7.8-25.59in)

Optional Three Power Supply Modes

Power Bus、Lithium Battery、Capacitor

Saving energy and protecting enviroment

Adopt energy-efficient parts and energy saving drive solutions to conserve energy and reduce consumption

Unique high reliability and high efficiency layer changing solution

SLS400 Features

High reliability, cost-effectiveness and applicability

This product has been CE standard fully certified

Highly flexible

Open and compatible

Standardized and universal system

Maximized storage space

Shuttles are equipped with super-capacitor energy recycling systems that can recycle energy when they slow down or brake, so to avoid the impact of long distance rail' s voltage degrada-tion or part of the isolated conductor rail

The multi-layer shuttle system has the function of intelligent deployment and control

The inbound access conveyor can identify the overall size of the containers

The system is simple to operate, easy to maintain, and ready for customization and expansion.

The shuttles are designed to work continuously for 24 hours with minimum maintenance request yet guarantee the highest reliability

HWA robotics

PERFORMANCE PARAMETERS

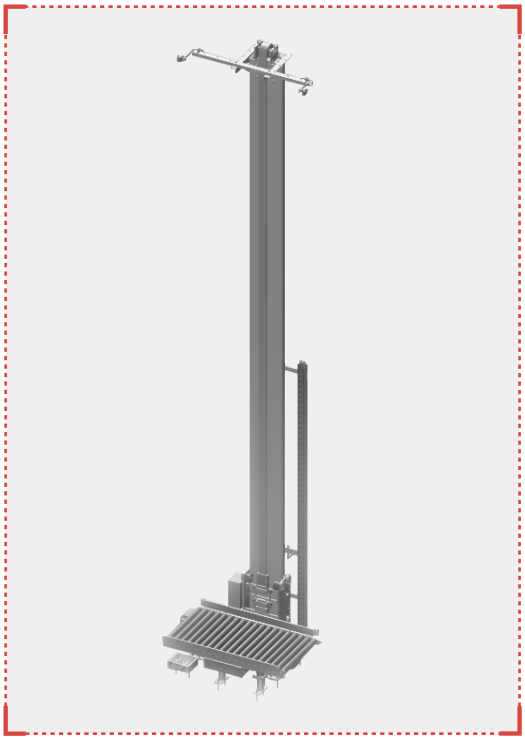
Item	*Parameter*
Single aisle compound efficiency	≥1000 boxes/hour①
Rated unit load	35kg (77lb)
Maximum unit load	50kg (110lb)
Cargo Unit Size(L*W*H)	200~850*200~650*60~500 (mm) 7.8~33.15*7.8~25.35*2.4~19.5 (in)
Speed(Max)	4m/s (13ft/s)
Acceleration(Max)	2m/s²(6.56ft/s2)
MTTR②	<15mins

Notes①: The parameter is based on the standard configuration height of 10 meters and a shelf length of 50 meters.

Notes②: MTTR (Mean Time to Repair) refers to the average time required to repair a failure. Please note that this parameter applies to an aisle but not the entire project.

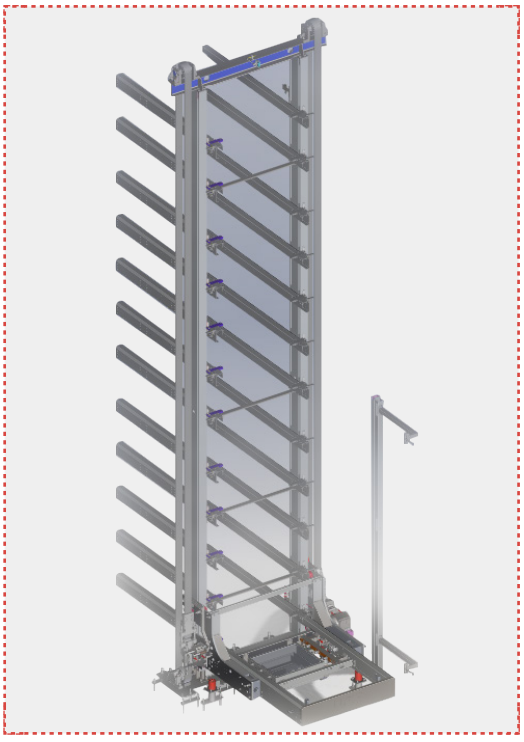
GOODS LIFT

PROJECT NAME		PARAMETER/BRAND
Lifting device	Rated load capacity(kg)	70kg (154 lb) (Double tote position)
	Positioning accuracy(mm)	±2mm (0.08 in)
Speed of rise and fall	No-load speed	≥5m/s (16 ft/s)
	No-load acceleration	≥7m/s² (23 ft/s²)
	Full load speed	≥5m/s (16 ft/s)
	Full load acceleration	≥7m/s² (23 ft/s²)
Single lift capacity(Max)		Compound throughput efficiency: ⩾700Boxes/hr



SHUTTLE LIFT

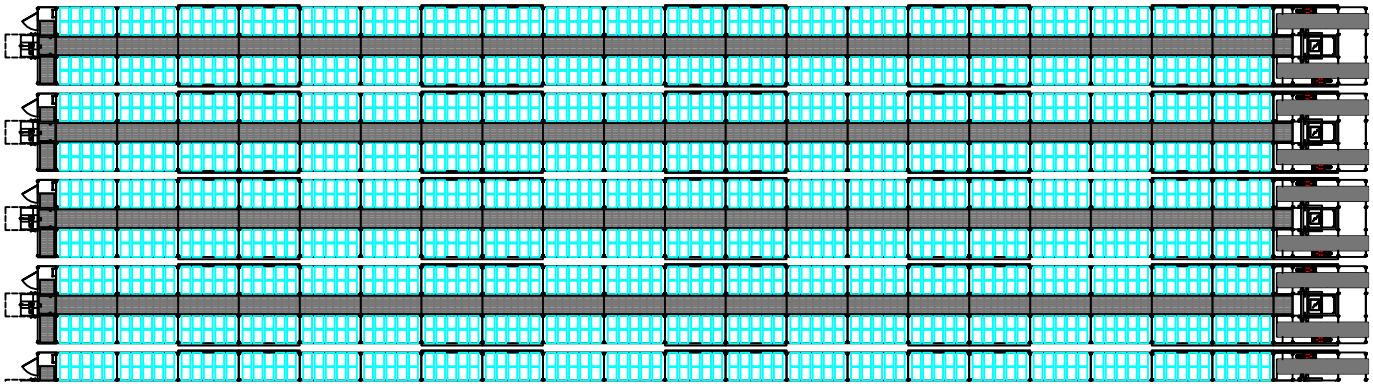
PROJECT NAME		PARAMETER/BRAND
Lifting Device	Rated load capacity(kg)	>160kg (352 lb) (shuttle & tote)
	Positioning accuracy(mm)	±2mm (0.08 in)
Speed	No-load speed	≥3m/s (10 ft/s)
	No-load acceleration	≥3m/s² (10 ft/s²)
	Full load speed	≥3m/s (10 ft/s)
	Full load acceleration	≥3m/s² (10 ft/s²)
Single lift capacity(Max)		Compound throughput efficiency: 120 units/hr



APPLICATION SCENARIO

With a strong industry applicability, this storage and retrieval system can be applied in numerous industries, such as e-commerce, media, tobacco, pharmaceutical, electric power, electronics and aviation.

E-commerce | Media | Tobacco | Pharmaceutical | Electric Power | Electronics



SLS400 Series Planning Sample Graph

CASE STUDY

A well-known large electronic parts intelligent warehouse project

Project Features
1. Muti-specification tote type mixed storage
2. Lifts at both ends

Core Configuration
· Multi-shuttle ASRS: 4 aisles
· Shuttles: 80
· Shuttle Lifts: 8
· Goods lifts: 16

A well-known electric power manufacturing enterprise Intelligent warehousing project

Project Features:
1. Cartons and totes storage
2. Height of warehouse is 20m(66ft)

Core Configuration
· Multi-shuttle ASRS: 4 aisles, 10800 standard totes
· Shuttles: 48
· Goods lifts: 8
· Shuttle Lifts: 4

HWArobotics PTE. LTD.

WhatsApp: +86 183 6209 7855 E-mail: marketing@hwarobotics.com Web: www.hwarobotics.com