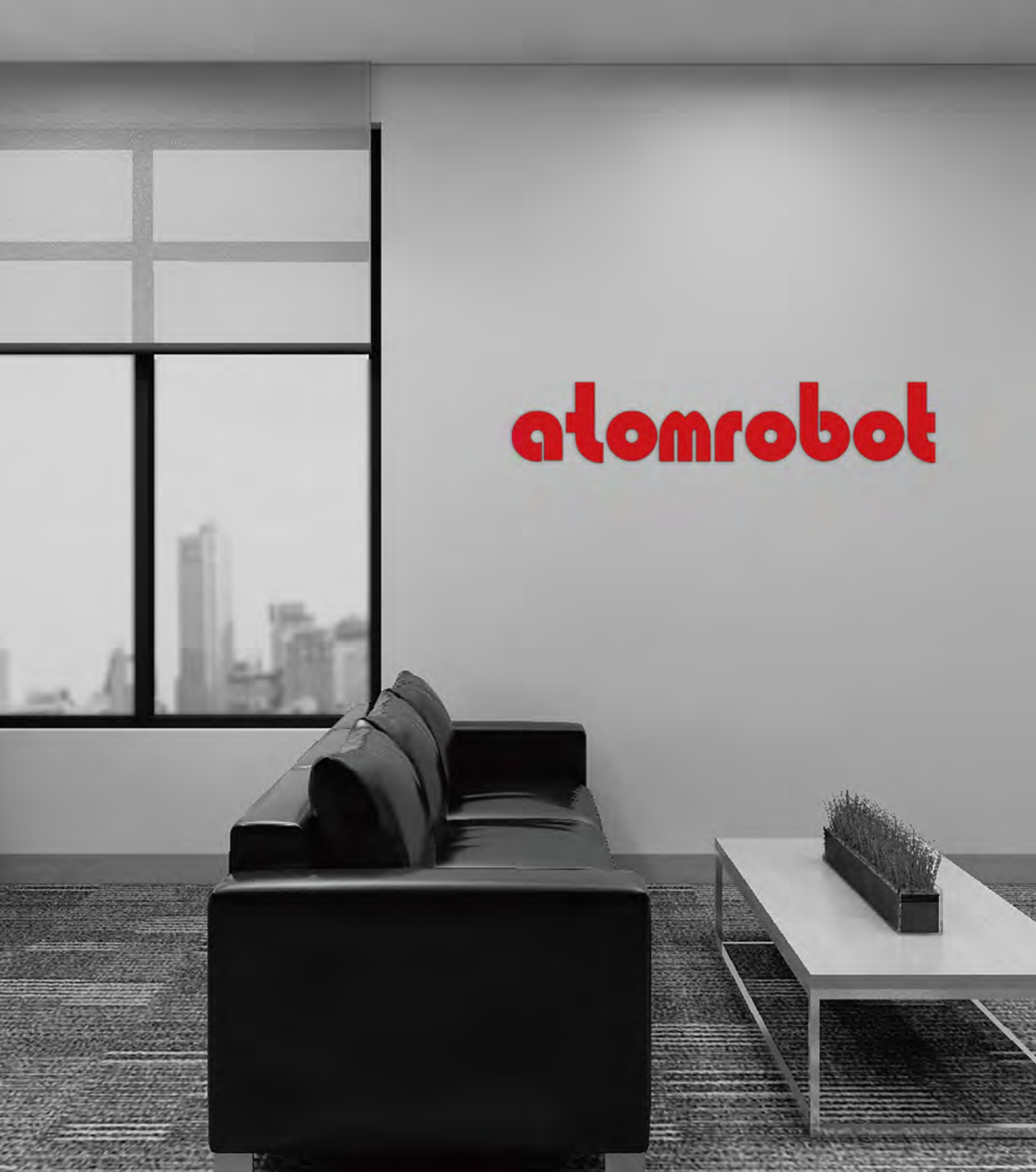


Atomrobot Intelligent Manufacturing Solutions

Parallel Robot Expert
Intelligent Manufacturing Explorer

atomrobot



atomrobot

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/ Company Profile

Mission

Free hands with technology

Vision

Become the most reliable industrial robot service provider in the world

Values

Rely on excellent products and services to stay in the market for a long time
Trust each other, take responsibility and move forward
Believe that talents are the source of power to create infinite possibilities
Change the world through continuous innovation

As the leading parallel robot specialist and intelligent manufacturing explorer in the industry, Atomrobot takes "Free hands with technology" as the mission to focus on the R&D and innovation of parallel Delta robot, high-speed SCARA robot and other intelligent manufacturing technologies. With many years of technical advantages, fully independently researched and developed high-performance general control system, AI+3D vision system and complete and rich core product matrix, the Company has been committing to providing single machines, workstations and automation, intelligent system solutions, process solutions and technical services for integrators in the food, pharmaceutical, daily chemical, 3C, PCB, new energy and other sub-sectors, helping clients to achieve cost reduction and profit increase.

The Company is headquartered in Tianjin, with subsidiaries established in Suzhou, Kunshan, Nanjing, Jiangsu, and Shenzhen in Guangdong.

Adhering to the brand spirit of "Concentration, Innovation and Ingenuity", up to now, the Company has served for more than 600 large-scale enterprises and has sold more than 6,000 units/sets. Our business covers more than 20 countries and regions, won the acknowledgment and trust all over the world.

/ Honorary Titles and Prizes

75

invention patents

69

utility model patents

24

software copyrights

9

design patents

NATIONAL HIGH-TECH ENTERPRISE TIANJIN GAZELLE ENTERPRISE

The Company has successively passed ISO9001 Quality Management Certification, European Union CE Certification and China CR Certification for entire series products of core products of parallel robot.

Part 1 About Atomrobot

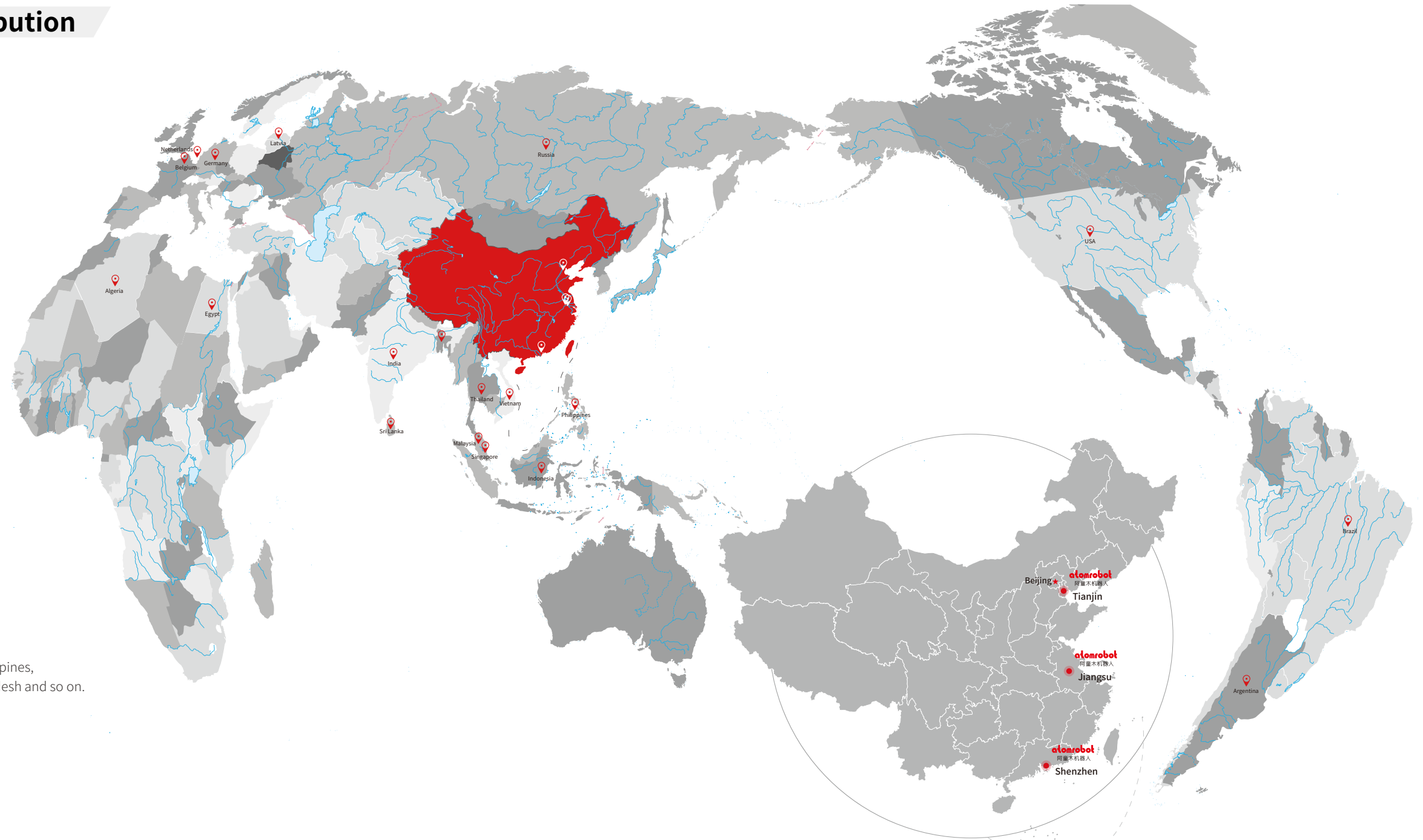
Global Business Distribution

600+
scale enterprise
clients

6000+
More than
6,000 sets sold

20+
countries clients
distribution

Atomrobot products and business cover more than 20 countries and regions such as Belgium, Germany, Japan, Korea, Thailand, Vietnam, the United States, Netherlands, Singapore, Philippines, Argentina, Brazil, Malaysia, India, Russia, Bangladesh and so on.



Development Path



ATOMROBOT CORE PRODUCTS MATRIX



Part 2 Core Products

PRODUCT ADVANTAGE



High Speed

Under the testing trajectory (25-305-25) of international standard, the cadence can be stabilized at a maximum of 600 cycles/min.

An individual robot can save 3 ~ 5 workers and replace 2 ~ 4 conventional sorting equipment.



High Precision

Even under the condition of high speed (over 300 cycles/min), the precision can still reach ± 0.02 mm.

It is more applicable to high-precision sorting and assembly under the condition of high speed.



High Durability

It is of high-precision sliding Hooke joints, and by giving consideration to high precision, high applicability and specialization, and measured wear-resistance is as long as 20,000 hours.

The assembly of core component parts becomes convenient, the load capacity is strong and service life can be up to 8 years.



High Stability

The manipulator is maintenance-free throughout the year. No extra lubrication maintenance is required for each joint and pre-tensional structure is clearance free.

The structural design is simple and the connection of assembly is reliable.

The logo for 'atomrobot' is displayed in a bold, red, lowercase sans-serif font. It is positioned on the side of a white, cylindrical component of a robotic arm. To the right of the logo, there is a red diamond-shaped symbol containing a white cross and the number '1'.

COST-EFFECTIVE CHOICE FOR SIMPLE SCENARIOS

The 2 DOF high- speed parallel robot is designed for plane handling and assembly of light material, it does not need to be equipped with vision and relies on sensor positioning to complete the plane operation.



High Speed

Under the testing trajectory (25-305-25) of international standard, the cadence can be stabilized at a maximum of 350 cycles/min.



High Precision

Under the condition of high speed (300 cycles/min and above), the precision can be up to ± 0.02 mm.



High Stability

It is of zero-backlash joints, extra lubrication maintenance becomes unnecessary, which allows maintenance-free throughout the year.

D2 SERIES

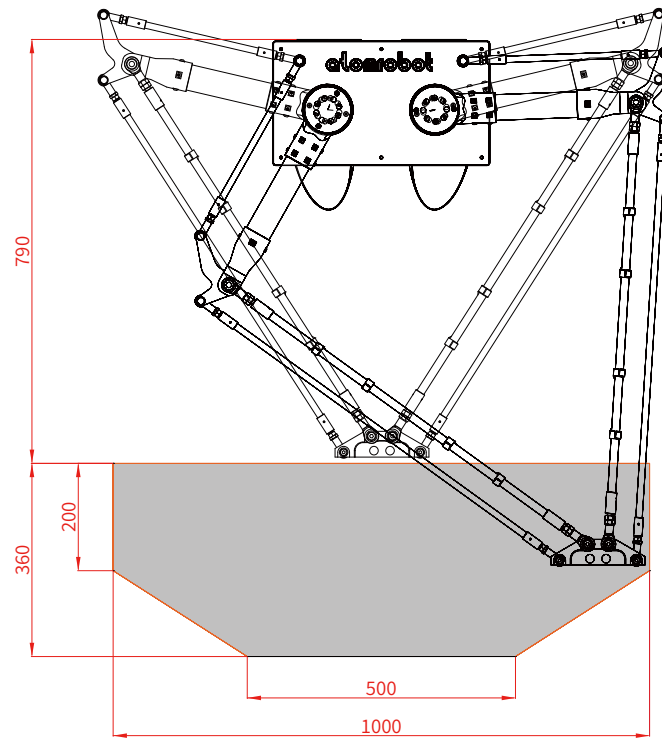
Models and Parameters



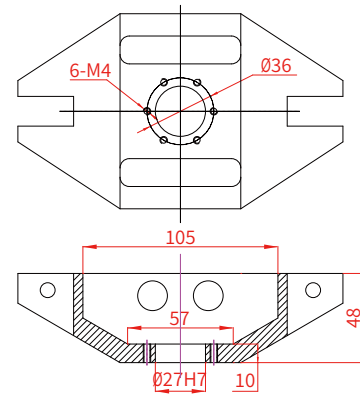
Model		D2-1000-P5	D2-1000-P15	D2-1300-P15	DD2-1000-P35	DD2-1200-P50
Axes		2	2	2	2	2
Max Payload		5kg	15kg	15kg	35kg	50kg
Manipulator	Weight	55kg	60kg	60kg	170kg	230kg
	Reach	1000mm	1000mm	1300mm	1000mm	1000mm
Repeatability	Position	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm
	Rotation	——	——	——	——	——
Maximum cadence		350pp/min	300pp/min	300pp/min	250pp/min	250pp/min
Rotation range		——	——	——	——	——
Allowable maximum moment of inertia		——	——	——	——	——
Angle range of actuated arm	Up	34°	25°	25°	25°	25°
	Down	75°	77°	77°	77°	77°
Power supply		Three-phase 380VAC -10%~+10%, 49~61HZ				
Power capacity		10KVA				
Rated power		4kw	6kw			
Storage temperature		-10°C~70°C				
Working environment		-10°C~50°C, RH≤80%				
Protection rating		IP55				

D2-1000-P5

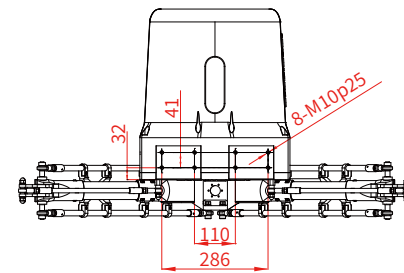
Overall Dimensions and Movement Range



Flange

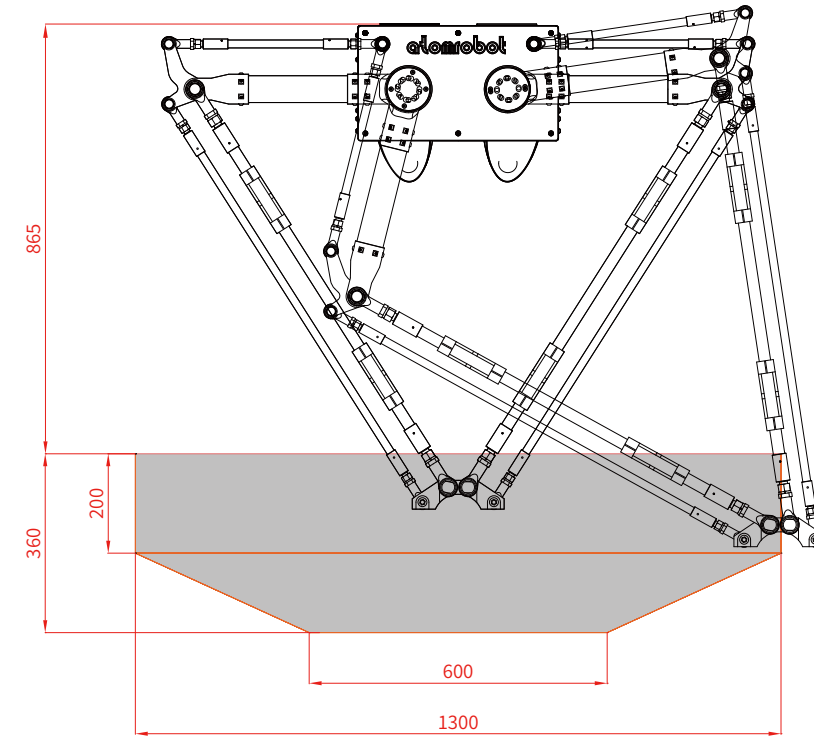


Base Installation

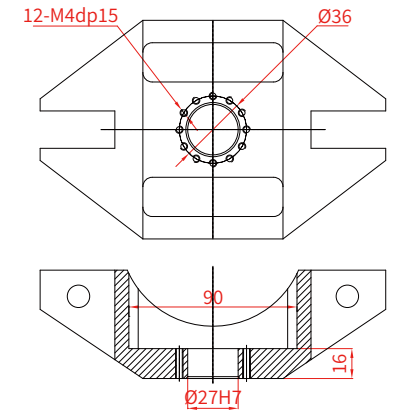


D2-1300-P15

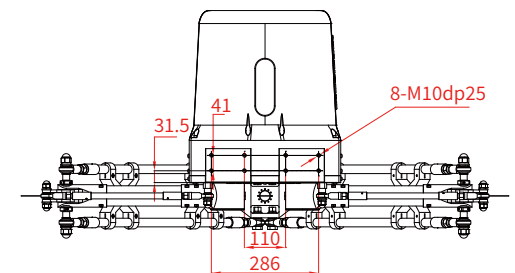
Overall Dimensions and Movement Range



Flange

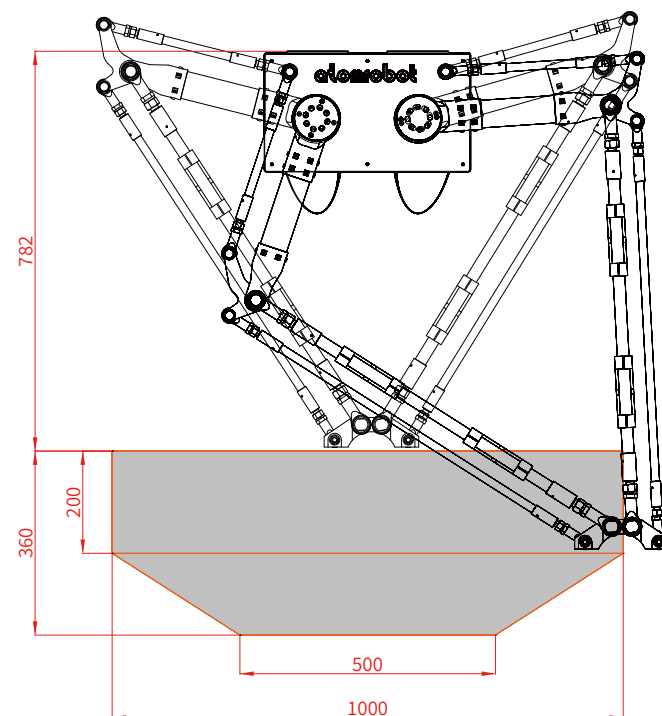


Base Installation

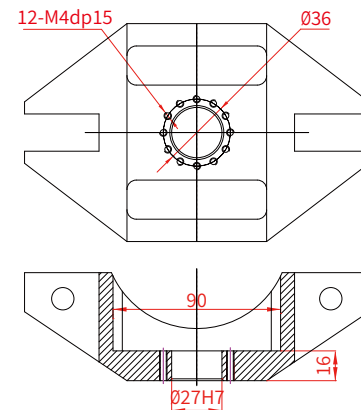


D2-1000-P15

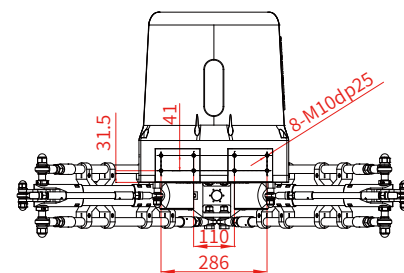
Overall Dimensions and Movement Range



Flange

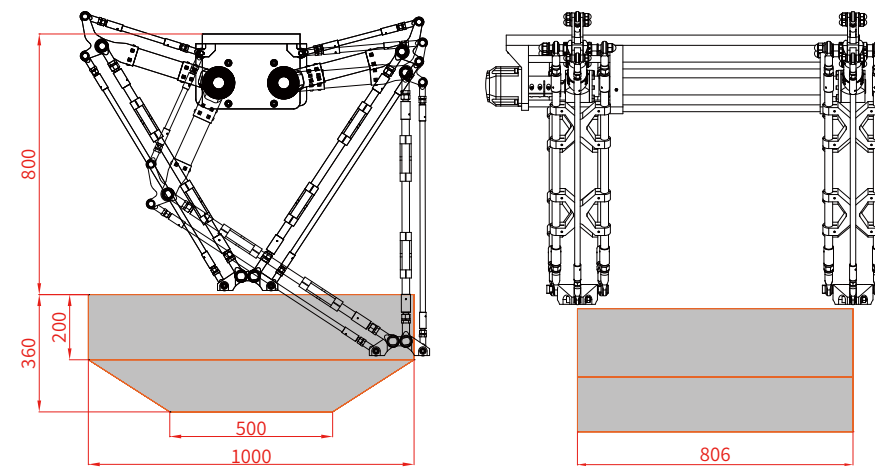


Base Installation

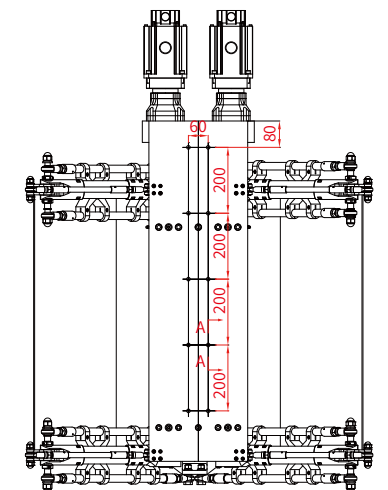


DD2-1000-P30

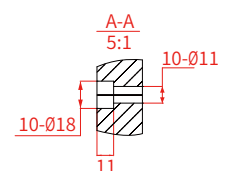
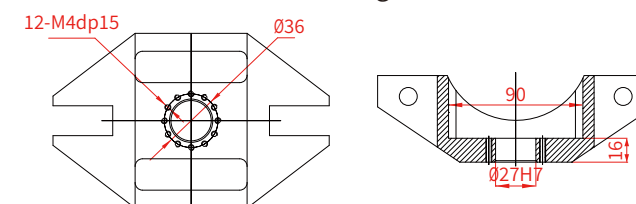
Overall Dimensions and Movement Range



Base Installation



Flange



NEW GENERATION OF CLASSIC BEST-SELLING PRODUCTS

The structure of classical high speed parallel robot allows functional features of translation along the X, Y and Z-axes in three-dimensional space and rotation around the Z-axis, with a high-precision machine vision system configured, it is applicable to high-speed production operations in the food, pharmaceutical and other industries, to be mainly used for the assembly, handling and sorting of light, small and random materials.



High Speed

Under the testing trajectory (25-305-25) of international standard, the cadence can be stabilized at a maximum of 600 cycles/min.



High Precision

Under the condition of high speed (300 cycles/min and above), the precision can be up to ± 0.02 mm.



High Stability

The manipulator is maintenance-free throughout the year. No extra lubrication maintenance is required for each joint and pre-tensional structure is clearance free.

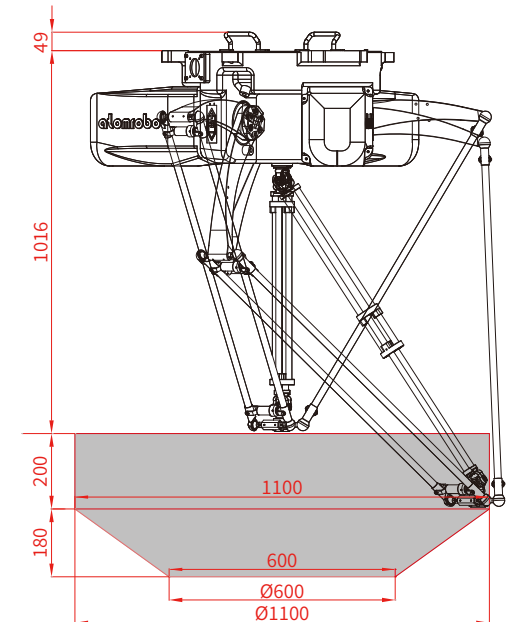
D3PZ-1100-P3

Models and Parameters

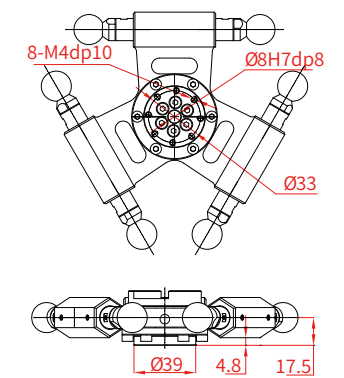


Model	D3PZ-1100-P3	
Axes	3+1	
Max Payload	3kg	
Manipulator	Weight	90.5kg
	Reach	1100mm
Repeatability	Position	0.05mm
	Rotation	0.1°
Maximum cadence	600pp/min	
Rotation range	$\pm 360^\circ$	
Allowable maximum moment of inertia	$31 \times 10^{-4} \text{kg} \cdot \text{m}^2$	
Angle range of actuated arm	Up	24.5°
	Down	73.5°
Power supply	Three-phase 380VAC -10%~+10%, 49~61HZ	
Power capacity	10KVA	
Rated power	6.1kw	
Storage temperature	-10°C~70°C	
Working environment	-10°C~50°C, RH \leq 80%	
Protection rating	IP54/IP67	

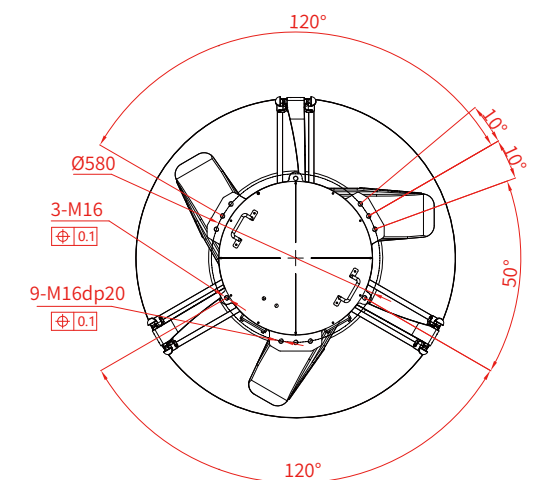
Overall Dimensions and Movement Range



Flange



Base Installation



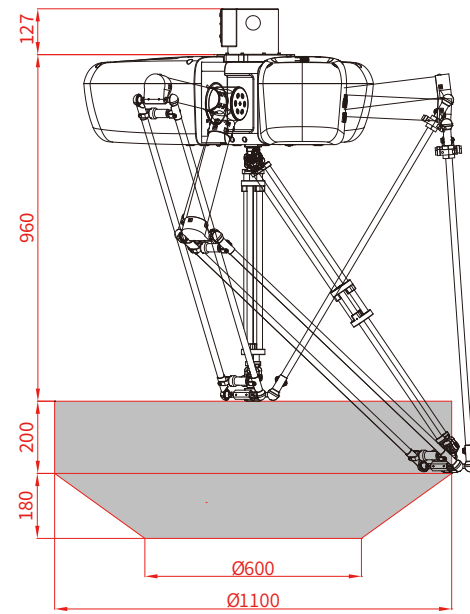
D3P-1100-P3

Models and Parameters

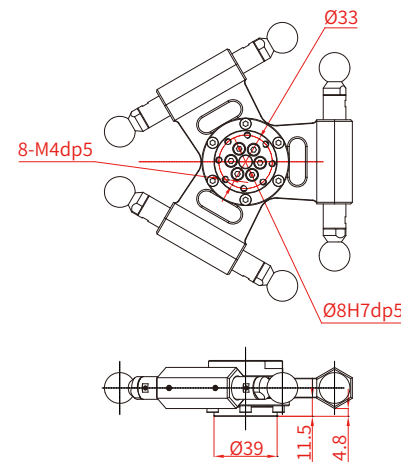


Model		D3P-1100-P3
Axes		3+1
Max Payload		3kg
Manipulator	Weight	90.5kg
	Reach	1100mm
Repeatability	Position	0.05mm
	Rotation	0.1°
Maximum cadence		600pp/min
Rotation range		±360°
Allowable maximum moment of inertia		$31 \times 10^{-4} \text{kg} \cdot \text{m}^2$
Angle range of actuated arm	Up	24.5°
	Down	73.5°
Power supply		Three-phase 380VAC -10%~+10%, 49~61HZ
Power capacity		10KVA
Rated power		6.1kw
Storage temperature		-10°C~70°C
Working environment		-10°C~50°C, RH≤80%
Protection rating		IP55

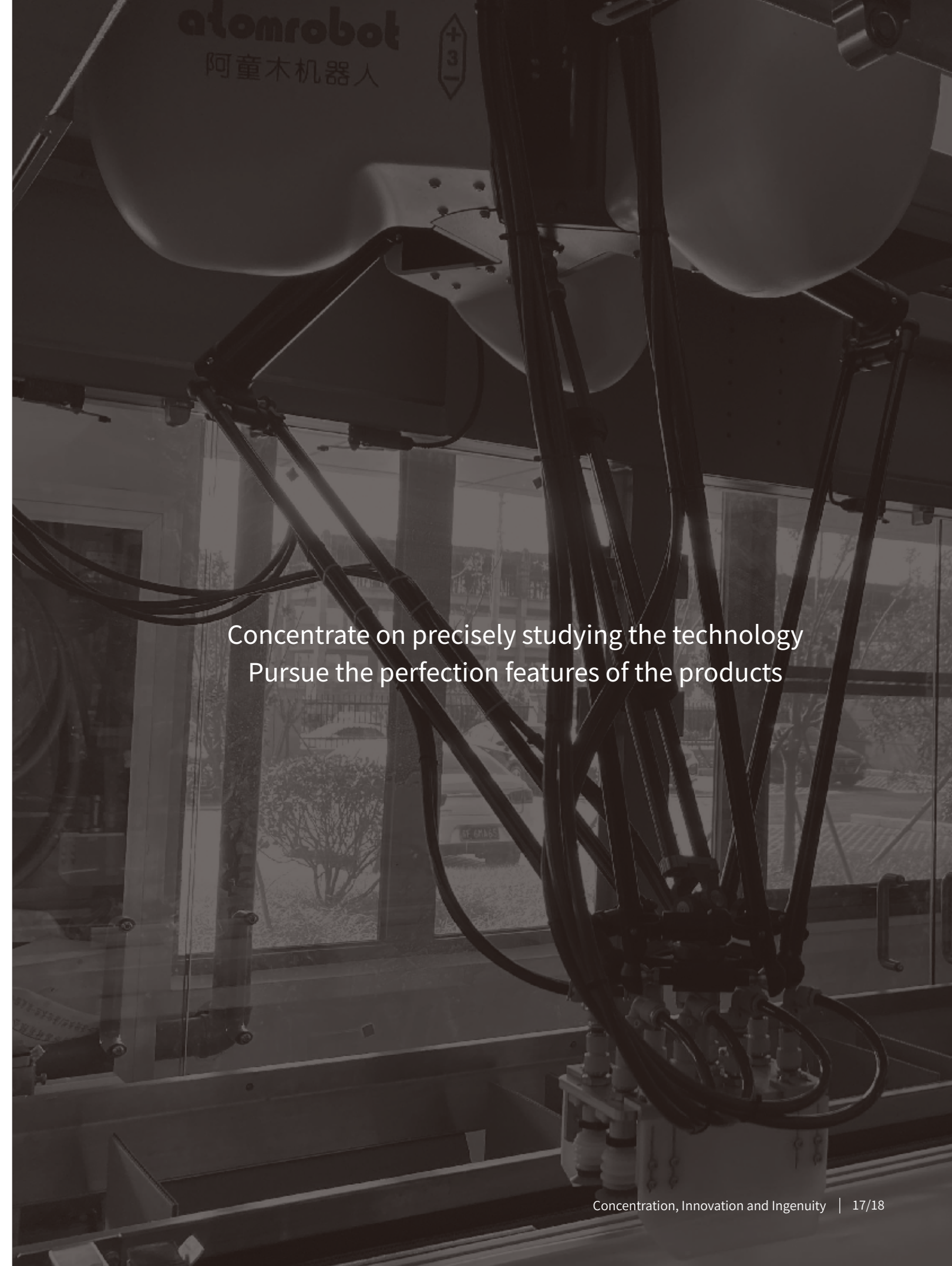
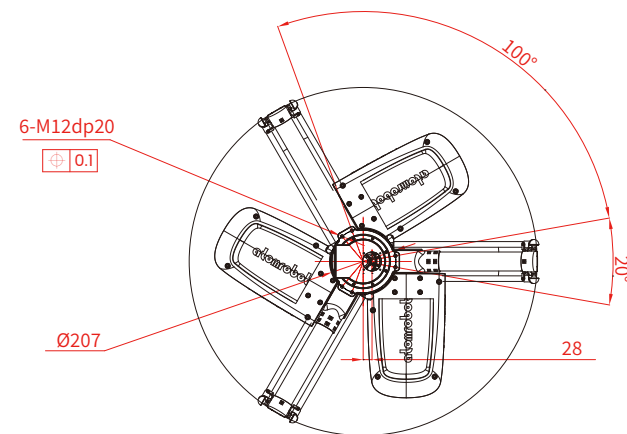
Overall Dimensions and Movement Range


















Flange



















Base Installation



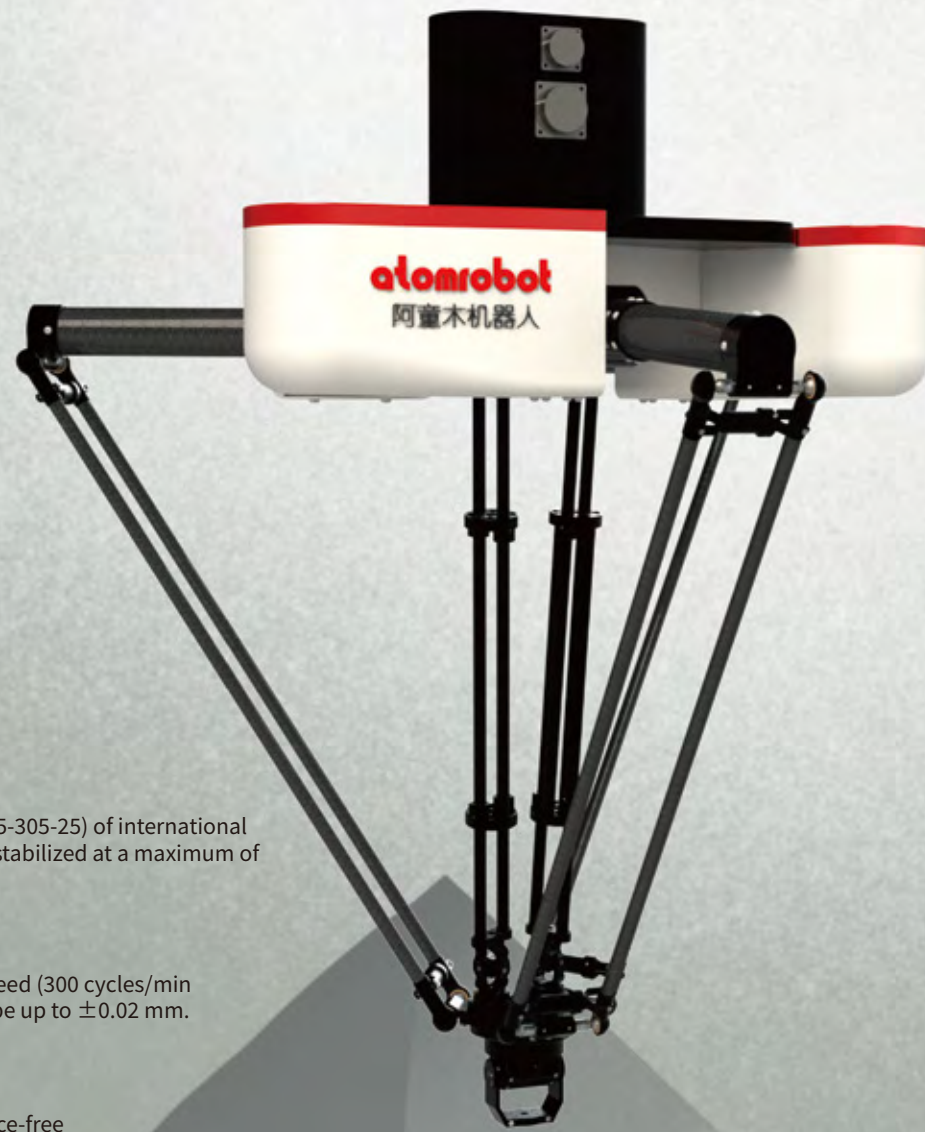
Concentrate on precisely studying the technology
Pursue the perfection features of the products

																	
Model	D3PZ-800-P3	D3PMZ-800-P3	D3PMZ-1100-P3	D3WZ-800-P3	D3WZ-1100-P3		D3P-450-P3	D3P-600-P3	D3P-800-P3	D3P-1300-P3	D3P-1600-P3		D3P-1100-P8	D3P-1400-P8	D3PM-600-P3	D3PM-800-P3	D3PM-1100-P3
Axes	3+1	3+1	3+1	3	3		3+1	3+1	3+1	3+1	3+1		3+1	3+1	3+1	3+1	3+1
Max Payload	3kg	3kg	3kg	3kg	3kg		3kg	3kg	3kg	3kg	3kg		8kg	8kg	3kg	3kg	3kg
Weight of manipulator	83kg	75kg	85kg	69.5kg	76kg		41.5kg	66kg	88.8kg	93.5kg	96.8kg		128kg	135kg	42kg	67.5kg	85kg
Reach of manipulator	800mm	800mm	1100mm	800mm	1100mm		450mm	600mm	800mm	1300mm	1600mm		1100mm	1400mm	600mm	800mm	1100mm
Repeatability - position	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm		0.05mm	0.05mm	0.05mm	0.05mm	0.05mm		0.05mm	0.05mm	0.05mm	0.05mm	0.05mm
Repeatability - rotation	0.1°	0.05°	0.05°	————	————		0.1°	0.1°	0.1°	0.1°	0.1°		0.1°	0.1°	0.05°	0.05°	0.05°
Maximum cadence (Note: no load, no pick/release, 25-305-25 stroke)	600pp/min	540pp/min	540pp/min	600pp/min	600pp/min		400pp/min	500pp/min	600pp/min	540pp/min	500pp/min		500pp/min	450pp/min	450pp/min	500pp/min	500pp/min
Rotation range	±360°	±360°	±360°	————	————		±360°	±360°	±360°	±360°	±360°		±360°	±360°	±360°	±360°	±360°
Allowable maximum moment of inertia	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	————	————		$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$		$250 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$250 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$
Angle range of actuated arm - Up	30.2°	42.5°	32.5°	42.5°	32.5°		36.5°	36.5°	30.2°	24.6°	28°		13.5°	23.5°	44.2°	42.5°	32.5°
Angle range of actuated arm - Down	63.6°	65.8°	68.5°	65.8°	68.5°		65.5°	65.5°	63.6°	78.5°	73°		78.5°	68°	68.7°	65.8°	68.5°
Power supply	Three-phase 380VAC -10%~+10%, 49~61HZ						Three-phase 380VAC -10%~+10%, 49~61HZ						Three-phase 380VAC -10%~+10%, 49~61HZ				
Power capacity	6KVA		10KVA	6KVA	10KVA		3KVA		6KVA	10KVA			10KVA		4KVA	6KVA	10KVA
Rated power	2.35kw		6.1kw	2.25kw	6kw		1.3kw		2.35kw	6.1kw			6.1kw		1.3kw	2.35kw	6.1kw
Storage temperature	-10°C~70°C						-10°C~70°C						-10°C~70°C				
Working environment	-10°C~50°C, RH≤80%						-10°C~50°C, RH≤80%						-10°C~50°C, RH≤80%				
Protection rating	IP67						IP55						IP55				

																				
Model	D3PM-1300-P3	D3PM-1600-P3	D3PM-1100-P15	D3PM-1600-P15	D3PM-1800-P15		D3PM-1200-P25	D3PM-1800-P25	D3PM-2200-P25	D3PM-2800-P25	D3W-600-P3	D3W-800-P3		D3W-1100-P5	D3W-1300-P3	D3W-1600-P3	D3W-1100-P15	D3W-1600-P15	D3W-1200-P25	
Axes	3+1	3+1	3+1	3+1	3+1		3+1	3+1	3+1	3+1	3	3		3	3	3	3	3	3	3
Max Payload	3kg	3kg	15kg	15kg	15kg		25kg	25kg	25kg	25kg	3kg	3kg		5kg	3kg	3kg	15kg	15kg	25kg	
Weight of manipulator	86.5kg	79.7kg	113kg	131kg	134kg		143kg	149kg	153kg	173kg	38.7kg	69.5kg		88kg	90kg	93kg	115kg	133kg	143kg	
Reach of manipulator	1300mm	1600mm	1100mm	1600mm	1800mm		1200mm	1800mm	2200mm	2800mm	600mm	800mm		1100mm	1300mm	1600mm	1100mm	1600mm	1200mm	
Repeatability - position	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm		0.05mm	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm		0.05mm	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm
Repeatability - rotation	0.05°	0.05°	0.025°	0.025°	0.025°		0.025°	0.05°	0.05°	0.05°	——	——		——	——	——	——	——	——	——
Maximum cadence (Note: no load, no pick/release, 25-305-25 stroke)	450pp/min	400pp/min	350pp/min	300pp/min	260pp/min		260pp/min	200pp/min	180pp/min	150pp/min	550pp/min	600pp/min		600pp/min	580pp/min	550pp/min	500pp/min	480pp/min	300pp/min	
Rotation range	±360°	±360°	±360°	±360°	±360°		±360°	±360°	±360°	±360°	——	——		——	——	——	——	——	——	——
Allowable maximum moment of inertia	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{ kg} \cdot \text{m}^2$	$0.224 \text{ kg} \cdot \text{m}^2$	$0.224 \text{ kg} \cdot \text{m}^2$	$0.224 \text{ kg} \cdot \text{m}^2$		$0.224 \text{ kg} \cdot \text{m}^2$	$0.224 \text{ kg} \cdot \text{m}^2$	$0.224 \text{ kg} \cdot \text{m}^2$	$0.224 \text{ kg} \cdot \text{m}^2$	——	——		——	——	——	——	——	——	——
Angle range of actuated arm - Up	31.5°	22°	23.5°	23°	23°		33.8°	42°	33.2°	33.2°	42.5°	42.5°		32.5°	31.5°	22°	23.5°	23°	33.8°	
Angle range of actuated arm - Down	74°	76°	70°	71.5°	71.5°		87.8°	75°	78.5°	78.5°	69.8°	65.8°		68.5°	74°	76°	70°	71.5°	87.8°	
Power supply	Three-phase 380VAC -10%~+10%, 49~61HZ						Three-phase 380VAC -10%~+10%, 49~61HZ						Three-phase 380VAC -10%~+10%, 49~61HZ							
Power capacity	10KVA		10KVA				15KVA			3KVA	6KVA		10KVA			15KVA				
Rated power	6.1kw		6.2kw				9.2kw			1.2kw	2.25kw		6kw			9kw				
Storage temperature	-10°C~70°C						-10°C~70°C						-10°C~70°C							
Working environment	-10°C~50°C, RH≤80%						-10°C~50°C, RH≤80%						-10°C~50°C, RH≤80%							
Protection rating	IP55						IP55						IP55							

DUAL-AXIAL DRIVE ACHIEVED KING PERFORMANCE FOR HORIZONTAL PICKING AND TILTING

Two parallel rotation axes are added to conventional 3-axis parallel robot to become the 5-axis robot, of which one of axes controls horizontal rotation while the other one control the rotation in vertical direction; the servo coupling control is used for two intermediate axes, which enables higher precision, faster speed and longer service life.



High Speed

Under the testing trajectory (25-305-25) of international standard, the cadence can be stabilized at a maximum of 400 cycles/min.



High Precision

Under the condition of high speed (300 cycles/min and above), the precision can be up to ± 0.02 mm.



High Stability

The manipulator is maintenance-free throughout the year. No extra lubrication maintenance is required for each joint and pre-tensional structure is clearance free.

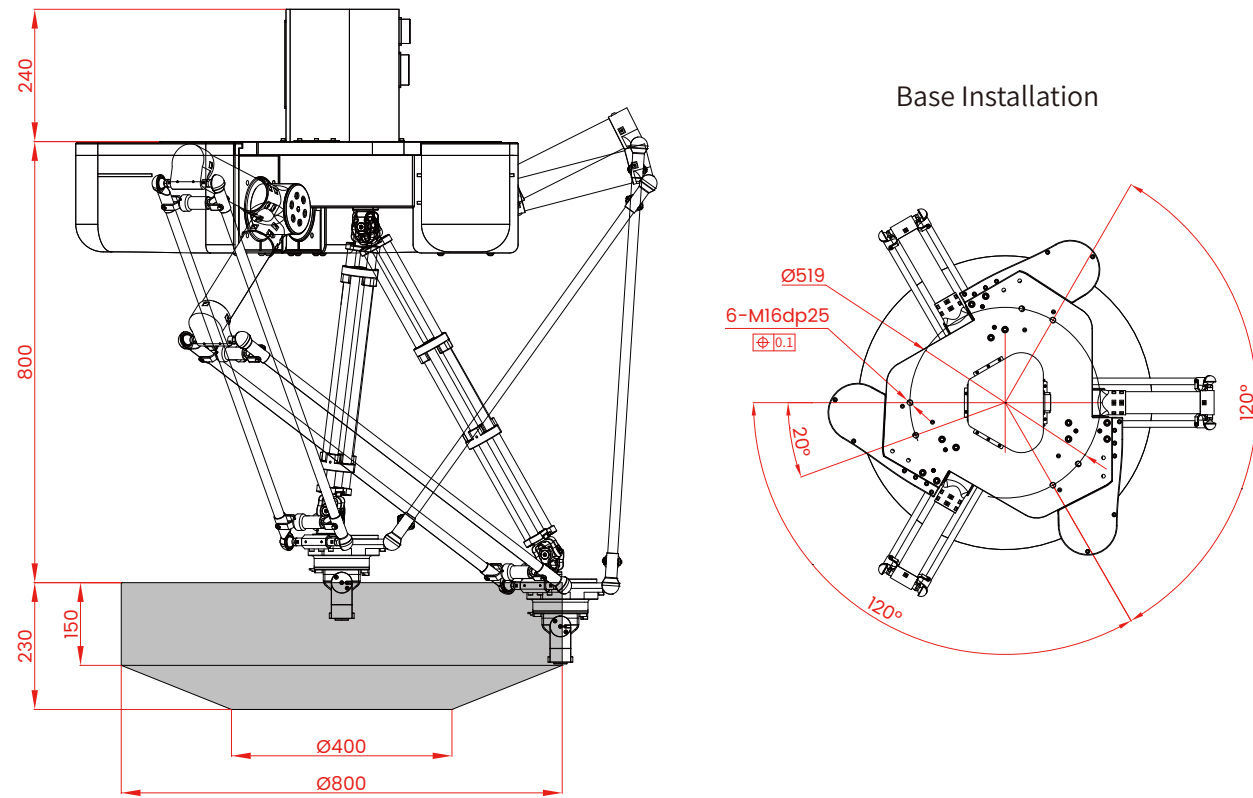
D5 SERIES

Models and Parameters

Model		D5-800-P2	D5-1200-P2
Axes		3+2	3+2
Max Payload		2kg	2kg
Manipulator	Weight	85kg	90kg
	Reach	800mm	1200mm
Repeatability	Position	0.05mm	0.05mm
	Rotation	0.1°	0.1°
Maximum cadence		400pp/min	380pp/min
Rotation range		$\pm 360^\circ$	$\pm 360^\circ$
Vertical rotation range		$\pm 90^\circ$	$\pm 90^\circ$
Allowable maximum moment of inertia		$31 \times 10^{-4} \text{kg} \cdot \text{m}^2$	$31 \times 10^{-4} \text{kg} \cdot \text{m}^2$
Angle range of actuated arm (Note: horizontal rotation)	Up	36.5°	36.5°
	Down	70.5°	70.5°
Power supply		Three-phase 380VAC -10%~+10%, 49~61HZ	
Power capacity		6KVA	10KVA
Rated power		2.5kw	6.2kw
Storage temperature		$-10^\circ\text{C} \sim 70^\circ\text{C}$	
Working environment		$-10^\circ\text{C} \sim 50^\circ\text{C}$, RH \leq 80%	
Protection rating		IP55	

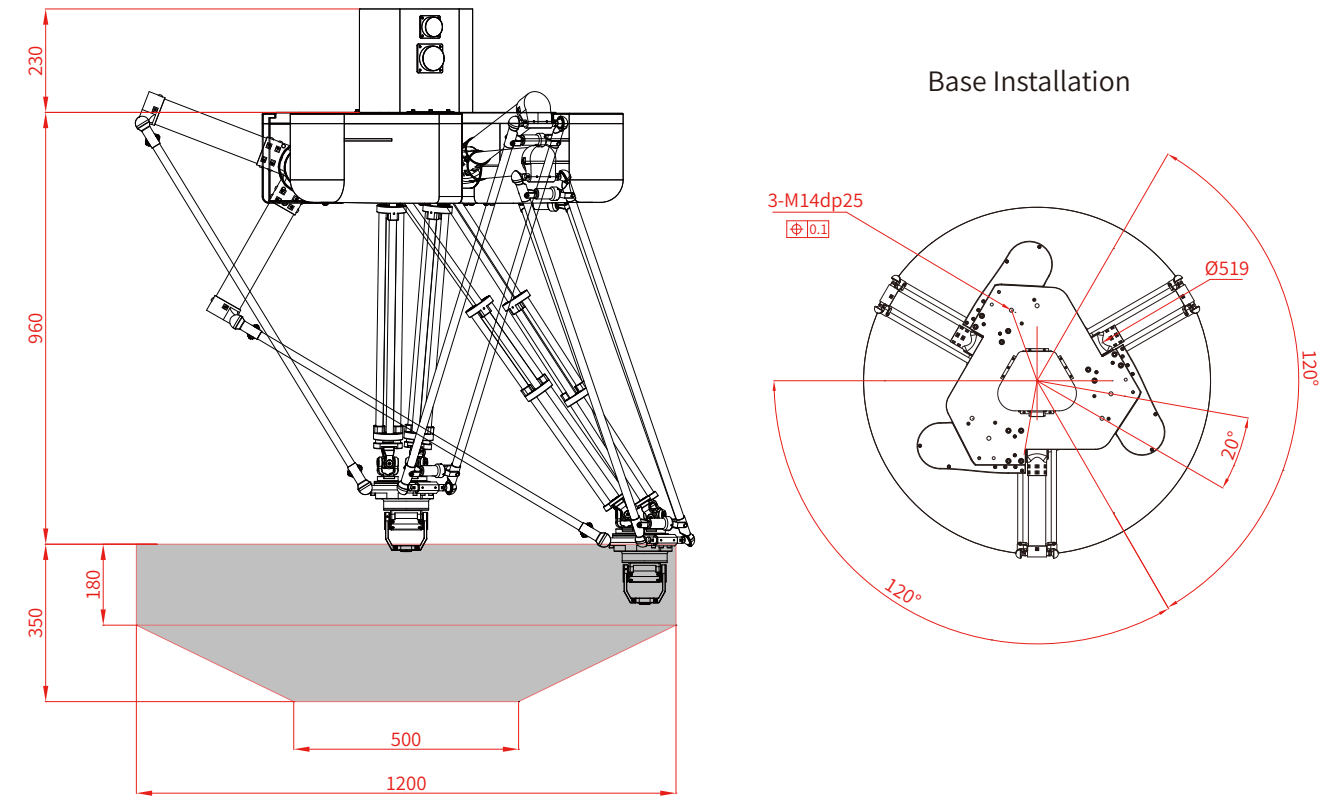
D5-800-P2

Overall Dimensions and Movement Range

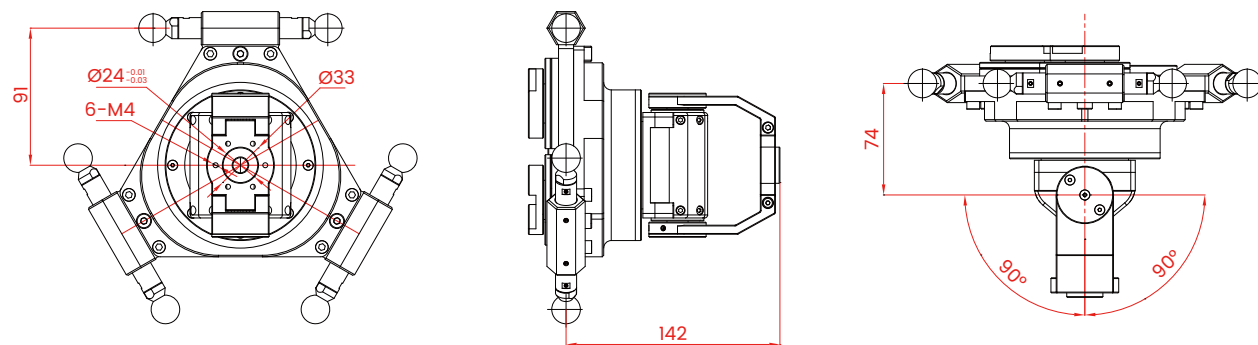


D5-1200-P2

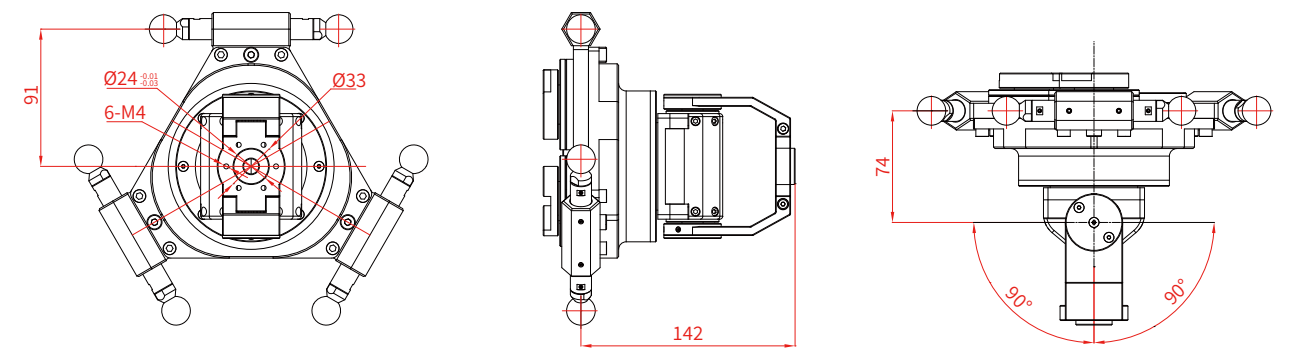
Overall Dimensions and Movement Range



Flange



Flange



SUPPORT PLATFORM FOR HEAVY LOAD CAPACITY

The classic Stewart parallel mechanism, can easily realize 6-DOF movement in three-dimensional space, the maximum load can reach 3000kg, meeting both demands on maximum precision and maximum load. The robot is ideal for high-precision test in laboratory, aerospace and other industries.



High Precision

The robot is ideal for high-precision test in laboratory, aerospace and other industries.



High Stability

The classic Stewart parallel mechanism, can easily realize 6-DOF movement in three-dimensional space.

S6 SERIES

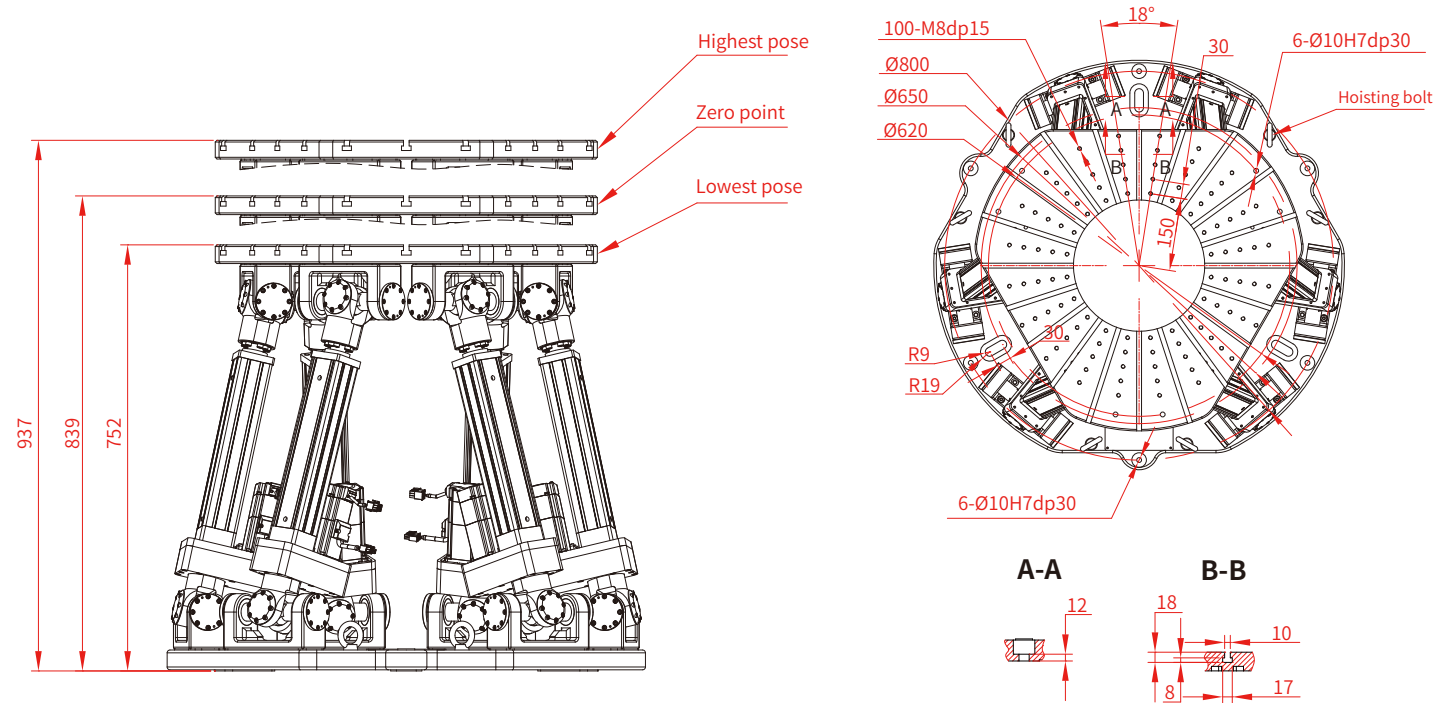
Models and Parameters



Model		S6-V0-P50	S6-V0-P200	S6-V1-P200	S6-V2-P3K
Axes		6	6	6	6
Max Payload		50kg	200kg	200kg	3000kg
Manipulator	Weight	260kg	550kg	768kg	3730kg
	Maximum movement speed	250mm/s	300mm/s	300mm/s	100mm/s
Repeatability	Position	0.05mm	0.05mm	0.05mm	0.1mm
	Rotation	0.02°	0.02°	0.02°	0.05°
Range of Axis	+ X-axis	±100mm	±100mm	±150mm	+700mm
	- X-axis	——	——	——	-100mm
	Y-axis	±100mm	±100mm	±150mm	±100mm
	Z-axis	±75mm	±75mm	±100mm	±100mm
	X-Rot	±20°	±15°	±20°	±10°
	Y-Rot	±20°	±15°	±20°	±10°
	Z-Rot	±20°	±15°	±20°	±10°
Power supply	Three-phase 380VAC -10%~+10%, 49~61HZ				
Power capacity	10KVA			40KVA	
Rated power	2.4kw			14kw	
Storage temperature	-10°C~70°C				
Working environment	0°C~50°C, RH≤80%				
Protection rating	IP55				

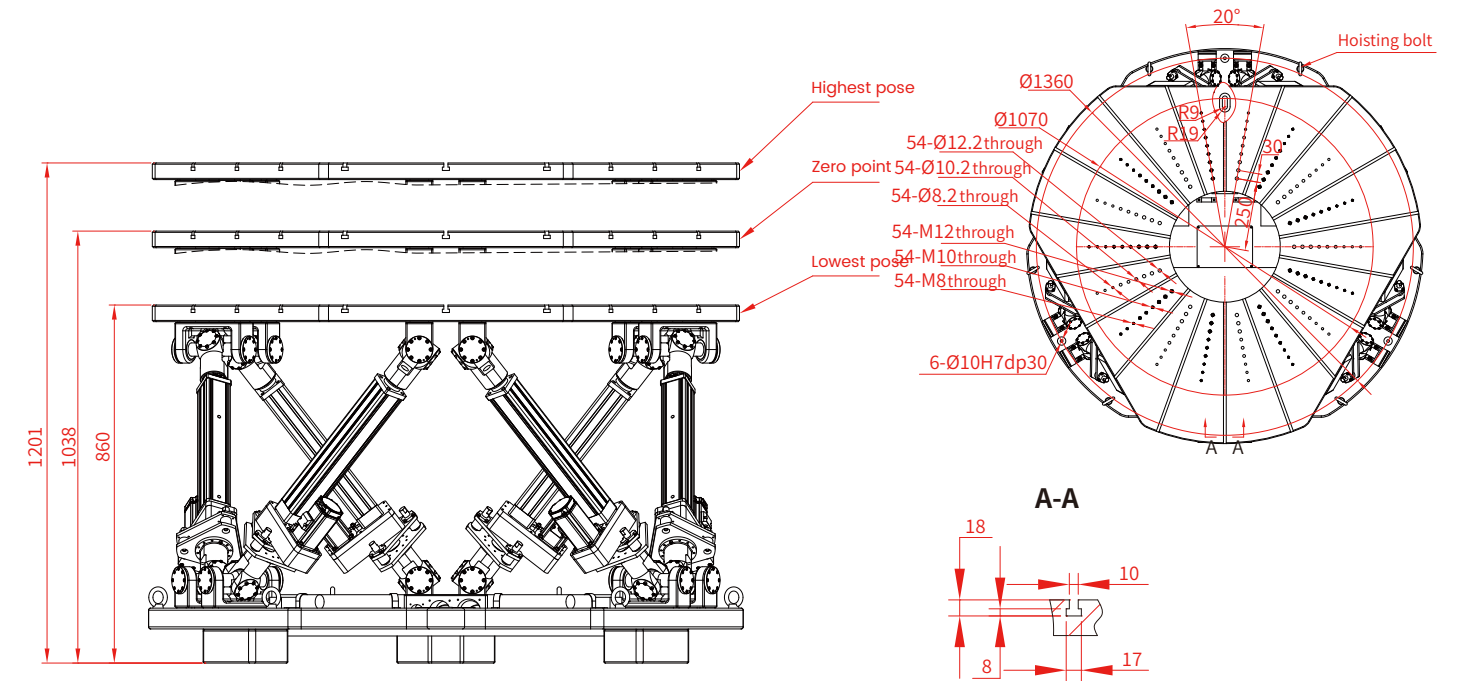
S6-V0-P50

Overall Dimensions



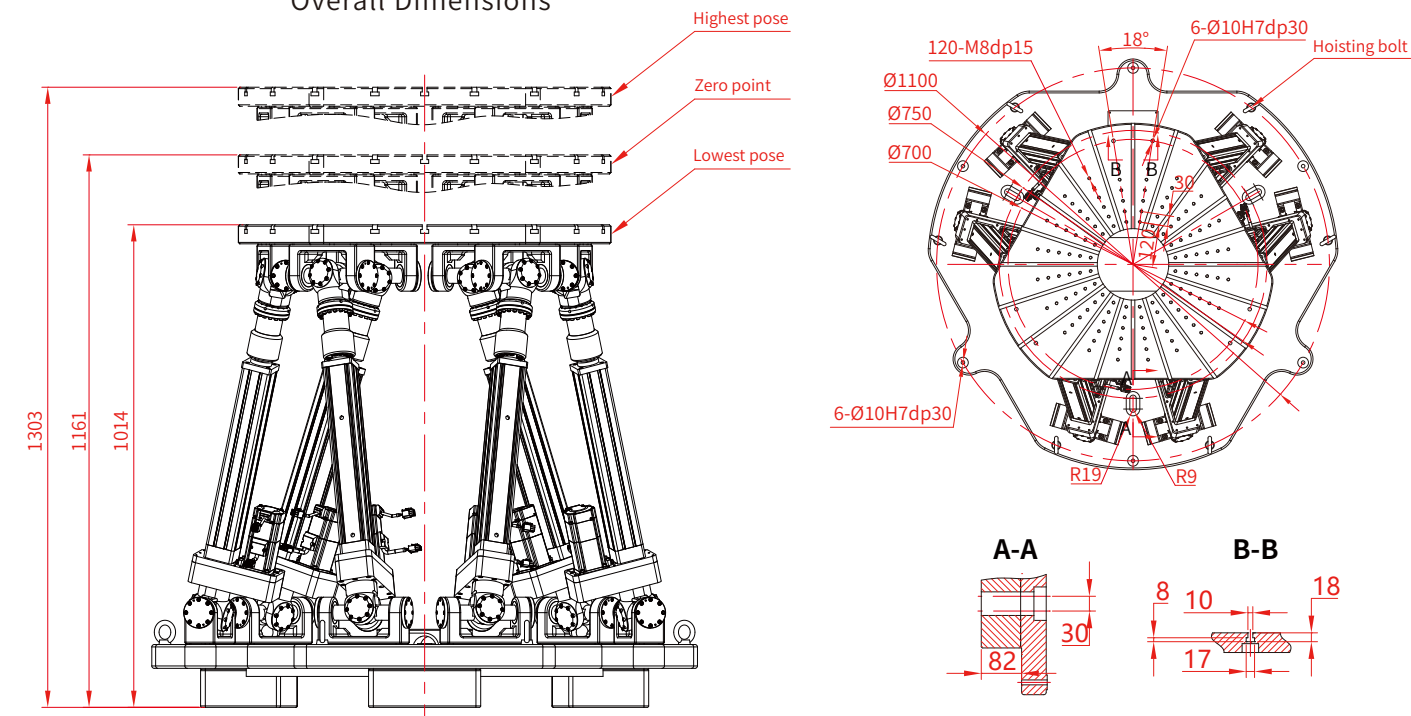
S6-V1-P200

Overall Dimensions



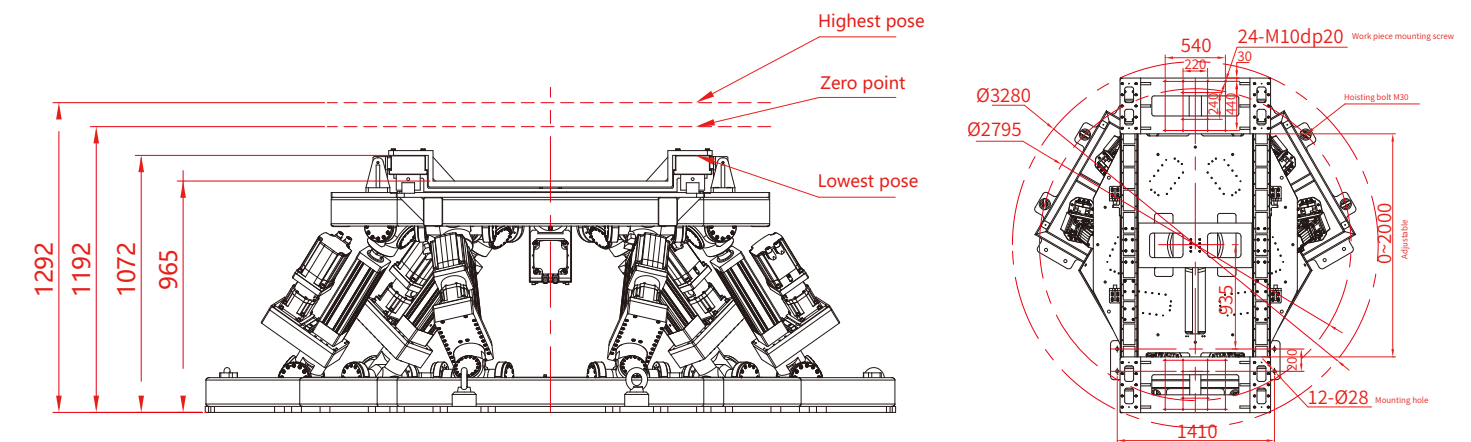
S6-V0-P200

Overall Dimensions







S6-V2-P3k

Overall Dimensions



HIGH SPEED ST SERIAL SCARA

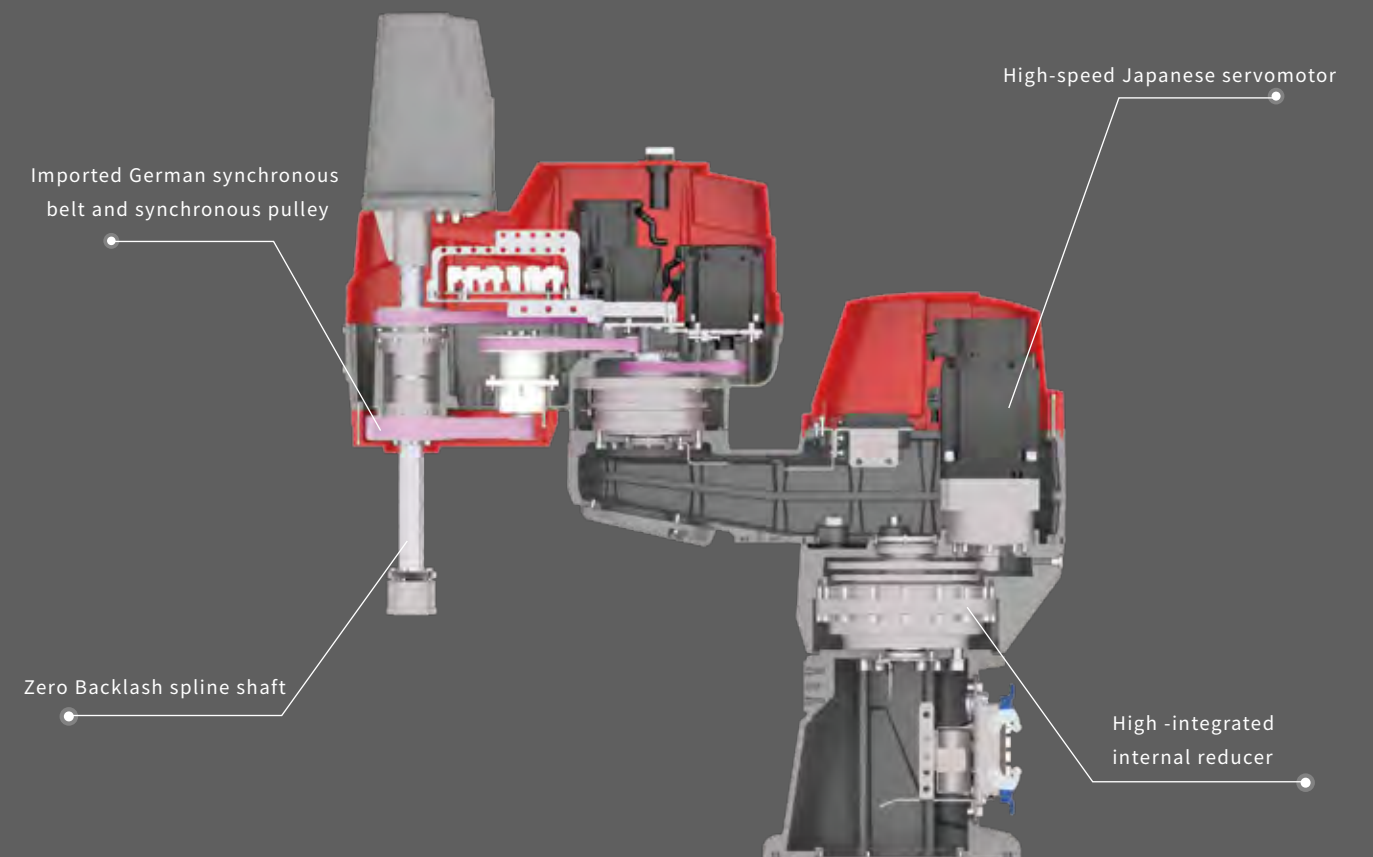
-  **Max payload 8.4kg**
-  **Max speed 240ppm (0.25s)**
-  **High precision $\pm 0.02\text{mm}$**
-  **Angle range 360°**



- The ST series Scara is a flat joint robot developed by Atomrobot Robot for high-speed and high-precision sorting.
- The robot arm and the reducer adopt an integrated design and use unique tooth shape. While providing large loads and high speed, the volume of the robot is greatly reduced.
- The robot adopts internal wiring, high integration, the highest protection level can reach IP65, the external interface position is diverse, available for ground and ceiling installation, suitable for various applications.

CORE CONFIGURATION

- High-speed Japanese servomotor brings up to 240 ppm movement cadence.
- Bespoke 1 arc minute reducer assures $\pm 0.02\text{mm}$ precision.
- Equipped with imported German synchronous belt and synchronous pulley, it can give more than 2 years of maintenance-free and precision holding time.



ST SERIAL

Models and Parameters



Model		ST-500-A	ST-500-B	ST-620-A
Axes		4	4	4
Max Payload		8.4kg	8.4kg	8.4kg
Weight		47kg	47kg	51kg
Stroke		500mm	500mm	620mm
Precision	Position	±0.02mm	±0.02mm	±0.02mm
	Rotation	±0.05°	±0.05°	±0.05°
Max speed*		240pp/min	240pp/min	220pp/min
Max payload inertia		0.43kg·m ²	0.43kg·m ²	0.43kg·m ²
Controller		atommotion	atommotion	atommotion
Movement range	1-Axis ①	±180°	±180°	±180°
	2-Axis ②	±135°	±135°	±150°
	3-Axis ③	±100mm	±100mm	±100mm
	4-Axis ④	±360°	±360°	±360°
Installation environment	Storage temperature	-10°C~70°C		
	Working environment	-10°C~50°C RH≤80%		
	Protection rating	IP55/IP65		
	Power supply	Three-phase 380VAC -10%~+10% 49~61HZ		
	Power capacity	6KVA		
	Rated power	3.6KW		
	Installation method	Ground	Ceiling	Ground



Model		ST-620-B	ST-800-A	ST-800-B
Axes		4	4	4
Max Payload		8.4kg	8.4kg	8.4kg
Weight		51kg	55kg	55kg
Stroke		620mm	800mm	800mm
Precision	Position	±0.02mm	±0.02mm	±0.02mm
	Rotation	±0.05°	±0.05°	±0.05°
Max speed*		220pp/min	180pp/min	180pp/min
Max payload inertia		0.43kg·m ²	0.43kg·m ²	0.43kg·m ²
Controller		atommotion	atommotion	atommotion
Movement range	1-Axis ①	±180°	±180°	±180°
	2-Axis ②	±150°	±150°	±150°
	3-Axis ③	±100mm	±100mm	±100mm
	4-Axis ④	±360°	±360°	±360°
Installation environment	Storage temperature	-10°C~70°C		
	Working environment	-10°C~50°C RH≤80%		
	Protection rating	IP55/IP65		
	Power supply	Three-phase 380VAC -10%~+10% 49~61HZ		
	Power capacity	6KVA		
	Rated power	3.6KW		
	Installation method	Ceiling	Ground	Ceiling





* payload2kg, 25mm-300mm-25mm Trajectory



∅ Cadence parameters are data tested in the laboratory
The load is of standard weight, without picking / releasing actions in the process.

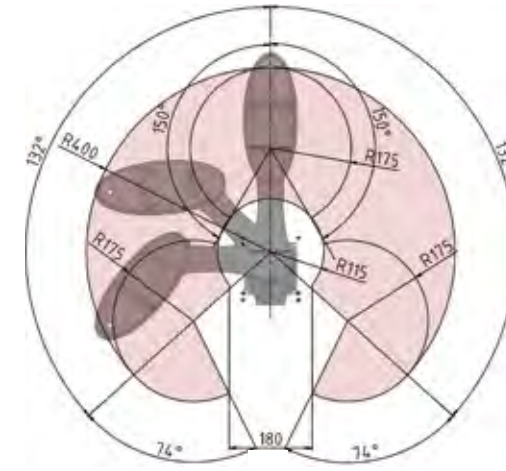
∅ Please consult us for the requirements for special service environments (dust, high-temperature, acid/alkali fog) and higher IP grade.

HIGH EFFICIENT M SERIAL SCARA

-  **Lower energy consumption**
-  **higher performance**
-  **higher accuracy**
-  **lower noise**



- This series are multi-joint, multi-degree-of-freedom robots with flexible movements, compact structure, easy installation, high dynamic performance, and high movement repeatability.
- The main body adopts internal wiring, and the joints adopt modular design and assembly, easy maintenance and can effectively replace manual labor under 20Kg.



Robot arm reach 400-6000mm, Arm Rotation angle $\pm 132^\circ$, Forearm rotation angle $\pm 154^\circ$. The working space :maximum diameter 1200mm. Suitable for multi-station and long-distance handling, sorting and assembly operations.

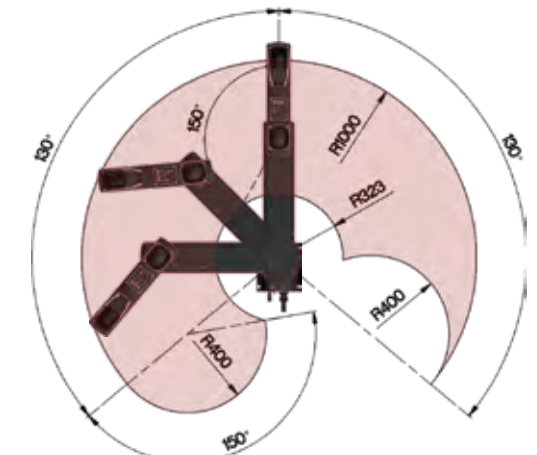
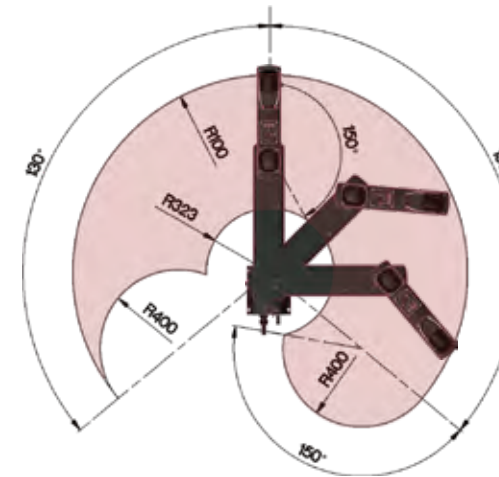


HIGH PAYLOAD

LARGE SPACE



Robot arm reach 700-1000mm, Arm Rotation angle $\pm 130^\circ$, Forearm rotation angle $\pm 150^\circ$. The working space :maximum diameter 2000mm. Suitable for multi-station and long-distance handling, sorting and assembly operations.

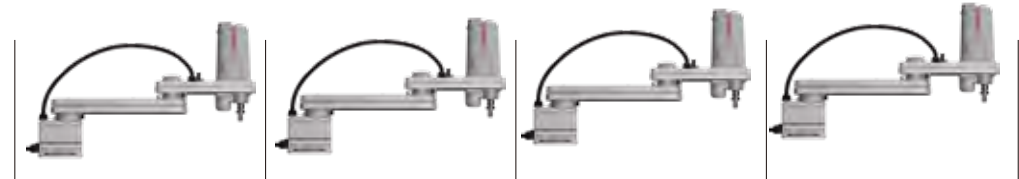


M SERIAL

Models and Parameters



Model		M-04BD				M-06BD				
-		X-axis	Y-axis	Z-axis	R-axis	X-axis	Y-axis	Z-axis	R-axis	
Arm reach		225mm	175mm	150mm	-	335mm	275mm	200mm	-	
Rotation range		±132°	±150°	-	±360°	±134°	±152°	-	±360°	
AC Motor output		200W	100W	100W	100W	400W	200W	200W	200W	
Deceleration mechanism Transmission method	Motor to reducer	Direct-coupled		Timing belt		Direct-coupled		Timing belt		
	Reducer to output	Direct-coupled		Timing belt		Direct-coupled		Timing belt		
Repeatability		±0.01mm			±0.01°		±0.01mm		±0.01°	
Maximum speed		6 m/sec		1.1 m/sec	2600°/sec	8.6 m/sec		2 m/sec	2600°/sec	
Maximum payload		4kg(Standard)、3kg(Option *4)				10kg(Standard)、9kg(Option *4)				
Standard cycle time: with 2kg payload *2		0.40 sec				0.36 sec				
R-axis tolerable moment of inertia		0.05 kgm ² (0.5 kgfcms)				0.3 kgm ²				
User wiring		0.2 sq*10 pieces				0.2 sq*20pieces				
User tubing (Outer diameter)		φ4*3pieces				φ6*3pieces				
Travel limit		1.Soft limit 2.Mechanical stopper (X,Y,Z axis)				1.Soft limit 2.Mechanical stopper (X,Y,Z axis)				
Robot cable length		option:5m、10m				Standard : 3.5m option:5m、10m				
Weight		15 kg				25 kg				
Controller		Atombox-4s								
Power supply		8000(MAX)								
Operation method		Programming /Remote command /Communication								



Model		M-07GD	M-08GD	M-09GD	M-10GD
Arm reach / Rotation range	X-axis	400mm / ±130°			
	Y-axis	400mm / ±150°			
	Z-axis	200mm / -			
	R-axis	400mm / -			
AC Motor output / Reducer	X-axis	750W / Harmonic drive			
	Y-axis	400W / Harmonic drive			
	Z-axis	400W / Ball screw rod			
	R-axis	200W / Harmonic drive			
Deceleration mechanism Transmission method	Motor to reducer	Direct-coupled			
	Reducer to output	Direct-coupled			
Repeatability / Maximum speed	X-axis	±0.02mm / 9.2 m/sec			
	Y-axis	±0.02mm / 9.2 m/sec			
	Z-axis (200mm)	±0.01mm / 2.3 m/sec			
	Z-axis (400mm)	±0.01mm / 1.7 m/sec			
	R-axis	±0.004° / 920°/sec			
Maximum payload		20kg(Standard)、19kg(With flange tool)			
Standard cycle time: with 2kg payload *2		0.42 sec			
R-axis tolerable moment of inertia		1.0 kgm ²			
User wiring		φ6*3pieces			
User tubing (Outer diameter)		0.2 sq*20 pieces			
Travel limit		1.Soft limit 2.Mechanical stopper (X,Y,Z axis)			
Robot cable length		option:5m、10m			
Weight		Z-axis (200mm) :50kg Z-axis (400mm) :52kg	Z-axis (200mm) :52kg Z-axis (400mm) :54kg	Z-axis (200mm) :54kg Z-axis (400mm) :56kg	Z-axis (200mm) :56kg Z-axis (400mm) :58kg
Controller		Atombox-4s			
Power supply		8000(MAX)			
Operation method		Programming /Remote command /Communication/Tracking			

PALLETIZING ROBOT WORKSTATION

SIMPLE | FLEXIBLE | WIDESPREAD

- Graphical programming, simple and efficient, the robot can be programmed without professional knowledge. Half an hour to learn the programming and 1 hour to complete simple programming.
- Integrated design, light and flexible, small footprint; simple deployment of new tasks, fast and efficient.
- Widely used in food, pharmaceutical, 3C, daily chemicals, printing and other industries.



Specifications

Specifications	
Payload	20Kg (up to 30kg)
Working space radius	1650mm
Pallet size	1200*1200*200 (max)
Vertical Stroke	1700mm (up to 2200mm)
Palletizing speed	10pcs/min
Air consumption	440L/min
Repeatability accuracy	±0.02mm
Communication	EtherCAT、IO
IP grade	IP65
Temperature	0~50°C
Max power	2500W
Rated voltage	220V
Weight	350Kg
Area	1260*780 (not including pallet and conveyor)

Highlights



Easy operation

Integrated touch screen interface, anyone can operate with simple training.



Flexible production

Multiple functional scenarios switched quickly, human-machine collaboration, dual-machine collaboration, and multi-machine collaboration are available too.



Flexible deployment

Integrated design, light and flexible, small footprint; easy to move, installation in a short time.



Economical and practical

ROI: 6-12 months.



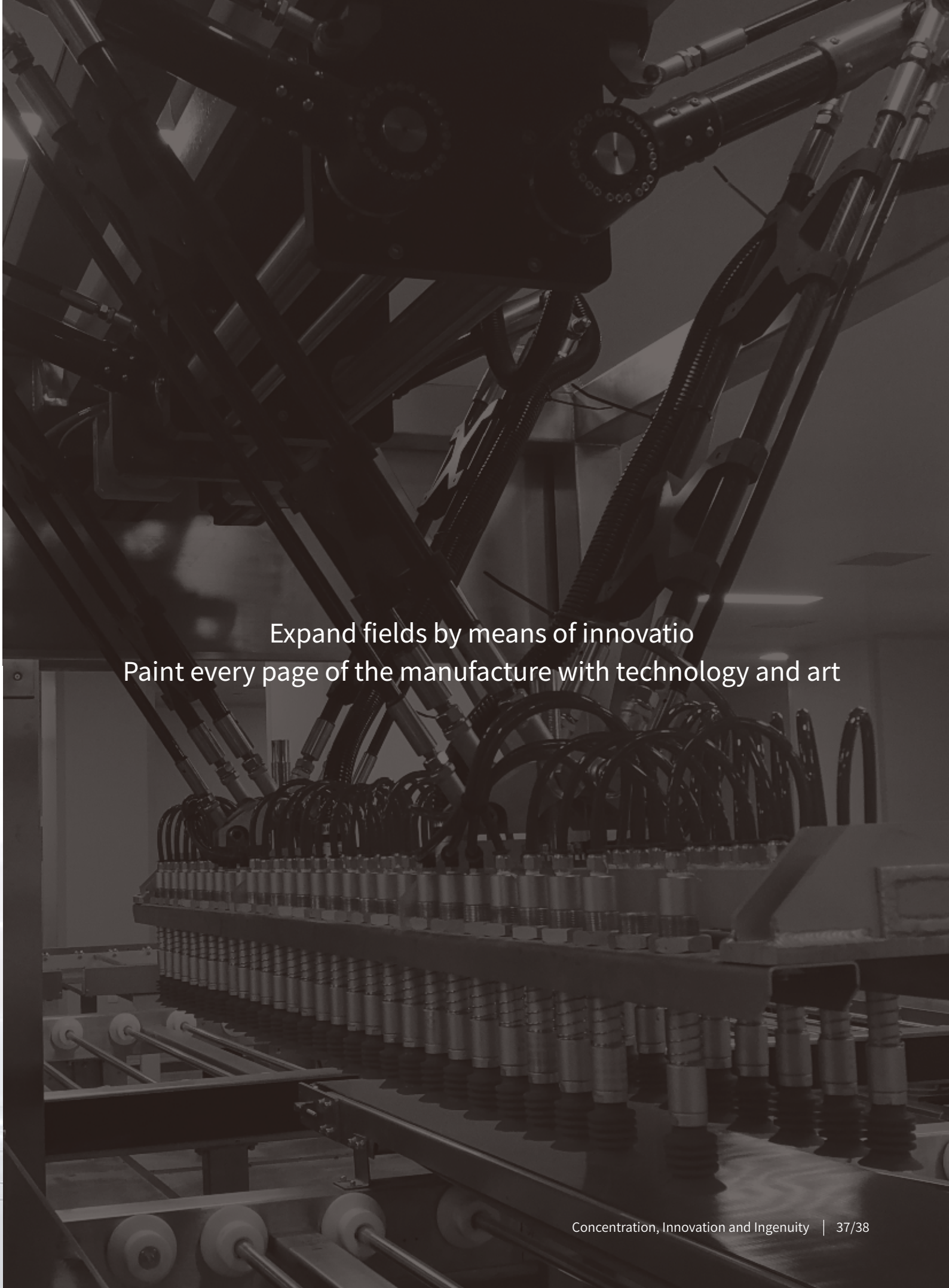
Wide range of applications

Widely used in food, medicine, 3C, daily chemicals, precision installation, product packaging, grinding, handling, welding, assembly, spraying, stacking and other fields.



Safe and stable

Equipped with collision detection, bottom leakage detection and empty box detection functions.




Expand fields by means of innovation
Paint every page of the manufacture with technology and art

atombox

*Empower Industrial Robots
to Demonstrate Outstanding Performance*



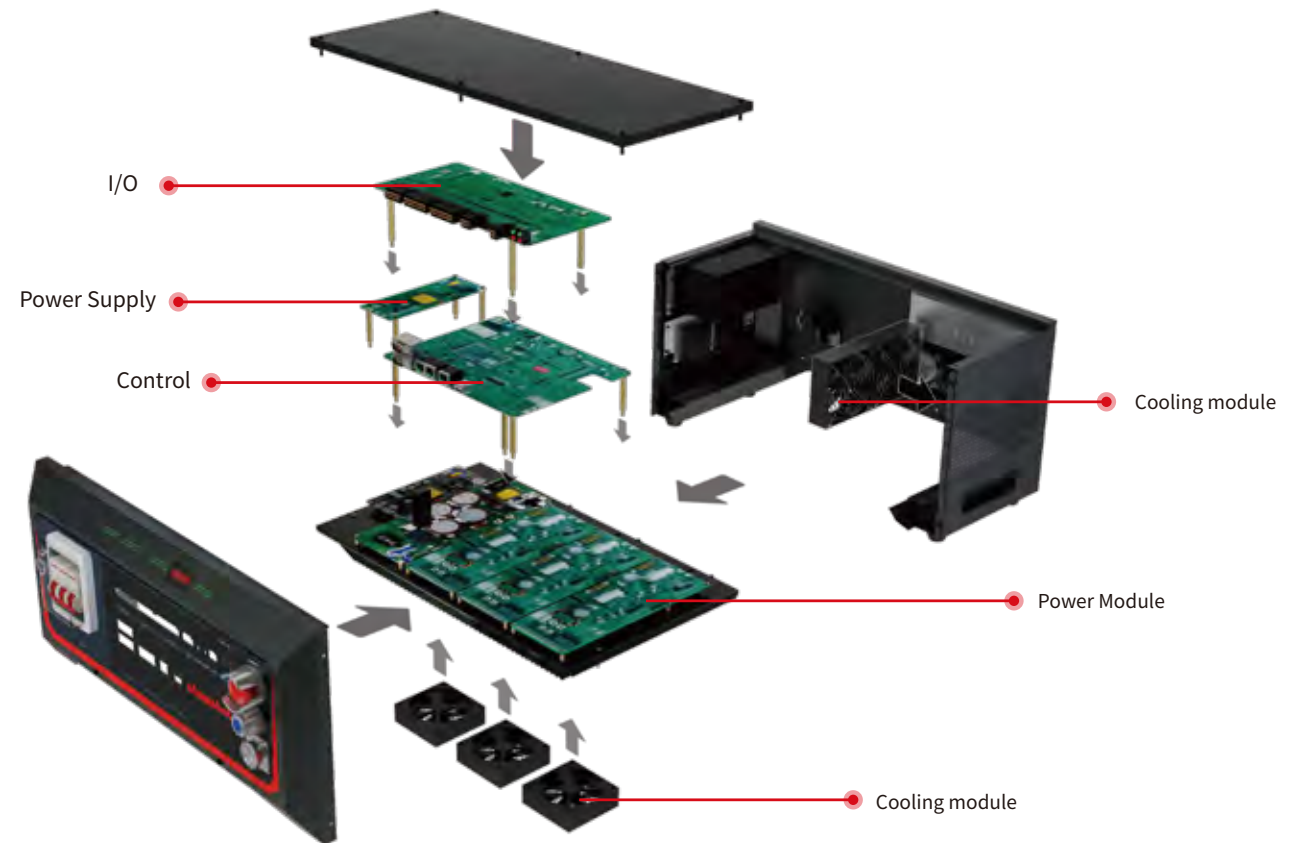
 Multi-core heterogeneous core to realize robot control and servo control functions.

 Multi-IO, integrated digital and analog input and output, encoder module.

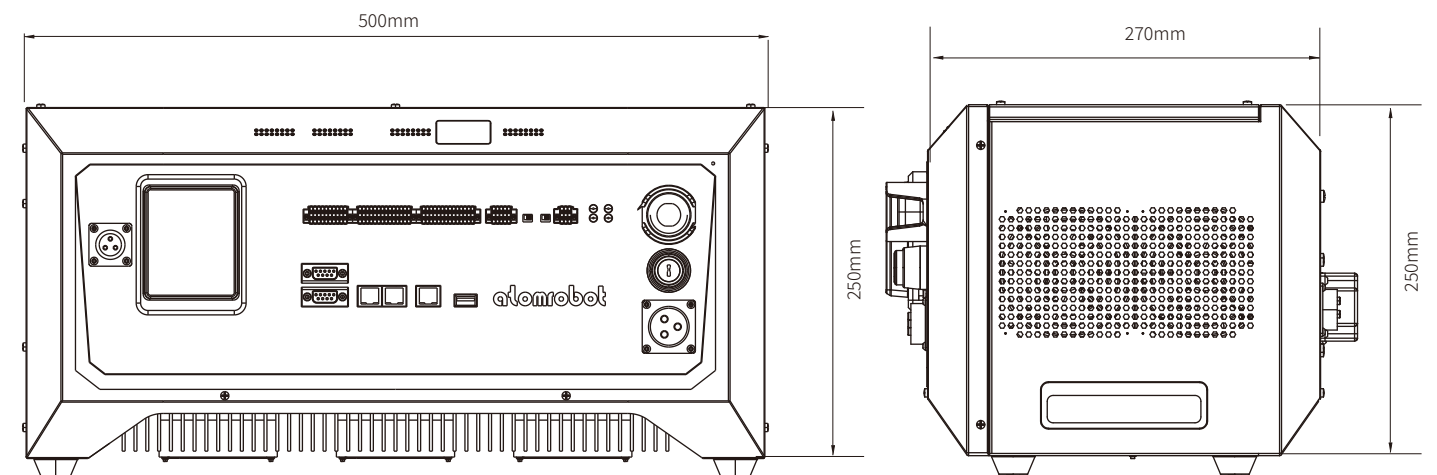
 Smaller size, and easier to install.

atomrobot

STRUCTURAL



DIMENSIONS



Specifications

External Interface Parameters

Specification	Interface Name	Specification
	Ethernet	3-channel 1000Mbps x1 (GBE) 100Mbps x2 (FE1, FE2)
	USB	1 channel USB 2.0
	External extension encoder EXTENC	2channel,Compatible with 5V differential incremental encoder
	System digital input and output IO	8 inputs, 4 outputs
	User digital input IO	Route 16
	User digital output IO	Route 16
	Analog input and output	2 inputs, 2 outputs, switchable between voltage mode and current mode
	STO safe torque off IO	2 inputs, 1 output
	Teaching Device	100M Ethernet communication, 1 emergency stop, 1 enable, 24VDC power supply, WS28-16-Z
	Motor power	WS40-26-Z aviation socket
	Motor encoder	WS28-26-Z aviation socket
	Main power	Single/three-phase AC220V compatible, WS20-4-Z aviation socket
	Emergency button	Emergency stop signal digital IO input
	Release brake key switch	Hardware switch. In an emergency, the key can be used to manually release the brake and drag the mechanical arm. It is prohibited to be used under normal circumstances
	External braking resistor interface	Choose the appropriate external brake according to the needs of different usage scenarios

Note:
 1.The two channel 100Mbps network ports are internal switches and are not independent network ports;
 2.The digital IO port input supports NPN and PNP types, the input voltage range is 5~26V; the output is NPN type;
 3.In the analog IO port voltage mode, the input and output voltage range: 2 ~ 10V, accuracy ±5%; in the analog IO port current mode, the input and output current range: 4 ~ 20mA, accuracy ±5%.

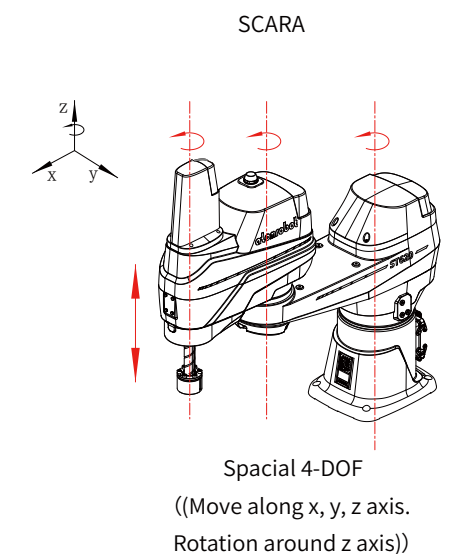
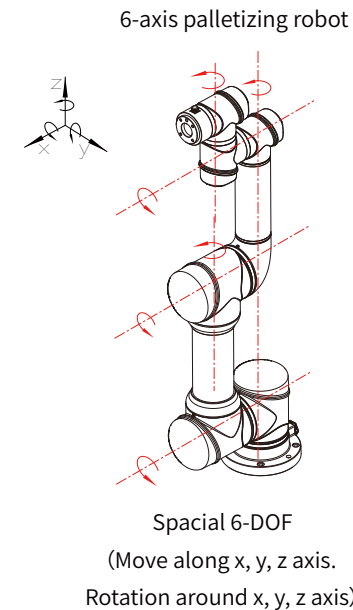
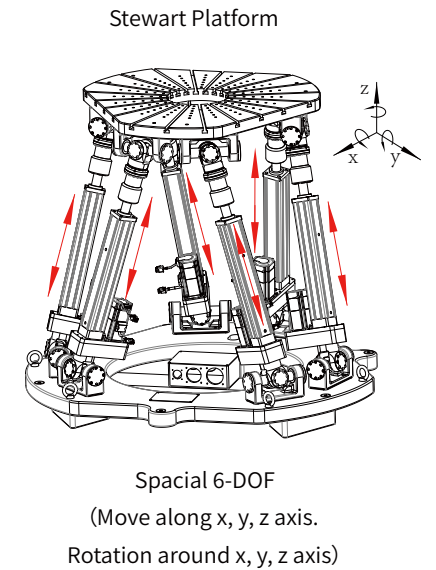
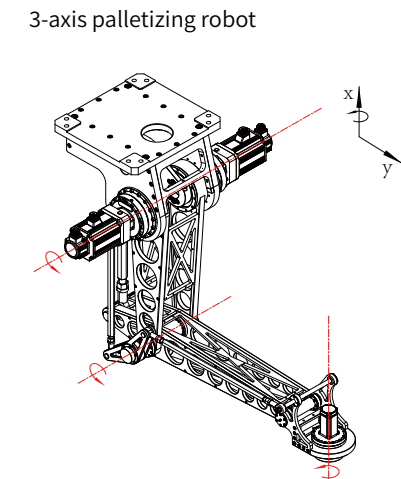
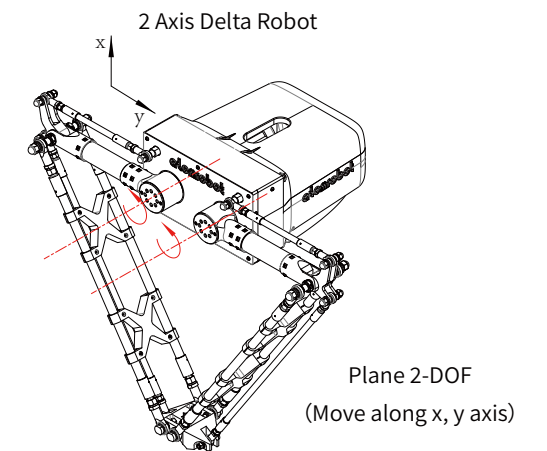
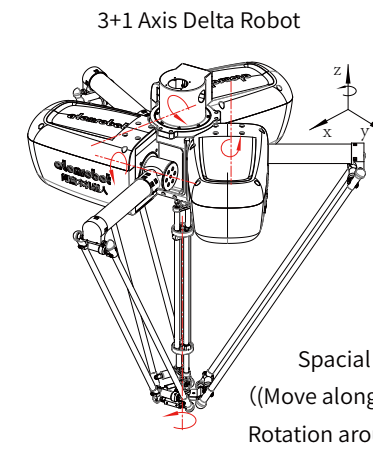
Electrical Parameters

	Name	Specification
Power parameters	Rated input voltage	Single/three-phase AC~220V
	Rated frequency	50Hz
	Maximum input current	30A
Output parameters	Maximum number of control axes	4
	Maximum driveable motor power and quantity	2KW*3+400W*1
	Single-axis rated output current	2KW motor: 10A; 750W motor: 6.7A; 400W motor: 3.7A; 200W motor: 1.7A; 100W motor: 1.4A
	Single-axis overload capacity	3 times rated
Other parameters	Energy consumption braking resistor	Built-in: 50RJ/300W
	Brake control voltage	24V
	Number of brake controls	1~4
	Digital IO input voltage range	5~24V
	Standby power consumption	56W
	Power device heat dissipation	Integrated heat sink + 24V fan
	Chassis cooling	24V fan
	Boot time	17s

Environmental Parameters

Specification	Name	Description
	Storage temperature	-40°C~+85°C
	Operating temperature	-20°C~+50°C
	Protection	IP20
	Working environment	Indoor, No corrosive gas, Flammable gas, Oil mist, Water vapor, Dripping water or salt,

Supporting Robot Models



ATOM STANDARD CONTROL CABINET

Atom-Unit

With AtomMotion controller equipped and vision features integrated, it is compact in volume, complete in features and strong in customization.



High performance



High reliability



High applicability



Core Parameters

Specification		
Controller hardware	Multi-processor system	
	PCIe bus	
	Large capacity flash drive	
	8GB Memory	
	4*Usb interface	
	TCP/IP interface	
	EtherCAT interface	
Controller software	Based on X86 platform robot dedicated control system	
	Easy to use, effective advanced features pack	
<small>Easy-to-operate human-computer interaction interface, high-performance, high-precision movement and tracking features and IEC61131-3-based PLC programming software</small>		
Electrical connection		
Power supply	3 phases, 380VAC -10%~+10%, 49-61HZ	
Power capacity	10KVA	
Physical characteristics	Dimensions (Width × Height × Depth)	Weight
Single-cabinet type	540x684x584	70kg
Double-cabinet type	540x1270x584	120kg
Environment		
Ambient temperature	+0°C~+45°C	
Relative humidity	Maximum 95%	
Protection rating	IP40	
Standard compliant certification	EU CE (Standard characters)	
Safety		
Basic	Safe shutdown, emergency shutdown	
	Over-current protection	
	High temperature warning	
Mechanical interface		
Input/output	16/16	
Number	24VDC or relay signal	
Simulation	1x0-10V	
Serial port	1xRS 232/RS 422	
Network	Ethernet (10/100MB/s)	
Two channels	EtherCat	
	TCP/IP	
Sensor interface		
Conveyor line tracking		
Robot vision		
Torque control		
User interface		
Control panel	Master, Emergency Stop and Switching buttons	
Maintenance	Recovery program	
	Remote service	
	Troubleshooting	

AtomVision



More smarter
Built-in deep learning, 3D and other cutting-edge advanced algorithms can realize vision application scenarios in various complex environments.

More open and compatible
Compatible with more brand industrial cameras to satisfy diverseApplication request.

More cost-effective
A powerful visual software platform with deep learning AI algorithm and traditional CV algorithm you can got it at even around USD1000. Standardized visual products and customized solutions are both available, with better quality and higher cost performance.

More faster in deployment
Ready-to-use, saving time in deployment; fully visual interface,can automatically switch templates, more convenient to use.

More application
There are hundreds of application cases, and practical applications have been deployed in China, the United States, South Korea, Germany, Belgium, the Netherlands and other places.

INTRODUCTION

>>01 AtomVision is a one-stop machine vision software platform that integrates deep learning algorithms and traditional CV algorithms.

>>02 Independent research and development, has been widely used in 3C, automobile, food, daily chemical,medical, new energy, semiconductor and other industries.

>>03 The software includes five functions of guidance, positioning,identification, measurement and detection.

>>04 A new generation of user-friendly operation interface,graphical wizard, code-free programming.

>>05 An open platform that supports customized functions.

ALGORITHM TOOLS

Numerical Logic
The conditional branching module combines conditional monitoring and branching modules, and supports AND, OR, NOT, NAND, NOR operations.

Measurement
Measure object dimensions using visual methods.

Positioning Guidance
Visual recognition is used for positioning, and the position information is given, and the manipulator grabs it.

Deep Learning

Solve the problems of stacking identification, classification, and defect detection that cannot be solved by traditional algorithms.

Judgment

Detect the presence or absence of certain features on an object.

Preprocessing

Image preprocessing, including color conversion and morphology algorithms.

Symbol Recognition

Including QCR character, barcode, two-dimensional code recognition.



VISION CONTROLLER

Model	AtomVision-CV-PLUS	AtomVision-DL-2-PLUS	AtomVision-3D-PLUS	AtomVision-DL-3-PL
	AtomVision-CV-MAX	AtomVision-DL-2-MAX	AtomVision-3D-MAX	AtomVision-DL-3-MAX
Introduction	2D CV Algorithm	AI Algorithm	3D CV Algorithm	3D AI Algorithm
Supported Cameras	Area Array Camera 2D Line Scan Camera		3D Laser Sensor 3D Structured Light Camera TOR Sensor	
Extension	Support network port expansion, I/O expansion, graphics card expansion, image acquisition card expansion and other functional modules.			

VISION HARDWARE



Area Array Camera



2D Line Scan Camera



3D Laser Sensor



3D Structured Light Camera



Industrial Lens



Visual Light Source

Algorithm Application Cases



Image Processing

Logical operations, grayscale and color transformations, shading correction, grayscale morphology, geometric transformations, polar transformations.

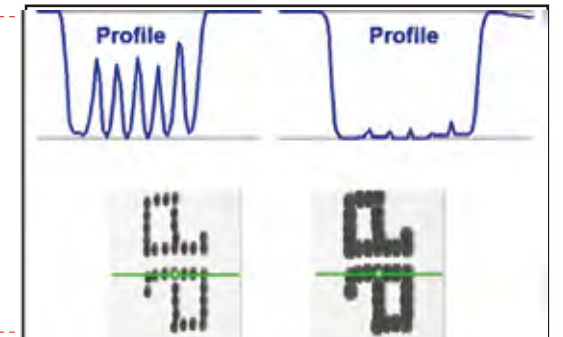


Image Analysis

Profile processing, histogram statistics, blob analysis, area masking, contouring.



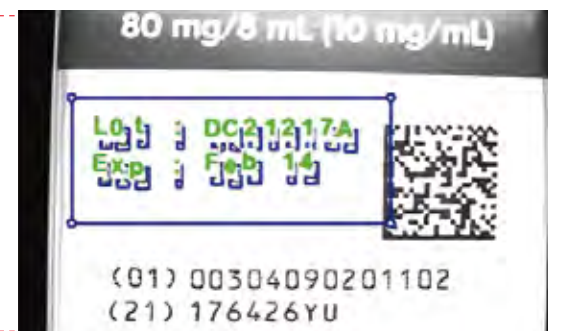
Edge Testing

Automatic edge detection, outlier suppression, point model fitting, powerful sub-pixel measurements.



Character Recognition

Font training, deskewing, automatic segmentation, typographic character recognition and validation.

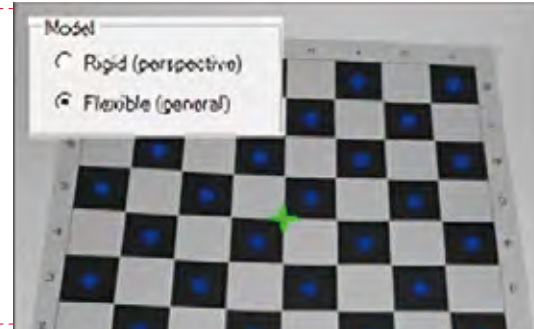


Algorithm Application Cases



Image Calibration

Zoom, isometric, correlation, perspective and distortion transformations.



Pattern Matching

Model training, sub-pixel position, rotation and scaling.



Barcode Reading

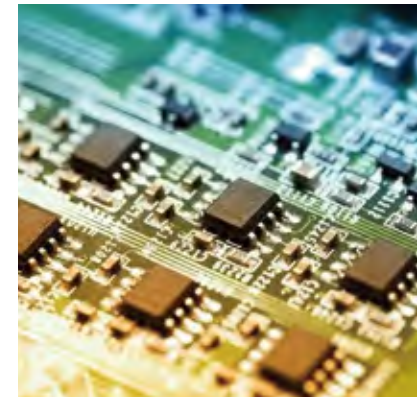
Automatic code placement, recognition and decoding, scaling and rotation invariant.



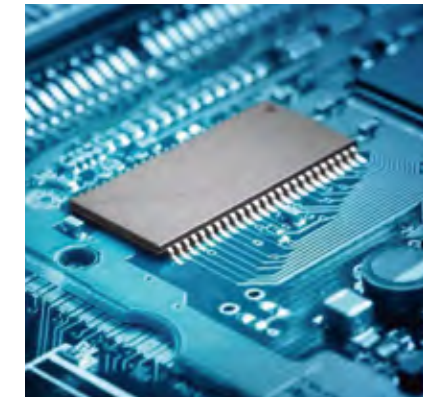
Industry Applications and Cases

Industry Application

Customized solutions according to the characteristics and needs of different industries.



3C



Semiconductor



AUTO



Hardware



Medicine



Rubber & Plastic



Agriculture



New Energy

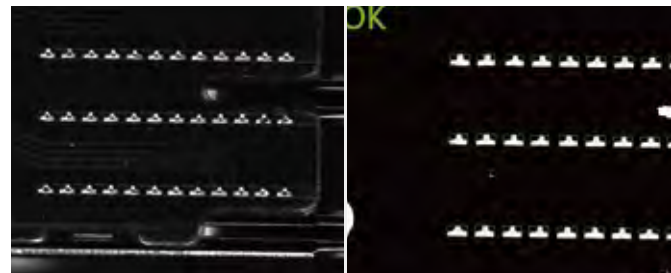


Household

Cases in 3C



QR Code Reading



Solder joint detect if have or not and count

Cases in Semiconductor Industry



Thickness detection of ceramic sheets

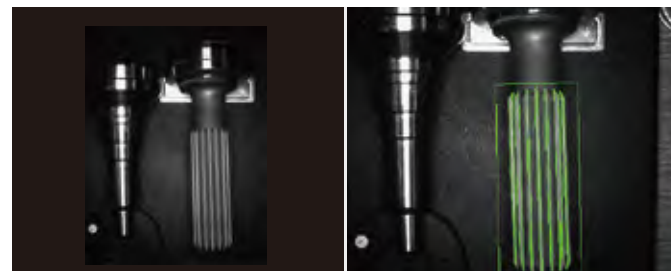


Through-hole inspection of ceramic sheet

Cases in Auto.

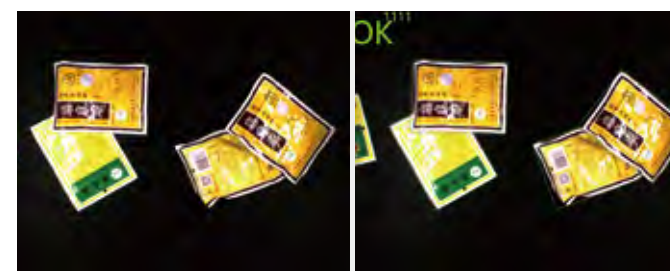


Steering wheel ultrasonic welding spot detect exist or not

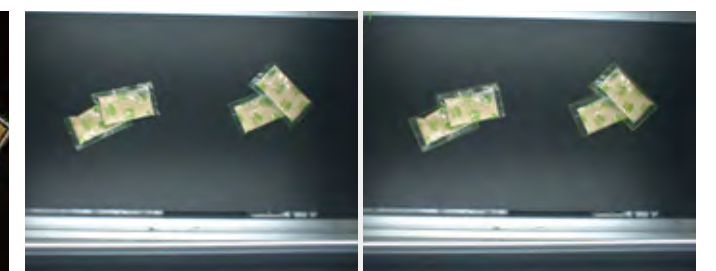


Visual inspection of connecting shafts appearance

Cases in Food and Daily Chemical

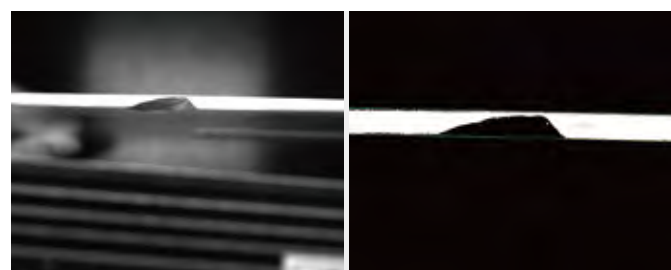


Distinguishing and positioning identification of the upper and lower stacked bags of seasoning.



Distinguishing and positioning identification of the upper and lower stacked bags of soy flour.

Cases in New Energy

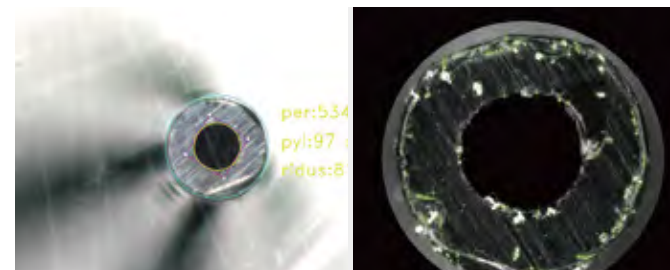


Photovoltaic glass defect detection

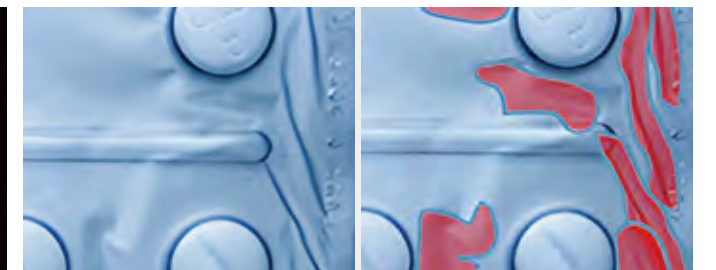


Power battery polar detection

Cases in pharmaceutical



Medical injection tube burr and defect detection

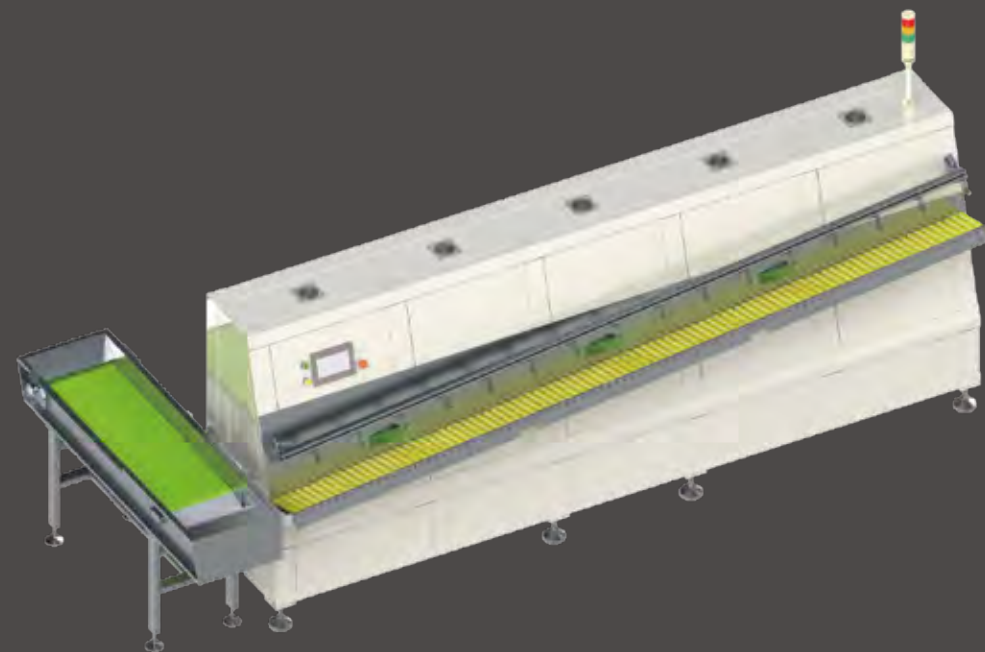


Drug board defect detection

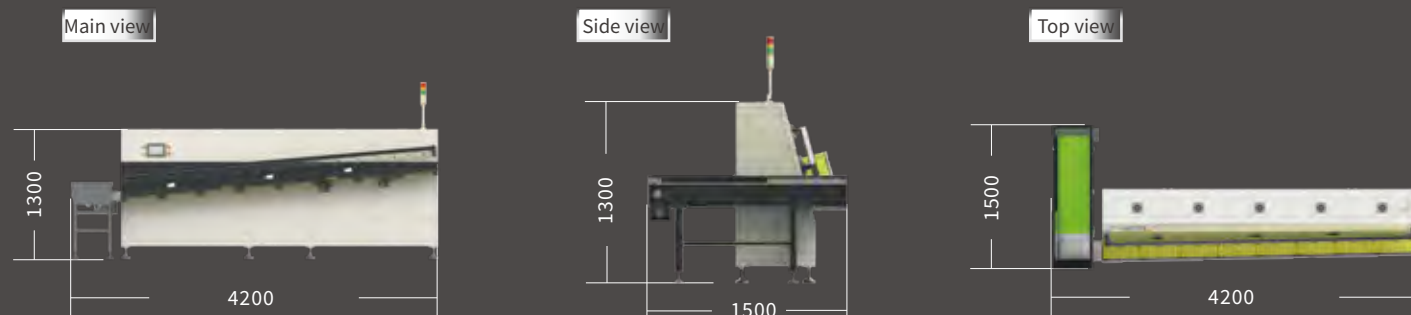
HIGH SPEED SORTING MACHINE

Unordered sachets sorting | Assortment Packing | Production counting | Qr code reading

- The intelligent high speed sorting system is suitable for all kinds of vacuum packaging products, which solves the problem of disconnection between inner packaging and outer packaging due to site, sterilization and other factors.
- The sorting system achieves product reorientation and improves efficiency.
- Various superposition functions can be implemented as needed, such as same face, same orientation, weight detection, counting, QR code reading, packing, etc.
- High speed, with a maximum throughput of up to 200 sachets per minute.



4200*1500*1300 (Length * Width * height)



unit: mm

Specifications

Specifications			
Model number	Main power supply for Equipment	Total power supply (KW)	Air Supply
GS-22012-012	Three phase 380v 50Hz	12	Compressed air: 0.6MPa ~ 0.8MPa Flow rate>600L/min
Operating temperature	Main Body material	Total weight of equipment	Production Cadence
temperature -10°C ~ +40°C	Carbon steel coated/ Stainless steel (optional)	2000	105 Sachet/min ~ 200 Sachet/min (According to the size of the product)

Equipment process description

- The material falls into the intelligent material bin, and the laser sensor is used to determine whether there is material on the conveyor belt. When the material accumulates on the conveyor belt, the intelligent material bin automatically stops supplying materials.
- The conveyor belt transports disorderly spaced materials, automatically performing 'interval adjustment'. At the same time, the stacked materials are automatically removed by the end roller to ensure that the materials enter the downstream equipment at a constant speed.

Equipment features

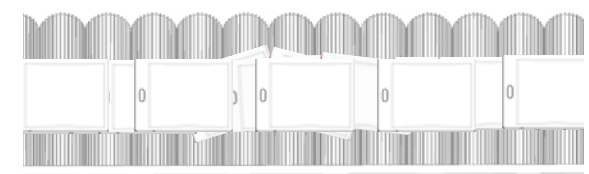
The equipment is designed for the sorting of flexible bag products, meeting the requirements for separation, reorientation, arrangement, shaping, and counting of flexible bag products. This enables the automatic allocation, automatic reorientation, automatic arrangement, automatic counting, and automatic rejection of non-compliant products (stacked bags, connected bags) during the feeding process, facilitating the packaging of flexible bag products into boxes.

- The entire line operates automatically without manual intervention, achieving automated production.
- Multiple material sorting channels can be configured based on actual production capacity requirements.
- The feeding is stable and the distance between the materials is even.

Device function

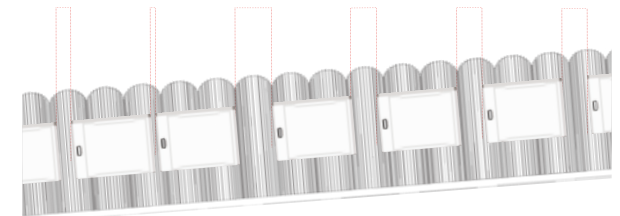
Stacked bag separation

- Equipped with 16 groups of power units and online detection units to separate various forms of packages to achieve single package output.
- Standardized positioning for single-package output.
- Compatible with the production switch of various materials.



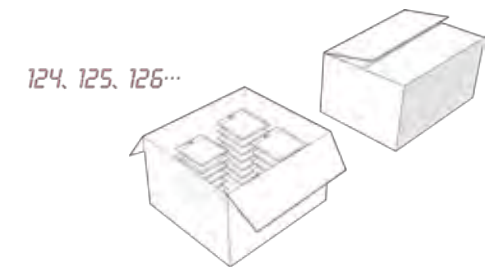
Online spacing and cadence control

- The system can dynamically adjust the material output spacing and frequency based on production capacity parameters.
- The system can set working cadence parameters to meet the requirement of consistent cadence with upstream and downstream equipment.



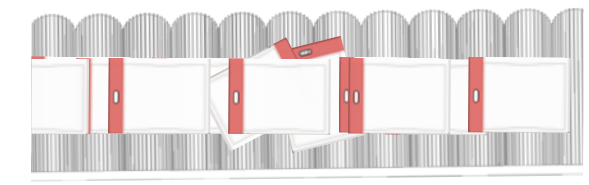
Online separation counting

- Configuring automatic recognition and separation function for stacked materials.
- Automatic counting of material output.
- Real-time automatic statistical display of work efficiency.



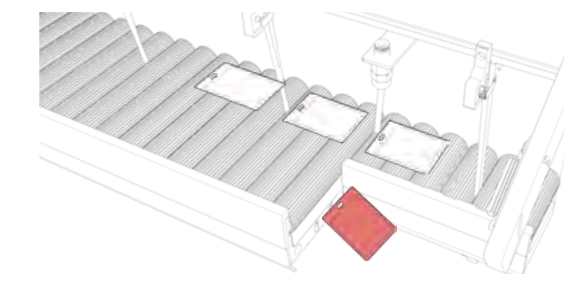
Online reorientation

- Configuring 4 sets of active reorientation modules, 1 set of forced reorientation module, achieving consistent output in the length direction of the material.
- Can be customized according to material width.



Online detection and rejection

- The system is equipped with the function of online detection and rejection of transverse bags to ensure consistent product output.



Flexible production

- The system supports the setting of material appearance parameters and is compatible with the production switch of various materials.



Industry application

The main application


Sorting and counting of flexible bag packaging in the post-production process of food and pharmaceuticals, automatic feeding for boxing, bagging, and packaging to achieve automation and intelligence in this process segment.



Application scenario

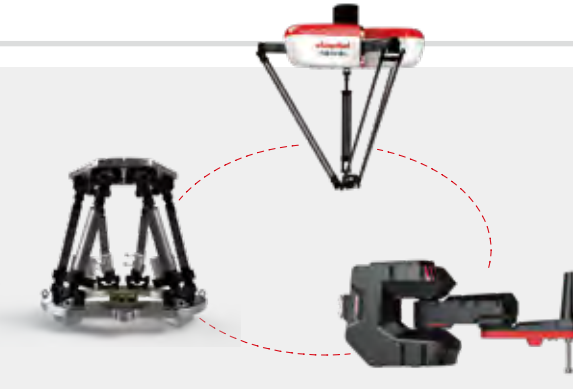
Soft packaging for snacks (vacuum, nitrogen-filled), bagged tea, coffee packaging, soft packaging for seasonings, hot pot base materials, pickled vegetables (such as pickled mustard greens), and soft packaging for pharmaceuticals (powders, granules, liquids), etc.






Exploring the boundary with ingenuity
Amplify natural physical properties of metals

Part 3 Advanced Features



Multi Model Support


Support multi models of robots such as entire series of parallel robot and SCARA robot, etc.



Trajectory Recurrence

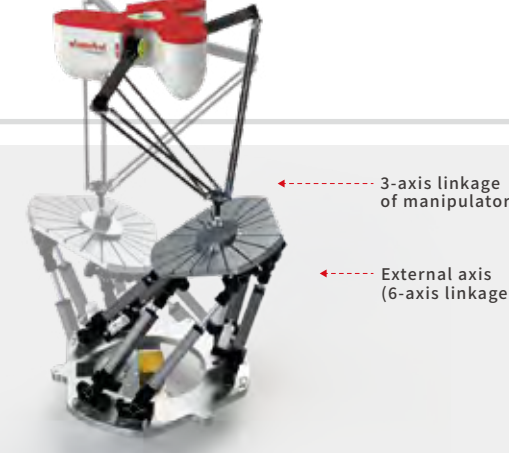
Fitting the trajectory by spline curve can realize the memory tracking of complex teaching trajectory.

- Teaching trajectory
- Moving trajectory



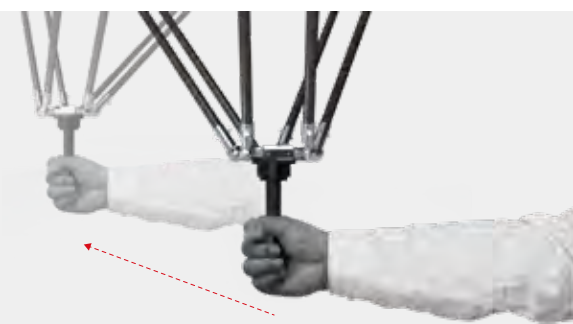
Trajectory Preview

Through the speed look-ahead technology, much smoother speed curve can be obtained, and the smooth speed curve can still be obtained even at places where the acceleration frequently changes, improving operation efficiency of the robot.



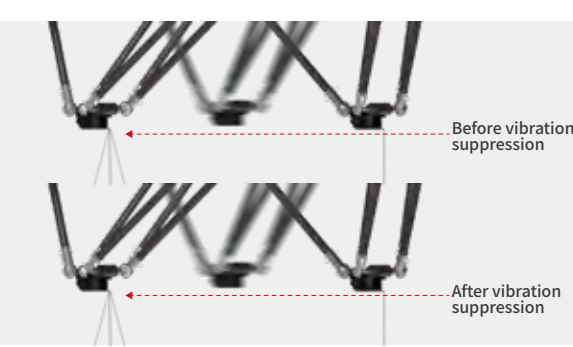
External Axis Control

In addition to the main body, multiple external servo axes can be controlled for independent or synchronized multi-axis linkage with the robot.



Drag Teach


By holding the traction robot directly, the posture data of the teaching process is recorded, and the robot application tasks are taught in an intuitive way.



Active Vibration Suppression

The vibration suppression algorithm effectively reduces the mechanical vibration caused by the robot during high-speed sudden stop, and improves the precision of the robot at high speed.

- Before vibration suppression
- After vibration suppression

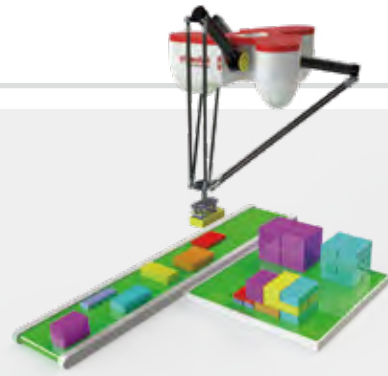


Dynamic Tracking

With the help of robot vision or encoder, it can realize the dynamic tracked pick-and-place of objects running along straight lines and arcs.

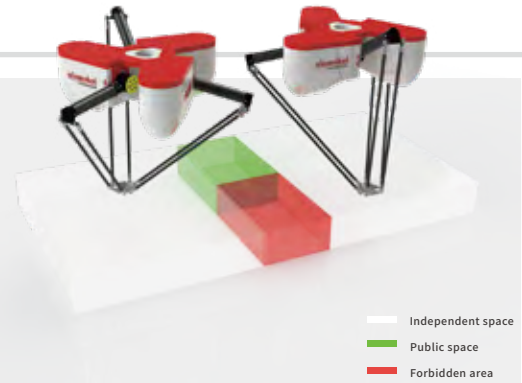
Palletizing Process

Provide palletizing algorithm, input the palletizing configuration to automatically generate motion trajectory, improve efficiency.



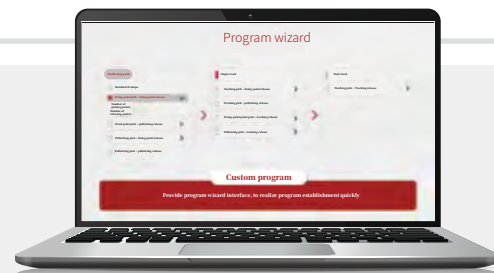
Area Monitoring

By setting the working area and the prohibited area to avoid accidents such as collision, the control system will monitor the robot's working space in real time, and control the start and stop of the robot through the relationship between the monitoring areas.



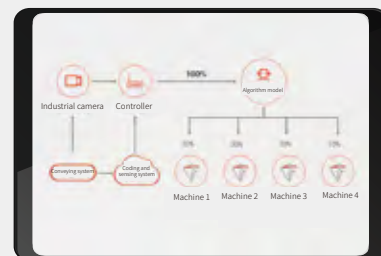
Program Wizard

By providing quick creation of programs including gate shape, single track, and double track, to quickly achieve robot programming.



Material Distribution

According to the quantity of materials, the operation of multi manipulators can be distributed reasonably, to guarantee service life of manipulators to maximum extent while picking the materials up stably.



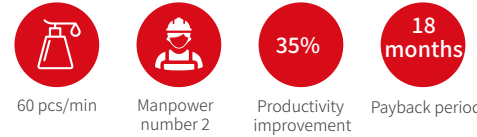
Part 4 Industry Applications and Solutions



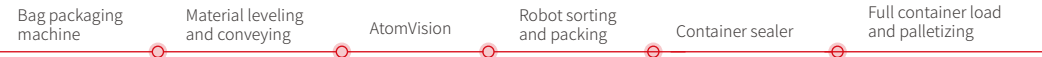
FOOD INDUSTRY
Bagged Food Packing



Scan to know the application cases



Production Line Process



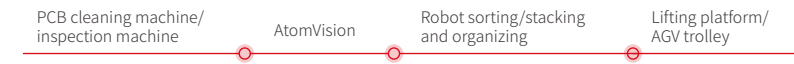
PCB INDUSTRY
PCB Electrode Piece Sorting



Scan to know the application cases



Production Line Process



PHARMACEUTICAL INDUSTRY

Infusion Bags Tray Loading



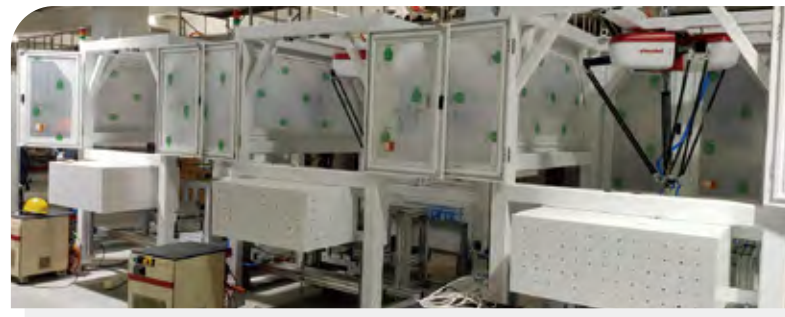
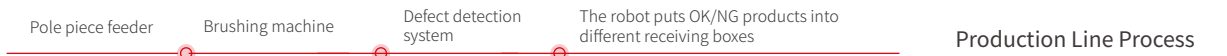
Scan to know the application cases



NEW ENERGY INDUSTRY
Electrode Piece of New Energy Battery



Scan to know the application cases



DAIRY INDUSTRY
Cup Yogurt Loading



Scan to know the application cases



Production Line Process



DAILY CHEMICAL INDUSTRY
Put Ice Cream Spoon into Packaging Machine



Scan to know the application cases



Production Line Process



AUTO INDUSTRY
Parts sorting



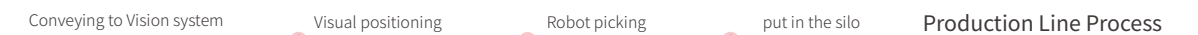
Scan to know the application cases



3C INDUSTRY
Semiconductor Chip Arrangement



Scan to know the application cases



APPLICATION IN FOOD INDUSTRY



Scan to know the application cases

Packing Solution for Bagged Foods

Client's Topics

1. Labor shortage in production line, labor cost has been increasing year by year;
2. The manual packing speed is slow, the consistency is bad, the rework rate in packing link is high;
3. Materials are not uniform when feeding with elevator, with stacked materials;
4. The vision identifying is difficult, resulting in failure of partial material picking;
5. There are 8 robots in two production lines, which are necessary to adopt TCP communication, so the collection and unification of data are required.

Difficulties in Implementation

1. The packing speed is required to be up to 400 bags/min;
2. In-coming materials are not uniform, with stacked materials;
3. There are certain wrinkle and deformation on the product surface, to be not easy to adsorb or picking up;
4. Product categories are various, and there is a demand for product replacement;
5. The "One-Object-One-Code" traceability feature is required to be achieved.



Solutions

1. Four parallel robots are used for collaborative coordination, to achieve the packing speed of 24,000 bags/hour;
2. The AtomVision system is introduced, to solve the difficulty of positioning of stacked materials;
3. By matching customized end fixtures, to solve the problem that materials are not easily adsorbed;
4. One-key changes the vision template over, to meet the flexible production of different materials;
5. With AtomVision system introduced, the precise identifying is allowed and the QR code is resolved, to achieve the product traceability;
6. Return lines are added to solve the problem of excess material recovery.

Optimization Effect

1. Six workers are reduced for a single production line, to reduce the company's labor cost;
2. High cost-effective ratio controls the ROI within 18 months;
3. 24 hours continuous operation assures the production efficiency;
4. The robot runs based on the set program, to avoid the uncertainty of manual operation, assuring the consistency of products.



APPLICATION IN DAIRY INDUSTRY



Scan to know the application cases

Automation Solution for Tetra Fino Aseptic Pillow Case Packing

Client's Topics

1. Labor shortage in production line, labor cost has been increasing year by year;
2. Manual packing speed is low and the consistency is bad, which is not in favor of the control of product quality.

Difficulties in Implementation

1. The operation speed of production line is fast, the operation speed of the production line is 850 mm/s, it is required for the robot to have very high acceleration, tracking and picking-up capacities;
2. The speed of in-coming materials are fast, which is up to 12,000 bags/hour, much higher picking speed is required;
3. Double-dynamic tracked tracking and picking, require to make dynamic picking and dynamic placing of materials possible;
4. The production line runs uninterruptedly 24 hours, to put forward high requirement for operation stability of equipment.

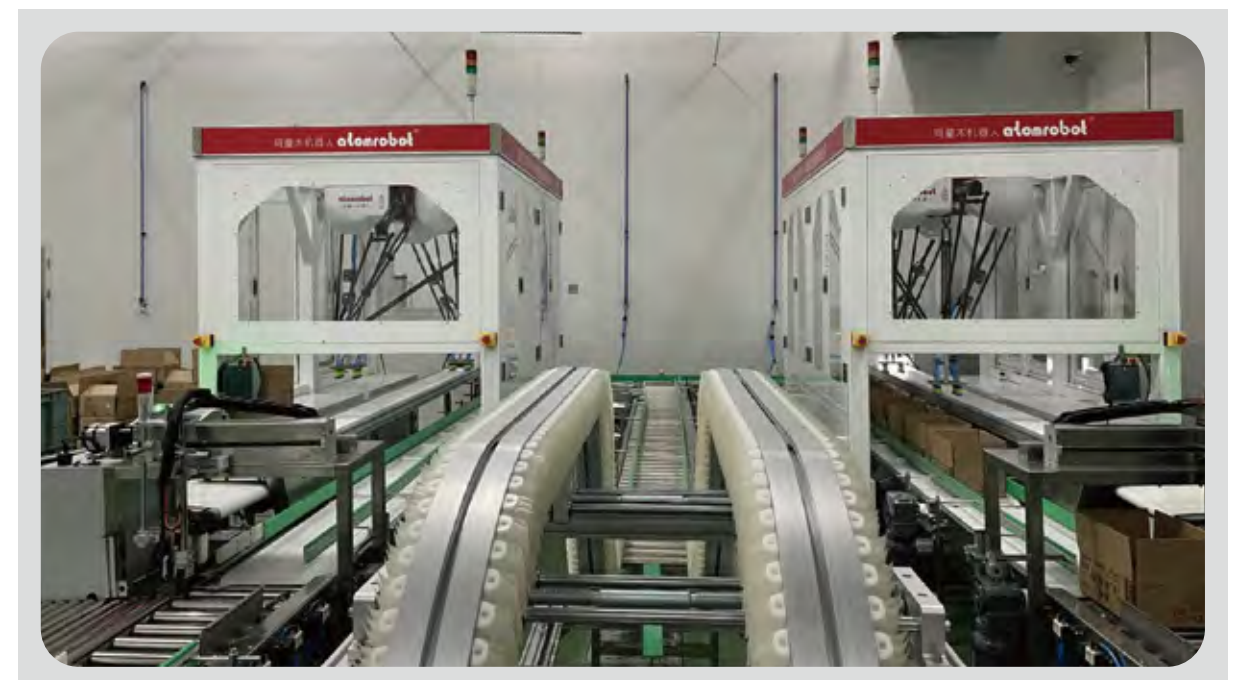


Solutions

1. Two parallel robots are used for collaborative coordination, to achieve the high-speed linkage packing of in-coming material at a speed of 200 bags/min;
2. Using sensor locating solution to realize precise positioning, dynamic picking-up and dynamic placing of materials, meanwhile, reduce the cost for introducing the vision system;
3. Adopting high precision encoder and modules monitors the operation speed and fluctuation condition of the in-coming material line in real time so as to assure the stability of picking-up.

Optimization Effect

1. Four workers are reduced for a single production line, to reduce the company's labor cost;
2. High cost-effective ratio controls the ROI within 18 months;
3. 24 hours continuous operation assures the production efficiency;
4. The robot runs based on the set program, to avoid the uncertainty of manual operation, assuring the consistency of products.



APPLICATION IN PHARMACEUTICALS INDUSTRY



Scan to know the application cases

Solution for Medicine Granule Pouches Cartoning

Client's Topics

1. The production line increases its output, but the manpower is short, the recruitment is difficult, and the cost increases year by year;
2. Manual counting is not accurate, to be unable to assure product quality;
3. So many workers in the production line, to bring very big challenge to the production site to meet the GMP standard.

Difficulties in Implementation

1. The production capacity of an individual line is 36,000 bags/hour, and the speed of in-coming material is high, to require the robot to have very high acceleration, tracking and picking-up capacity;
2. Precise counting is required so as to avoid any shortage of materials;
3. Product packing categories are various, to demand for frequent product replacement;
4. The angle of in-coming material of the product is inconsistent, to require the robot to have 360°picking-up feature.



Solutions

1. Six parallel robots are used for collaborative coordination, to achieve sorting and packing speed of 36,000 bags/hour;
2. The suction cup is equipped with negative pressure sensor to assure the accurate counting, enabling the same quantity in each box;
3. By adding the design scheme of the storage tank, guarantee the discharging speed of the robot to the greatest extent;
4. With the high-precision positioning of the vision system, guide the robot to rotate 360° to achieve the consistency of material boxing;
5. With the defect detection feature introduced, eliminate precisely the out-of-spec product to improve the acceptability of the product.

Optimization Effect

1. Eight workers are reduced for a single production line, to reduce the company's labor cost;
2. By counting precisely, increase the acceptability of boxing to 99.99% and more;
3. 24 hours continuous operation assures the production efficiency;
4. The robot runs based on the set program, to avoid the uncertainty of manual operation, assuring the consistency of products.



APPLICATION IN PCB INDUSTRY



Scan to know the application cases

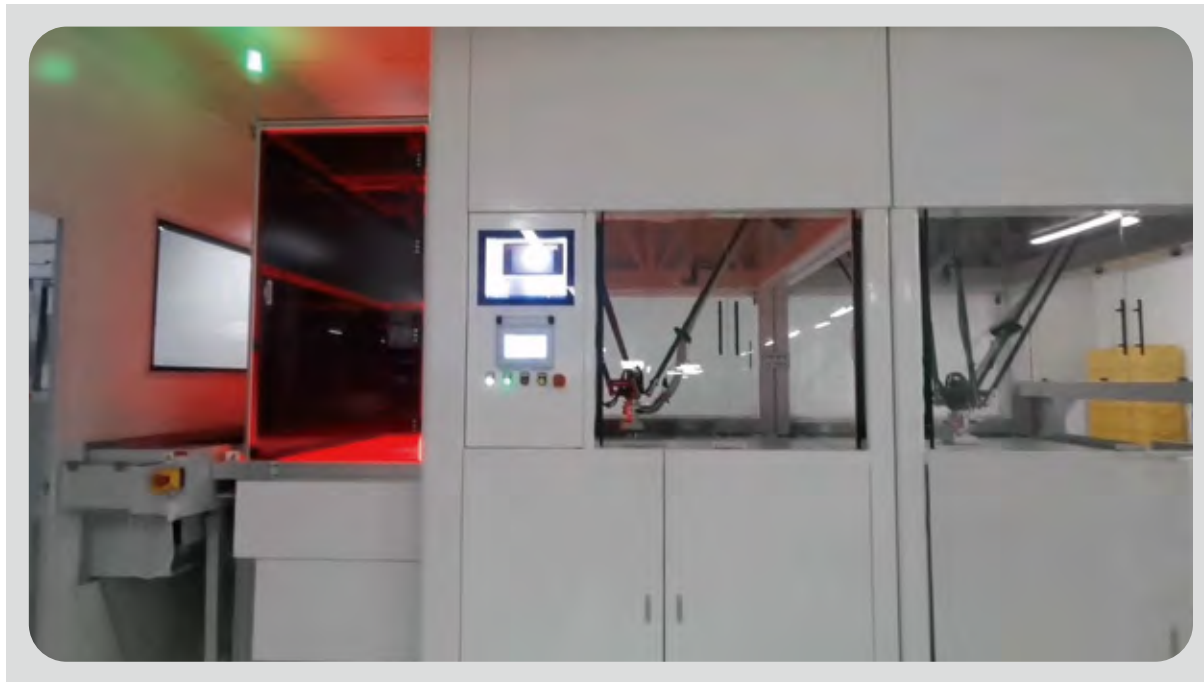
Solution for Sorting of Electronic Circuit Board

Client's Topics

1. There is labor shortage of production line, and high loss rate and high labor cost;
2. Manual operation is high in scratch rate and low in product acceptability;
3. Manual operation is unable to meet the requirement for production capacity.

Difficulties in Implementation

1. There are many kinds of PCB boards, colors and sizes of products are various, so it is difficult to identify and pick up;
2. Frequent change of material types puts forward higher requirements for flexible production;
3. It is prone to scratch between products to lead to scratching on product;
4. The board conveyor and lamination precision is required to be not less than ± 0.5 mm.

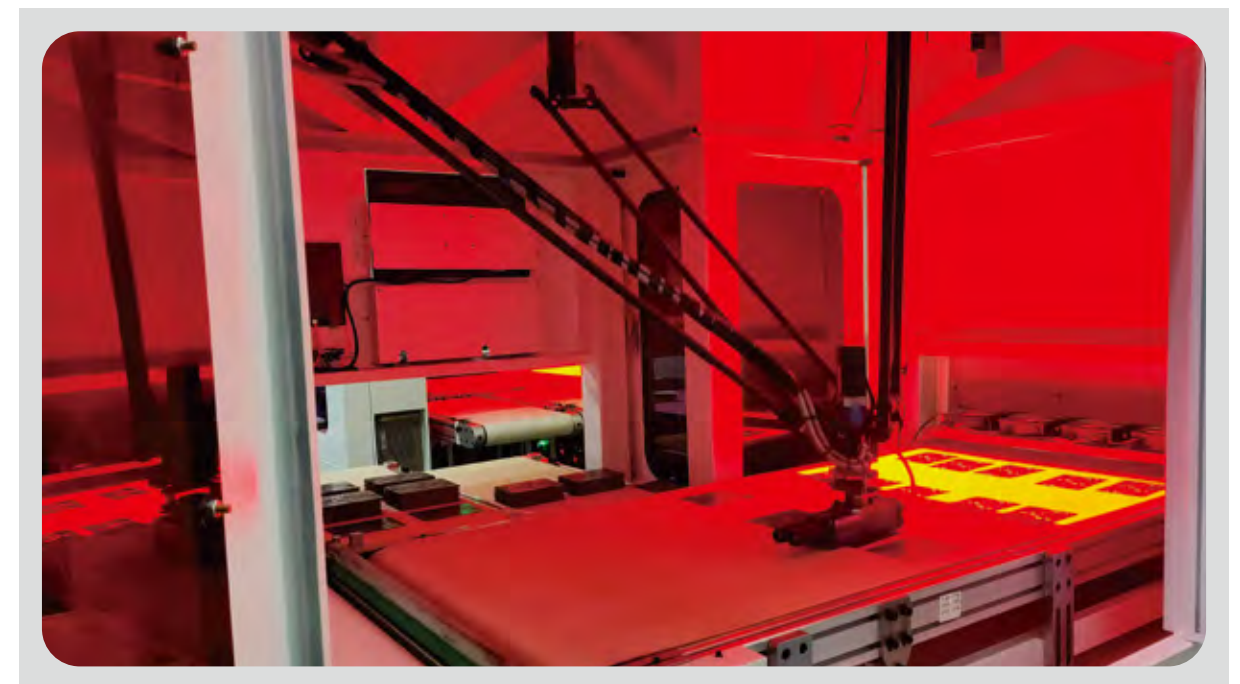


Solutions

1. The AtomVision system is used to allow precision identifying and positioning of materials with many colors;
2. The bespoke suction cup is selected to achieve stable picking-up of products with different sizes;
3. One-key changes the vision template over, to meet the flexible production of different materials;
4. By tracking, picking and accurate placing of materials, to avoid the scratching of materials;
5. The D3PM series parallel robot (repeated precision ± 0.05 mm, rotation precision $\pm 0.05^\circ$) is introduced to allow high precision conveyor and lamination.

Optimization Effect

1. The number of workers previously used for a single production line is reduced from 3 to 1, to reduce the company's labor cost;
2. Reduce the labor intensity of manual operation and the loss rate of manpower;
3. The condition of scratching caused due to manual conveyor is reduced, to reduce reject ratio of product appearance;
4. The conveyor speed is improved to 70-80 cycles/min, to have enhance the production efficiency.



AUTO INDUSTRY



Scan to know the application cases

Auto parts sorting solution

Clients' Issue

1. Difficult recruiting, and labor costs increasing year by year;
2. Labor-intensive for manual loading, unloading or assembly;
3. Low labor speed, poor consistency, and high failure rate;
4. On-site oil pollution environment has an impact on workers' health.

Implementation Difficulties

1. Products are difficult to sort, and the feeding mechanism is non-standard;
2. The workpiece size is large, robot is hard to cover the space;
3. High precision requirements;
4. Too many devices on site, the interference problem is serious.



Solution

1. The feeding form is changed to double vibrating discs and direct vibrator, and the product position is fixed to solve the problem of regularity and shape;
2. The workpiece is large, and the external axis control function is used to realize the front and rear movement and turning of the large workpiece, robot can cover the full movement space;
3. Customised end effector with cylinder and non-standard parts design, to improve stability and precision;
4. All encoder lines, power lines, and power lines are routed separately.

Optimization effect

1. Single-line day and night shift saves 6 workers and reduces labor costs for enterprises;
2. 24-hour continuous production, increasing production capacity by 30%;
3. High cost performance, ROI within 12 months;
4. Robots run according to the established procedures to ensure product consistency.



3C INDUSTRY



Scan to know the application cases

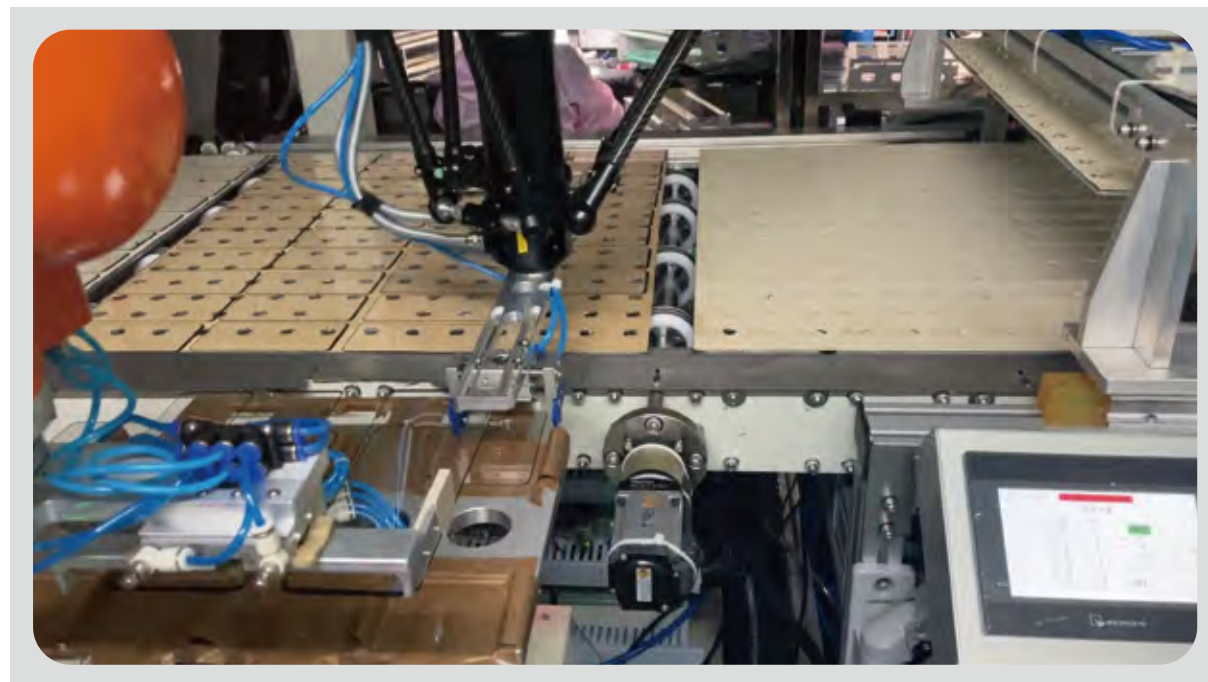
Mobile screen sorting solution

Clients' Issue

1. Difficult recruiting, and labor costs increasing year by year;
2. Labor-intensive for manual loading, unloading ;
3. Low labor speed, poor consistency, and high failure rate;
4. Screen tracking and placing, need 60ppm.

Implementation Difficulties

1. Multi robots are need for high feeding speed ;
2. varieties of products, which need to be compatible with a variety of display methods, and the working range is large;
3. High precision is required.

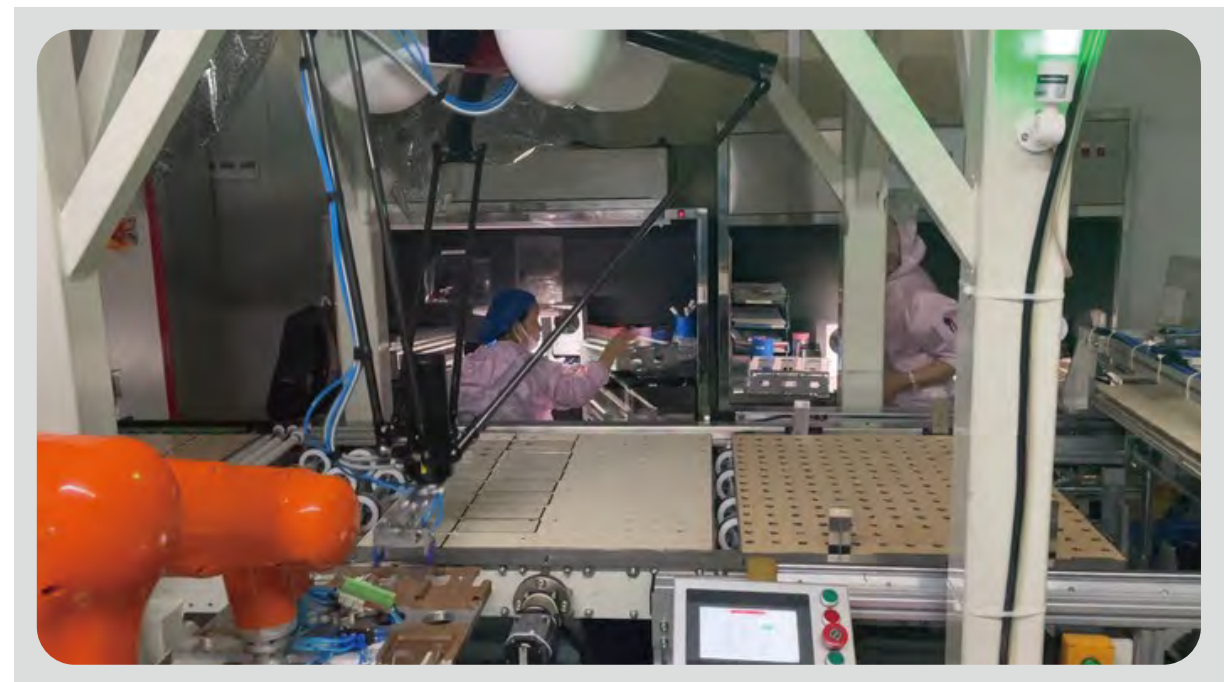


Solution

1. The feeding form is a six-axis robot and a rotating disk. The double 4 stations are used alternately to speed up the feeding speed. A vacuum generator is added to the bottom of the rotating disk to ensure that the glass screen will not be displaced during rotation;
2. Adjust robot picking point, closer to the loading station, and reduce part of the stroke;
3. Customised end effector with cylinder and non-standard parts design, to improve stability and precision;
4. All encoder lines, power lines, and power lines are routed separately.

Optimization effect

1. Single-line day and night shift saves 4 workers and reduces labor costs for enterprises;
2. 24-hour continuous production, increasing production capacity by 30%;
3. High cost performance, ROI within 24months;
4. Robots run according to the established procedures to ensure product consistency.



Hardware industry

Solutions for depalletizing and palletizing



Scan to know the application cases

Original production mode

1. Products are palletized after completion of production;
2. Manually unstacking products and enter into the user inventory system;
3. After scanning the code, place the boxes into another empty pallet;
4. Each box weight is 20kg, 5 boxes/minute, manual decoding.

solution

1. Use collaborative robots for depalletizing operations;
2. Suction cups with one-way valve installed at the end of the robot to pick products;
3. The robot controls the beat during transportation, and can scan codes during the operation;
4. After the code scanning is completed, palletize again.

Optimization effect

1. The robot comes with a graphical interface, which can easily handle the rapid creation and switching of different box types and patterns;
2. Equipped with collision safety detection function, which greatly improves safety and reduces the occurrence of safety accidents;
3. The robot suction cup strongly absorbs products and no damage to the carton;
4. Complete the depalletizing and palletizing process quickly and efficiently;
5. The layout of the robot is reasonable, simple and easy to operate;
6. Small footprint, no need fence, and easy maintenance.



Pharmaceuticals industry

High pallet palletizing solutions



Scan to know the application cases

Original production mode

1. Manually place wooden pallets and then perform palletizing operations;
2. Product weight is 5-12kg, manual shift operation and palletizing;
3. The wooden pallets are dropped to the ground and transported to the warehouse by forklifts or manually;
4. The production line has 6 boxes/minute, 10 hours/shift, and three fixed workers.

solution

1. Collaborative robots are used for palletizing operations, with the maximum palletizing height reaching 2100mm;
2. An automatic pallet warehouse is equipped to automatically distribute wooden pallets;
3. The pallet is automatically transported to the warehouse at high position;
4. The system automatically identifies the product supply rhythm, and the maximum speed can be 10 boxes/minute;
5. Starting the automatic pallet supply and palletizing process can save 2 fixed workers and change 1 person to a mobile post.

Optimization effect

1. The height of the pallet from the ground is increased, and liftable collaborative palletizing is adopted. The maximum palletizing height can reach 2100mm;
2. Robot adaptive palletizing with adjustable speed;
3. Can be equipped with data management information output to achieve closed-loop management;
4. Strong adaptability, suitable for multi-line automatic operations;
5. Small footprint, saving working space and convenient layout.



Food Industry

Double box palletizing solution



Scan to know the application cases

Original production mode

1. Multi-product, multi-line on-demand production, all personnel are mobile;
2. Product weight is 4-10kg, production efficiency is 8-10 boxes/minute;
3. Short-term cache storage after product production;
4. There are no fixed shifts from 8 to 24 hours, and workers are allocated by labor service companies on demand, so the personnel structure is unstable.

solution

1. Use mobile collaborative robots for palletizing operations;
2. The robot is equipped with a universal suction cup, which can be used for both small and large boxes within the range;
3. The robot comes with a graphical interface, which can easily handle the rapid creation and switching of different box types and stacking types;
4. Double box palletizing can be realized, with the maximum speed up to 16 boxes/minute;
5. Double palletizing positions, one person can complete palletizing and consignment operations on the move.

Optimization effect

1. The robot can select single, double, or triple grasping modes according to the size and weight of the materials to meet the customer's mixed needs of low weight, high speed, and large weight, low speed;
2. The robot can run smoothly without fixing;
3. The bottom plate of the robot is equipped with a shipping slot, which can be shipped by forklifts;
4. Small footprint, saving working space and convenient layout;
5. There is no need for fixed-position workers to operate, and it can automatically warn the palletizing progress and remind the palletizing status.



Food Industry

Elevated palletizing solution for large size boxes

atomrobot



Scan to know the application cases

Original production mode

1. Large size box: L: 400-600mm, W: 300-500mm, H: 250-400mm;
2. Product weight: 12-20kg, production efficiency is 6-8 boxes/minute;
3. It is required that the stacking height of high boxes should be within 5 layers, and that of short boxes should be within 4-7 layers;
4. Manual handling and palletizing may cause injuries due to falls and injuries, and the position requires 2 staff.

solution

1. Lifttable collaborative robots are used for palletizing operations, with the maximum palletizing height reaching 2100mm;
2. Large-size suction pads design improves the stability of large-size cartons and is compatible with small-size cartons;
3. The robotic arm has a rated load capacity of 30kg, covering all product weights;
4. The suction pad is equipped with an insufficient air pressure warning to prevent the product from falling due to insufficient energy supply;
5. Equipped with radar protection, it can provide early warning and shutdown when personnel enter the required range to avoid personal injury accidents.

Optimization effect

1. Flexibly grab large products for palletizing operations;
2. Air pressure adsorption safety warning to prevent boxes from falling out;
3. Safety radar protection to further improve safety protection;
4. Large load capacity, compatible with multiple specifications;
5. The palletizing program can be called and changed freely, making it more adaptable.



COMMITMENT

Service philosophy



Client First

Service First

Service pursuit



Response within **2** hours



Arrive within **24** hours



Solve within **72** hours

- For a long time, we have providing "Extreme Service" to clients as the core value of Atom Robot. To meet all-round needs of clients is the promise of Atom Robot to make efforts to practice. We insist all the time the after-sales service to response within 2 hours, arrive within 24 hours and solve your problem within 72 hours.
- We are committed to providing clients with perfect service network, to maintain close communication with clients at all times, to ensure that each set of robot system sold can run stably for long time.
- The Call Center provides clients with 24-hour all-round services. We will communicate attentively and answer your questions timely. We continuously improve operation rate of equipment through the best after-sales services, escorting the production of users.
- We have sufficient spare parts inventory, advanced warehouse management system, and timely and fast distribution system, to eliminate clients' after-sales worries.

Part 5 Commitment

COOPERATIVE PARTNER



Become the most reliable industrial robot service provider in the world



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Jiansu Xiaoye Intelligent Equipment Co.,Ltd

