

Wibbow Smart Factory

Assist on Digital Transformation

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PART. 01

Products & Services

Business Overview

Committed to be the leading "integrated" digital transformation service provider in China



High-end equipment software supply

- ✓ Domestic industrial robots
- ✓ Stacker, conveyor, hoisting and other special equipment
- ✓ MES, WMS, BDC, WCS, SCADA, and other industrial softwares



Intelligent production line and system integration

- ✓ Robot integration application
- ✓ Complete sets of new materials
- ✓ Intelligent warehouse logistics system integration
- ✓ Advanced manufacturing equipment



Digital system integration

- ✓ Digital integration of manufacturing
- ✓ Data acquisition and big data analytics



Intelligent factory construction

- ✓ Intelligent change number turn diagnosis
- ✓ Plant planning and design
- ✓ Project application and implementation
- ✓ Project after-sales operation and maintenance

Main Products

Industrial robot and its application technology



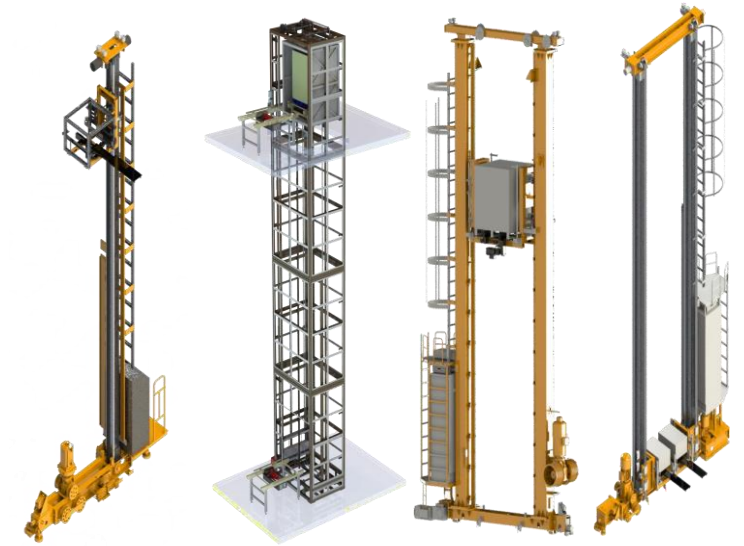
Self-developed domestic robot series, covering 0.6~2.7m arm span, 4~210kg load

iManuf digital intelligence platform



Self-developed industrial software, including MES, WMS, SCADA, WCS, BDC, etc.

Warehouse logistics equipment



Independently developed Stacker, hoist, RGV and other warehousing logistics equipment systems

Industrial Robots



Multi-specification robot ontology

Load: 4 ~ 210kg

Arm span: 0.6 ~ 2.7m

Independent intellectual property

High extensibility

Seismic suppression control



		WR3-479	WR7-799	WR0399Q	WR01-1999	WR19E	WR14-0799	WR24-0769	WR49-1299	WR79-1949	WR099-1399	WR019-1129	WR054E	WR109-1699	WR109-2099	WR259-1544
Structure (axes)		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Wrist weight		4kg	8kg	6kg	12kg	20kg	25kg	35kg	50kg	80kg	100kg	120kg	165kg	210kg	210kg	360kg
Repeatability accuracy		±0.02mm	±0.05mm	±0.05mm	±0.08mm	±0.06mm	±0.08mm	±0.03mm	±0.08mm	±0.06mm	±0.1mm	±0.06mm	±0.2mm	±0.06mm	±0.06mm	±0.1mm
Total motor power		2kw	2kw	4kw	7.3kw	6kw	7.7kw	8kw	14kw	22.4kw	22.1kw	26kw	15kw	30.7kw	30.7kw	26.5kw
Brake specifications		Wall axes with brakes														
Ingress protection		IP67	IP65	IP50	IP54 (wrist: IP65)	IP50	IP54 (wrist: IP67)	IP54 (wrist: IP67)	IP54 (wrist: IP67)	IP54 (wrist: IP67)	IP54 (wrist: IP67)	IP54 (wrist: IP67)	IP54 (wrist: IP65)	IP50	IP54	IP54 (wrist: IP65) IP54 (wrist: IP65)
Mounting posture		ground; side hanging; sky hanging	ground; ceiling	ground; side hanging; sky hanging	ground; ceiling	ground; side hanging; sky hanging	ground; ceiling	ground; side hanging; sky hanging	ground; ceiling	ground	ground	ground	ground	ground	ground	ground
Body weight		27kg	42kg	150kg	198kg	280kg	198kg	260kg	530kg	530kg	730kg	700kg	1100kg	1140kg	1200kg	1600kg
Operating environment		0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation	0~45°C/ 20~80%RH No condensation
Storage environment		-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation	-25°C~60°C/ 10%RH~90%RH No condensation
Action area	Max. elongation	576mm	827mm	1402mm	1980mm	1710mm	1808mm	1867mm	2340mm	2050mm	2440mm	2230mm	2650mm	2695mm	3100mm	2655mm
	Min. elongation	206mm	240mm	399mm	328.4mm	467mm	397mm	497mm	355mm	485mm	409mm	410mm	520mm	416mm	847mm	755mm
Range of motion	J1 axis	±170°	±170°	±170°	±180°	±170°	±180°	±180°	±180°	±185°	±180°	±185°	±180°	±185°	±183°	±185°
	J2 axis	-150°~+90°	-145°~+80°	-155°~+100°	-125°~+90°	-125°~+105°	-125°~+90°	-160°~+98°	-135°~+100°	-135°~+85°	-150°~+85°	-154°~+65°	-180°~+160°	-50°~+80°	-50°~+85°	-75°~+76°
	J3 axis	-70°~+200°	-70°~+180°	-80°~+100°	-74°~+202°	-70°~+125°	-77°~+202°	-60°~+200°	-80°~+180°	-75°~+200°	-67°~+153°	-80°~+170°	-146.5°~+150°	-65°~+210°	-120°~+161°	-133°~+90°
	J4 axis	±190°	±180°	±180°	±170°	±180°	±200°	±200°	±180°	±360°	±360°	±360°	±360°	±350°	±360°	±360°
	J5 axis	-35°~+215°	-40°~+220°	-50°~+225°	-60°~+206°	-45°~+225°	-35°~+215°	-220°~+40°	-25°~+205°	-30°~+210°	-35°~+215°	-30°~+210°	-45°~+225°	-35°~+215°	-35°~+215°	-35°~+215°
	J6 axis	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±350°	±360°
Maximum speed	J1 axis	480°/s	233°/s	190°/s	145°/s	195°/s	175°/s	202°/s	125°/s	160°/s	85°/s	130°/s	95°/s	123°/s	105°/s	110°/s
	J2 axis	460°/s	236°/s	190°/s	115°/s	190°/s	162°/s	211°/s	110°/s	120°/s	84°/s	110°/s	86°/s	115°/s	94°/s	105°/s
	J3 axis	520°/s	291°/s	190°/s	150°/s	180°/s	173°/s	234°/s	145°/s	120°/s	126°/s	120°/s	90°/s	112°/s	100°/s	100°/s
	J4 axis	560°/s	372°/s	370°/s	265°/s	400°/s	417°/s	470°/s	276°/s	225°/s	156°/s	170°/s	182°/s	179°/s	136°/s	110°/s
	J5 axis	560°/s	500°/s	370°/s	215°/s	400°/s	336°/s	405°/s	259°/s	225°/s	145°/s	170°/s	175°/s	172°/s	129°/s	110°/s
	J6 axis	880°/s	375°/s	600°/s	160°/s	600°/s	456°/s	535°/s	274°/s	225°/s	205°/s	250°/s	265°/s	219°/s	206°/s	180°/s



Stacker Series

Light Container Stacker

Light-weight structure design, low layer height requirements, high space utilization, to achieve intelligent access to small products.

Parameters	Material Box Stacker
Rated load	50kg
Material box size	Customizable
Height	< 30m
Walking speed	0~120m/min
Rise and fall speed	0~60m/min
Fork operation speed	Full load: 0~60m/min; no load: 0~30m/min
Address accuracy	X-direction: $\pm 3\text{mm}$; Y-direction: $\pm 3\text{mm}$; Z-direction: $\pm 3\text{mm}$
X-direction addressing	Laser ranging
Y-direction addressing	Laser ranging/barcode address recognition
Z-direction addressing	Encoder + sensor
Control method	Position control
Communication	Optical communication/wireless AP/ power carrier
Operating method	Manual, semi-automatic, automatic, maintenance mode
Safety configuration	Cargo ultra high and super deviation detection, speed limiter, broken rope detection



Stacker Series

Heavy Load Pallet Stacker

Suitable for all kinds of large tray, cage tray access.

Parameters	Material Box Stacker
Rated load	100~300kg
Materail box size	Customizable
Height	< 30m
Walking speed	0~120m/min
Rise and fall speed	0~60m/min
Fork operation speed	Full load: 0~60m/min; no load: 0~30m/min
Address accuracy	X-direction: $\pm 3\text{mm}$; Y-direction : $\pm 3\text{mm}$; Z-direction : $\pm 3\text{mm}$
X-direction addressing	Laser ranging
Y-direction addressing	Laser ranging/barcode address recognition
Z-direction addressing	Encoder + sensor
Control method	Position control
Communication	Optical communication/wireless AP/ power carrier
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Hoist Series

C Type Reciprocating Hoist

It is a special single machine to send products into and out, which is mainly composed of steel frame, hanging basket car, counterweight, elevator special guide rail and control system. With the brake motor as the power source, the sprocket on the shaft drives one side of the lifting basket trolley, and the other side drives the counterweight block to fall and rise along the elevator guide rail to complete the up and down operation requirements of the product.

Features

- ◆ The elevator adopts chain traction, with fast lifting speed, high efficiency and low noise.
- ◆ The trolley and the counterweight block are equipped with reinforced polyurethane coated bearing rollers to rise and fall along the guide rail, which runs smoothly and has low noise.
- ◆ Car motor adopts imported parts, with high reliability.
- ◆ The guide rail adopts special elevator guide rail to ensure high speed requirements.

Parameters	C Type Reciprocating Hoist
Rated load	1000kg, customizable
Materail box size	Customizable
Speed of operation	10m/min, variable frequency adjustable
Control method	Inverter + sensor positioning



Conveying Series

C Type Reciprocating Hoist

Multi-wedge Belt Roller Conveyor



The multi-wedge belt roller conveyor is suitable for conveying all kinds of boxes, bags, pallets and other pieces of goods. Bulk materials, small items or irregular items need to be transported on the tray or in the turnover box. It can transport a single heavy material, or withstand a large impact load, and it is widely used in express, medicine, e-commerce and so on logistics delivery system.

Features

- ◆ The elevator adopts chain traction, with fast lifting speed, high efficiency and low noise.
- ◆ The trolley and the counterweight block are equipped with reinforced polyurethane coated bearing rollers to rise and fall along the guide rail, which runs smoothly and has low noise.
- ◆ Car motor adopts imported parts, with high reliability.
- ◆ The guide rail adopts special elevator guide rail to ensure high speed requirements.

Multi-wedge Belt 90° Roller Conveyor



Parameters	Chain Conveyor
Rated load	1~50kg, customizable
Material box size	Customizable
Speed of operation	1~40m/min, variable frequency adjustable
Control method	Inverter + sensor positioning

Industrial Robots Controller

Excellent performance, independent and controllable

The industrial robot controller with autonomy has been upgraded through multiple iterations, showing excellent integration adaptability and expansion ability. Among them, multi-axis coordinated motion control technology plays an important role in improving accuracy, speed, programmability, and synchronization ability of external axis equipment. The reset accuracy of the controller is up to 0.02mm, and this advantage can be fully exploited even at ultra-high operating speeds. Accurate positioning, strong shock suppression, to ensure the stability and safety of production.

Feature 1

Easy to operate and strong expansibility

Multi-axis linkage control system design, robot controller can add external axis control software module.

Feature 2

High real-time control response

Real-time operating system and EtherCAT communication bus are used to ensure real-time performance.

Feature 3

Fully enclosed structure

The interior of controller is fully enclosed to meet the requirements of harsh environment. The high heating element is cooled separately exterior.

Feature 4


Seismic suppression control

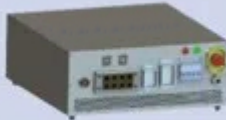
Through the kinematic calculation, and the use of multi-segment S curve, ball shape trajectory motion algorithm and other processing methods to achieve high-speed motion and vibration reduction of the robot.



Industrial Robots Controller

Products and services

| Wibbow 

Model	WRC3995	WRC3991	WRC3992
Picture			
Size (W*H*D)	450*160*400mm	550*211.5*560mm	660*251.5*628mm
Ingress Protection	IP20	IP54	
Environment Temperature	0~45℃		
Specification	AC200V~AC200V±10%, 3 phase, 50/60Hz	AC380V±10%, 3 phase, 50/60Hz	
Consumption of electricity	3kVA	6kVA (PR1400P) 10kVA (PR20D)	15kVA
IO	16User DI, 16User DO, external extensible interface		



■ ■ ■ Integration Application of Industrial Robots



Arc welding



Tin welding, spot welding



Sorting and palletizing



Flexible loading and unloading



Plasma cutting



Cold saw blade/brazing blade cutting



Rust removal



Sanding/polishing

■ Integration Application of Industrial Robots

Wibbow



Tighten up



Lock attachment



Tin welding



Automatic detection



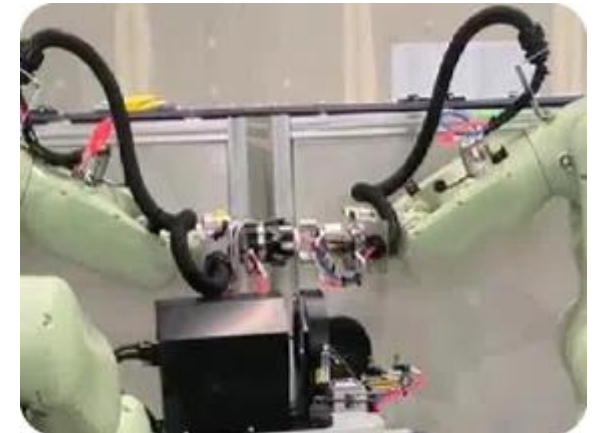
Spray/glue



Coding

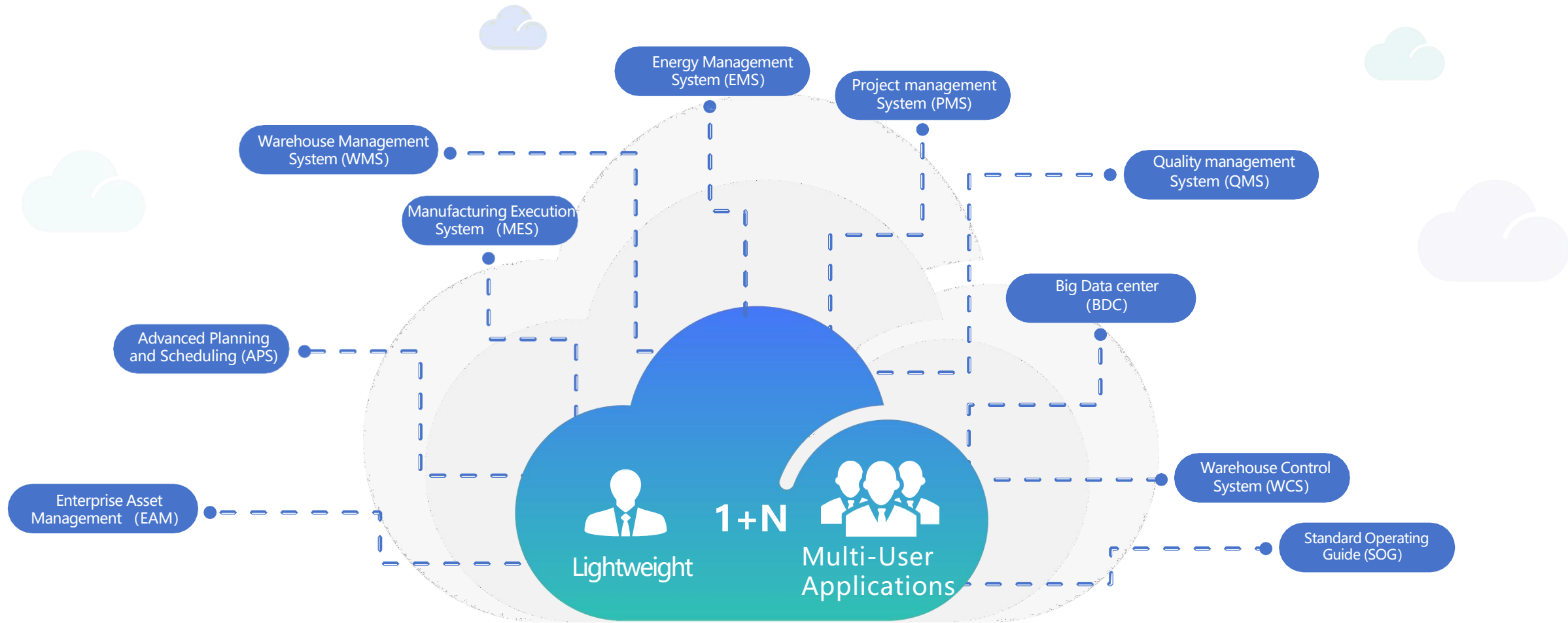


Labeling

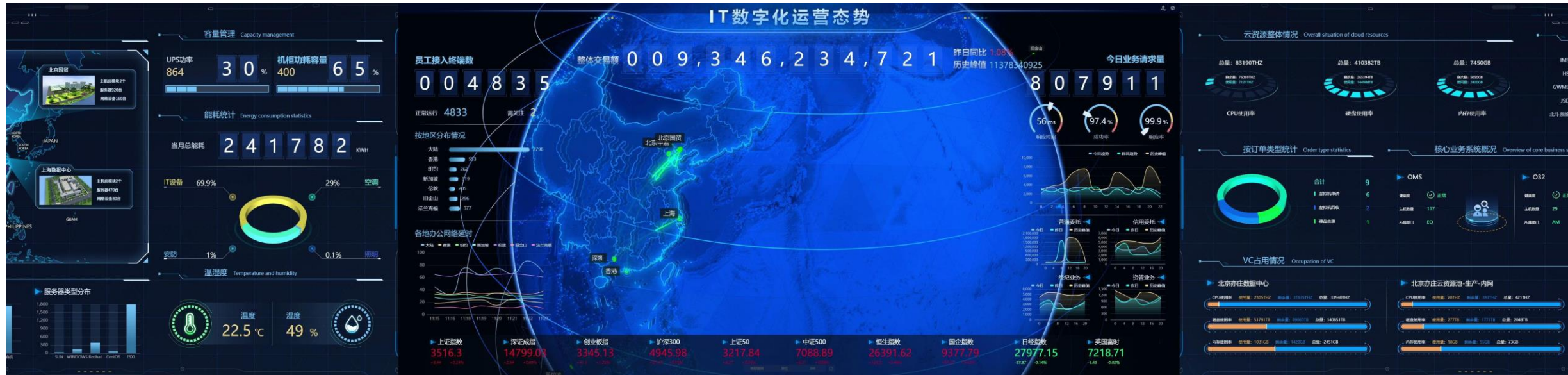


Set of fit

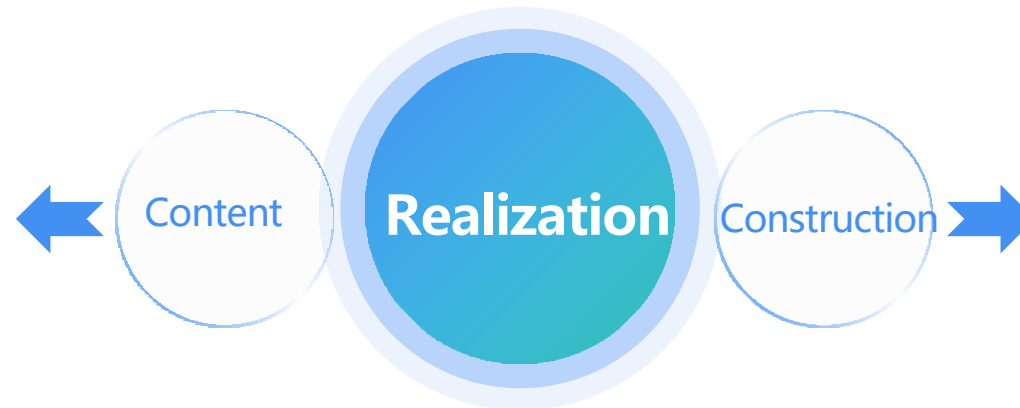
iManuf. Digital intelligence platform



iManuf. Digital Intelligence Platform - Operational Decision-Making Cockpit

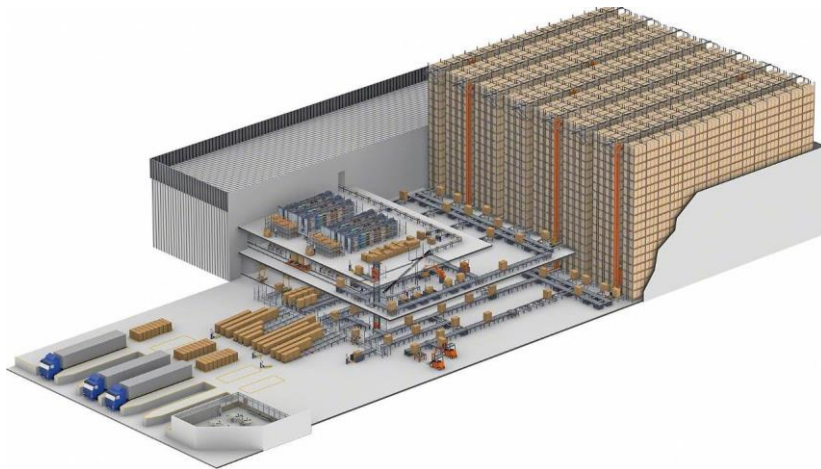
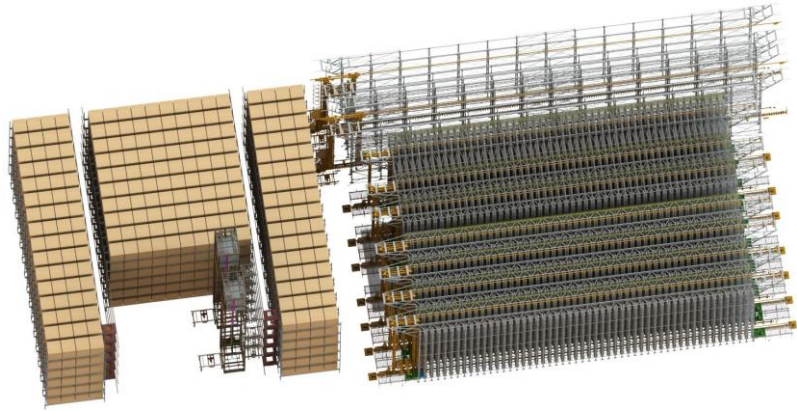


- Visualization of plant operation situation awareness
- Visual management of factory management
- Visual management of factory manufacturing



- Smart Factory Management Center
- Command and dispatch center
- Achievement Exhibition Center

Smart Warehouse Logistics



Smart logistics
planning

Warehouse distribution
center planning

Warehouse logistics
equipment planning

Professional intelligent warehouse logistics project planning services

Intelligent Logistics Equipment

Warehouse
(shelf/stacker/shuttle)

Conveying/lifting/sorting

Special aircraft
(depalletizer/palletizer,
disassembling tray, box
changer, balance crane)

EMS/RGV/AGV system

Robot (depalletizing/palletizing,
sorting)

System Planning

Warehouse functional area
planning

Equipment and facilities planning

Logistics path planning

Operational process planning

Operator planning

Logistics Software System

WMS、WCS、RCS

Digital twin visualization system

Barcode /RFID data acquisition

Light picking system

ERP/MES system interface

One-stop warehouse logistics system integration service

PART. 02

Case Sharing

Smart Factory

LoT water meter smart factory



Display panel intelligent manufacturing factory



LCD glass intelligent manufacturing factory



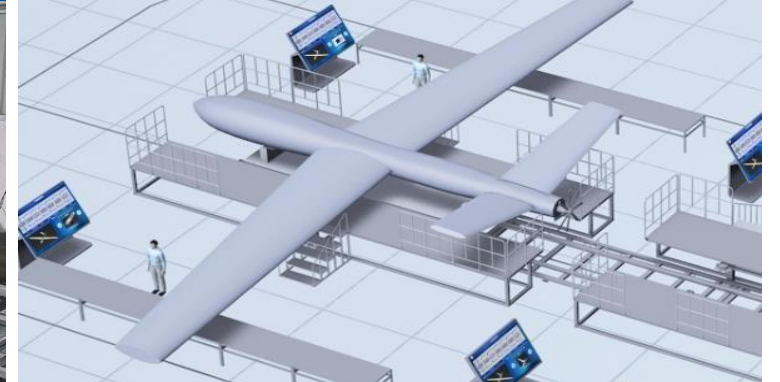
Lithium battery cathode material smart factory



Power battery base intelligent manufacturing workshop



A fixed-wing UAV assembly plant



Smart Warehouse Logistics



Heavy load pallet stereoscopic storage project



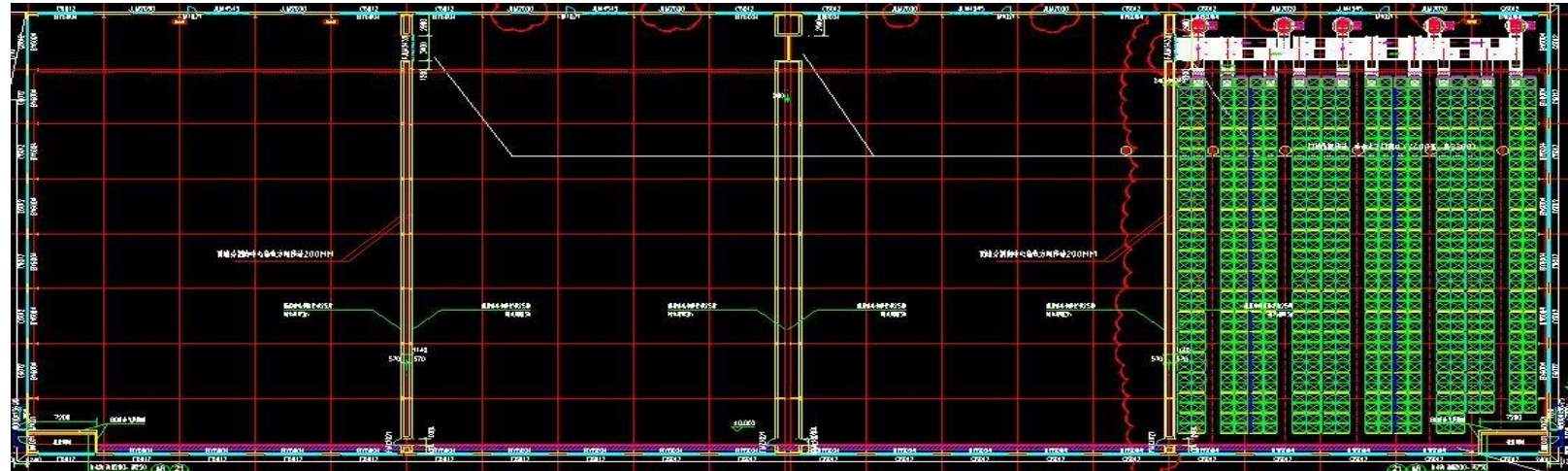
AGV logistics and warehouse integration project



High speed light load container stereoscopic storage project



20 meters attic type stereo library



Super large three-dimensional grain storage and logistics integration project

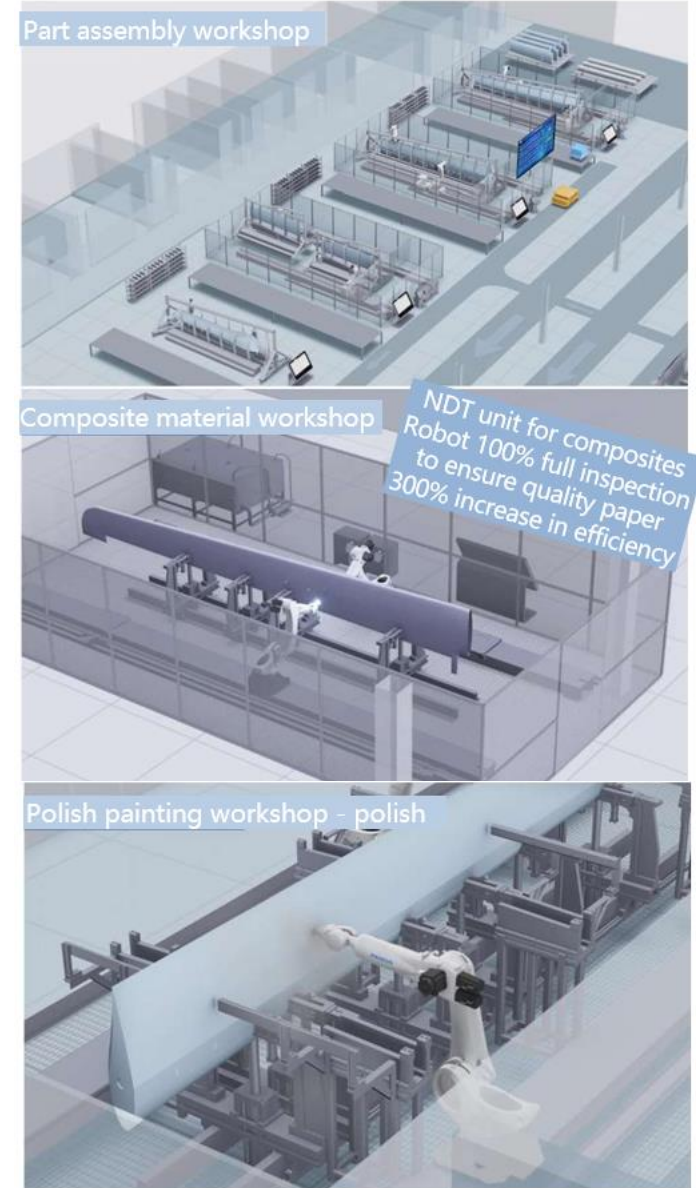
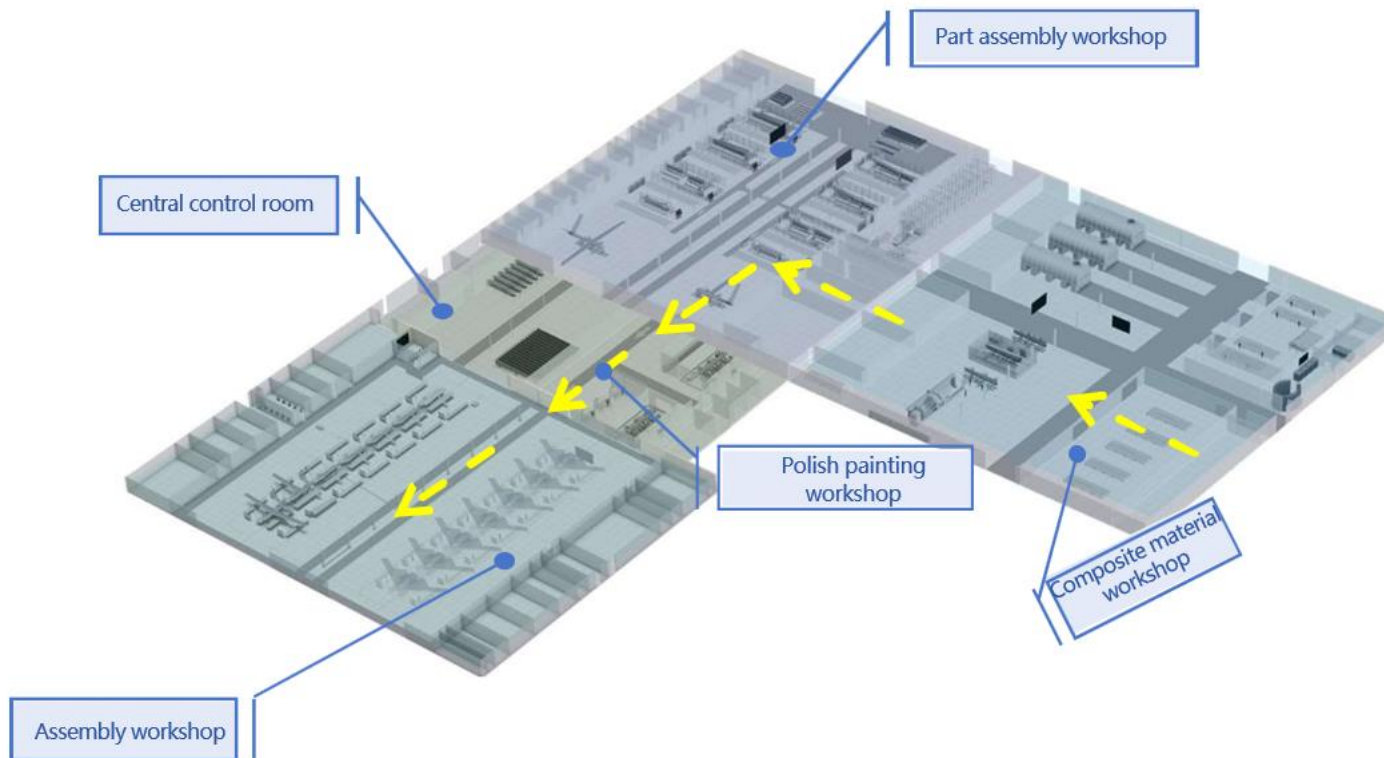
Flow Battery Smart Factory Solution

Flow Battery Intelligent Manufacturing Factory



UAV Smart Factory

Based on the UAV production process, the panoramic layout of the intelligent factory is planned as follows:



Smart Factory Solution for Flow Battery

Flow Battery Manufacturing Smart Factory



Smart Factory Solution for Battery Recycling

Power Lithium Battery Recycling Smart Factory

