

INTELLIGENCE CREATES A BETTER LIFE

ROBOTPHOENIX LLC

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ROBOT PHOENIX

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Intelligence Creates
a Better Life

**CREATE EXCELLENT PRODUCTS WITH
SOPHISTICATED TECHNOLOGY
PROVIDE HIGH QUALITY SERVICE WITH
PROFESSIONAL EFFICIENCY**

Established in 2012, Robotphoenix LLC is headquartered in High-tech Development Zone of Jinan, Shandong province, with branch offices in Shenzhen and Shanghai. Robotphoenix is a comprehensive high-tech automation enterprise specialized in industrial robot R&D and manufacturing, control system and visual system development, OEM support and automation system integration. The company has passed ISO9001:2015 and CE qualification, owning dozens of national patented technologies.

The company focuses on the research and development of lightweight high-speed industrial robots, constantly challenges the breakthrough of core technology, and adheres to the mission of providing excellent robot products and services for global manufacturing enterprises. At present, it has a full range of lightweight high-speed industrial robot products, such as parallel robot, SCARA robot, small six-axis robot, etc.

With its precise, high-speed and extremely ingenious brand tone, Robotphoenix has expanded the flexible application of lightweight high-speed robots in many fields, enabling the iteration of intelligent production lines of leading enterprises in 3C electronics, new energy, logistics, food, pharmaceutical, daily chemical and other industries. Its customers cover more than 80 cities in China, and are exported to more than 10 countries and regions on four continents, with a market share at the forefront of China.

ROBOT
PHOENIX

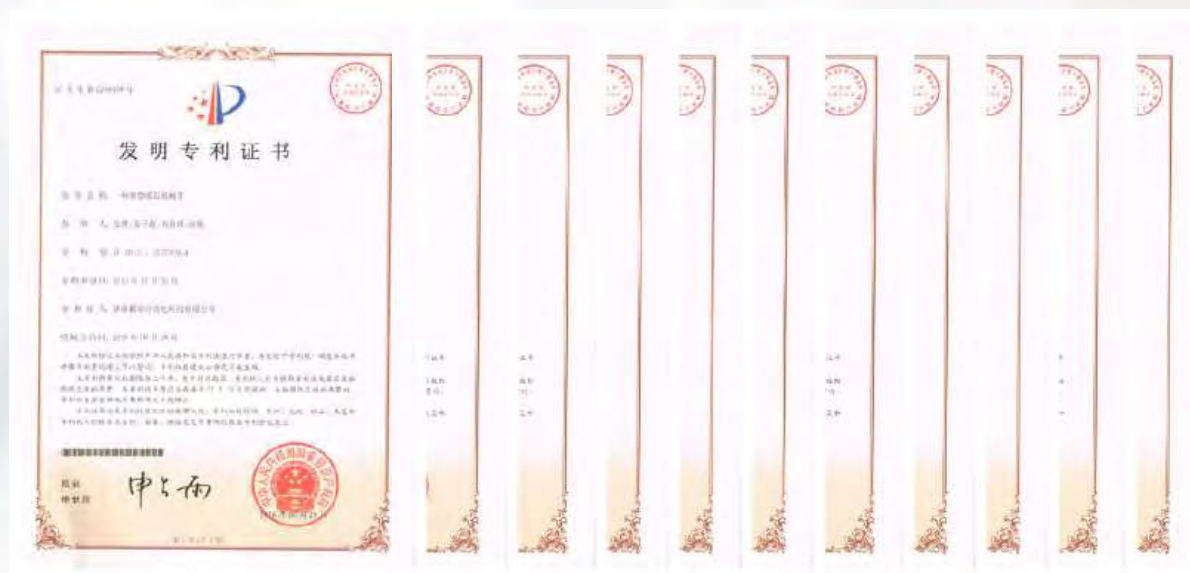


QUALIFICATION AND CERTIFICATION

Robotphoenix adheres to the business philosophy of "Technology Is The King" and has obtained the qualification and certification of various high-tech enterprises in order to provide customers with the most advanced and high-end products. So far, more than 100 patents have been granted to Robotphoenix, including dozens of patents of invention, and nearly 100 patents are being publicized and declared.



The National High-tech Enterprise.
Small and medium sized enterprises with the characteristics of "specialization, refinement, characteristics and novelty" in Shandong Province.
Gazelle Company in Shandong.
Capek - Top Sales in 2019.
Red Star Design Award.
Most Valuable Investment New Star Enterprises.
Leading Enterprise in Artificial Intelligence.
Intelligent Robot R & D Demonstration Enterprise.
Science and Technology Award of China Society for the Promotion of Science and Technology Commercialization.
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ORGANIZATION STRUCTURE

Robotphoenix is committed to creating a healthy robot ecosystem for customers and providing competitive automation solutions and services. Its full-time R & D personnel account for 50%, and the engineering team is led by technical personnel from Columbia University, University of the Renne, Tsinghua University, Harbin Institute of Technology and Shandong University, which key personnel have more than 10 years of practical experience in the industry. The company now has a complete industrialization team integrating R & D, management, market, project and production.



The company's production base is headquartered in the High-tech District of Jinan City, with a production workshop area of 10000 square meters and an annual production capacity of more than 1000 sets.

In recent years, Robotphoenix has developed rapidly and the demand for carrying space is growing. In 2021, it will build a R & D and production base for lightweight high-performance robots with an area of 24000 square meters (located in the south of Aerospace Avenue in North High-Tech District of Jinan and east of Jiaxuan West Road) to expand production capacity and improve quality of production to meet new market and new demand. With the help of the implementation of this project, it will further improve the level of the domestic robot industry, gather more than 1000 high-tech talents, accurately tap the needs of subdivided industries, realize high matching, high flexible and high intelligent products and solutions for customers, and comprehensively assist the intelligent upgrading of surrounding industries.



SERIES PRODUCTS



Bat Series

Bat-B
Bat1000B-A60
Bat1300B-A50



Bat-3+1
Bat360-A1
Bat800-A3
Bat800-S3
Bat1100-A3
Bat1300-A6
Bat1600-A6



Bat-C
Bat800C-A3
Bat1100C-A3
Bat1300C-A6
Bat1600C-A6



Bat-M
Bat2000M-A15



Python Series

Desktop installation
Python450-B6
Python550-B6
Python650-B6
Python850-A10



Lifting installation
Python550C-B6
Python550F-B3



Mantis Series

Mantis570-A3
Mantis830-A6
Mantis1000-A7



BAT ROBOT SERIES



PRODUCT INTRODUCTION

Bat Robot is the result of the perfect combination of robot technology, visual recognition technology and conveyor belt tracking technology, which can accurately track the speed of the conveyor belt in the fast flow process, identify the position, color, shape, size, etc. of objects through visual intelligence, carry out packing, sorting, arrangement etc. according to specific requirements, and greatly improves the efficiency of the production line and reduces the operation cost of the enterprise with its speed and flexibility.



PRODUCT CHARACTERISTICS



01. High-speed

Bat robot adopts fast-response servo drive system and highly-optimized transmission structure. At the same time, it is equipped with the control system of the robot independently developed by Robotphoenix, which greatly improves the motion speed and acceleration. For the standard stroke, the working cycle of the robot can reach 0.22s, which fully meets the requirements of high-speed production.



02. High Payload

Bat robot can carry objects weighing up to 15 kg.



03. High Accuracy

The re-positioning accuracy can reach 0.02 mm, which is very suitable for high-precision work.



04. Small footprint with large working space

BAT-1100, with a footprint of only 1.4m*1.4m, has a working space being a cylinder with a diameter of 1100mm and a height of 250mm.



05. Integrated control system

The controller of BAT Series is not only a motion controller, but also a machine control system integrated with visual processing and belt tracking; motion control module is in charge of processing and motion control of algorithms such as machine kinematics, path planning etc.; visual module includes vision calibration, module matching and image processing; tracking module matches visual processing results with the operation of the external conveyor line for dynamic tracking to realize seamless connection between the machine and vision.



06. Modular structure design

The structure of the robot adopts modular design, which is convenient for maintenance; the quick gripping mechanism makes the change of product line easy and fast.



07. Easy to use

It has a generous, simple and friendly human-machine interface, as well as high-reliable buttons and touch-screen teach pendant; users can easily and quickly complete the robot teaching, program change and other operations, which requires just a few steps to complete the motion object and range of the robot, and can also intuitively understand the production status and progress.



08. Multi-robot collaboration

Robotphoenix controller realizes any axis control, realizes information sharing through internal communication, and can share a set of vision system with multiple robots.



09. Zero grad oil-free

It can provide clean robot for high-precision industries of food, pharmacy and electronics, which has class-0 oil-free and pollution-free, meeting the production requirements of various industries.





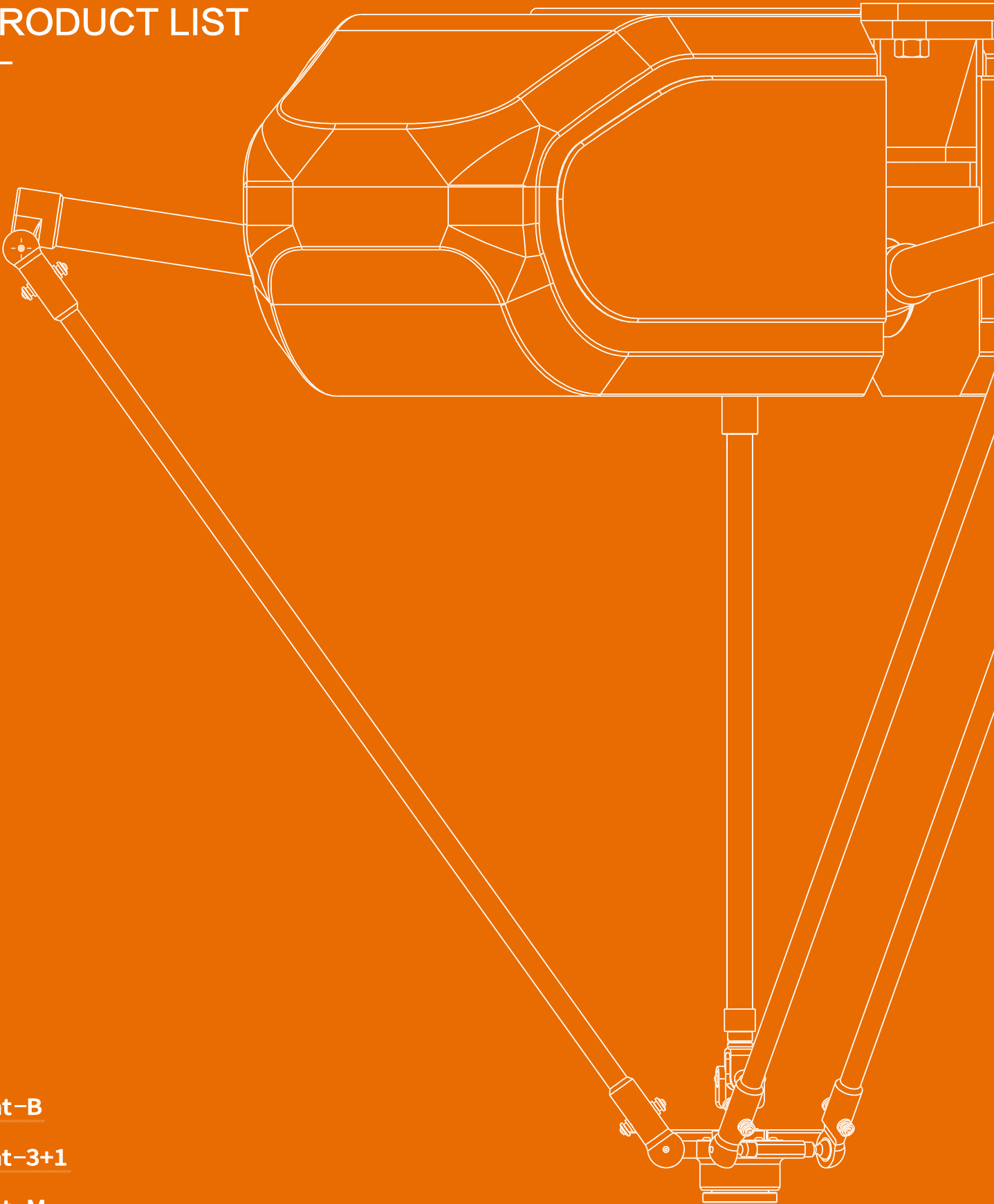
PRODUCT LIST

Bat-B

Bat-3+1

Bat-M

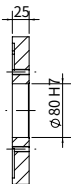
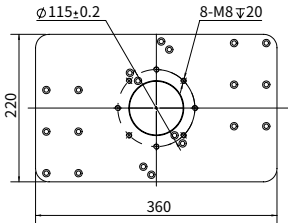
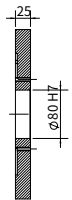
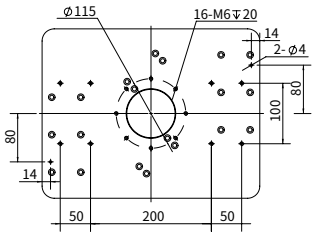
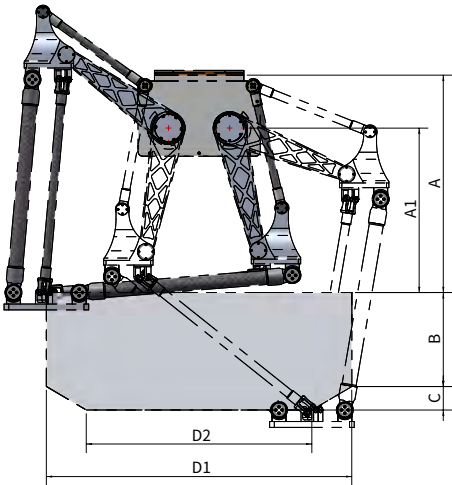
Bat-C



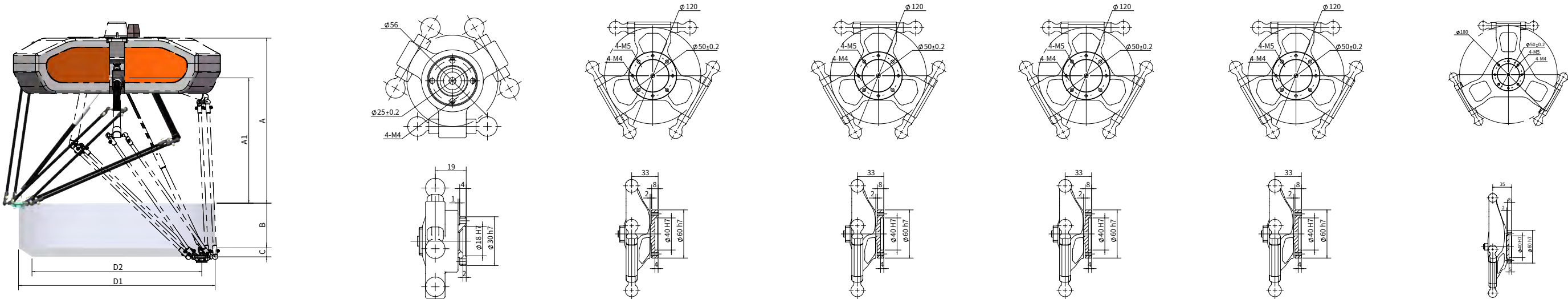
Bat-B

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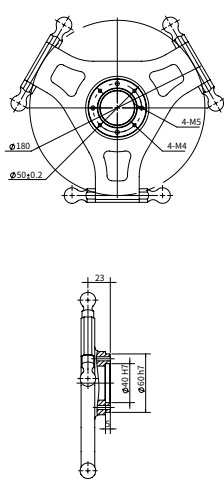
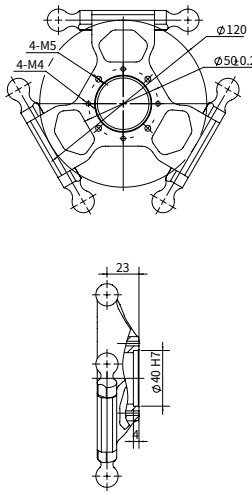
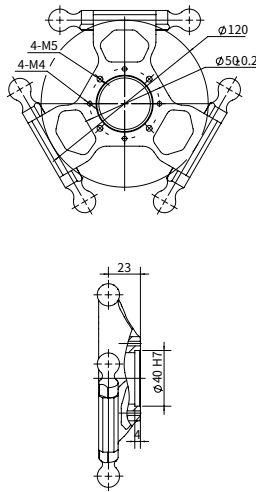
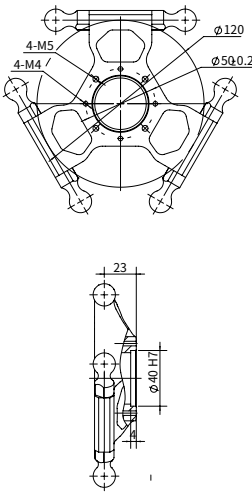
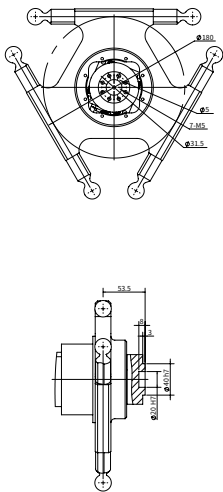
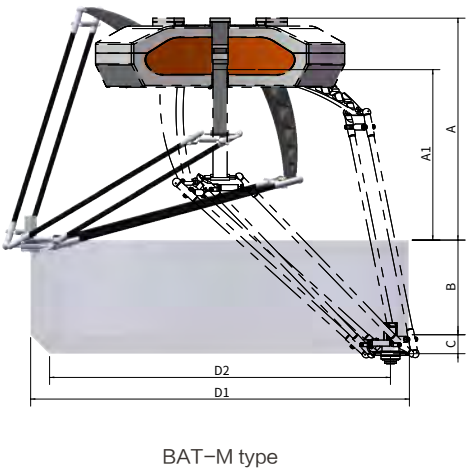
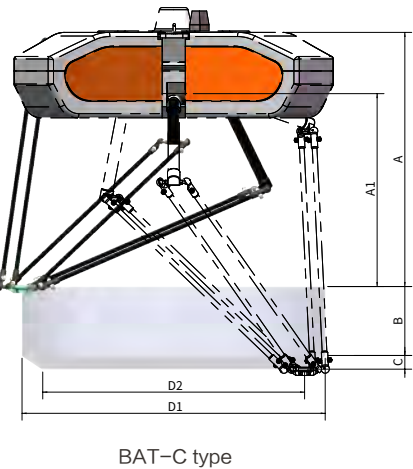
FEATURE		Bat1000B-A60	Bat1300B-A50
Specification	Rated load	60kg	50kg
	Working Space diameter	1000mm	1300mm
	Number of axes	2	2
	Re-positioning accuracy	0.02mm	0.02mm
Performance	25 / 305 / 25	0.1kg	
		1kg	
		3kg	
		6kg	
	90 / 400 / 90	0.1kg	1.1s
		1kg	1.1s
Work Space		3kg	
		6kg	
	Max. Speed	1.1s	1.1s
	Max. Acceleration	2m/s	2m/s
	A(mm)	20m/s ²	20m/s ²
	A1(mm)	875mm	925mm
	B(mm)	650mm	700mm
	C(mm)	300mm	400mm
Electrical Connection	D1(mm)	50mm	100mm
	D2(mm)	1000mm	1300mm
	Voltage	900mm	960mm
	Rated power	3P 380V,50/60HZ	3P 380V,50/60HZ
Environment	Ambient temperature	4.8KW	4.8KW
	Relative humidity	0-45℃	0-45℃
	IP ratings	5-95%	5-95%
	Safety	IP54	IP54
	Radiation	Monitor, EM Stop and Safety Switch	Monitor, EM Stop and Safety Switch
Mounting	Mounting methods	EMC shielded	EMC shielded
	Weight (excl. Frame)	Suspended	Suspended
		200kg	200kg
Interface	I/O interface	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs
	Ethernet	1个	1个
	USB	2个	2个
	RS232/RS485	1个	1个
	Communication protocol	Modbus-RTU/TCP、Socket	Modbus-RTU/TCP、Socket



FEATURE		Bat360-A1		Bat800-A3		Bat800-S3		Bat1100-A3		Bat1300-A6		Bat1600-A6		
Specification	Rated load		1kg		3kg		3kg		3kg		6kg		6kg	
	Working Space diameter		360mm		800mm		800mm		1100mm		1300mm		1600mm	
	Number of axes		4		4		4		4		4		4	
Performance	Re-positioning accuracy		0.08mm		0.08mm		0.08mm		0.08mm		0.1mm		0.1mm	
	25 / 305 / 25	0.1kg	0.3s		0.3s		0.252s		0.3s		0.3s		0.3s	
		1kg	0.38s		0.36s		0.280s		0.36s		0.36s		0.36s	
		3kg			0.54s		0.304s		0.54s		0.54s		0.54s	
		6kg							0.6s		0.6s		0.6s	
	90 / 400 / 90	0.1kg	0.46s		0.44s		0.283s		0.44s		0.44s		0.44s	
		1kg	0.52s		0.51s		0.365s		0.51s		0.51s		0.51s	
		3kg			0.7s		0.389s		0.7s		0.7s		0.7s	
		6kg							0.9s		0.9s		0.9s	
	Max. Speed		6m/s		6m/s		6m/s		10m/s		10m/s		10m/s	
Max. Acceleration		120m/s ²		150m/s ²		150m/s ²		150m/s ²		150m/s ²		150m/s ²		
Work Space	A(mm)		462mm		762mm		717mm		917mm		917mm		1022mm	
	A1(mm)		300mm		550mm		550mm		700mm		700mm		800mm	
	B(mm)		100mm		200mm		200mm		250mm		250mm		350mm	
	C(mm)		40mm		100mm		100mm		50mm		50mm		50mm	
	D1(mm)		360mm		800mm		800mm		1100mm		1300mm		1600mm	
	D2(mm)		150mm		700mm		700mm		950mm		1100mm		1300mm	
Electrical Connection	Voltage		220V,50/60HZ		3P 380V,50/60HZ		3P 380V,50/60HZ		3P 380V,50/60HZ		3P 380V,50/60HZ		3P 380V,50/60HZ	
	Rated power		1.6KW		3.5KW		4.25KW		5KW		5.2KW		5.2KW	
Environment	Ambient temperature		0-45℃		0-45℃		0-45℃		0-45℃		0-45℃		0-45℃	
	Relative humidity		5-95%		5-95%		5-95%		5-95%		5-95%		5-95%	
	IP ratings		IP54		IP54		IP54		IP54		IP54		IP54	
	Safety		Monitor, EM Stop and Safety Switch		Monitor, EM Stop and Safety Switch		Monitor, EM Stop and Safety Switch		Monitor, EM Stop and Safety Switch		Monitor, EM Stop and Safety Switch		Monitor, EM Stop and Safety Switch	
Mounting	Radiation		EMC shielded		EMC shielded		EMC shielded		EMC shielded		EMC shielded		EMC shielded	
	Mounting methods		Suspended		Suspended		Suspended		Suspended		Suspended		Suspended	
	Weight (excl. Frame)		50kg		120kg		120kg		180kg		180kg		210kg	
Interface	I/O interface		4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs		4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs		4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs		4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs		4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs		4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs	
	Ethernet		1个		1个		1个		1个		1个		1个	
	USB		2个		2个		2个		2个		2个		2个	
	RS232\RS485		1个		1个		1个		1个		1个		1个	
	Communication protocol		Modbus-RTU/TCP、Socket		Modbus-RTU/TCP、Socket		Modbus-RTU/TCP、Socket		Modbus-RTU/TCP、Socket		Modbus-RTU/TCP、Socket		Modbus-RTU/TCP、Socket	



FEATURE		Bat2000M-A15		Bat800C-A3	Bat1100C-A3	Bat1300C-A6	Bat1600C-A6
Specification	Rated load	15kg		3kg	3kg	6kg	6kg
	Working Space diameter	2000mm		800mm	1100mm	1300mm	1600mm
	Number of axes	4		3	3	3	3
Performance	Re-positioning accuracy		0.1mm	0.1mm	0.1mm	0.1mm	0.1mm
	25 / 305 / 25	0.1kg	0.43s	0.3s	0.3s	0.3s	0.3s
		1kg		0.36s	0.36s	0.36s	0.36s
		3kg		0.54s	0.54s	0.54s	0.54s
		6kg	0.47s		0.6s	0.6s	0.6s
	90 / 400 / 90	0.1kg	0.58s	0.44s	0.44s	0.44s	0.44s
		1kg		0.51s	0.51s	0.51s	0.51s
		3kg		0.7s	0.7s	0.7s	0.7s
		6kg	0.6s			0.9s	0.9s
	Max. Speed		10m/s	6m/s	6m/s	10m/s	10m/s
Work Space	Max. Acceleration		150m/s ²	150m/s ²	150m/s ²	150m/s ²	150m/s ²
	A(mm)		1172mm	762mm	917mm	917mm	1022mm
	A1(mm)		900mm	550mm	700mm	700mm	800mm
	B(mm)		500mm	200mm	250mm	250mm	350mm
	C(mm)		100mm	100mm	50mm	50mm	50mm
	D1(mm)		φ 2000mm	800mm	1100mm	1300mm	1600mm
	D2(mm)		φ 1800mm	700mm	950mm	1100mm	1300mm
Electrical Connection	Voltage		3P 380V,50/60HZ	3P 380V,50/60HZ	3P 380V,50/60HZ	3P 380V,50/60HZ	3P 380V,50/60HZ
	Rated power		6KW	3.4KW	4.1KW	4.8KW	4.8KW
	Ambient temperature		0-45℃	0-45℃	0-45℃	0-45℃	0-45℃
Environment	Relative humidity		5-95%	5-95%	5-95%	5-95%	5-95%
	IP ratings		IP54	IP54	IP54	IP54	IP54
	Safety		Monitor, EM Stop and Safety Switch	Monitor, EM Stop and Safety Switch	Monitor, EM Stop and Safety Switch	Monitor, EM Stop and Safety Switch	Monitor, EM Stop and Safety Switch
	Radiation		EMC shielded	EMC shielded	EMC shielded	EMC shielded	EMC shielded
Mounting	Mounting methods		Suspended	Suspended	Suspended	Suspended	Suspended
	Weight (excl. Frame)			120kg	120kg	180kg	210kg
Interface	I/O interface		4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs
	Ethernet		1个	1个	1个	1个	1个
	USB		2个	2个	2个	2个	2个
	RS232/RS485		1个	1个	1个	1个	1个
	Communication protocol		Modbus-RTU/TCP、Socket	Modbus-RTU/TCP、Socket	Modbus-RTU/TCP、Socket	Modbus-RTU/TCP、Socket	Modbus-RTU/TCP、Socket





PYTHON ROBOT SERIES

PRODUCT INTRODUCTION

Python series integrates peripheral systems with industrial automation products (such as servo system, vision system, etc.) independently developed by Robotphoenix, which can adapt to various application scenarios under complex working conditions. Robots have the advantages of being more intelligent, more flexible, adjustable, and more advantages in the unpredictable market demand and the rapid change of production line. After the automation of the production line is introduced by the manufacturing customers, the robot can present higher flexibility in the manufacturing system and gradually realize intelligent production, so as to achieve efficient automation, effectively improve the quality, increase the flexibility in production and improve the production capacity.



PRODUCT CHARACTERISTICS

ROBOT PHOENIX



01. High-speed

The robot has the characteristics of compact design and lightweight, which not only saves space, facilitates system integration, but also can run continuously at high speed, and can ensure high positioning accuracy at high speed, meeting the requirements of production speed and efficiency.



02. High speed and high precision

It has extremely high motion speed and positioning accuracy, and integrates the latest market technologies such as commonality, flexibility and adjustability. Scara robot can complete the product assembly with high efficiency and quality, which improves the production efficiency.



03. Quick configuration

It is convenient for disassembly and assembly, more efficient, and is extremely suitable for the field where the production line alternates frequently. It adopts lightweight design, which occupies a small area and can be quickly configured according to the alternation of production line.



04. Integrated control system

The controller of BAT Series is not only a motion controller, but also a machine control system integrated with visual processing and belt tracking; motion control module is in charge of processing and motion control of algorithms such as machine kinematics, path planning etc.; visual module includes vision calibration, module matching and image processing; tracking module matches visual processing results with the operation of the external conveyor line for dynamic tracking to realize seamless connection between the machine and vision.



05. Modular structure design

The structure of the robot adopts modular design, which is convenient for maintenance; the quick gripping mechanism makes the change of product line easy and fast.



06. Easy to use

It has a generous, simple and friendly human-machine interface, as well as high-reliable buttons and touch-screen teach pendant; users can easily and quickly complete the robot teaching, program change and other operations, which requires just a few steps to complete the motion object and range of the robot, and can also intuitively understand the production status and progress.



07. Lightweight and compact

It adopts lightweight design, which occupies a small area and can be quickly configured according to the alternation of production line. The overall design of Scara robot of Python series is compact and closed, which reduces the weight of the robot to the greatest extent. Compared with the same type of products, the volume of Scara robot is reduced by 25%, making it more convenient for the robot to work in a small space.

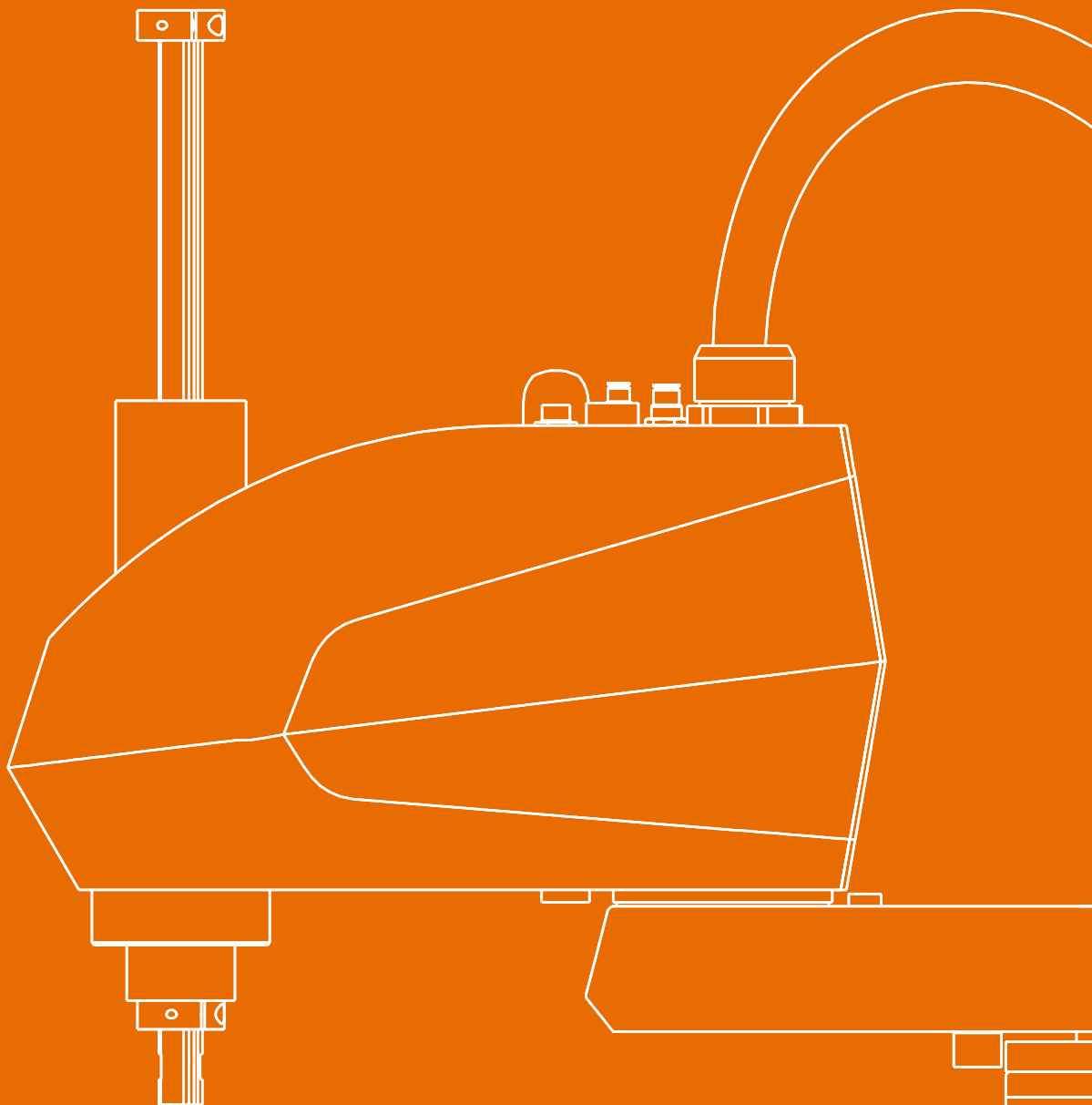


08. Class-0 oil-free

It can provide clean robot for high-precision industries of food, pharmacy and electronics, which has class-0 oil-free and pollution-free, meeting the production requirements of various industries.



PRODUCT LIST



[Python450-B6\550-B6](#)

[Python650-B6](#)

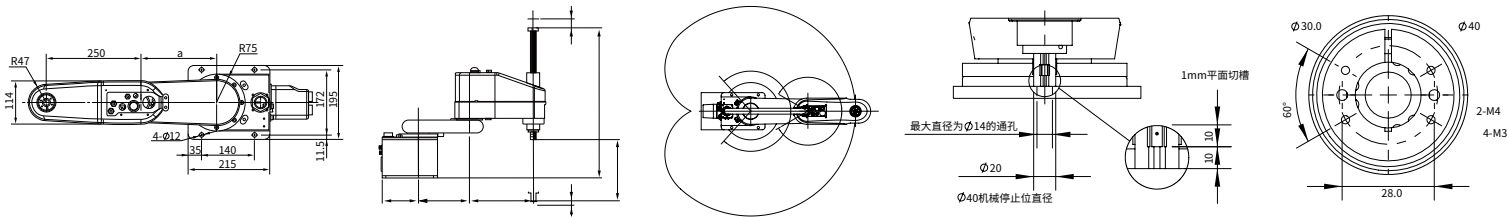
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[Python550F-B3](#)

[Python850-A10](#)

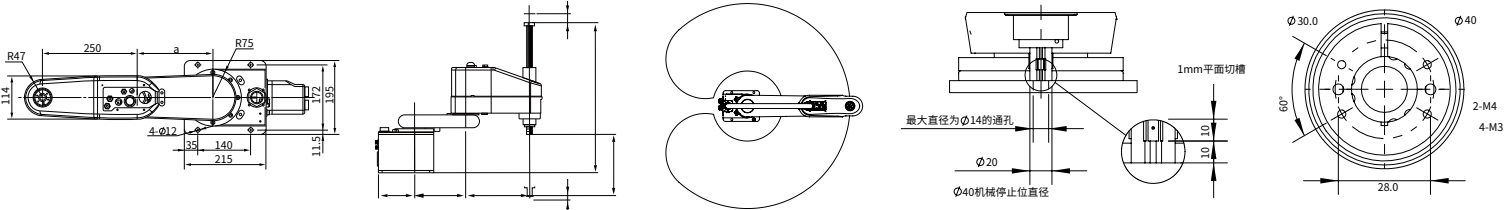
Python450-B6/550-B6

FEATURE		Python450-B6	Python550-B6
Length of manipulator	Combined length of arm 1 and 2	450mm	550mm
	Manipulator 1	200mm	300mm
	Manipulator 2	250mm	250mm
Max. operating speed	Joint 1 and 2	6600mm/s	7400mm/s
	Joint 3	1100mm/s	1100mm/s
	Joint 4	2360° /s	2360° /s
Repositioning accuracy	Joint 1 and 2	± 0.02mm	± 0.02mm
	Joint 3	± 0.01mm	± 0.01mm
	Joint 4	± 0.01°	± 0.01°
Payload	Rated	3kg	3kg
	Max.	6kg	6kg
Scope of work	Joint 1	± 132°	± 132°
	Joint 2	± 150°	± 150°
	Joint 3	240mm	240mm
	Joint 4	± 360°	± 360°
Performance	0.1kg	0.36s	0.37s
	1kg	0.40s	0.41s
	3kg	0.47s	0.48s
Motor power	Joint 1	400W	400W
	Joint 2	400W	400W
	Joint 3	100W	100W
	Joint 4	100W	100W
Electrical	Voltage	1P 220V,50/60Hz	1P 220V,50/60Hz
	Rated power	1200W	1200W
Environment	Ambient temperature	0-45℃	0-45℃
	Humidity	5-95%	5-95%
	IP Ratings	IP54	IP54
Measurement	Mounting aperture	172 × 140mm;4- φ 12	172 × 140mm;4- φ 12
	Z-axis diameter	20	20
Line	Circuit	8 input /8 output	8 input /8 output
	Gas circuit	6mm x 2, 4mm x 2	6mm x 2, 4mm x 2
Mounting	Mounting type	Table mounting	Table mounting
	Weight	24kg (excl. cable)	25kg (excl. cable)
Interface	I/O interface	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extendible 32 digital inputs and outputs	
	Ethernet	1个	1个
	USB	2个	2个
	RS232\RS485	1个	1个
	Communication protocol	Modbus-RTU/TCP、Socket	



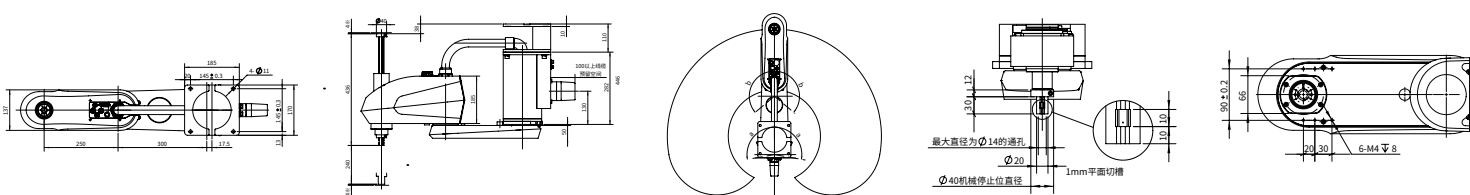
Python650-B6

FEATURE		
Length of manipulator	Combined length of arm 1 and 2	
	Manipulator 1	400mm
	Manipulator 2	250mm
Max. operating speed	Joint 1 and 2	
	Joint 3	8200mm/s
	Joint 4	1100mm/s
	Joint 4	2360° /s
Repositioning accuracy	Joint 1 and 2	
	Joint 3	± 0.02mm
	Joint 4	± 0.01mm
	Joint 4	± 0.01°
Payload	Rated	3kg
	Max.	6kg
Scope of work	Joint 1	
	Joint 2	± 132°
	Joint 3	± 150°
	Joint 4	240mm
Performance	Joint 4	
	± 360°	
	0.1kg	0.39s
	25\305\251kg	0.43s
Motor power	3kg	
	0.50s	
	Joint 1	400W
	Joint 2	400W
Electrical	Joint 3	100W
	Joint 4	100W
	Voltage	1P 220V,50/60Hz
Environment	Rated power	1200W
	Ambient temperature	0–45℃
	Humidity	5–95%
Measurement	IP Ratings	IP54
	Mounting aperture	172 × 140mm;4– ϕ 12
	Z–axis diameter	20
Line	Circuit	8 input/8 output
	Gas circuit	6mm x 2, 4mm x 2
Mounting	Mounting type	Table mounting
	Weight	26kg (excl. cable)
Interface	I/O interface	
	4 configurable digital inputs and outputs	
	8 general digital inputs and outputs	
	Re–extensible 32 digital inputs and outputs	
	Ethernet	1个
Communication protocol	USB	2个
	RS232\RS485	1个
	Modbus–RTU/TCP、Socket	



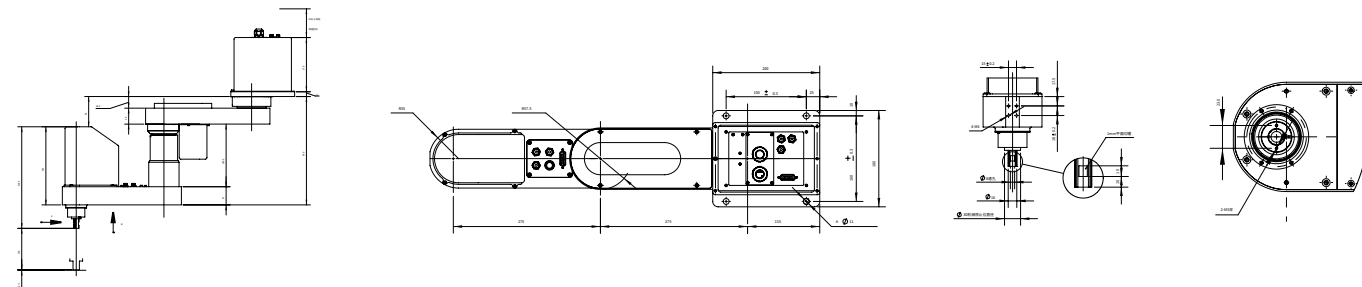
Python550C-B6

FEATURE		
Length of manipulator	Combined length of arm 1 and 2	
	Manipulator 1	300mm
	Manipulator 2	250mm
Max. operating speed	Joint 1 and 2	
	Joint 3	7400mm/s
	Joint 4	1100mm/s
	Joint 4	2360° /s
Repositioning accuracy	Joint 1 and 2	
	Joint 3	± 0.02mm
	Joint 4	± 0.01mm
	Joint 4	± 0.01°
Payload	Rated	3kg
	Max.	6kg
Scope of work	Joint 1	
	Joint 2	± 105°
	Joint 3	± 145°
	Joint 4	240mm
Performance	Joint 4	
	± 360°	
	0.1kg	0.37s
	25\305\251kg	0.41s
Motor power	3kg	
	0.48s	
	Joint 1	400W
	Joint 2	400W
Electrical	Joint 3	100W
	Joint 4	100W
	Voltage	1P 220V,50/61Hz
Environment	Rated power	1200W
	Ambient temperature	0–45℃
	Humidity	5–95%
Measurement	IP Ratings	IP54
	Mounting aperture	145 × 145mm;4– ϕ 11
	Z–axis diameter	20
Line	Circuit	8 input/8 output
	Gas circuit	6mm x 2, 4mm x 2
Mounting	Mounting type	Ceiling
	Weight	26kg (excl. cable and frame)
Interface	I/O interface	
	4 configurable digital inputs and outputs	
	8 general digital inputs and outputs	
	Re–extensible 32 digital inputs and outputs	
	Ethernet	1个
Communication protocol	USB	2个
	RS232\RS485	1个
	Modbus–RTU/TCP、Socket	



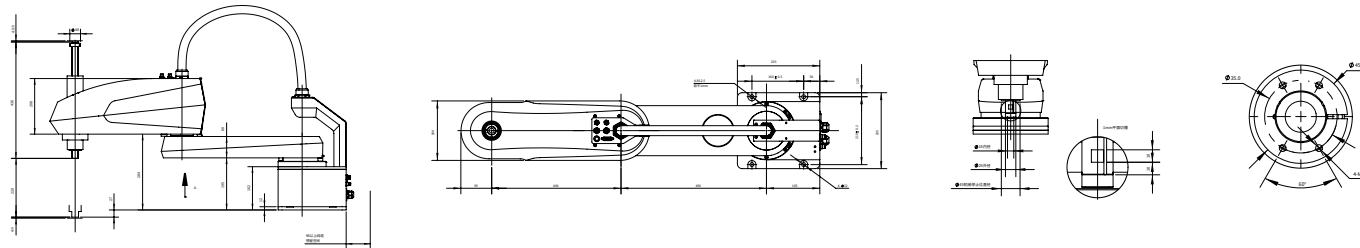
Python550F-B3

FEATURE		
Length of manipulator	Communication protocol	550mm
	Manipulator 1	275mm
	Manipulator 2	275mm
Max. operating speed	Joint 1 and 2	7400mm/s
	Joint 3	1100mm/s
	Joint 4	2600° /s
Repositioning accuracy	Joint 1 and 2	± 0.02mm
	Joint 3	± 0.01mm
	Joint 4	± 0.01°
Payload	Rated	1kg
	Max.	3kg
Scope of work	Joint 1	± 225°
	Joint 2	± 225°
	Joint 3	130mm
	Joint 4	± 720°
Performance	0.1kg	0.36s
	25\305\251kg	0.39s
	3kg	
Motor power	Joint 1	400W
	Joint 2	400W
	Joint 3	100W
	Joint 4	100W
Electrical	Voltage	1P 220V,50/60Hz
	Rated power	1200W
Environment	Ambient temperature	0-45℃
	Humidity	5-95%
	IP Ratings	IP54
Measurement	Mounting aperture	150 × 160mm;4- φ 11
	Z-axis diameter	20
Line	Circuit	8 input/8 output
	Gas circuit	4mm x 3
Mounting	Mounting type	Ceiling
	Weight	20kg(excl. cable and frame)
Interface	I/O interface	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs
	Ethernet	1个
	USB	2个
	RS232\RS485	1个
	Communication protocol	Modbus-RTU/TCP、Socket



Python850-A10

FEATURE		
Length of manipulator	Communication protocol	850mm
	Manipulator 1	450mm
	Manipulator 2	400mm
Max. operating speed	Joint 1 and 2	11000mm/s
	Joint 3	1800mm/s
	Joint 4	2400° /s
Repositioning accuracy	Joint 1 and 2	± 0.025mm
	Joint 3	± 0.01mm
	Joint 4	± 0.01°
Payload	Rated	5kg
	Max.	10kg
Scope of work	Joint 1	± 132°
	Joint 2	± 150°
	Joint 3	220mm
	Joint 4	± 360°
Performance	0.1kg	0.39s
	25\305\251kg	0.45s
	3kg	0.47s
Motor power	Joint 1	750W
	Joint 2	750W
	Joint 3	400W
	Joint 4	200W
Electrical	Voltage	1P 220V,50/60Hz
	Rated power	2300W
Environment	Ambient temperature	0-45℃
	Humidity	5-95%
	IP Ratings	IP54
Measurement	Mounting aperture	160 × 210mm;4- φ 12
	Z-axis diameter	25
Line	Circuit	8 input/8 output
	Gas circuit	6mm x 2, 4mm x 2
Mounting	Mounting type	Table mounting
	Weight	46kg (excl. cable)
Interface	I/O interface	4 configurable digital inputs and outputs 8 general digital inputs and outputs Re-extensible 32 digital inputs and outputs
	Ethernet	1个
	USB	2个
	RS232\RS485	1个
	Communication protocol	Modbus-RTU/TCP、Socket



MANTIS ROBOT SERIES



PRODUCT INTRODUCTION

Mantis adopts intelligent design, with the characteristics of small size, compact structure, small footprint, easy maintenance and high reliability, which is the most suitable robot for building small units, and can complete loading and unloading, sorting, assembly and other work with high speed and high precision. The re-positioning accuracy is $\pm 0.01\text{mm}$, which meets the requirements of high precision and high speed, thus meeting various requirements of customers.



PRODUCT CHARACTERISTICS

ROBOT RHOENIX



01. High accuracy

The production quality of the parts is stable, each axis is of full dynamic model with torque feedforward, which can improve the response and has the best re-positioning accuracy and trajectory accuracy. The cycle can be reduced through high-speed and high-precision motion, and the productivity can be significantly improved.



02. Short operation cycle

The six-axis industrial robot optimizes the acceleration and deceleration performance to minimize the working cycle of the robot, and has the optimal flexibility because of its compactness and agility.



03. Commonality

The robot has synchronous linkage and non-synchronous independent axis motions with the external axis, and has a variety of standard process packages such as 2D / 3D vision, conveyor belt tracking, sorting, etc. It can carry all kinds of fixtures and sensors, corresponding to applications in different industries such as high-precision assembly, testing, grinding, handling etc.



04. Integrated control system

The controller of Mantis Series is not only a motion controller, but also a machine control system integrated with visual processing and belt tracking; motion control module is in charge of processing and motion control of algorithms such as machine kinematics, path planning etc.; visual module includes vision calibration, module matching and image processing; tracking module matches visual processing results with the operation of the external conveyor line for dynamic tracking to realize seamless connection between the machine and vision.



05. Modular structure design

The structure of the robot adopts modular design, which is convenient for maintenance; the quick gripping mechanism makes the change of product line easy and fast.



06. Easy to use

It has a generous, simple and friendly human-machine interface, as well as high-reliable buttons and touch-screen teach pendant; users can easily and quickly complete the robot teaching, program change and other operations, which requires just a few steps to complete the motion object and range of the robot, and can also intuitively understand the production status and progress.



07. High reliability

It is firm and durable with the minimum number of parts used and the characteristics of strong reliability and long maintenance interval; With the high protection level, it is suitable for the harsh environment such as oil mist, dust, humidity and high temperature, as well as the application occasions with high working intensity, harsh environment and high product accuracy and consistency requirements.



08. Class-0 oil-free

It can provide clean robot for high-precision industries of food, pharmacy and electronics, which has class-0 oil-free and pollution-free, meeting the production requirements of various industries.



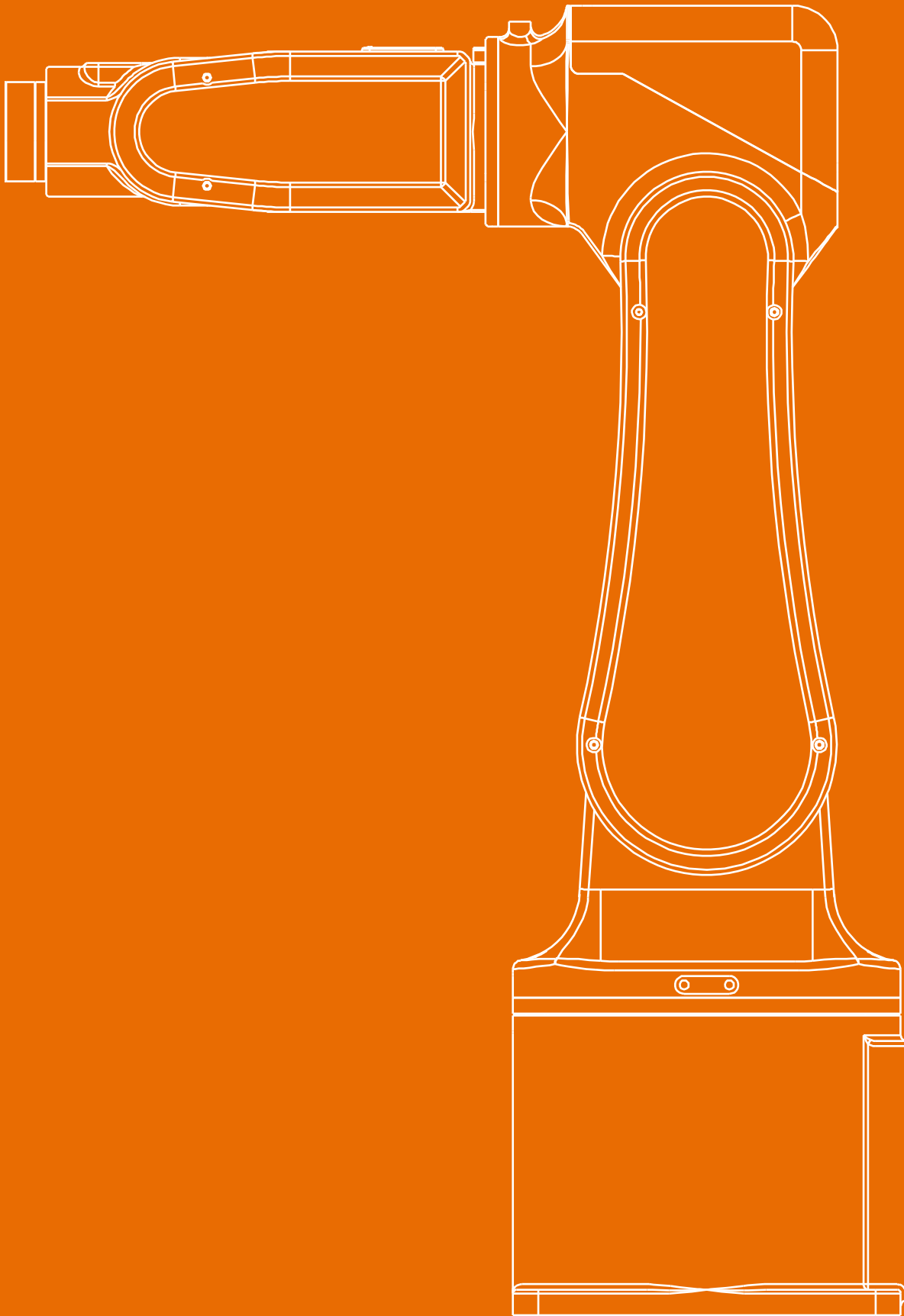


PRODUCT LIST

Mantis570-A3

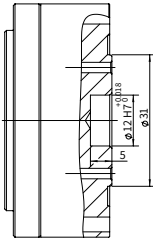
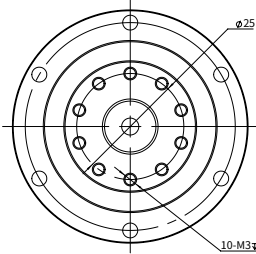
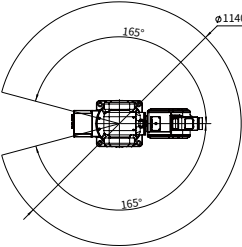
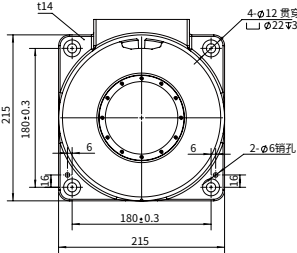
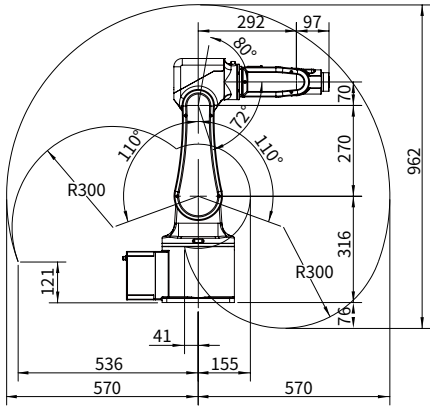
Mantis830-A6

Mantis1000-A7



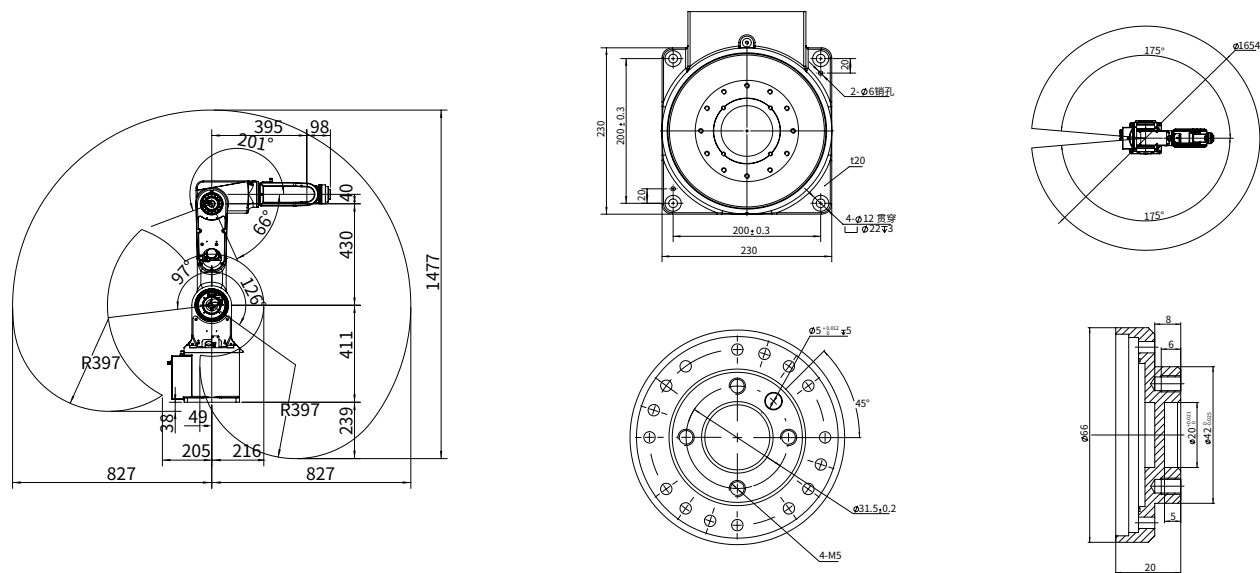
Mantis570-A3

FEATURE			
Specification	Load	3KG	
	Scope of work	570mm	
	Number of axes	6	
Motion	Axis 1 rotation	+165° ~ -165°	407° /s
	Axis 2 arm	+110° ~ -110°	407° /s
	Axis 3 arm	+80° ~ -72°	444° /s
	Axis 4 wrist	+160° ~ -160°	444° /s
	Axis 5 bending	+100° ~ -100°	487° /s
	Axis 6 flip	+400° ~ -400°	780° /s
Characteristics	Integrated signal source	Set the wrist with 10 signals	
	Integrated gas source	Set 4 gas circuits (5 bar) at wrist	
	Re-positioning accuracy	0.02 mm	
	Robot mounting	Any angle	
Electrical Connection	IP ratings	IP54	
	Voltage	1P AC220V ± 10% 50/60HZ	
	Rated power	1.6KW	
Physical characteristics	Rated power of transformer	No transformer	
	Power consumption	1.6KW	
	Robot base size	215mm × 215mm	
	Robot height	975mm	
Environment	Weight	35KG	
	Relative humidity	Up to 95%	
	Noise level	Up to 70 dB (A)	
	Safety	Safety stop/ emergency stop/ safety circuit monitor/ start device	
	Radiation	EMC / EMI shielded	

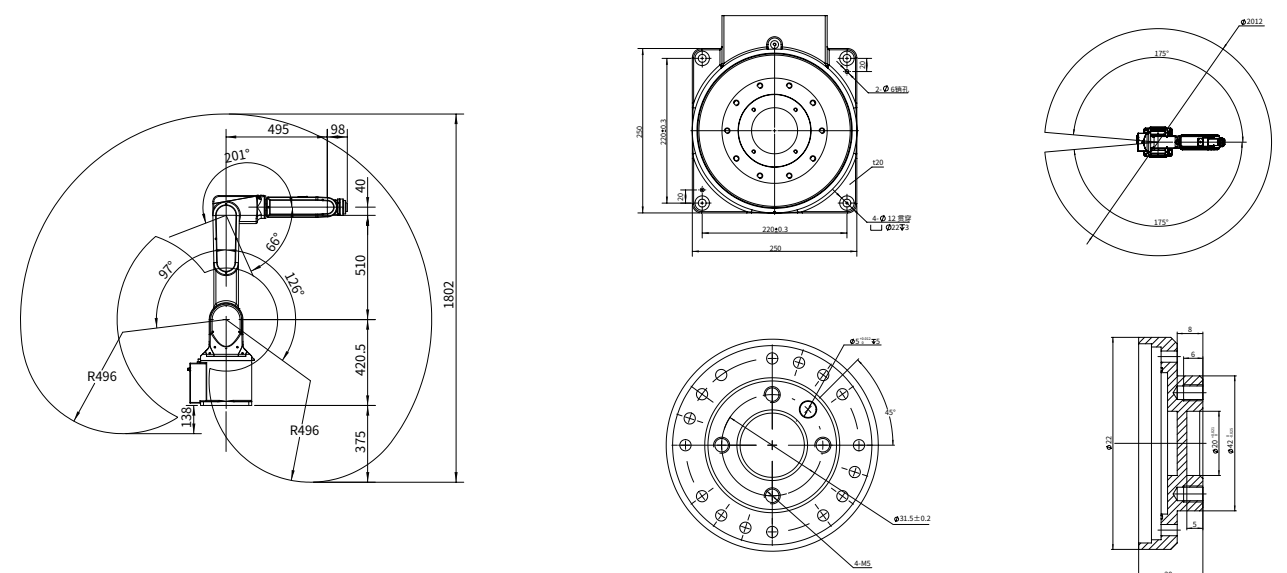


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FEATURE		
Specification	Load	6KG
	Scope of work	830mm
	Number of axes	6
Motion	Axis 1 rotation	+175° ~ -175° 288° /s
	Axis 2 arm	+97° ~ -126° 240° /s
	Axis 3 arm	+201° ~ -66° 415° /s
	Axis 4 wrist	+180° ~ -180° 421° /s
	Axis 5 bending	+120° ~ -120° 487.5° /s
	Axis 6 flip	+360° ~ -360° 765° /s
	Characteristics	Integrated signal source
Integrated gas source		Set 4 gas circuits (5 bar) at wrist
Re-positioning accuracy		0.02 mm
Robot mounting		Any angle
IP ratings		IP54
Electrical Connection	Voltage	1P AC220V ± 10% 50/60HZ
	Rated power	2.8KW
	Rated power of transformer	No transformer
Physical characteristics	Power consumption	2.8KW
	Robot base size	230mm × 230mm
	Robot height	1334mm
	Weight	59KG
Environment	Relative humidity	Up to 95%
	Noise level	Up to 70 dB (A)
	Safety	Safety stop/ emergency stop/ safety circuit monitor/ start device
	Radiation	EMC / EMI shielded

[illegible]

FEATURE		
Specification	Load	7KG
	Scope of work	1000mm
	Number of axes	6
Motion	Axis 1 rotation	+175° ~ -175° 240° /s
	Axis 2 arm	+97° ~ -126° 225° /s
	Axis 3 arm	+201° ~ -66° 407° /s
	Axis 4 wrist	+180° ~ -180° 389° /s
	Axis 5 bending	+120° ~ -120° 487.5° /s
	Axis 6 flip	+360° ~ -360° 765° /s
Characteristics	Integrated signal source	Set the wrist with 10 signals
	Integrated gas source	Set 4 gas circuits (5 bar) at wrist
	Re-positioning accuracy	0.02 mm
	Robot mounting	Any angle
Electrical Connection	IP ratings	IP54
	Voltage	1P AC220V ± 10% 50/60HZ
	Rated power	3.2KW
	Rated power of transformer	No transformer
Physical characteristics	Power consumption	3.2KW
	Robot base size	250mm × 250mm
	Robot height	1523.5mm
	Weight	66KG
Environment	Relative humidity	Up to 95%
	Noise level	Up to 70 dB (A)
	Safety	Safety stop/ emergency stop/ safety circuit monitor/ start device
	Radiation	EMC / EMI shielded





CONTROLLER

The controller of Robotphoenix is not only a motion controller, but also a machine control system which integrates visual processing and belt tracking.

Robotphoenix controller realizes the control of any axis, and realizes the multi-robot sharing of visual information without external communication; It uses a simple UI operation interface, which can achieve one-stop completion from robot to vision.

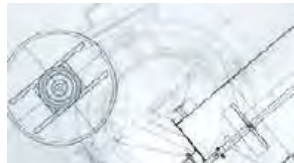
The controller supports RS232/485,TCP/IP self-defining communication, compatible with EtherCAT, Modbus485, Modbus TCP standard bus communication; Motion control module is in charge of processing and motion controlling algorithms of machine kinematics, path planning and others; Visual module includes vision calibration, template matching and image processing; Tracking module matches visual processing results with external transport line operation, to perform dynamic tracking and achieve seamless docking between machine and vision.

The machine control system integrates command editing, vision calibration, template matching and visual parameter setting, belt calibration and other functions, and can realize the operation and configuration of the machine and vision without other auxiliary tools.



VISUAL MODULE

The Robotphoenix control system contains built-in vision module, which supports plane vision (2D vision) and stereo vision (3D vision).



2D vision

It uses image sensor to collect planar two-dimensional image, and according to the collected information (planar information such as area, shape, texture, color etc.), it uses 2D vision algorithm to calculate the corresponding results, which is finally used in applications such as practical detection, measurement and control etc.

Visual module based on deep learning

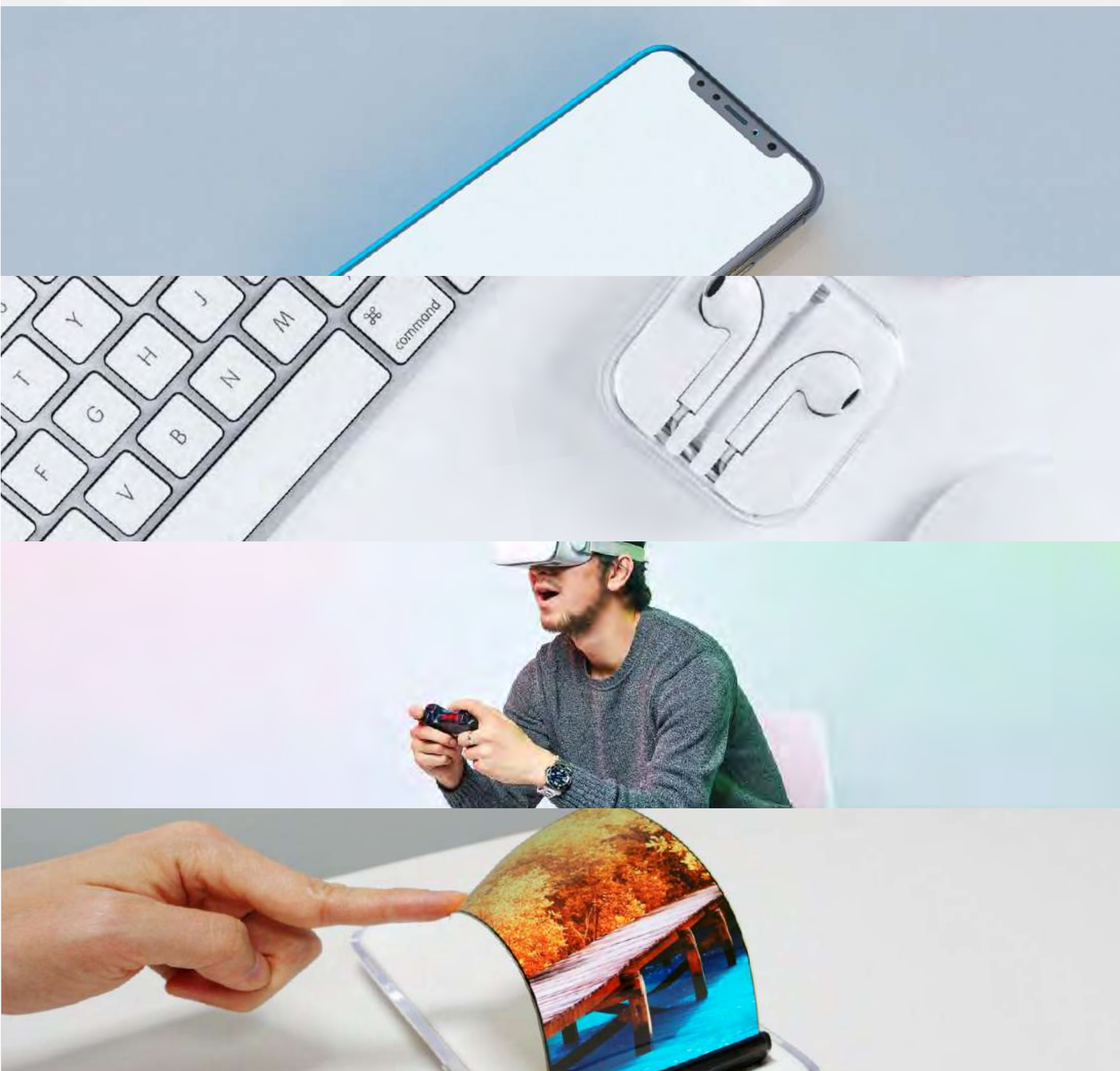
Based on deep learning of image processing technology, it makes innovation from the aspect of algorithm principle, and uses self-developed algorithm to complete image classification, target detection, image segmentation and anomaly detection with high quality and efficiency, so as to meet the basic needs of the industry and customized needs of users. It can be applied to stack detection, defect detection, product identification and classification, missing inspection, workpiece counting, multi-class object detection, tight segmentation etc.

3D vision

It uses 3D camera or 3D sensor to collect the 3D information of the object and get the "point cloud" of the object. According to the obtained point cloud data, it uses 3D algorithm and 3D features to calculate the required results, and guides the robot or control automation device to complete the corresponding work.

It uses 3D vision to grab scattered materials, detect deep objects, 3D defect detection, 3D measurement, etc., which can be widely used in industries such as food, beverage, pharmaceutical, chemical industry, building materials, cosmetics, metal processing, electronic manufacturing, packing, automobile manufacturing etc.

INDUSTRY APPLICATION



ELECTRONIC, PANEL

Robotphoenix robot can be used in processes of electronic products such as the assembly, arrangement, handling, sorting, packing and boxing etc.

Parallel receiving system of stamping parts

The device has the functions of detecting the position and state of the stamping parts, robot grabbing the stamping parts and putting them into the tray, and automatic loading and unloading of the tray, which covering efficiency can reach 1000 pieces / hour. It has high precision, high speed and wide working scope, which realizes the comprehensive solution for high-order requirements such as efficiency and security etc.

Transfer system of stamping parts

The system can be compatible with the transfer of stamping parts of different specifications and models, and can transfer the scattered or disordered stamping parts to other conveying lines or fixtures in an orderly arrangement through parallel robot and visual tracking system, with an efficiency of 50-60 pieces / min.

Cell phone screen handling system

The system can complete a series of operations, such as splitting, sorting, viscose, handling etc. The clean version of Robotphoenix robot meets the needs of dust-free, pollution-free and static electricity-free, and the speed can reach 30 tablets / min, which greatly improves the production efficiency of the enterprise.



Shell and rocker loading system

The system is suitable for six types of U-L covers and trays, realizes the splitting and stacking of trays through the splitting and stacking mechanism, and also realizes the automatic picking, placing and loading of materials through the parallel robot and visual tracking system, which picking and placing efficiency can reach 70-100 pieces / min.

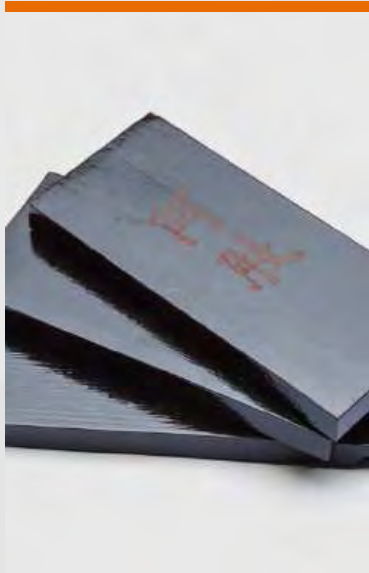
PCB arranging system

The system is suitable for two types of PCB board and blister box, which realizes the splitting and stacking of trays through the splitting and stacking mechanism, and also realizes the automatic picking and placing of PCB board and packing through parallel robot and visual positioning of blister box.



FOOD, MEDICINE

Robotphoenix robot can be used in the handling, sorting, boxing and packing of various kinds of food in bags, boxes and bottles. Clean version can be provided, which conforms to the production hygiene and quality management standard of food and medicine.



Forming device for croissant

The device solves the problem of dough forming in bread factory, which can bend the cylindrical dough into "moon", "open horn" and "lap horn" etc.



Automatic bottle packing system

A parallel packing robot can meet the production speed of 126 bottles / min in the first filling process, and can complete the packing of a whole box of products at one time by means of the lane separation device before packing. At the same time, it can be compatible with a variety of products, which saves manpower and improves the efficiency of the production line.

Automatic packing system for donkey-hide gelatin

The system can complete a series of actions such as automatic packing at speed of 240 pieces per minute. Replacing manpower, it greatly improves the production efficiency of enterprise.

Automatic arranging system for donkey-hide gelatin

The system could automatically place the incoming products onto the plate in a required pattern, which is suitable for all kinds of bulk food. The speed can reach 240 pieces per minute, which can improve the production efficiency by saving manpower.

Dough tray alignment

When the trays with dough are used as the incoming material, its posture is disordered, which will lead to blocking when it enters the cold storage. The vision system of the device can accurately identify the tilt angle, position, etc. of the tray, and realize the fast arrangement of the tray at the speed of 80 trays / min, so that they can enter the cold storage neatly.



Automatic arranging system for infusion bag

It meets the requirements of automatic placing and arranging in the plate, suitable for non-PVC infusion bag in 100ml, 250ml, 500ml, 1000ml and 3000ml etc. The speed can reach 150 bags per minute. Even it grabs the 3000ml infusion bag, the speed can still reach 60 bags/min.



Automatic post packing system for medical consumables

The device realizes the transportation, confluence, flap, visual inspection and automatic packing of dual-bag syringes; the single cycle of disposable sterile syringe ≤ 14 plates/min. It can realize the box unpacking and positioning of the box conveying, the whole-box conveying and the automatic delivery of the certificate; it also realizes the packing of the full box, the screening of the unqualified full box, the weighing and the subsequent quantitative finishing of cartons.



Automatic packing system for bagged drugs

The production line of fully automatic small bagged packing can meet the requirements of single packing of 0.5g-3g, medium package of 20 bags / package, and the output can reach 20000 packages per hour, realizing the fully automatic packing process from single package to medium package of 20 bags, online printing and scanning of barcode and automatic information input of medium package of 20 bags; it realizes the weight detection of single bag, the elimination of unqualified products, the counting and automatic packing of medium package of 20 bags. The production process can ensure accurate quantity and complete packing, accurately eliminate the unqualified products, and finally achieve automatic packing, which can meet the packing and quality standards of formula particles.



ENERGY, DAILY CHEMICAL

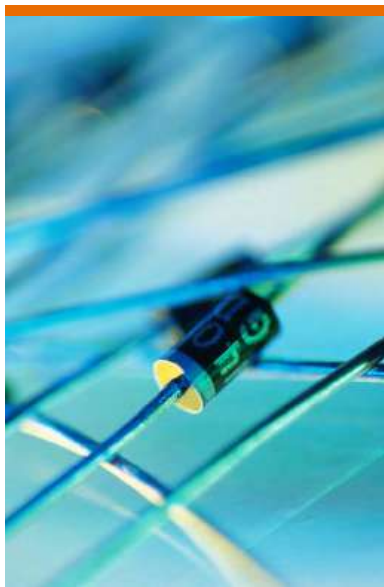
The Robotphoenix robots can be used in the process of gluing, finishing, alignment, handling and packing of energy and daily chemical products.

Automatic testing and sorting system for power battery

The system can be used for high and low voltage test sorting of 26650 cylindrical power battery cells, compatible with 18650, 21700 and other cylindrical power battery cells, and can sort 6000 cells per hour, that is, 62.5 battery boxes (96 cells / box) per hour, which greatly improves the production efficiency.

Automatic packing system for capacitor

A robot can meet the packing speed of 70–90 cans/min for a single production line. A special gripper is used to clamp the capacitors and can be easily changed to adapt different types and sizes of capacitors. With strong compatibility and high speed of changing, it can response quickly and amazingly in the workshop and production line, greatly improving the production efficiency of enterprise.



Wet Wipes Lids Applicator

The system can complete a series of actions such as automatic un-lidding, labeling, gluing, lidding etc. The lidding accuracy can reach 1mm, which speed can reach 90–100 bags/min.



Disposable kit packing

The system is developed for the disposable kit of such as hyaluronic acid and essence etc. The high-performance automatic production line is mainly used for the loading of disposable boards with the speed up to 20 boxes/min, which greatly improves the efficiency of the production line, reduces the labor intensity of workers, and reduces the operation cost of the enterprise.



Bottle unscrambling of cosmetics

The system realizes the temporary storage of empty bottles and uniform feeding, the preliminary arrangement and visual positioning detection of empty bottles, the replenishment and positioning of the puck, and the holding of empty bottles into the puck. There is no scratch on the bottles during the whole unscrambling process, which efficiency can reach 100–120 / min.



LOGISTICS, SORTING

Automatic sorting system for goods

The system can realize rapid parcel sorting for express industry. According to the size, features and bill barcode information, each robot can reach sorting speed of 2000 pieces/h by using 2/3D visual fusion technology.

AGV logistics turnover

It is used for the logistics turnover of materials with tray, which is composed of laser navigation system in natural environment, steering wheel traction and steering drive system, safety system and power supply system etc. with the characteristics of high navigation accuracy, reliable performance and high cost-performance.

Stereoscopic warehouse

The stereoscopic warehouse is mainly composed of shelves, aisle stacker, delivery device, automatic control and management system (WMS / WCS). The auxiliary equipment for delivery and the aisle stacker can complete the warehousing operation under the computer management, implement the integrated warehouse management and network with the superior management system, realize the management modernization, access automation, automatically complete the access operation of goods according to the instructions, and can automatically manage the goods in stock.

CUSTOMER SERVICE

With the continuous development of Robotphoenix's automation, its service network has gradually covered more than 100 countries and regions in the world, and has established partnership with more than 100 agents globally to provide users with continuous follow-up service with pre-sales and after-sales focused.

We put forward the concept of "active service", and no longer satisfied with the rapidity of passive maintenance. We have set up a follow-up system of after-sales service calls to track the whole process of satisfaction for after-sales service, actively help customers maintain the device and find out the aspects that need to be improved, so as to continuously improve the products.

Program support

Robotphoenix's technical team will conduct a comprehensive evaluation for customers from the start of cooperation, customize the best robot solution, and have professional engineers to provide analysis, simulation and test services for the project in all aspects of project operation, so as to ensure the smooth and efficient implementation of the solution.



Technical support

The better use of products is inseparable from a professional and efficient technical support team, so Robotphoenix continues to provide users with open and friendly technical guidance. The support provided includes device mounting and debugging, on-site service, robot expansion, upgrading and transformation, remote technical support, etc.



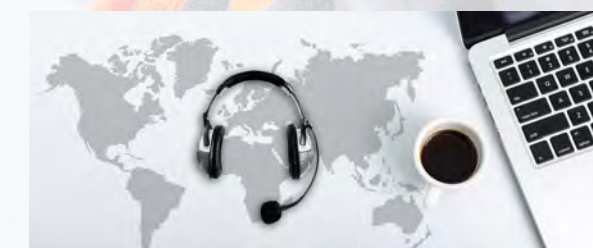
Technical training

In order to improve the understanding and application of our partners, we will provide technical training of robot from shallower to deeper on a regular basis. According to the different needs of our partners, we can provide standardized and customized training, perfectly combine theory with practice, and make them become technical experts in the field of robots.



After-sale service

Robotphoenix provides the fastest robot after-sales service mechanism. Customers can contact our professionals by telephone or email for online service, so that we can provide customers with the most professional 7*24h after-sales service.



📍 Jinan Headquarters
 📍 Hangzhou branch
 📍 Shanghai branch
 ■ Domestic sales
 📍 Country of exportation